CUSTOMER ASSET MANAGEMENT IN ACTION

USING CUSTOMER PORTFOLIOS FOR ALLOCATING RESOURCES ACROSS BUSINESS-TO-BUSINESS RELATIONSHIPS FOR IMPROVED SHAREHOLDER VALUE

Helsinki 2009
Customer asset management in action: using customer portfolios for allocating resources across business-to-business relationships for improved shareholder value

Key words: customer asset management, customer portfolio, shareholder value, customer relationship management, resource allocation

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1 INTRODUCTION

1.1. Customers as assets

The performance and impact of marketing, as of any other activity of commercial organizations, should be understood, measured and managed. As the marketing paradigms have evolved over time, so has our understanding of marketing performance.

The foundations of marketing were laid in the early 20th century, originating in economics: marketing focused on the distribution and exchange of products (Shaw 1912; Weld 1916). This emphasis on exchange theory continued for several decades, creating the so-called marketing management school of thought (McCarthy 1960; Kotler 1967) and the influential frameworks of the marketing mix and the 4Ps (McCarthy 1960; Kotler 1967). The focus on exchange theory naturally affected the way marketing was perceived. Marketing was seen as an activity aiming at optimizing a company’s marketing decision variables against demand variables outside the company’s sphere of influence in such a way that the company’s objectives are fully achieved (Kotler 1972).

The first major wave of marketing performance research took place in the 1950s and the 1960s. During those years, the main focus was on short-term cost reduction and the efficiency of marketing function (Kerin 1996; Sheth & Sisodia 2002; Bush et al. 2007). During the 1970s the interest in marketing performance dwindled down (Sheth & Sisodia 2002), to be evoked again at the wake of activity-based costing in the 1980s (Bust et al. 2007).

When the markets for most products and services in the developed economies matured, the paradigms built on the idea of commodity exchange became outdated. During the 1980s and 1990s, there emerged new marketing paradigms such as industrial marketing and purchasing (Ford 1980; Håkansson 1987; Dwyer et al. 1987), services marketing (Shostack 1977; Zeithaml et al. 1985; Grönroos 2000), relationship marketing (Berry 1983; Grönroos 1990, 1994; Gummesson 1994), and value and supply chain management (Lee & Billington 1992; Normann & Ramirez 1993). All these paradigms contributed to the efforts to extend the traditional exchange-theory-based domain of marketing by including the notions of continuous relationships and the co-creation of value. Vargo and Lusch (2004) propose that these paradigms are now converging into a new service-dominant logic for marketing. In the service-dominant logic, the ultimate objective of marketing is not to optimize marketing variables but to ensure the optimal co-creation of value for both the customer and the company.

The evolution of marketing paradigms has also been reflected in the marketing performance research. During the 1990s increasing concerns were voiced that the traditional functional approach and product market performance did not necessarily translate into the best financial performance (Srivastava et al. 1998) and that the failure to link marketing activities to shareholder value creation could lead to the marginalization of marketing thought and practice (Srivastava et al. 1999; Doyle 2000). This need to better understand the link between marketing actions and a firm’s financial performance has resulted in a new line of research, focusing on demonstrating how
marketing contributes to the enhancement of shareholder returns (e.g. Srivastava et al. 1998; Rust et al. 2004a; Rao & Bharadwaj 2008).

The quest for linking marketing and shareholder value has brought forth three considerable conceptual development steps within marketing thought. First, the understanding of the financial outcomes of marketing activities is now seen as an integral part of marketing (e.g. Srivastava et al. 1998; Srivastava et al. 1999; Rust et al. 2004a; Kumar & Petersen 2005; O’Sullivan & Abela 2007; Rao & Bharadwaj 2008). Second, the external stakeholders of marketing are expanded from customers and business partners to include current and potential shareholders as well (Srivastava et al. 1998). Third, several authors have proposed that, from a marketing viewpoint, relational assets such as customer, brand and network equity are the key constructs in linking marketing activities to shareholder value (e.g. Srivastava et al. 1998; Doyle 2000; Rust et al. 2004a; Vargo & Lusch 2004; Bush et al. 2007) and that marketing should assume responsibility for a firm’s financial performance by taking responsibility for increasing the market value of the organization by building relational assets (Vargo & Lusch 2004).

Customer equity as a relational asset linking shareholder value and marketing has received an increasing amount of interest among the marketing scholars since the 1990s (e.g. Blattberg & Deighton 1996; Hogan et al. 2002b; Rust et al. 2004b; Kumar & George 2007). Customer equity is most often defined as the sum of all discounter profits from both the existing and potential customers of the firm (Hogan et al. 2002b). Since the 1990s, considerable conceptual development has taken place within customer equity research: customer lifetime value (Dwyer 1989) has been accepted as the main method for estimating customer equity; several calculation models for customer lifetime with varying levels of sophistication value have been proposed; customer equity has been conceptualized as the main construct linking marketing actions and firm performance (Stahl et al. 2003; Rust et al. 2004b); the link between customer lifetime value and firm market valuation has been empirically verified (Gupta & Lehmann 2003); and models have been proposed for guiding the allocation of marketing budgets between acquisition and retention activities based on customers’ lifetime values (e.g. Blattberg & Deighton 1996; Berger & Nasr-Bechwati 2001; Reinartz et al. 2005).

However, the ability to accurately calculate customer lifetime value, or the ability to conceptually or empirically demonstrate the link between customer equity and shareholder value creation, provides little guidance for an active management of customer relationships for increased customer equity. Therefore in the present study it is emphasized that customer equity (the sum of discounted profits from current and future customer relationships) is conceptually a separate construct from customer asset management, which can be defined as the optimized use of a firm’s tangible and intangible resources in order to facilitate as profitable current and future customer relationships as possible (Hogan et al. 2002b).

One of the few studies explicitly focusing on the various ways of designing customer asset management activities for different customers for improved customer equity has been conducted by Kumar and George (2007). They present two main approaches for designing customer asset management activities: the dyad approach, in which the needed lifetime calculations are conducted on an individual customer level and the
activities are designed to create customer-specific management concepts; and the customer base approach in which the lifetime calculations are conducted on a firm’s level and activities are designed to create a firm-level management concept.

In addition to the clear-cut dyad and customer base approaches, Kumar and George (2007) also acknowledge an intermediate way of designing customer asset management activities: the customer portfolio approach. In the customer portfolio approach the needed lifetime calculations are conducted at customer level. Based on this information, customers are divided into customer portfolios and the customer asset management activities are designed based on portfolio-specific management concepts. Even though the customer portfolio approach has been less extensively studied within the customer asset management literature than the dyad and the customer base approaches, it is likely to have several favorable characteristics: portfolio-level management concepts are more cost-efficient than customer-level concepts but they allow more differentiation options than firm-level management concepts.

Regardless of the chosen customer asset management approach, the empirical investigation of customer asset management seems to lag behind the conceptual development steps taken. The majority of the customer asset management examples presented by Kumar and George (2007) are conceptual ones or tested by hypothetical examples. Very few studies present any empirical evidence of how customer asset management is or could be conducted in practice, studies by Ryals (2003) and Rust et al. (2004b) being one of the exceptions. Even fewer in number are those studies that have been empirically investigated in an industrial business-to-business context as most studies in customer asset management have either explicit or implied focus on business-to-consumer relationships and/or service companies. One exception to this rule is the study conducted by Venkatesan and Kumar (2004) who apply their customer lifetime value framework for customer selection and resource allocation to a business-to-business manufacturing company.

The limited adoption of customer asset management by the practitioners indicates that the current frameworks are not sufficiently suitable for business-to-business relationships. The potential challenges of the current customer asset management frameworks in business-to-business contexts can be divided into two categories. First, it might be that the customer lifetime value calculations proposed by the current literature as the basis for making resource allocation decisions are not suitable for business-to-business relationships. As Gupta and Lehmann (2003) point out, the concept and models of customer lifetime value originate in the field of direct and database marketing. Therefore it can be argued that the use of customer asset management frameworks focusing mainly on customer lifetime value maximization and customer acquisition-retention optimization are not optimally suited to a B2B context. After all, in the majority of the B2C customer relationships there is a significant power asymmetry between the provider and the customer: the provider is a considerably larger player in the market than an individual consumer and each consumer generates only a limited share of the provider’s business. Such asymmetry enables successful acquisition-retention optimization: terminating an individual customer relationship does not have a considerable impact on the overall business of the provider and there are always several new potential consumers to be targeted with acquisition campaigns. However, B2B customer relationships are often much more symmetrical than B2C customer
relationships: the customer and the provider can be of equal size or the customer can even be a larger player than the provider. Additionally, B2B customer bases are often characterized by a limited number of customer relationships and thus the relative importance of each customer relationship is considerably larger than in B2C customer bases. Finally, the number of potential customer relationships is also much more restricted in a B2B context than in a B2C context, further limiting the applicability of acquisition-retention optimization. The challenges associated with CLV applications in a B2B context is also acknowledged by Blocker and Flint (2007) who suggest that CLV and customer portfolio approaches should be developed in parallel. Second, it is also possible that the current customer asset management frameworks provide insufficient guidance for executing customer asset management in practice (customer base approach) or that they promote too costly customer management approaches (dyad approach) compared to the available benefits.

1.2. Purpose of the research and research problem

The purpose of the present research is to contribute to the abovementioned research gap by creating a framework for allocating resources with customer portfolios across business-to-business customer relationships for improved shareholder value. The framework will be explored empirically with several case studies in a B2B context.

The purpose of the research can be further divided into four research questions:

1) Can the resource allocation within a customer base be done through a single customer portfolio similar to financial portfolios or are several customer portfolios needed?

2) What kind of customer portfolio model should be used if the aim is to improve shareholder value?

3) What are the customer asset management activities that can be conducted if the aim is to improve shareholder value?

4) How to operationalize resource allocation decisions within a customer base?

These research questions are approached with action research (Lewin 1946), which seeks simultaneously practical outcomes that improve the health of the participant organizations and new forms of theoretical understanding. The present thesis consists of four essays, each contributing to various degrees to the research questions:

- Essay 1 “Why finance does not help customer asset management – challenges in applying financial theories to customer relationship management” focuses on the first research question: can the resource allocation within a customer base be done through a single customer portfolio similar to financial portfolios or are several customer portfolios needed.

- Essay 2 “Customer portfolios in customer asset management – empirical comparison of customer portfolio models” concentrates on the second research
question: what kind of customer portfolio model should be used if the aim is to improve shareholder value.

- Essay 3 “The role of customer asset management in shareholder value creation – an empirical investigation” contributes to the third and fourth research questions: what are the customer asset management activities that can be conducted if the aim is to improve shareholder value and how to operationalize resource allocation decisions within a customer base.

- Essay 4 “Customer asset management for business-to-business relationships: differentiating cross-functional customer management concepts for improved firm performance” further elaborates the fourth research question: how to operationalize resource allocation decisions within a customer base.

Figure 1 further illustrates the relationship of the essays to the research questions.

1.3. Positioning of the research

This section explains how the present study is positioned among the various streams of research in marketing and management. After this, the positioning of the present research among the customer asset management literature is discussed in more detail.

The research aim of the present study is embedded in the larger context of marketing performance (Srivastava et al. 1998; Sheth & Sisodia 2002; Rust et al. 2004a; Grønholdt & Martensen 2006; Bush et al. 2007; O’Sullivan & Abela 2007; Seggie et al. 2007; Rao & Bharadwaj 2008). During the 1990s marketing scholars became increasingly aware of the fact that the traditional functional, product-oriented marketing was no longer meeting the needs of marketing practitioners: the traditional quest for product market performance did not necessarily translate into the best financial
performance (Srivastava et al. 1998). The marginalization of traditional marketing has raised fears about the marginalization of entire marketing, especially at top management level (Doyle 2000; McGovern et al. 2004).

Some researchers argue that this decline in marketing’s status within organizations originates in the lack of evidence that links marketing activity to shareholder value creation (Rust et al. 2004a; Srivastava et al. 1999). The need to better understand the link between marketing actions and firm financial performance has resulted in a new line of research focusing on proving marketing performance (Srivastava et al. 1998; Sheth & Sisodia 2002; Rust et al. 2004a; Grønholdt & Martensen 2006; Bush et al. 2007; O’Sullivan & Abela 2007; Seggie et al. 2007; Rao & Bharadwaj 2008). This line of research has been conducted under various terms (e.g. marketing productivity, marketing performance, marketing accountability, marketing-finance interface, return on marketing), but the overall objective of this body of research is the same: demonstrating how marketing contributes to the enhancement of shareholder returns. Thus, during recent years various researchers have concluded that the main objective of marketing is to improve firm performance and shareholder value creation (e.g. Day & Fahey 1988; Srivastava et al. 1998; Srivastava et al. 1999; Doyle 2000; Kumar & Petersen 2005; Rao & Bharadwaj 2008).

In their seminal article, Srivastava et al. (1998) propose a framework illustrating how marketing actions result in shareholder value creation. In this framework Srivastava et al. (1998) introduce the concept of market-based assets. According to Srivastava et al. (1998), market-based assets include both relational assets (e.g. relationships to suppliers and customers) and intellectual assets (knowledge about the environment and the entities in it). In their framework, Srivastava et al. (1998) propose that market-based assets, especially customer and partner relationships, represent the accumulated outcomes of marketing actions. Marketing actions also result in customer behavior, which translates into market performance (e.g. faster market penetration, price premium, share premium, extensions, service costs, loyalty/retention). Market performance in turn affects shareholder value. Therefore, in the framework proposed by Srivastava et al. (1998), the marketing actions affect shareholder value through the logical sequence of “marketing actions ➔ market-based assets ➔ market performance ➔ shareholder value”.

From different types of relational assets, brand equity and customer equity have received most attention from marketing scholars. Brand equity has been the first attempt within marketing to conceptualize and measure relational assets; several researchers have been involved in studying brand equity since the early 1990s (e.g. Baldinger 1990; Farquhar 1990; Aaker 1992; Keller 1993). Aaker (1992:28) considers brand equity as a set of brand assets and liabilities, which are linked to the brand’s name and symbol, can subtract and add to the value provided by a product or a service, and provide value to customers as well as to a firm. Keller (1993:8) on the other hand defined brand equity as “the differential effect of brand knowledge on consumer response to the marketing of the brand.” Regardless of the slightly differing definitions of brand equity presented, brand equity researchers seem to agree on the role of brand equity as a mediating variable between marketing actions and improved performance. Research has also been conducted on the potential relationship between brand equity and firm value. Aaker and Jacobson (1994) found a positive association between one component of brand quality,
brand quality perceptions, and stock market returns. Barth et al. (1998) found a positive relationship between brand value and share prices and returns. These findings with positive links between brand equity and a firm value support in their part the proposition made by Srivastava et al. (1998) on the importance of market-based assets in shareholder value creation. Even though both brand equity and customer equity research have their roots in market-based assets literature, the present research focuses solely on customer equity and customer asset management.

As pointed out by Srivastava et al. (2001), Hogan and Armstrong (2001) and Hogan et al. (2002b), notions of market-based and relational assets have a strong link to the resource-based view of the firm. According to the resource-based view, the competitive advantage of firms can be explained by the heterogeneous distribution of strategic resources among firms (e.g. Wernerfelt 1984; Barney 1991). Customer asset management is concerned with the management of one particular type of heterogeneously distributed strategic resources, i.e. the customer asset. Even though no documented literature review on the resource-based view of the firm has been conducted during this research process, the notions of the resource-based view have affected the research process.

The key concepts and propositions of relationship marketing (e.g. Shostack 1977; Berry 1983; Grönroos 1990, 1994; Gummesson 1994) have played an important part in developing customer equity thinking into customer asset management thinking: after all, relationship marketing focuses on the facilitation of value creation within relationships. Similar to the literature on the resource-based view of the firm, no formal literature review of relationship marketing has been conducted during the research process. However, the influences of relationship marketing thinking are inseparable from the present research.

As the objective of the present research is to create a framework for allocating resources within a business-to-business customer portfolio for improved shareholder value, the present research draws considerable influences from industrial marketing. Especially the relationship portfolios provided by the researchers within the Industrial Marketing and Purchasing Group (IMP) have enriched the present research (e.g. Fiocca 1982; Campbell & Cunningham 1983; Dickson 1983; Krapfel et al. 1991; Olsen & Ellram 1997; Bensaou 1999; Zolkiewski & Turnbull 2000, 2002; Sanchez & Sanchez 2005; Leek et al. 2006).

Finally, the present research utilizes financial theories in developing a framework for allocating resources within a customer base for improved shareholder value. Two financial theories in particular have affected the present research. First, the shareholder value literature is investigated in order to gain a comprehensive understanding of the shareholder value construct (e.g. Stewart 1991; Black et al. 1998; Rappaport 1998). Second, the modern portfolio theory (Markowitz 1952), is reviewed as it is the most influential theory explaining resource allocation under risk.

The theoretical positioning of the study is summarized in Figure 2. The present research is positioned within the customer asset management literature, but the research synthesizes views from various other research streams in order to gain a comprehensive view to the research problem.
Within the customer asset management literature, the positioning of the present research is illustrated in Figure 3.

Customer asset management can be defined as the optimized use of a firm’s tangible and intangible assets in order to make current and future customer relationships as profitable as possible (Hogan et al. 2002b). Historically, as Gupta and Lehmann (2003) point out, the concepts and models in customer asset management originate in the field of direct and database marketing. This focus continues still: the majority of the customer asset management literature has an explicit or implicit emphasis towards B2C relationships and acquisition-retention optimization. The present research reviews all customer asset management literature but focuses mainly on business-to-business relationships in theory generation and empirical research.

Customer asset management literature can also be categorized based on its focus area: does the research focus on evaluating the customer asset or does the research provide insights on how to manage the customer asset based on the evaluations. The vast majority of the evaluation literature uses customer lifetime value (CLV) as the main
evaluation method. CLV as a term can be traced to Dwyer (1989) and it is most commonly defined as the present value of the expected revenues less the costs from a particular customer. However, various authors have pointed out that there are challenges associated to CLV models ranging from the calculation of the CLV, practical utilization of the CLV models, to the B2C emphasis of the CLV models (Bell et al. 2002; Hogan et al. 2002a; Verhoef & Langerak 2002; Berger et al. 2003; Gupta & Lehmann 2003, Malthouse & Blattberg 2005; Nasr Bechwati & Eshghi 2005). Therefore the present research focuses on finding alternative evaluation methods to CLV models.

According to the customer asset management literature, the management of the customer asset effectively translates to the allocation and re-allocation of tangible and intangible resources for maximum return from customer relationships. The existing literature suggest that the resource allocation can be conducted either by the dyad approach (e.g. Verhoef & Donkers 2001; Ryals 2003; Venkatesan & Kumar 2004), the customer base approach (e.g. Blattberg & Deighton 1996; Berger & Nasr 1998; Blattberg et al. 2001; Gupta & Lehmann 2003; Rust et al. 2004b), or by utilizing customer portfolio approach (e.g. Reinartz & Kumar 2000, 2003; Verhoef & Donkers 2001; Bell et al. 2002; Venkatesan & Kumar 2002). The present research focuses solely in investigating the customer portfolio approach in designing and operationalizing resource allocation decisions.

1.4. Key concepts and limitations

In the following section the key concepts of the study will be defined. Additionally, the main limitations of the present research will be outlined.

Customer equity. Customer equity is a term closely linked to the concept of customer lifetime value. CLV as a term can be traced by to Dwyer (1989) and it is most commonly defined as the present value of the expected revenues less the costs from a particular customer. In this research customer equity is defined as “the aggregation of expected lifetime values of firm’s entire customer base of existing customers and the expected future value of newly acquired customers” (Hogan et al. 2002a:30)

Customer asset. As defined above, the term customer equity refers to a figure, the amount of money that can be generated from the current and prospective customer relationships. For improved conceptual clarity, in this study it is proposed that customer equity is conceptually separated from the customer asset. Thus, in the present research the customer asset is defined as the customer relationships the company has and will have with its customers. Even thought the conceptual separation is emphasized in the present study, it is worth noting that the majority of the existing customer asset management literature implicitly agrees with the proposed conceptual hierarchy: the customer asset comprises customer relationships, and the customer asset generates customer equity for the firm.

Customer asset management. In the present study customer asset management is defined as a comprehensive management approach aimed at optimizing the use of a firm’s tangible and intangible resources in order to maximize the shareholder value creation from the customer asset (influenced by Hogan et al. 2002b).
Customer portfolio. In the present study customer portfolios are proposed as an alternative medium for allocating resources within a customer base for improved shareholder value. The customer based of a firm can be divided into customer portfolios by investigating the monetary value capture from the customer relationships or issues directly influencing the monetary value capture. Customer portfolio models are differentiated from market segmentation models, customer segmentation models and relationship portfolio models by their definition: customer portfolio models take customer relationships as the main unit of analysis, the scope of customer portfolio models are limited to the customer base of a single firm, and customer portfolio models focus on monetary value capture from customer relationships.

Shareholder value. The present study focuses on developing concepts for active customer asset management for improved shareholder value. Shareholder value is defined as the earnings a firm generates on invested capital in excess of the cost of capital, adjusted for risk and time (e.g. Stewart 1991; Black et al. 1998; Rappaport 1998). It should be noted that there are at the moment at least two alternative approaches to calculating shareholder value: the discounted cash flow method (e.g. Black et al. 1998; Rappaport 1998) and the economic profit method (e.g. Stewart 1991). Theoretically, however, both methods should arrive at the same end result regarding shareholder value.

Customer asset management activities. In the present study customer asset management activities are defined as activities that the firm conducts in order to improve the shareholder value creation by the customer relationships.

Customer management concept. In the present study customer management concept is defined as the overall plan guiding customer asset management activities, differentiated for different customer portfolios.

The aim of the present research is to contribute to the current customer asset management literature by creating a framework for managing business-to-business customer relationships as an investment portfolio for improved shareholder value. Due to this research aim, there are certain limitations to the study. First, the entire research has been conducted with a specific focus on business-to-business relationships and all empirical investigations have been executed within a business-to-business context. Therefore the applicability of the research findings in business-to-consumer contexts requires further studies. Second, the present study focuses on investigating the customer portfolio approach in designing customer asset management activities. Therefore the present study does not aim at increasing understanding of customer lifetime value calculations or the dyad and customer base approaches of designing customer asset management activities. Third, the present study limits its focus to the current customer base of a firm. Thus the research findings do not contribute to the literature focusing on understanding the overall market potential or customer acquisitions.

1.5. The structure of the research report

The research report comprises five main chapters and appendices. Chapter 1 presents the domain of the research, the research gap, the research aim and research questions,
the positioning of the research, as well as key concepts and limitations. Chapter 2 provides an overview of the theoretical background of the research, leading to the creation of a preliminary framework for allocating resources within a business-to-business customer portfolio for improved shareholder value. Chapter 3 discusses the philosophical positioning of the study, the methodological choices made, and the data collection and analysis procedures. Chapter 4 presents brief summaries of each of the four essays included in the present thesis. Chapter 5 elaborates on the theoretical and managerial contributions of the study, discusses the limitations of the research and suggests avenues for further research. Appendices include the full versions of the essays included in the thesis.
2 CUSTOMER ASSET MANAGEMENT IN ACTION

The present chapter provides an overview of the theoretical background of the research. The literature review starts by discussing the concept of customer equity as the linking construct between marketing and financial performance. After this, the existing customer asset management literature is reviewed. Third, a brief review of modern portfolio theory is conducted next, leading to a discussion on whether the customer base is better managed with a single or multiple customer portfolios. Fourth, the existing customer portfolio models are identified and analyzed, after which three alternative customer portfolio models for improved shareholder value are presented. Fifth, the link between customer asset management and shareholder value creation is discussed, leading to the identification of thirteen distinct roles for customer and customer asset management in improving shareholder value. Finally, the main findings of the literature review are summarized into a preliminary framework for allocating resources within a business-to-business customer portfolio for improved shareholder value.

2.1. Customers as assets

In this section, the theoretical foundations of customer equity and customer asset management are discussed. Additionally, the section provides a categorization of the existing customer asset management literature based on the studies’ financial and management orientations.

2.1.1. Customer equity: linking marketing and finance

In order to answer to the call by marketing performance researchers such as Srivastava et al. (1998) to link shareholder value and marketing, several studies have suggested that customer relationships could be viewed as assets and that customer equity could be seen as the construct bridging the chasm between finance and marketing (Stahl et al. 2003; Gupta & Lehmann 2003; Rust et al. 2004b).

In 1996 Blattberg and Deighton defined customer equity as the sum of all discounted profits from all customers of the company. A couple of years later, Hogan et al. (2002b) expanded the definition made by Blattberg and Deighton (1996) by stating that a company’s customer equity is derivative of both the existing and potential customer assets. There is a widespread agreement among the customer equity researchers that customer equity is best calculated by using a construct of customer lifetime value (CLV). CLV as a term can be traced by to Dwyer (1989) and it is most commonly defined as the present value of the expected revenues less the costs from a particular customer. The majority of the existing CLV models are built around three basic elements: revenue from the customer, costs of serving the customer, and customer retention rate. The more simplistic CLV models have later been extended to include e.g. sensitivity for cash flows that vary in timing and amount (Berger & Nasr 1998; Reinartz & Kumar 2000), customer-specific variations (Crowder et al. 2007), customer risks (Hogan et al. 2002a; Ryals & Knox 2005, 2007), different acquisition modes (Villanueva et al. 2007b), different relationship types (Roemer 2006), channel quality
(Dong et al. 2007), networking and learning potential (Stahl et al. 2003), different levels of buyer-seller dependence (Roemer 2006), competitive environment and game theory (Villanueva et al. 2007a), and factors like supply chain interactions (e.g. Niraj et al. 2001). Gupta et al. (2006) provide a comprehensive review of possible alternative approaches to calculating CLV: recency-frequency-monetary value models, probability models, econometric models, persistence models, computer science models, and diffusion/growth models.

Historically, as Gupta and Lehmann (2003) point out, the concepts and models of customer lifetime value and customer equity originate in the field of direct and database marketing. This focus continues still: the majority of the customer equity applications have an explicit or implicit emphasis towards B2C relationships and acquisition-retention optimization. Customer lifetime value and customer equity can also be seen as descendents of customer profitability research. Over the last two decades, customer profitability has been studied extensively (e.g. Storbacka 1994; Storbacka et al. 1994; Mulhern 1999; Kaplan & Narayanan 2001, Chiquan et al. 2004) and the concept of customer profitability has also been readily adopted by marketing practitioners. Customer profitability research reflects the paradigm shift in marketing from short-term optimization to long-term relationship management: customer profitability does not limit itself to maximizing return from individual transactions but it seeks to manage overall customer profitability over time. However, the customer lifetime value research extends the long-term view of traditional customer profitability literature even further: as customer profitability is interested in the historical profitability of the customer during a specific moment in time, customer lifetime value seeks to estimate the discounted future profits derived from a particular customer over her lifetime.

Similar to the research regarding other relational assets, studies have also been conducted in order to demonstrate the link between customer equity and shareholder value. Rust et al. (2004b) developed a framework for return on marketing, in which customer equity is presented as the sole mediating relational asset between marketing investments and a return on marketing. Stahl et al. (2003) have created a conceptual framework in which they discuss the different aspects of the customer lifetime value (base potential, growth potential, networking potential and learning potential) and their impacts on shareholder value. In one of the few existing empirical studies on the link between customer equity and shareholder value, Gupta and Lehmann (2003) used customer lifetime value information to calculate the market values of five publicly traded companies, yielding accurate valuations for three companies.

If assets are conceived as resources that can generate cash flows in the future, customer relationships fulfill the characteristics of assets. However, as customer profitability and customer lifetime value research has demonstrated, the cash flows generated by the customer relationships vary both from one relationship to another as well as over time. Therefore, the active management of customer assets is needed in order to improve shareholder value creation. As the step is taken from calculation of customer equity to the management of customer relationships for improved shareholder value creation, we enter the area of customer asset management. In customer asset management the key question is finding the optimal allocation of a firm’s tangible and intangible resources between risky customer assets for increased shareholder value creation.
2.1.2. Two theoretical foundations, three approaches to management

Customer asset management can be defined as the optimized use of a firm’s tangible and intangible assets in order to make current and future customer relationships as profitable as possible (Hogan et al. 2002b). Even though the majority of the researchers seem to concur with a definition along similar lines, customer asset management is not a cohesive school of thought. On the contrary, it is possible to identify two different schools of thought, each influenced mainly by two different financial approaches: project finance and modern portfolio theory.

The majority of the current customer asset management literature is built around the term of customer lifetime value (CLV). CLV as a term can be traced to Dwyer (1989) and it is most commonly defined as the present value of the expected revenues less the costs from a particular customer. The financial background of CLV models can be traced back to discounted cash flow models and project finance.

However, various authors have pointed out that there are challenges associated to CLV models ranging from the calculation of the CLV, practical utilization of the CLV models, to the B2C emphasis of the CLV models. The challenges involved in calculating CLV are brought forward by Bell et al. (2002), Hogan et al. (2002a), Verhoef and Langerak (2002), Gupta and Lehmann (2003), and Nasr Bechwati and Eshghi (2005): assembling customer-level industry-wide customer data, selection of the appropriate model, extensive modeling, difficulty of including and predicting factors not related to the firm itself or its customers, the assumption that customers are all equally risky and that risk is time invariant, the difficulty of estimating the needed variables, and the challenges related to estimating the overall reliability and sensitivity of the results. Even if the above mentioned challenges are overcome, the underlying challenge associated with CLV models remains: how well does the past behavior of the customer predict her future behavior and thus lifetime value? Studies conducted by Berger et al. (2003) as well as Malthouse and Blattberg (2005) indicate that current CLV models seem to be have challenges in predicting future customer lifetime value accurately enough for business purposes.

Several researchers have also been concerned about the relatively slow and sometimes misguided adoption of the CLV models by practitioners (e.g. Guilding & McManus 2002; Verhoef et al. 2002; Thomas et al. 2004). Gupta and Lehmann (2003) argue that in order to promote wider use of customer asset management among senior executives and investors, the frameworks should not require too laborious modeling or the existence of too complex and comprehensive customer data. Even the utilization of a properly calculated CLV information is not as straight-forward as it might seem: e.g. Nasr Bechwati and Eshghi (2005) illustrate the managerial challenges involved in utilising the CLV information ranging from negative word-of-mouth associated with letting unprofitable customers go, disfavoring certain demographic segments, to applying marketing strategies that are inconsistent with corporate overall objectives. Finally, as Gupta and Lehmann (2003) point out that the concepts and models of customer lifetime value originate in the field of direct and database marketing – and the focus on this domain continues still. Therefore it can be argued that the use of customer asset management frameworks focusing mainly on customer retention and acquisition optimization are not optimally suited to a B2B context in which customer relationships
are long-term in nature and the options to acquire new customer relationships are more limited than in a B2C context.

In addition to the CLV-based customer asset management literature, some researchers have taken the financial modern portfolio theory and the capital asset pricing model (CAPM) as the starting points for creating customer asset management frameworks (Hopkinson & Lum 2002; Ryals 2002; Dhar & Glazer 2003). In these models, the central concepts of financial modern portfolio theory and CAPM such as required return, risk-free return, systematic (market) risk, and beta are applied to the context of customer relationships. One of the purest applications of CAPM to customer asset management has been made by Dhar and Glazer (2003). In their study, Dhar and Glazer (2003) calculate the customer betas by comparing the cash flows from an individual customer to the cash flows of the entire customer portfolio and depict an efficient frontier for customers.

Even though models influenced by the financial portfolio theory provide an interesting alternative to the more traditional CLV models, there are some challenges associated with them. First of all, the financial portfolio theory-influenced models are less extensively studied than the CLV-based models. Additionally, the direct application of financial modern portfolio theory and CAPM to customer relationship context is somewhat problematic. For example, the work done by Dhar and Glazer (2003) does not challenge the underlying assumptions of financial markets such as the relationship between risk and return. Additionally, the study assumes that customers can be acquired and divested without too much difficulty and that there is no interconnectedness between customers. Even with the abovementioned limitations, the financial portfolio theory-influenced models are valuable in that they always acknowledge the risks involved in customer relationships and that they often take the capital costs associated with asset utilization into consideration – issues that are often neglected in the traditional CLV models.

Regardless of the school of thought, the core of customer asset management is designing the right customer asset management activities for different customers in order to maximize the return from customer relationships. In their article, Kumar and George (2007) present main two ways of designing customer asset management activities, both based on CLV calculations. The first method is called a disaggregate approach. Adopting a disaggregate approach means conducting the needed calculations on an individual customer level and then designing the customer asset management activities with the help of customer-level management concepts (e.g. Verhoef & Donkers 2001; Ryals 2003; Venkatesan & Kumar 2004). The second approach presented by Kumar and George (2007) is labeled as the aggregate approach. The use of the aggregate approach means that the CLV calculations are conducted at firm level (e.g. average CLV within a firm) and that the activities are designed by a firm-level customer management concept affecting the drivers of the customer asset (e.g. pricing, promotion, loyalty programs, channel choices). Examples of an aggregate approach are presented by e.g. Blattberg and Deighton (1996), Berger and Nasr (1998), Blattberg et al. (2001), Gupta and Lehmann (2003) and Rust et al. (2004b). However, in order to clarify the differences between the identified approaches to designing customer asset management activities and to emphasize the separation of CLV calculation and the customer asset management, the present study proposes new terms and definitions for
disaggregate and aggregate approach. In this study it is proposed that the disaggregate approach is called the dyad approach, indicating a management approach in which customer asset management actions are designed for each dyadic customer relationship separately. Following the same logic, in this study the aggregate approach is called the customer base approach as this management approach seeks to optimize shareholder value by designing customer asset management activities at the customer base level.

In addition to the dyad and customer base approaches, there is also a third way of designing customer asset management activities: the customer portfolio approach. In the portfolio approach the needed calculations are conducted at customer level – similar to the dyad approach. Based on this information, customers are divided into customer portfolios and the customer asset management activities are designed based on portfolio-specific customer management concepts. The customer portfolio approach has several benefits: portfolio-level customer management concepts are more cost-efficient than customer-level concepts but they allow more differentiation options than firm-level customer management concepts. Additionally, the customer portfolio approach is not limited to the use of CLV calculations – even though it does not exclude its use either. As several researchers (e.g. Reinartz & Kumar 2000, 2003; Verhoef & Donkers 2001; Bell et al. 2002; Venkatesan & Kumar 2002) have included segments or portfolios in their customer asset management frameworks, it can be concluded that the customer portfolio approach is a viable alternative for the more clear-cut dyad and customer base approaches in executing customer asset management. Echoing this development, Blocker and Flint (2007) suggest that CLV and segmentation (portfolio) approaches should be developed in parallel, especially in a B2B context where the development of CLV applications seems to have been lagging behind the development steps taken in the B2C sector.

The table 1 summarizes the above-presented overview of the customer asset management literature.
Table 1  Overview of customer asset management literature

<table>
<thead>
<tr>
<th></th>
<th>CLV-models</th>
<th>Financial portfolio theory influenced models</th>
</tr>
</thead>
<tbody>
<tr>
<td>Main background in financial theory</td>
<td>Discounted cash flow models / project finance</td>
<td>Modern portfolio theory &amp; capital asset pricing model</td>
</tr>
<tr>
<td>Dyad approach for management (examples)</td>
<td>• Verhoef &amp; Donkers (2001)</td>
<td>• Hopkinson &amp; Lum (2002)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Dhar &amp; Glazer (2003)</td>
</tr>
<tr>
<td>Customer base approach for management (examples)</td>
<td>• Blattberg &amp; Deighton (1996)</td>
<td>not available /</td>
</tr>
<tr>
<td></td>
<td>• Berger &amp; Nasr (1998)</td>
<td>not applicable?</td>
</tr>
<tr>
<td></td>
<td>• Rust, Lemon &amp; Zeithaml (2004)</td>
<td></td>
</tr>
<tr>
<td>Customer portfolio approach for management (examples)</td>
<td>• Reinartz &amp; Kumar (2003)</td>
<td>not available</td>
</tr>
<tr>
<td></td>
<td>• Venkatesan &amp; Kumar (2002)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Gupta &amp; Lehmann (2005)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Kumar, Petersen &amp; Leone (2007)</td>
<td></td>
</tr>
</tbody>
</table>

2.2. Customer portfolios as an alternative medium for guiding customer asset management activities

The previous section concluded that the customer portfolio approach is a viable alternative to the dyad and the customer base approaches to designing and executing customer asset management activities. The present section investigates the customer portfolio approach in more detail. First, the applicability of the modern portfolio theory in the customer relationship context is analyzed in order to find out whether the customer portfolio approach requires one or several customer portfolios. Second, the existing studies on customer portfolios are reviewed. Third, three alternative customer portfolio models aimed at improving shareholder value are proposed.

2.2.1. Limited applicability of modern portfolio theory in customer relationships: a need for multiple customer portfolios

Customer asset management is based on the notion that the value capture from customer relationships to the provider varies between one customer and another and that this value can be actively managed by allocating resources between customer relationships. Additionally, customer asset management researchers generally agree on the fact that the future cash flows from the customers are always uncertain: there is an innate risk concerning the future returns on customers (e.g. Hogan et al. 2002a). This idea of future revenues from multiple assets that are subject to risk and that are optimized through resource allocation decisions provides a logical link to modern portfolio theory (Markowitz 1952). Modern portfolio theory is the most influential theory illustrating asset management decisions under uncertainty. Therefore it is worth investigating whether there are potential concepts and frameworks that could be transferred from
modern portfolio theory to customer asset management. In order to achieve this aim, the differences and similarities of the units of analysis of modern portfolio theory and customer asset management are analyzed. In modern portfolio theory, the unit of analysis is an individual investment instrument; in customer asset management, the unit of analysis is a customer relationship.

Additionally, the marketing performance and relational asset literature urges marketing researchers to provide frameworks and concepts for an active management of the marketing-finance interface: marketing actions should not be guided only by marketing’s own objectives but by a thorough understanding of the potential impacts of marketing actions to the firm financial performance. Also in this respect, modern portfolio theory should be investigated as the modern portfolio theory outlines several core concepts and assumptions regarding investment instruments and resource allocations in financial markets that are shared by the majority of financial frameworks. Therefore a detailed analysis of modern portfolio theory and its applicability to a customer relationship context provides help in creating a language and measures for discussing customer relationships and their impact on a firm’s performance across functional borders to top management and the external investors.

The objective of this section is to investigate the differences and similarities between investment instruments and customer relationships in the light of modern portfolio theory. Before the differences and similarities between customers and investment instruments can be further elaborated on, the basic premises of the modern portfolio theory have to be investigated. In this way the underlying assumptions regarding investment instruments (such as stocks, bonds, commodities) and their context can be understood – to be later compared to customer relationships.

Modern portfolio theory is used to explain the behavior of rational investors, the use of diversification to optimize investment portfolios, and investment instrument pricing. Capital asset pricing model (CAPM) is one of the key concepts of modern portfolio theory, described in more detail in the works by Litner (1965a, 1965b) and Sharpe (1964).

The modern portfolio theory is built on the notion that investors are rational and risk averse. The only two variables relevant for investors when making investment decisions are the return of the investment instrument (expected mean return) and the risk associated with the investment instrument (historical volatility of the mean return): for a riskier investment, the investor will require a higher expected return – and vice versa. Each investment instrument / portfolio can be described in the risk-return space. Within risk-return space one can identify efficient frontiers which describe the portfolios that have the lowest possible level of risk for a given level of return. Therefore, a rational investor would only invest in a portfolio residing on an efficient frontier. Which efficient frontier the investor chooses depends on her individual risk aversion. The portfolios alongside the same efficient frontier can be compared to a measure called the Sharpe ratio. The Sharpe ratio illustrates a portfolio’s return above the risk-free rate (i.e. additional return) compared to the risk of the portfolio. The portfolio with the highest Sharpe ratio on the efficient frontier is called the market portfolio. If a straight line is drawn through the market portfolios of all efficient frontiers, one creates the capital market line. This means that all portfolios on the capital market line have superior risk-
return rates (or Sharpe ratios) compared to any other portfolios on the efficient frontiers – and based on the foundations of modern portfolio theory, it is impossible to create a portfolio from risky assets that has a risk-return rate above the capital market line.

Modern portfolio theory also distinguishes systematic risk from specific risk. Specific risk is associated with a particular investment instrument. Systematic (market) risk is used to illustrate the risk common to all investment instruments. Modern portfolio theory is not concerned with specific risks as it assumes that specific risks can be diversified out in portfolios consisting of sufficiently many investment instruments. The capital asset pricing model (CAPM), on the other hand, is the means to apply modern portfolio theory to resource allocation decision; it is a formula that calculates the required return for a correctly priced asset that is added to the market portfolio (i.e. a portfolio residing at the capital market line, with optimal risk-return rates). A central measure in the CAPM equation is the beta coefficient, which illustrates the sensitivity of the investment instrument to the general market movements. In other words, the beta coefficient describes how sensitive an investment instrument is to systematic (market) risk. In practice, the beta coefficient allows the calculation of price for any individual asset if the expected return of the market and the risk-free rate of interest are known.

The direct application of modern portfolio theory-based models has also been considered outside the domains of finance, especially in relation to product portfolio optimization (e.g. Anderson 1981; Wind & Mahajan 1981). However, the possibly incompatible assumptions of financial markets and product portfolios, possibly undermining direct application of financial portfolio models to product portfolios, have been pointed out (Devinney et al. 1985). These challenges voiced by the product portfolio researchers further accentuate the need to consider the underlying assumptions of modern portfolio theory and CAPM. The differences between investment instruments and customers as investment targets must be understood before modern portfolio theory-based models can be adapted to customer asset management.

Building on the findings related to product portfolios by Devinney et al. (1985), the differences between investment instruments and customer relationships as investment targets can be categorized into five classes: interconnectedness, risk, return, risk-return correlation, and resource allocation. Perhaps the most fundamental difference between investment instruments and customer relationships relates to interconnectedness. Even though investment instruments can be regarded to be independent from both the actions of the investor and from each other, the same assumption cannot be extended to customer relationships. Customer relationships are interconnected, both to the firm and to each other. The actions made by the firm in one customer relationships are conducted in order to create an effect in this particular customer relationship. For example, a firm may initiate a marketing campaign aimed at increasing cross-sales in a particular customer segment, thus potentially increasing the returns from this customer segment. Additionally, changes in one customer relationship are likely to affect at least some other customer relationships. For example, a firm’s decision to terminate an unprofitable customer relationship may create negative word of mouth, leading to several profitable customers ending their relationships with the firm – a scenario utterly unthinkable with modern portfolio theory and investment instrument context.
Due to this interconnectedness, it cannot be assumed that customer relationship specific risks would be diversified away in a large customer base, as suggested by modern portfolio theory. Secondly, as the customer relationship interconnectedness makes it impossible to diversify away customer-specific risks, systematic market risks cannot be the sole basis for investment calculations: information about customer-specific risks is also needed. Additionally, modern portfolio theory’s assumptions of risk’s indifference over time and for investment levels must be challenged: it is highly likely that customer relationship risks vary both over time and based on the investments made in the customer relationship. Finally, the definition of risk is different for investment instruments and customer relationships. Modern portfolio theory defines risk as the unpredictability of return. On the other hand, there is no commonly agreed definition for customer relationship risk: it can be considered to be e.g. the unpredictability of cash flows, the threat of customer relationship termination, or the probability of fostering profitable customer relationships.

The expected return for investment instruments is estimated in financial portfolio models by utilizing the accumulated market-wide historical data that has been collected over several decades by collectively acknowledged parties such as stock exchanges. Therefore is can be said that the historical data gives sufficient indication about the future return of investment instruments, barring any abnormalities in the markets. However, similar market-wide historical customer data cannot be accumulated: information on customer relationships is considered proprietary information and thus firms are not willing to exchange this information freely. Therefore, firms have access only to firm-specific historical data that does not necessarily give a comprehensive view of the customers that can be engaged in relationships with various firms simultaneously. Additionally, the historical return cannot be considered to give sufficient information on the expected return of the customer relationships. This is mainly explained by the fact that firms are able to influence the behavior of their customers – an opportunity that is not open for investors investing in investment instruments. This opportunity should not be overlooked in customer asset management: in fact, the greatest profit improvement potential for many firms could actually come from improving the currently unprofitable customer relationships and not from fostering the already profitable ones. Finally, in investment instruments the investor has to take into account the transaction costs in the return calculations. When investing in customer relationships, the return calculations should also take into account the indirect costs and capital costs associated with the customer relationship in question.

Customer relationships also differ from investment instruments in their risk-return ratios: whereas modern portfolio theory assumes a positive correlation between risk and return in investment instruments, it is expected that this correlation does not always hold in customer relationships. This has notable implications. First, the absent positive risk-return correlation dissolves two central concepts of modern portfolio theory: efficient portfolio and capital market line. On the other hand, it simultaneously opens the door for the possibility for abnormal returns from customer relationships. Finally, similar to return and risk, the risk-return ratio of customer relationship is also not indifferent to the acts of the investor. Finally, there are differences between how resource allocation is approached in investment instrument and customer relationship contexts. Unlike when investing in investment instruments, the firm rarely knows the return and risk of a
customer relationship prior to initiating the relationship – an issue that hinders the mathematical optimization of the customer base. Second, modern portfolio theory assumes that that resources can be allocated freely without any entry or exit barriers and that the investor is the sovereign decision-maker in choosing the investment volumes. However, in a customer relationship context firms may encounter various entry and exit barriers: customer relationships may be difficult to initiate or terminate and customer-specific resources can be difficult to transfer from one customer to another. Additionally, in a customer relationship the customer is also active in deciding the business volume that takes place within the relationship; thus, the investment volume cannot be solely decided by the firm. Finally, firms may have objectives for customer relationships in addition to return maximization at a given risk level: for example, certain business logics may favor a stable business volume over profitable but short-term customer relationships. For investors in investment instruments, the return maximization at a given risk level is the only objective.

The above discussion on the differences of investment instruments and customer relationships as investment targets is summarized in Table 2.
### Table 2. Differences between investment instruments and customer relationships as investment targets

<table>
<thead>
<tr>
<th>Investment target characteristics</th>
<th>Investment instruments</th>
<th>Customer relationships</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interconnectedness</td>
<td>• Investment instruments are independent from each other and the actions of the investor</td>
<td>• Customer relationships are often interconnected to each other and are affected by the actions of the firm</td>
</tr>
<tr>
<td>Risk</td>
<td>• Diversification leads to reduced variance: specific risk can be diversified away</td>
<td>• Customers are interconnected: specific risks cannot be diversified away</td>
</tr>
<tr>
<td></td>
<td>• Systematic market risk is enough for calculations</td>
<td>• Systematic market risk is not enough for calculations as specific risks cannot be diversified away</td>
</tr>
<tr>
<td></td>
<td>• Risk is stable over time and indifferent to varying investment amounts</td>
<td>• Risk can vary over time and based on investment level variations</td>
</tr>
<tr>
<td></td>
<td>• Universal definition of risk</td>
<td>• Multiple definitions of risk</td>
</tr>
<tr>
<td>Return</td>
<td>• Expected return can be forecasted by market-wide historical data</td>
<td>• Firm-specific historical data might not be enough to forecast expected return, return potential has also to be considered</td>
</tr>
<tr>
<td></td>
<td>• Transaction costs should be considered in return calculations</td>
<td>• In addition to transaction costs, also non-direct and capital costs should be considered in return calculations</td>
</tr>
<tr>
<td>Risk-return ratio</td>
<td>• Risk and return have a positive correlation: existence of efficient portfolios and capital market line</td>
<td>• Risk and return do not necessarily have a positive correlation: no efficient portfolios or capital market line</td>
</tr>
<tr>
<td></td>
<td>• It is impossible to create a portfolio with a risk-return rate above the capital market line</td>
<td>• Possibility of customer relationship with abnormal returns</td>
</tr>
<tr>
<td></td>
<td>• Risk-return ratio is independent from the acts of the investor</td>
<td>• Risk-return ratio can be affected by the firm</td>
</tr>
<tr>
<td>Resource allocation</td>
<td>• Risk and return are known prior making investment decisions</td>
<td>• Risk and return are seldom know prior initiating a relationship</td>
</tr>
<tr>
<td></td>
<td>• Resources can be allocated freely (both investment &amp; divestment)</td>
<td>• Challenges in reallocating customer-specific resources &amp; in ending customer relationships</td>
</tr>
<tr>
<td></td>
<td>• Resource allocation volume can be decided freely</td>
<td>• Customers are active participants in deciding volume of customer relationship</td>
</tr>
<tr>
<td></td>
<td>• Return optimization at a given risk level is investor’s only objective</td>
<td>• Firm may have other objectives in addition to return optimization</td>
</tr>
</tbody>
</table>

Due to the fundamental differences between customers and investment instruments as investment targets, it is clear that the modern portfolio theory cannot be applied as such to customer relationships. Thus, the modern portfolio theory’s aspiration to identify a single efficient investment portfolio that maximizes return at a given risk level is not applicable in a customer relationship context. Instead, if a portfolio approach is to be used in customer asset management, a resource allocation framework based on managerial judgment, not a mathematical optimization formula, should be used in the attempts to improve the return from a customer portfolio – a clear deviation from the financial applications of the modern portfolio theory. Such a flexible resource allocation framework is needed in order to optimize the risk and return of a customer base, since the characteristics of customers as assets do not allow the mathematical optimization of a single portfolio. However, the basic constructs of modern portfolio theory such as return, risk and risk-return ratio can be used in customer asset management and the
resulting resource allocation frameworks – these constructs can be applied to customer relationships and they improve the link between the customer asset management frameworks and firm financial performance.

2.2.2. Customer portfolio models in customer asset management

Before proceeding to a more thorough investigation of the use of customer portfolio models in customer asset management, the existing portfolio models and terminology in other research traditions should be reviewed. It is possible to identify three different terms which all aim at dividing the customer base into smaller and more informative sections in order to facilitate better decision-making, strategy creation, and resource allocation: market segmentation, customer segmentation, and relationship portfolios.

All three concepts have common roots in cluster analysis. The goal of the majority of cluster analysis procedures is to find groups which are both internally cohesive (homogeneous) and externally isolated (heterogeneous) (e.g. Cormack 1971; Anderberg 1973). Therefore, the ultimate segments or portfolios are as different as possible from each other, but as homogeneous as possible within. Traditionally, dividing the current and potential customers into smaller groups is an effort made to tackle the demand heterogeneity inherent in all markets. The idea of using segmentation to match the heterogeneous need in the market with the heterogeneous resources of the firm was already discussed by Alderson (1957, 1965), and more recently by Hunt and Morgan (1995) and Priem (1992).

The first segmentation studies were inspired by economics: they concentrated on matching and manipulating the demand in the markets with the available supply from the firm (e.g. Smith 1956; Alderson 1957, 1965). Following this emphasis, Dickson and Ginter (1987:5) define market segmentation as follows: “Market segmentation is a state of demand heterogeneity such that the total market demand can be disaggregated into segments with distinct demand functions. Each firm’s definition, framing, and characterization of this demand heterogeneity will likely be unique and form the basis for the firm’s marketing strategy.” From this definition it is important to notice two important features of market segmentation studies. First of all, market segmentation research concentrates on the overall demand in the markets: the aggregate demand is seen as more relevant that the current customer base of the firm. Secondly, the market segmentation forms the segments based on the demand functions, or in other words the utility functions, of the customers. If value that is co-created in a customer relationship is divided into value capture (the value to the provider) and value creation (value to the customers), it can be said that market segmentation research is mainly interested in the value creation (for more detailed discussion on value co-creation, please refer to Payne et al. 2008). Examples of market segmentation studies can be found from e.g. Wind (1978), Dickson and Ginter (1987), Piercy and Morgan (1993), Griffith and Pol (1994), Dibb and Simkin (2001), as well as Sausen et al. (2005).

Customer segmentation studies differ from market segmentation in that the analyses are primarily limited to the customer base of a particular firm: segmentation is conducted to understand the need heterogeneity present in the customer base (e.g. Albert 2003; Badgett & Stone 2005; Ulaga & Eggert 2006). Even though the concept of a customer
base can be extended to cover both the existing and potential customers of a firm, the analyses are not conducted on an aggregate market level. Traditionally, customer segmentation research focuses on value creation – similar to market segmentation. Due to their similar origins and assumptions, the line between market and customer segmentation studies is relatively fine; in fact, many studies refer merely to ‘segmentation research’, making no difference whether the market or the customer base is subject to segmentation. However, especially in industrial markets the difference between the market and the firm’s customer base can sometimes be of considerable importance.

The product-orientation of early marketing inspired the creation of relationship marketing that considers the customer or the customer relationship as the main unit of analysis (e.g. Shostack 1977; Berry 1983; Grönroos 1990, 1994; Gummesson 1994). Relationship marketing has also produced segmentation and portfolio models that reflect this customer-orientation. Especially the researchers within the Industrial Marketing and Purchasing Group (IMP) have investigated the use of relationship portfolios. Krapfel et al. (1991) and Leek et al. (2006) propose relationship typologies that help in choosing the appropriate relationship management mode. Fiocca (1982) and Campbell and Cunningham (1983) utilize customer portfolio analysis to support industrial (marketing) strategy development. Olsen and Ellram (1997) as well as Bensaou (1999) created portfolio frameworks to support effective supply chain management. Dickson (1983) created a framework for distributor portfolio analyses that can be used to understand and manage better the power dynamics in distribution channels. The relationship portfolios differ from market and customer segmentation models also in respect of the value focus: relationship portfolios are also interested in the value capture from the customer relationships (the value to the provider) as opposed to value creation to the customers. Therefore, the IMP-originated portfolio models are aimed at describing the relationship base, gaining better understanding of the relationship base, and/or providing tools for the management and measurement of the relationship base. For overviews of the IMP-originated portfolio models, please see e.g. Zolkiewski and Turnbull (2000, 2002) and Sanchez and Sanchez (2005).

It is important to notice that the terminology around segmentation and portfolio models is not commonly determined and agreed upon. Therefore it is worth elaborating on what the term ‘customer portfolio’ denotes in this study. The present study concurs with the fundamental notions that the objective of creating portfolios is to find groups which are both internally homogeneous and externally heterogeneous (e.g. Cormack 1971; Anderberg 1973). Additionally, in this study the portfolio creation efforts are directed towards the customer base of a firm – thus leaving the ‘market’ and the potential customer relationships within it outside the scope of the portfolio model. However, as the aim of the research is to create a framework for managing business-to-business customer relationships as an investment portfolio for improved shareholder value, the portfolio models relevant to this study focus on the monetary value capture from the customer relationships or issues directly influencing the monetary value capture. Thus, in the present study portfolio models are used as a conceptual framework unveiling clusters within a customer base, each having a different effect on the shareholder value creation of the firm. These customer portfolios are then used as a framework for guiding resource allocation decisions for improved shareholder value creation.
The following Table 3 summarizes the portfolio models that can logically be linked to customer asset management research tradition: i.e. they build upon the existing customer asset management literature, or they include as dimensions or are explicitly aimed at increasing customer lifetime value, customer profitability, customer equity, or shareholder value.

### Table 3  Customer portfolio models linked to customer asset management

<table>
<thead>
<tr>
<th>Study</th>
<th>Year</th>
<th>Portfolio dimensions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dubinsky &amp; Ingram</td>
<td>1984</td>
<td>Present profit contribution, potential profit contribution</td>
</tr>
<tr>
<td>Shapiro, Rangan, Moriarty &amp; Ross</td>
<td>1987</td>
<td>Net price, cost to serve</td>
</tr>
<tr>
<td>Rangan, Moriarty &amp; Swartz</td>
<td>1992</td>
<td>Price, cost to serve</td>
</tr>
<tr>
<td>Storbacka</td>
<td>1994</td>
<td>Profitability</td>
</tr>
<tr>
<td>Storbacka</td>
<td>1997</td>
<td>Profitability, volume</td>
</tr>
<tr>
<td>Turnbull &amp; Zolkiowski</td>
<td>1997</td>
<td>Net price, cost to serve, relationship value</td>
</tr>
<tr>
<td>Elliott &amp; Glynn</td>
<td>1998</td>
<td>Current profitability, long-term attractiveness</td>
</tr>
<tr>
<td>Reinartz &amp; Kumar</td>
<td>2000</td>
<td>Customer lifetime, customer lifetime revenue</td>
</tr>
<tr>
<td>Blattberg, Getz &amp; Thomas</td>
<td>2001</td>
<td>Acquisition portfolio: acquisition investment retention time, retention profit potential; Management portfolio: customer life cycle</td>
</tr>
<tr>
<td>Niraj, Gupta &amp; Narasimhan</td>
<td>2001</td>
<td>Current profitability, future profit potential</td>
</tr>
<tr>
<td>Verhoef &amp; Donkers</td>
<td>2001</td>
<td>Current customer value to firm, potential customer value to firm</td>
</tr>
<tr>
<td>Zeithaml, Rust &amp; Lemon</td>
<td>2001</td>
<td>Current profitability</td>
</tr>
<tr>
<td>Reinartz &amp; Kumar</td>
<td>2002</td>
<td>Profitability, customer lifetime</td>
</tr>
<tr>
<td>Venkatesan &amp; Kumar</td>
<td>2002</td>
<td>Share of wallet, customer value to firm</td>
</tr>
<tr>
<td>Reinartz &amp; Kumar</td>
<td>2003</td>
<td>Share of wallet, profitable customer lifetime</td>
</tr>
<tr>
<td>Shih &amp; Liu</td>
<td>2003</td>
<td>No dimensions (clustering based on CLV and weighted RFM values)</td>
</tr>
<tr>
<td>Hansotia</td>
<td>2004</td>
<td>Revenues from customer, attrition risk</td>
</tr>
<tr>
<td>Johnson &amp; Selnes</td>
<td>2004</td>
<td>Development stage of customer relationship</td>
</tr>
<tr>
<td>Thomas, Reinartz &amp; Kumar</td>
<td>2004</td>
<td>Acquisition cost, retention cost</td>
</tr>
<tr>
<td>Ang &amp; Taylor</td>
<td>2005</td>
<td>Margin, customer lifetime</td>
</tr>
<tr>
<td>Garland</td>
<td>2005</td>
<td>Profitability, customer lifetime, share of wallet</td>
</tr>
<tr>
<td>Gupta &amp; Lehmann</td>
<td>2005</td>
<td>Value of customers (CLV), value to customers</td>
</tr>
<tr>
<td>von Wangenheim &amp; Lentz</td>
<td>2005</td>
<td>No dimensions (clustering based on revenue, spending trend and temporal inactivity)</td>
</tr>
<tr>
<td>Storbacka</td>
<td>2006</td>
<td>Spread, duration</td>
</tr>
<tr>
<td>Kumar, Petersen &amp; Leone</td>
<td>2007</td>
<td>Customer lifetime value, customer referral value</td>
</tr>
</tbody>
</table>

Several sub-groups can be identified from the identified portfolio models by looking into their origins. Several customer portfolio models directly associated with the customer asset management research tradition utilize the CLV model as the basis for their portfolio model: Reinartz and Kumar (2000), Hansotia (2004) and Thomas et al.
(2004) use CLV as the main influencer of their models while others complement CLV thinking with other theoretical influences - Reinartz and Kumar (2003) complement CLV with customer lifetime duration literature while Johnson and Selnes (2004) combine CLV and exchange relationship development literature. Another distinct group of customer portfolio models are being built on customer profitability research (Shapiro et al. 1987; Storbacka 1994, 1997; Niraj et al. 2001; Ang & Taylor 2005). The third cluster of customer portfolio models comes from the domains of the IMP Group (Dubinsky & Ingram 1984; Turnbull & Zolkiewski 1997). Finally, several portfolio models are being built on the general segmentation research (Rangan et al. 1992; Elliott & Glynn 1998). The wide variety in the theoretical foundations of different portfolio models can be explained by the selection criteria used to select portfolio models relevant to the present study: objectives such as increasing customer lifetime value, customer profitability, customer equity, or shareholder value can be argued to be common for all marketing researchers and practitioners, and therefore the same issue has been approached from various starting points.

As the overall objective of customer asset management is to facilitate as profitable current and future customer relationships as possible (Hogan et al. 2002b), the customer portfolio models should also provide assistance in managing two aspects of customer relationships: return from customer relationships and the risks associated with this return.

With only one exception (Johnson & Selnes 2004), all identified portfolio models include some indicator of return from customer relationships as one of the portfolio dimensions. The analysis of the portfolio models reveals several proxies that can be used to operationalize return from customer relationships: revenue from customers (Hansotia 2004), price or net price (Shapiro et al. 1987; Rangan et al. 1992; Turnbull & Zolkiewski 1997), margin or profit contribution (Dubinsky & Ingram 1984; Ang & Taylor 2005), profitability (Storbacka 1994, 1997; Elliott & Glynn 1998; Niraj et al. 2001; Zeithaml et al. 2001; Reinartz & Kumar 2002; Garland 2005), customer lifetime value (Reinartz & Kumar 2000; Kumar et al. 2007), economic profitability (Storbacka 2006), and the overall value of customers to the firm (Verhoef & Donkers 2001; Venkatesan & Kumar 2002; Gupta & Lehmann 2005). Some researchers approach the return from customer relationships from the cost perspective, analyzing the cost to serve customers (Shapiro et al. 1987; Rangan et al. 1992) or the acquisition and retention costs (Thomas et al. 2004).

The treatment of the other important variable in customer asset management, risk, varies considerably in the identified customer portfolio models. In the present study three portfolio dimensions are categorized as having characteristics of a risk proxy: customer lifetime, profitable customer lifetime, and share of wallet. The most commonly used proxy of risk is customer lifetime (Reinartz & Kumar 2000, 2002; Ang & Taylor 2005; Garland 2005) or profitable customer lifetime or duration (Reinartz & Kumar 2003; Storbacka 2006). Also the use of share of wallet as one of the portfolio dimensions can be considered to illustrate the risk level of the customer relationship (Venkatesan & Kumar 2002). Even though it can be argued that the most sophisticated CLV calculations acknowledge the risk differences between various customers, given the various alternatives to calculate the CLV in practice it would be daring to suggest that the mere use of CLV as a customer portfolio dimension fulfils the need to understand...
customer risks fully. Therefore it can be stated that the majority of the identified portfolio models do not explicitly address the risk associated with the customer relationships – even though the concept of risk is considered as one of the key concepts of both customer asset management and financial modern portfolio theory.

2.2.3. Customer portfolio models for improving shareholder value creation

In the previous sections it has been concluded that a portfolio approach is a viable alternative for designing customer asset management activities. It has also been demonstrated that even though it is not possible to utilize modern portfolio theory as such in selecting the optimal resource allocation between customer relationships, the basic constructs of modern portfolio theory such as return, risk, risk-return ratio, and resource allocation can be used in customer asset management and customer portfolio models supporting customer asset management.

The objective of this section is to investigate alternative customer portfolio models with aimed at providing a foundation for increasing firm performance and shareholder value. However, before alternative portfolio models for increased shareholder value can be created, a sufficient understanding of the concept and the appropriate measures of shareholder value have to be established.

The optimal financial performance is ultimately judged by the shareholders of the firm. Thus, it can be argued that the optimal financial performance is reached when the shareholder value is maximized during the shareholder’s investment period. To put it simply, shareholder value is created when a company generates earnings on invested capital in excess of the cost of capital adjusted for risk and time (e.g. Stewart 1991; Black et al. 1998; Rappaport 1998). Several measures for shareholder value have been proposed, and these measures can be roughly divided into firm-operations-based and capital-market-based measures. The performance of the firm’s operations can be measured for example by discounted future cash flows (e.g. Black et al. 1998; Rappaport 1998), return on investment (Buzznel & Gale 1987; Jacobson 1988, 1990), sales (Dekimpe & Hassens 1995), price (Boulding & Staelin 1995), cost (Boulding & Staelin 1993), and economic profit or economic value added (Stewart 1991; Kleiman 1999). Other shareholder value indicators are based on capital market data. According to the efficient market theory, all information on future expected earnings are taken into account in stock prices (Fama 1970). Hence, market capitalization as such is an interesting measure, especially in relation to the book (accounting) value of the firm, i.e. market-to-book (M/B) ratio (Hogan et al. 2002a). Another capital market based measures of shareholder value is Tobin’s q, which is the ratio of the firm’s market value to the current replacement costs of its assets (Tobin 1969; Lewellen & Badrinath 1997; Anderson et al. 2004) and the market value added (MVA), which is the difference between a firm’s market value and its capital employed (Stewart 1991; Griffith 2004).

Before shareholder value oriented customer management concepts can be formulated, there has to be agreement on the measure used to approximate the shareholder value creation. Some of the capital-market-based measures, such as market-to-book value and Tobin’s q, do not allow assessing the contribution of an individual customer to the company’s shareholder value creation. Additionally, the stock market bubbles have
shown that the efficient market theory has its shortcomings when applied in the real world. Thus, basing the shareholder value analysis on for example share price can be misleading. Accounting-based ratios, such as ROI and sales, allow customer-level analysis but they concentrate on the accounting profit instead of the more relevant economic profit. Therefore the use of economic profit as the measure of shareholder value creation is proposed. Economic profit defines the net operating profit after tax (NOPAT) and subtracts the capital charge for the economic book value of a firm’s assets. Thus economic profit gives an estimate of the true profit that accrues to shareholders, after all operating and financial expenses have been deducted. However, economic profit as a stand-alone measure does not account for the growth opportunities inherent in the companies’ investment decisions. Therefore shareholder value creation can be expressed as the discounted present value of all economic profit that the company is expected to generate in the future. Economic profit combines the attractive features of both the operations-based and the capital-market-based measurements: it acknowledges both the operating and financial expenses and allows for an individual customer relationship level analysis. Also, empirical evidence has shown that a positive economic profit leads to an increase in shareholder wealth (Bacidore et al. 1997; Kleiman 1999).

The present research will next discuss three alternative customer portfolio models: the cumulative absolute return model, the relative return-volatility-volume model, and the relative return-duration model. Due to the favorable characteristics of economic profit, all proposed three portfolio models have economic profit as one of their fundamental dimensions. However, the three proposed portfolio models differ in levels of complexity and the potential other dimensions used.

The first proposed customer portfolio model, the cumulative absolute return model, is based on the cumulative economic profit contribution analysis, building on the work done by Storbacka (2000) on customer profitability. The cumulative economic profit contribution analysis is relatively simple: the economic profit created by each customer is calculated and customers are placed in descending order – starting with the customer with the largest economic profit and finishing with the customer with the lowest economic profit.

The cumulative absolute return model results in three different portfolios: portfolio 1 of customers with the highest economic profit contribution, portfolio 2 of customers with economic profit contribution close to zero, and portfolio 3 of customers with negative economic profit contribution. It is projected that both portfolios 1 and 3 consist of customer relationships with relatively large business volumes, whereas the portfolio 2 is expected to contain small business volume customer relationships. This assumption is based on the findings by Storbacka (1997), which indicate that the profitability dispersion in the customer base increases as a function of relationship volume. Figure 4 illustrates the cumulative absolute return model.
Figure 4  Cumulative absolute return model

The cumulative absolute return model, however, lacks the risk dimension called by the premises of customer asset management and financial modern portfolio theory. In the two remaining portfolio models the need to assess risks is solved in alternative ways. The second customer portfolio model, the relative return-volatility-volume model, is a direct descendant of financial modern portfolio theory (Markowitz 1952) with its dimensions of relative economic return (i.e. economic profit percentage), economic profit volatility, and sales volume. In this customer portfolio model the risk is assessed by the volatility of the absolute economic profit: thus it can be said that this portfolio model defines risk as the unpredictability of cash flows from customer relationships.

It is important to notice that the relative return-volatility-volume model deviates from the return-variance model proposed by Markowitz (1952) with one notable exception: it separates 'return' into relative return level (economic profitability) and absolute business volume (sales volume). This deviation is needed due to the innate differences of customer relationships and investment instruments as investment targets. According to financial modern portfolio theory, it is possible to identify one single efficient investment portfolio that maximizes the return on a given risk level. Based on this information, the investor makes sovereign decisions on investment volume, investment instrument acquisitions, and on investment instrument divestments in order to reach the optimal portfolio. These fundamentals of efficient markets do not, however, apply to customers as investment targets as both the volume in customer relationships as well as the acquisition of new or the termination of old customer relationships depends both on the company and the customer. Due to these limitations, a purely mathematical optimization of the entire customer base is impossible. The relative return-volatility-volume model generates eight different portfolios with different combinations of relative return, volatility and volume levels: e.g. low return + low volatility + low volume portfolio, high return + high volatility + high volume portfolio and so forth. The relative return-volatility-volume model is illustrated in Figure 5.
The third customer portfolio model, the relative return-duration model, uses the same indicator of relative return (i.e. economic profit percentage) as the relative return-volatility-volume model. However, in this portfolio model the risk is illustrated by the concept of duration. The concept of duration or profitable customer duration has earlier been presented by Reinartz and Kumar (2003) and Storbacka (2006). In this study, duration is defined to be an approximation of the time over which the firm expects to maintain positive economic profitability in a particular customer relationship. Therefore this customer portfolio model defines risk as the probability of fostering profitable customer relationships. As it is not possible to create a mathematical formula that calculates the actual duration in terms of time for all customer relationships, the duration has to be estimated by using an index as a proxy. A suitable duration index would consist of measures related to risks related to the customer relationship.

The relative return-duration model creates four different portfolios. Portfolio 1 consists of customers with high relative return and low estimated duration whereas portfolio 2 contains customer with high relative return and high estimated duration. Portfolio 3 is composed of customer with low relative return and low estimated duration. Finally, portfolio 4 consists of customers with low relative return and high estimated duration. Figure 6 illustrates the relative return-duration model.
Finally, the three proposed customer portfolio models are summarized in Table 4.

Table 4  Summary of the proposed customer portfolio models

<table>
<thead>
<tr>
<th></th>
<th>Cumulative absolute return model</th>
<th>Relative return-volatility-volume model</th>
<th>Relative return-duration model</th>
</tr>
</thead>
<tbody>
<tr>
<td>Return dimension</td>
<td>Absolute economic profit</td>
<td>Relative economic profitability</td>
<td>Relative economic profitability</td>
</tr>
<tr>
<td>Risk dimension</td>
<td>-</td>
<td>Volatility of absolute economic profit</td>
<td>Duration of positive economic profitability</td>
</tr>
<tr>
<td>Business volume</td>
<td>-</td>
<td>Absolute turnover</td>
<td>-</td>
</tr>
</tbody>
</table>

As seen from Table 4, the proposed customer portfolio models differ mainly in terms of their approach to business volume and risk. The cumulative absolute return model does not differentiate between relative profitability and absolute business volume. Instead, this customer portfolio model uses absolute economic profit as the return dimension, i.e. the multiplication of relative profitability and business volume. The relative return-volatility-volume model uses relative return and absolute business volume as separate portfolio dimensions. Finally, the relative return-duration model does not acknowledge business volume: it focuses solely on relative return and risk.

From a risk perspective, the only proposed customer portfolio model without a risk dimension in the cumulative absolute return model. However, as mentioned by Srivastava et al. (1998) and Doyle (2000), risk reduction is one of the most important factors through which relational assets can support shareholder value creation. Therefore it is plausible to argue that the customer portfolio models most suitable for increasing shareholder value are likely to contain risk as one portfolio dimension. Unfortunately, as pointed out by Hibbard et al. (2003), there are currently few studies on relationship risks. Thus more research on relationship risks is needed before suggestions on the conceptualization and the measurement of relationship risks can be provided.

2.3. Managing customer portfolios for improved shareholder value

During the literature review the origins of customer asset management have been reviewed, the customer portfolio approach to designing customer asset management has been presented as a viable alternative to dyad and customer base approaches, the need for multiple customer portfolios within one customer base has been demonstrated, and alternative customer portfolio models for increased shareholder value creation have been proposed. However, the creation of a customer portfolio model is only the starting point: after all, the mere existence of a portfolio model does not improve a firm’s shareholder value in any way. As defined in this study, customer asset management is defined as the optimized use of a firm’s tangible and intangible assets in order to facilitate as profitable current and future customer relationships as possible. Therefore
the customer portfolio model should be used in making resource allocation decisions between different portfolios in order to increase shareholder value. In order to gain a deeper understanding of the potential options to increase shareholder value through customer asset management, a review of drivers of shareholder values and their applicability to customer asset management is conducted in this section.

Several authors have investigated how shareholder value creation can be increased. Rappaport (1998) and Black et al (1998) have identified seven value drivers that affect the shareholder value and its creation: sales growth rate, operating profit margin, income tax rate, working capital investment, fixed capital investment, cost of capital and value growth duration. Srivastava et al. (1998) suggest that the firm’s value is driven by increasing the cash flows, accelerating the cash flows, reducing the volatility and vulnerability of cash flows and enhancing the residual value of cash flows. Stewart (1991) has identified six shareholder value drivers: net operating profits after taxes, the tax benefit of debt associated with the target capital structure, the amount of new capital invested for growth, the after-tax rate of return of the new capital investments, the cost of capital for business risk, and the future period of time over which the company is expected to generate a return exceeding the cost of capital from its new investments. Leibowitz (2000) argues that the main determinant of shareholder value is the franchise spread, the return that the company is able to earn on new investments over the cost of capital. Chen et al. (2002) identify four value drivers for a company’s stock: the company’s current assets and the cash flows derived from them, the present value of growth opportunities, options to reduce risks, and options to add flexibility.

Even though the authors presented above represent different schools of thought within finance, it can be argued that the drivers of shareholder value can - from a marketing point of view - be divided into four main categories: revenue, cost, asset utilization, and risk. These drivers of shareholder value are illustrated in Figure 7.

![Figure 7 Drivers of shareholder value](image)

Even though customer asset management is seen as a link between shareholder value formation and marketing (Stahl et al. 2003; Gupta & Lehmann 2003; Rust et al. 2004b), the current customer asset management literature discusses the different drivers of shareholder value with varying intensity levels, with noticeably more emphasis on revenue and cost drivers than asset and risk drivers.

The strong emphasis on certain drivers of shareholder value can be explained by the historical roots of customer asset management literature. The majority of the current customer asset management literature is built around CLV models. The majority of the existing CLV models are built around three basic elements: revenue from the customer, costs of serving the customer and customer retention rate. Most often, the CLV models are used to optimize investment allocation between customer acquisition and customer
retention. The more simplistic CLV models have later been extended to include e.g. sensitivity for cash flows that vary in timing and amount (Berger & Nasr 1998; Reinartz & Kumar 2000), customer risks (Hogan et al. 2002a; Ryals & Knox 2005, 2007), and networking and learning potential (Stahl et al. 2003). From a shareholder value creation point of view, it can be argued that the CLV models focus mainly on direct stable revenue from the customer and costs – with some more advanced models also incorporating the risk perspective.

However, if it is accepted that all of a firm’s operations are performed in order to provide service to customers, it can be argued that customer asset management has linkages to all aspect of business. Thus, customer asset management should affect all drivers of shareholder value - including asset and risk drivers. In the following section the potential roles that customers and customer asset management can have in shareholder value creation are presented.

**Increased revenues.** Customer asset management can help increase revenues by enlarging the number of customers (customer retention, customer acquisition, customer referrals), augmenting revenues from existing customers (up-sales/cross-sales, price increases) and by ensuring future revenues by a firm’s renewal/innovation. The existing CLV models discuss customer retention and customer acquisition, but provide little guidance concerning the other potential roles of customers in increasing revenues. The importance of customer referrals as an aid in customer acquisition has just recently been acknowledged in the customer asset management literature (Stahl et al. 2003; Kumar et al. 2007; Villanueva et al. 2007b). A few papers also discuss the importance of up-sales and cross-sales in maximizing the value of customer assets (Stahl et al. 2003; Bolton et al. 2008). However, the remaining potential customer roles in increasing revenues (price increases, firm’s renewal/innovation) are almost entirely neglected by the current customer asset management literature: Stahl et al. (2003) present one of the few articles that acknowledge that customer bases offer opportunities for active price increases and that the knowledge created within one relationship could yield cash flows in other contexts as well.

**Decreased costs.** The costs of a firm can also be affected by customer asset management: it can help to reduce costs to serve existing customer and reduce costs to acquire new customers. The CLV model presented by Berger and Nasr-Bachwati (2001) propose how a fixed promotion budget should be allocated between customer acquisition and retention. However, the existing CLV models take the costs associated with individual acquisition and retention activities as fixed variables that cannot be lowered by enhancing a firm’s processes. Additionally, it can be argued that as the CLV models focus on allocating promotion budgets, they do not cover all costs that a company has to cover in order to serve its customers – after all, the majority of customer relationships also include other activities (and thus costs) than just promotional ones. However, customer asset management could also be used to reduce costs to serve and costs to acquire customers: for example Stahl et al. (2003) discuss how the experience curve can be utilized to reduce relationship costs.

**Optimized asset utilization.** Customer asset management can be used to optimize asset utilization in two ways: by optimizing the capital invested in customer relationships and by managing business volumes for economies of scale. Rather paradoxically, the current
customer asset management literature has not been interested in studying the link between traditional assets in the balance sheet and the customer asset: the vast majority of the customer asset management studies limit themselves to exploring the effects of customer relationships to the profit and loss statement, ignoring the capital employed in managing customer relationships and the balance sheet effects. Similarly, the current studies on how customer asset management can be used to achieve optimal asset utilization and economies of scale are in a minority within the current literature. To the best of this author’s knowledge, only two current customer asset management studies acknowledge the existence of economies of scale – and, thus, the importance of optimal asset utilization (Stahl et al. 2003; Johnson & Selnes 2004).

Decreased risks. If a customer relationship is defined as a process between a provider and a customer aimed at value formation, customer asset management can be used to reduce risks in three ways: reduce relationship termination risks, reduce risks related to value formation for the provider, and reduce the risk concentrations within the customer base. Even though relatively few studies explicitly discuss risks and customer asset management, it is possible to identify literature on both reducing risks of relationship termination and reducing risks to value formation to the provider. Relationship termination risks have been approached with concepts such as customer lifetime (e.g. Ang & Taylor 2005; Garland 2005; Reinartz & Kumar 2000, 2002), profitable customer lifetime or duration (Reinartz & Kumar 2003; Storbacka 2006), relationship strength (e.g. Storbacka et al. 1994; Donaldson & O’Toole 2000), and relationship stress (Holmlund-Rytkönen & Strandvik 2005). On the other hand, risks related to value formation for the provider have been illustrated by concepts like risk-adjusted customer lifetime value (Ryals 2002, 2003; Ryals & Knox 2005, 2007), vulnerability of cash flows (Stahl et al. 2003), volatility (Hopkinson & Lum 2002; Stahl et al. 2003), and customer beta (Hopkinson & Lum 2002; Dhar & Glazer 2003). However, the current customer asset management literature provides little insight into how to manage risk concentrations and correlations within the customer base – even though common sense suggests that a customer base with a strong reliance on a limited number of or highly correlating customer relationships, customer portfolios, or geographies is riskier than a more diversified, uncorrelated customer base.

There are, as the above overview of both shareholder value literature and customer asset management literature indicates, thirteen distinct roles for customer asset management that influence the four shareholder value drivers (revenue, cost, assets, risk). These thirteen roles are summarized in Figure 8.
2.4. Actionable customer asset management in business-to-business context: conclusions from the literature review

The majority of the existing customer asset management literature is based on calculation and the management of the customer lifetime value (CLV). However, several authors have pointed out various challenges in both the calculation of CLV and in its ability to guide resource allocation decisions, especially in the B2B context. Thus, the present study proposes the use of a customer portfolio model in evaluating and managing the customer asset of the firm.

The literature review revealed that there are considerable differences between customer relationships and investment instruments as investment targets in terms of interconnectedness, risk, return, risk-return ratio, and resource allocation. Additionally, the characteristics of customer relationships as assets do not allow the mathematical optimization of a single portfolio. Therefore the resource allocation decisions should be based on a framework allowing managerial judgment. Due to these limitations, the present study proposes the use of a portfolio model consisting of several customer portfolios in customer asset management.

However, even though financial resource allocation theories cannot be applied as such to customer relationships, the basic construct of these theories, return and risk, can be applied to customer asset management. Thus, based on the literature it is presumed that customer portfolio models aimed at increasing shareholder value creation should have risk and return as portfolio dimensions. In particular, the measures of customer relationship return should have a direct link to firm performance. Economic profit is an appropriate proxy for the shareholder value captured from a single customer relationship as it acknowledges both the operating and financial expenses and it allows individual customer relationship level analysis.

As the aim of customer asset management is to improve shareholder value, the literature review indicates that acquisition-retention optimization falls short of fulfilling this target...
as it focuses mainly on two drivers of shareholder value: return and cost. Review of the existing shareholder value literature indicates that customer asset management activities should affect all drivers of shareholder value: revenue, cost, asset utilization, and risk. Customer asset management can assume thirteen roles in improving shareholder value creation: affecting customer retention, affecting customer acquisition, affecting customer referrals, increasing up-sales & cross-sales, enabling price increases, enabling firm renewal/innovation for future revenues, reducing cost to serve, reducing cost to acquire, optimizing capital invested in customer relationships, managing business volumes for economies of scale, reducing risks of relationship termination, reducing risks to value formation to provider, and reducing risk concentrations and correlations within customer base.

These main findings of the literature review summarized in the preliminary conceptual framework for allocating resources across business-to-business customer relationships for improved shareholder value (Figure 9).

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**Figure 9** Preliminary framework for allocating resources across business-to-business customer relationships for improved shareholder value

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The proposed preliminary framework suggests that customer asset management in action and resource allocations across business-to-business customer relationships for improved shareholder value can be conceptualized on three interlinked levels: *dominating ideas, design, and operations*. First, the concept of dominating ideas has been proposed by Normann (2001) to illustrate the mental models of managers that guide their decisions and actions. Similar construct has also been proposed by Prahalad with the term ‘dominating logic’. In the preliminary framework it is proposed that the dominating ideas form the foundation for the customer asset management performed by an organization by answering questions such as ‘what is the objective of customer asset management’ and ‘what is the customer asset to be managed.’ Second, the customer
asset management design refers to the models and instructions used to guide customer asset management activities. Baldwin and Clark (2006, p. 3) define designs as ‘instructions based on knowledge that turn resources into things that people use and value.’ According to Baldwin and Clark (2006), designs are created through purposeful human effort and that only through the agency of designs can knowledge become the basis of real goods and services. Third, the customer asset management operations refer to all operations conducted in an organization in order to manage customer relationships as assets. In order to understand customer asset management in action, one has to understand all the three levels of customers asset management: dominating ideas, design, and operations.

These literature findings guide the empirical part of the study, which is documented in essays 2-4 and summarized in chapter 4, and the formation of the concluding framework, which is presented and discussed in chapter 5.
3 RESEARCH METHODOLOGY

In this chapter the research methodology and the empirical research process are explained in more detail. First, the considerations regarding the positioning of the study in relation to different standings within the philosophy of science are discussed. Second, the methodological choices in all four essays are explained. Third, the data collection and analysis are presented. Finally, the issues related to reliability, validity, and the role of the researcher are discussed.

3.1 Philosophy of science: considerations

According to Burrell and Morgan (1979), the philosophical assumptions of social sciences can be investigated by exploring notions of ontology, epistemology, human nature, and degree of social change. These notions in turn have direct implications regarding methodology: in all scientific studies the philosophical assumptions and the chosen methodologies should support and not contradict each other.

Ontology. The ontological orientation of scientific studies is often explained with the continuum ‘realism-nominalism’. Realistic ontology assumes that social reality exists in itself and is expressed to all observers in the same way. On the other hand, nominal ontology presumes that the observer forms her own subjective reality, i.e. there is no social reality without the observer. The majority of the marketing literature has adopted a realistic ontological position. The present study follows this line of thinking: the research questions are investigated with an overriding assumption that the phenomena under investigation, such as customer relationships, exist independent of the observer. Naturally it could be argued that customer relationships are also subjective in nature: the relationship is experienced and valued in a different manner depending on the person conducting the observations and judgments. However, the present study is aimed at finding concepts and constructs for more effective customer asset management. Therefore the research questions are in line with ontological realism.

Epistemology. The epistemological choices in scientific research can be illustrated with a continuum ‘positivism-antipositivism’. Positivist epistemology relies on empiricism: information is deemed to be true if it is supported by the empirical observations. In contrast, antipositivist epistemology is based on rationalism: the uniqueness of all information and different contexts are taken into consideration when the validity of the information is assessed. Thus antipositivist studies are often characterized by reasoning, deduction, uniqueness, and case studies. In the present study the research questions are approached through moderate antipositivist epistemology. An antipositivist positioning denotes that the present study acknowledges that information and knowledge is context-dependent and that the value of theories is at least partially based on how well theories can be used in different contexts. However, the present study seeks to make some generalizations within the guidelines of the adopted antipositivist epistemology: after all, no generalizations translate easily into a non-existent theoretical contribution.

Human nature. The Philosophy of science also contains debates about human nature. The different stances concerning human nature can be described with the continuum
‘determinism-voluntarism’. According to the deterministic point of view, humans are controlled by their environment and they react to external impulses in a mechanic manner. Voluntarism, on the other hand, suggests that humans are active agents with a free will: humans actively create their own environments and realities. In the early 20th century the objective of marketing was to manipulate consumers by altering the relationship between product features, price, channel, and promotion. Even though modern marketing has evolved considerably since the days of 4P dominance, the majority of the current marketing studies still position themselves with determinism: it is assumed that customers and consumers can be guided by modifying the environment either in the firm-customer interface or within consumers’ practices. The present study seeks to find concepts and constructs for more effective customer asset management. Therefore, the study focuses on investigating the customer asset practices in different firms and how they are being developed. The notion of ‘development’ implies that the individuals in the organizations under investigation are active agents, who are active participants in shaping their own environment. Thus, it can be argued that the present study adopts a voluntary viewpoint on human nature: firms and individuals within these firms are active agents, who are able to alter their customer asset management procedures based on their own learning and insights.

Degree of social change. The philosophical assumptions of scientific studies can also be investigated by exploring their attitudes towards social change on a continuum ‘regulation-radical change’. Studies emphasizing regulation aim at maintaining the current social set-up, both at a firm’s and society’s levels. In contrast, the studies emphasizing radical change seek to emancipate human beings and thus evoke radical development steps in the current social system. The vast majority of the existing marketing literature implicitly or explicitly focuses on regulation and aims to maintain the current social set-up. The present study concurs with the majority of the existing marketing studies with its approach to social change: the study does not question the existing social system and does not aim at achieving radical change within an organization or society in general.

3.2. Methodological choices and the role of the researcher

According to Burrell and Morgan (1979), the methodological choices should reflect the philosophical positioning of the study. The philosophical assumptions of the present study (realism, moderate antipositivism, voluntarism, and sociology of regulation) form a basis for using moderately antipositivist and qualitative methodology.

An important factor explaining the research process and the methodological choices of the present study is the researcher’s simultaneous role as a management consultant. As a management consultant the researcher has been involved in tens of client engagements aimed at improving the health of the organization by formulating and implementing customer-oriented strategies and concepts. These client engagements, as well as the experiences of the management consultant colleagues, form an inseparable part of the researcher’s implicit paradigm on customer asset management and organizational change. This implicit paradigm has guided both the literature review and the empirical research.
The empirical material used in the present study is also created through client engagements. The dual role of a researcher and a consultant creates a logical link to action research as “action research is […] usually practiced by scholar-practitioners who care deeply about making a positive change in the world. As such it is unlikely that we find comfortable homes inside academia with its norms of disinterest (or value on the status quo). Nevertheless, many action researchers work well with the creative tension of the boundary space between academia and practice.” (Reason & Bradbury 2006b, xxv).

Action research as a term was introduced by Kurt Lewin in 1946. Rapaport (1970, 499) defines action research as follows: action research aims to contribute both to the practical concerns of people in an immediate problematic situation and to the goals of social science by joint collaboration within a mutually acceptable ethical framework. Reason and Bradbury (2006a, 2) concur with similar definition: “So action research is about working towards practical outcomes, and also about creating new forms of understanding, since action without reflection and understanding is blind, just as theory without action is meaningless.”

Action research has stimulated several related research methods such as cooperative inquiry (Heron 1971, 1996; Reason 1995), clinical research (e.g. Normann 1970; Schein 1987) and interaction research (Gummesson 2002). In addition to the above-mentioned principle of dual objectives (practice and theory), all action research inspired research methods share the principle of participatory worldview: research is done ‘with’ rather than ‘on’ people and all active participants are fully involved in generating the new knowledge. These principles of action research are well visible in the present study. First, even though the study is aimed at generating new theoretical understanding on customer asset management, the practical benefits experienced by the client organizations have been at least as important objectives for the research process as the theory generation. Second, the research processes described in the present research are conducted as collaborative processes between the representatives of the client organizations and the consulting team.

Action research as a research method has its benefits and drawbacks, such as any other research method. One of the most substantial benefits is the considerable access to data that action research enables. The access in action research is vividly described by Gummesson (2005, p. 324): “By being involved, the object of study creeps under the skin of the researcher in a way that is not possible in the study of documents or in interviews, even in participant observation. The access is as close as can be, and tacit and embedded knowledge can be uncovered.” According to this author’s best understanding, it would not have been possible to create similar illustrations of the customer asset management practices of business-to-business firms without the dual researcher-consultant role and the use of action research. Customer asset management practices are often considered highly strategic issues within firms and they are not eagerly disclosed to outside researchers in high detail – even if full anonymity and discretion are guaranteed. In fact, the current lack of empirical studies illustrating the implementation of customer asset management might be explained by the choice of research methods in the current customer asset management studies. Given the strategic nature of customer asset management, it is difficult to get access to actual empirical data if the researchers choose to remain as outside academic researchers. The main
drawbacks associated with action research usually relate to demonstrating sufficient reliability and validity. These challenges are discussed in more detail in section 3.4.

As the present study the research was conducted in the format of four essays, the action research orientation demonstrates itself in different ways in different essays. The research questions and research methods of each essay are summarized in table 5 and discussed in more detail below.

### Table 5 Summary of research approaches and research strategies used in each essay

<table>
<thead>
<tr>
<th>Essay</th>
<th>Research question</th>
<th>Research method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Essay 1</td>
<td>• Can the resource allocation within a customer base be done through a single customer portfolio similar to financial portfolios or are several customer portfolios needed?</td>
<td>Conceptual</td>
</tr>
<tr>
<td>Essay 2</td>
<td>• What kind of customer portfolio model should be used if the aim is to improve shareholder value?</td>
<td>Experiment</td>
</tr>
</tbody>
</table>
| Essay 3 | • What are the customer asset management activities that can be conducted if the aim is to improve shareholder value?  
• How to operationalize resource allocation decisions within a customer base? | Action research, multiple cases |
| Essay 4 | • How to operationalize resource allocation decisions within a customer base? | Action research, single case |

Essay 1 concentrates on investigating the differences between customers and investment instruments as investment targets with the aim of finding out whether the resource allocation within a customer base can be done through a single customer portfolio similar to financial portfolios or are several customer portfolios needed. This research question was targeted with conceptual research, which included an extensive literature review complemented by researcher’s interpretations of the existing literature in the light of her practical experiences. The decision to conduct solely conceptual research for essay 1 was supported by several reasons. First, the comparison of the differences and similarities between customers and investment instruments requires first and foremost a thorough examination of modern portfolio theory and its fundamental assumptions. Only a comprehensive understanding of the conceptual similarities and differences supports identifying potential concepts and frameworks that could be transferred from modern portfolio theory to customer asset management. Second, to the best of this author’s knowledge no prior studies have been conducted on the applicability of modern portfolio theory for customer relationship management. Thus, conceptual research has potential to advance the understanding of the scientific community on the topic. Third, a conceptual research enables exploring potential application areas for modern portfolio theory within customer asset management without limitations: the current customer asset management practices in firms are still only evolving and thus observing current practical applications of modern portfolio theory in customer asset management could yield to overly conservative outcomes.

Essay 2 focuses on investigating what kind of customer portfolio model should be used if the aim is to improve shareholder value. In essay 2, experimentation was chosen as the research method. The choice of experimentation was supported by the amount of
existing literature on relationship portfolios and customer segmentation, customer portfolio models in customer asset management, and shareholder value creation: as comprehensive literature on related topics existed, it was possible to create alternative customer portfolio models based on previous research findings. In empirical research, three alternative customer portfolio models were tested with a real customer base data from one company, even though the case study company in practice is not utilizing all the proposed customer portfolio models.

Essay 3 explores what are the customer asset management activities that can be conducted if the aim is to improve shareholder value and how resource allocation decisions within a customer base can be operationalized. Essay 3 is a synthesis from three separate action research projects, all conducted in cooperation with different client firms operating in business-to-business customer relationship contexts.

Essay 4 further expands the findings of essay 3 by exploring how to operationalize resource allocation decisions within a customer base. Similar to essay 3, essay 4 also utilizes action research as the research method. Unlike essay 3, the findings of essay 4 are based on a longitudinal single case study. The use of a single case study deviates clearly from the recommendations of the positivist methodology literature (e.g. Eisenhardt 1989; Miles & Huberman 1994; Yin 1994), which perceives the use of multiple case studies and replication in order to provide better explanations. Additionally, the positivist research tradition recommends the use of triangulation for increasing the validity of results of single case studies. The three most typical forms of triangulation are data source, investigator, and method triangulation (e.g. Stake 1995; Cresswell & Miller 2000). It can be said that the use of action research and being involved in a process of writing a co-authored essay incorporate investigator triangulation. However, due to the research method and research questions, data source and method triangulation were not feasible in this particular research project. The limitations brought forward by the use of data from a single case study company are acknowledged in essay 4, but due to access and resource constraints replicating a comparable data collection from another case study company does not seem possible during this particular research project. Additionally, the antipositivist epistemological standing adopted in the overall research differs from the traditional positivist research tradition, also welcoming the use of single case studies as they have the potential of providing rich contextual information about the research object.

3.3. Data collection and analysis

In this section, the data collection and analysis is explained in more detail. According to Susman and Evered (1978), action research can be viewed as a cyclical process with five phases: diagnosing (identifying or defining a problem), action planning (considering alternative courses of action for solving a problem), action taking (selecting a course of action), evaluating (studying the consequences of an action), and specifying learning (identifying general findings). As action research is by nature participatory, all these five phases are conducted in a constant dialogue with the client-system infrastructure. In the following section, the research process of essays 2, 3 and 4 are explained in more detail. Essay 1 is left outside this discussion as it was conducted as a conceptual study, without explicit empirical material.
Essay 2. The empirical material was gathered in one case study firm, operating internationally in the forestry products business and headquartered in Europe. As essay 2 was conducted as an experiment instead of a full-scale action research project, the research process deviates from the process described by Susman and Evered (1978). The main deviation from the traditional action research is the fact that the study covers only the first two phases and the last phase of the action research process: diagnosis, action planning, and specifying learning. The experimentation acted as vehicle for comparing the alternative courses of action (i.e. alternative customer portfolio models) before taking action (i.e. implementing the chosen customer portfolio model). In order to emphasize the findings related to the research question (“What kind of customer portfolio model should be used if the aim is to improve shareholder value?”), the essay does not report the remaining two (action taking, evaluating) stages of the action research process, even though the consulting engagement with the client covered also these phases.

The study focused on a customer base of 1094 individual B2B customers served by six different factories. The investigation period was two years, from the beginning of 2005 to the end of 2006. The empirical material was gathered from two main sources. The customer specific information on sales volumes, tonnages and earnings before depreciation, interests and taxes (EBDIT) was collected from the corporate databases. The information needed to create the duration index for the relative return-duration model was collected by questionnaires send to 52 sales managers. The return rate of questionnaires was 100%. Unfortunately, due to the confidentiality agreements, the questionnaire or its content cannot be disclosed in the present study.

The three alternative customer portfolio models proposed in the conceptual framework were evaluated with the same data from the case study firm. The empirical research deviated from the conceptual framework only on one occasion: instead of economic profit proposed in the conceptual framework as the proxy of the firm’s financial performance, in the case study earnings before depreciation, interests and taxes (EBDIT) were used instead. This deviation from the conceptual framework was imposed by the inconsistent data on physical asset value: some of the physical assets had already been depreciated from the balance sheet and there was no consistent approach within the case study company to valuate such assets. In the absence of reliable asset valuation, the calculation of economic profit was not feasible. This challenge was taken into account by estimating an EBDIT percentage (EBDIT 19%) that corresponds with an economic profit level of zero. This was then used to recalibrate the customer portfolio models in such a way that they illustrate the economic profit creation of the customer base, even though the actual economic profit was not calculated.

The customer portfolio models were created by using a data from 438 customers. 656 customers were omitted from the analysis for any of the following three reasons. First of all, some customers were omitted from the analysis as their purchases from the case study firm were too small and irregular for the sales managers to conduct a reliable duration index assessment for the relative return-duration models. The second reason for omission emerged if the customer had started the business with the case study firm during the investigation period. Third, only those customers that were active during the entire investigation period were included in the analysis.
In order to compare the different customer portfolio models, 20 test customers were selected randomly from the customer base. The allocation of these test customers in different models was analyzed in detail, concentrating on the potential logical contradictions in the resource allocation suggestions of different customer portfolio models.


The diagnosis phase of the action research process in all case studies consisted of 1-2 meetings with the project team, interviews with key individuals in the organizations (4 interviews with firm A, 3 interviews with firm B, 4 interviews with firm C), and reviews of the existing data-material provided by the firms. Project team meetings were participated by 4-8 representatives of the client organizations and the consulting teams of 3-4 members. In these first project team meetings the problem definition was clarified and the suitable interviewees and background materials were identified in cooperation with the consulting teams and the representatives of the client organizations. The interviewees in all organizations represented executive vice president and senior manager level positions involved in general management or the management of customer relationships. All interviews are in-depth theme interviews, in which no formal interview questionnaire were used but the interviewees were encouraged to elaborate freely upon topics related to customer relationship management and the challenges of their organizations. All interviews lasted 1-2 hours and they were conducted and documented by two members of the consulting team. The existing data-materials provided by the firms covered the number of customers in the customer base, the calculation of economic profit for each customer relationship, the characteristics (business volume, product mix, and behavioral data) of firms’ customer portfolio models, and descriptions of the customer asset management activities applied.

During the action planning phase, the consulting teams and the representatives of the client organizations met in several (3-8) project meetings in which the appropriate customer portfolio models and the customer management concepts were designed. The action taking phase was mostly conducted by the client organizations, even thought the consulting teams remained in close contact with the clients during the implementation phase through phone calls, emails, project meetings, and training workshops targeted to client organizations’ middle management and operative staff. The evaluation phase was again conducted in a close cooperation with the consulting teams and the representatives of the client organizations: the project teams convened in 1-2 meetings in which the consequences of implementing customer portfolios and customer management concepts were analyzed and discussed.

The final phase of the action research project, specifying learning and identifying general findings, were conducted in three stages. First, the general findings for the client organizations were identified in joint project meetings with the consulting teams and the representatives of the client organizations. Second wave of learning specification occurred when the authors were involved in writing essay 3. During this time, the authors selected the three case studies to be included in essay 3. The selection among tens of client engagements was based on two criteria: 1) the action planning phase had
resulted in a decision which included the implementation of customer portfolio model and matching customer management concepts, and 2) the client functioned in a B2B context. The three case studies portrayed in essay 3 were the only three cases that fulfilled the both criteria. After this, the data and observations accumulated during the consulting project were analyzed through the iterative process of categorization and abstraction described by Thomas (1993). First, both authors carried out an independent review of the three case studies and proposed categorization of customer asset management actions based on the theoretical framework (Roles of customer asset management in shareholder value creation, Figure 8). After this the researchers compared the cases and their findings dispassionately and debating whether and how each data item should be included in the analysis. These debates ensure sensitivity to the dialogue between data and theory and involve clarifying the meaning, wording and linking between data points, themes and actions. The third wave of learning specification occurred when the author of this research report was combining the individual essays into the present thesis. During this third wave the emphasis has been on identifying learnings that surpass the domains and contributions of individual essays.

The reflection that occurs in the learning specification phase is the main element that separates action research from consulting. Reflection is non-linear, non-sequential, iterative process of systematic combination that aims at matching theory with reality (Dubois and Gadde 2002). The important word is combining: the aim is to combine data gathering with data analysis, compare the evolving framework with existing theory from literature, and put side by side the evidence and experiences from many simultaneous interventions in order to see patterns and sharpen the constructs used to describe reality (Eisenhardt 1989). The process of reflection is highly creative and thus well suited to generate new theory. However, the reflection process is not always transparent and even if the reader would have access to the same data, and participate in the same interventions, the generated theory would most probably be different as the pre-understanding and the experience base of the researcher influences the theory generation. These challenges related to reliability and validity are discussed in more detail in section 3.4.

**Essay 4.** The empirical research comprised a single longitudinal case study. The case company is a division of a global forestry product corporation headquartered in Europe. The research process of essay 4 bears considerable similarities with essay 3. The case study company was chosen based on accessibility, since this was the only company in which the authors had conducted action research related to customer portfolios which also calculates the economic profit of their customer relationships. Our analysis covered two financial years.

The diagnosis phase of the action research process consisted of 2 meetings with the project team, interviews with key individuals in the organizations (5 interviews with 3 individuals), and reviews of the existing data-material provided by the company. Project team meetings were participated by 4-5 representatives of the client organization and the consulting team of 3 members. In these first project team meetings the problem definition was clarified and the suitable interviewees and background materials were identified. The interviewees represented executive vice president and senior manager level positions involved in the management of customer relationships. All interviews are in-depth theme interviews, in which no formal interview questionnaire were used.
but the interviewees were encouraged to elaborate freely upon topics related to customer relationship management and the challenges of their organization. All interviews lasted 1-2 hours and they were conducted and documented by two members of the consulting team. The provided data covered the calculation of economic profit for each customer relationship, the characteristics (business volume, product mix, and behavioral data) of the individual customer relationships, and descriptions of the customer management concepts applied.

After analysis year 1, the economic profit of customer relationships was calculated by the company and the action planning phase was initiated. During the action planning phase, the customer portfolio framework and the differentiated customer management concepts were created through a collaborative process including interventions in the forms of 6 project meetings and informal discussion with five key individuals. As a result of action planning phase, the company decides to utilize a cumulative economic profit contribution analysis as the starting point for creating customer management concepts. Based on the analysis, three customer portfolios were created and the financial performance of each portfolio was analyzed. After this, differentiated customer management concepts were created for each portfolio.

During year 2, the case company conducted the action taking phase by executing the differentiated customer management concepts for the customer portfolios. The evaluation phase was conducted at the end of analysis year 2: the project team convened in one meeting in which the financial performance of each portfolio was analyzed and compared with the performance during year 1.

Similar to essay 3, specifying learning and identifying general findings was conducted in three stages. First, the general findings for the client organizations were identified in the final joint project meetings with the consulting team and the client representatives. Second wave of learning specification occurred when the authors were involved in writing essay 4. During this time, the authors compared the action research data and findings to the proposed theoretical framework (Conceptual framework for customer asset management in a B2B context, Figure 1 in Essay 4). The third wave of learning specification occurred when the author of this research report was combining the individual essays into the present thesis.

### 3.4. Reliability and validity of the research

In qualitative research, and especially in non-positivist qualitative research, it is very difficult or almost impossible to fulfill the requirements for reliability and replicability in a similar manner as in quantitative research. Nevertheless, the ability to assess the reliability of the research findings is an integral part of scientific research – both in qualitative and quantitative research.

Naturally, the choice to be involved in action research evokes certain challenges and drawbacks. Especially the ability of the researcher to influence the outcome raises doubts about the validity of the research findings: would the same outcomes have happened without the influence of the researcher? This issue of potentially biased researchers is also discussed by the clinical researchers (e.g. Schein 1987). In clinical
research it is assumed that even though the clinician is potentially biased and an active participant in the research process, the decisions are always made by the organizations themselves (Schein 1987). The same logic can be extended to action research: even though the action researcher is likely to have her own objectives, it is not possible to manipulate organizations to take part in actions that the organization considers to be against its best interests.

Bradbury and Reason (2006) suggest five test of quality in action research: quality as relational praxis, quality as reflexive-practical outcome, quality as plurality of knowing, quality as engaging in significant work, and emergent inquiry towards enduring consequence. Regarding the first test of quality (quality as relational praxis), the present study meets the demand for explicit development of a praxis of relational-participation: a great deal of time and effort is used in all reported consulting engagements in building solid and trustworthy relationships with all involved client representatives. Additionally, the client representatives and the consulting team members take part in the research process as equals: client representatives bring to the process their knowledge of the client organization and its customers whereas consulting team members enrich the research process with their knowledge of customer portfolio models and customer asset management. The relational praxis was also fostered with the active facilitation of different intervention methods which ranged from informal discussions to group works conducted in project meeting. Through the use of multiple intervention methods, the involvement of all selected client representatives can be ensured.

The second test of quality in action research suggested by Bradbury and Reason (2006) is the quality as reflexive-practical outcome. This can be translated into questions such as: has the research benefited the participants, have the participants adopted new ways of acting, and has the health of the organization improved. The present research has resulted into new customer portfolio models and customer management concepts for three different organizations (illustrated in more detail in essays 3 and 4), which in turn have evoked a change in the way people in the participant organizations manage and think about customer relationships. Additionally, during the research period the financial health of two participant organizations has improved considerably and the third participant organization states that its financial health would have deteriorated more than it actually did if the organization had not participated in the action research project.

The third test of quality by Bradbury and Reason (2006) is the quality as plurality of knowing. This test can be translated into questions such as: has the research ensured conceptual-theoretical integrity, has the research embraced ways of knowing beyond the intellect, and has the research intentionally chosen appropriate research methods. Friedman (2006) states that due to the immense complexity of the empirical world, it is very difficult to generalize action research findings. He continues by suggesting that action researchers should be humble with their findings and allow others in the scientific and practical community assess the reasonableness of proposed concepts and theories as well as the appropriateness of the used methods. In a similar vein, Gummesson (2005) proposes that the transparency as a substitute to the traditional reliability assessments of the quantitative research approaches. According to Gummesson (2005) transparency over the research process as well as the researcher’s implicit paradigm, pre-understanding and tacit knowledge is needed in order to assess
the reliability of a qualitative marketing research. Even though it is not possible to create a comprehensive disclosure on the researcher’s implicit paradigm, the researcher has aimed at explaining all decisions made during the research process and the rationale behind these choices throughout the research report. The present study has also made some efforts to include other ways of knowing beyond the intellect to the research process. First, both the participants of the client organizations and the consulting teams have been able to use their intuition, instead of merely fact-based information, during all interventions. The researcher has additionally accepted informal data such as discussions on coffee breaks and observations on organizations’ practices and rituals as relevant ingredients in the reflection process.

The fourth test of quality proposed by Bradbury and Reason (2006) is quality as engaging in significant work. Assessing the significance of any research during the time of the research is difficult as significance is best observed over time: has the research improved the existing theories and has it resulted in wide-spread improvement in the praxis. Some indication of the significance of the present research can however be found from the fact that the majority of the present research has been connected to consulting assignments: the client organizations have deemed the research problems important enough to initiate a consulting projects to solve them – and the client organizations have been satisfied enough with the results in order to pay a consulting fee for them.

The final test of quality in action research by Bradbury and Reason (2006) is the emergent inquiry towards enduring consequence, i.e. has the action research created new patterns of behavior that remain also after the action researcher has left the scene. It can be said that the present research has created new, enduring patterns of behavior to all case study companies in forms of new customer portfolio models and customer management concepts. These models and concepts have altered the way the case study firms manage their customer relationships, and thus these changes in behavior will also affect how the customers of the case study firms behave in their relationships with the case study firms.
4 SUMMARY OF THE ESSAYS

This chapter presents brief summaries of each of the four essays included in the thesis. The first essay investigates the differences between customers and investment instruments as investment targets. The second essay discusses the elements of a framework for allocating resources within a customer portfolio for increased shareholder value creation for the provider. The third essay explores the roles of customer asset management in shareholder value creation in order to understand how customer asset management activities can be designed for improved shareholder value creation. The fourth and final essay investigates how customer management concepts can be differentiated based on customer portfolios and executed cross-functionally.

4.1 Essay 1: Differences between customers and investment instruments

The first essay provides the foundation for the thesis by exploring the differences between customers and investment instruments as investment targets. As one of the main motivations behind customer asset management is to prove and improve the impact of marketing on firm financial performance, a detailed understanding of the applicability of the financial resource allocation theories and constructs for customer relationships is needed. Only with such an understanding is it possible to create customer asset management frameworks that both take into account the characteristics of customer assets and have a direct link to firm financial performance.

As there are practically no previous studies on the differences and similarities between customers and investment instruments, essay 1 was conducted as a conceptual study. First, the fundamental assumptions and concepts of modern portfolio theory (Markowitz 1952) were reviewed. The choice to use the modern portfolio theory as the starting point was supported by the fact that the modern portfolio theory outlines several assumptions regarding investment instruments and resource allocations in financial markets that are shared by the majority of financial frameworks. Therefore a detailed analysis of modern portfolio theory and its applicability to a customer relationship context gives a comprehensive view on how financial resource allocation theories and concepts should be utilized in marketing.

The analysis of the differences between customer relationships and investment instruments as investment targets revealed five major dissimilarities: interconnectedness, risk, return, risk-return correlation, and resource allocation. The main findings of essay 1 are discussed in more detail in section 2.2.1 and summarized in Table 2.

Essay 1 contributes to the understanding of the applicability of financial resource allocation theories and concepts in customer relationship context. Due to the fundamental differences between customers and investment instruments as investment targets, it is clear that the modern portfolio theory cannot be applied as such to customer relationships. Thus, the modern portfolio theory’s aspiration to identify a single efficient investment portfolio that maximizes return at a given risk level is not applicable in a customer relationship context. Even though essay 1 does not discuss the use of CLV
calculations as the basis of resource allocation decisions, the findings of essay 1 raise some concerns regarding the use of CLV optimization on a customer base level. If we concur with the findings of essay 1 and accept that the customer relationships in a customer base are interconnected, it is very difficult to generate a mathematical formula that maximizes the sum of the customer lifetime values on a firm level: maximization of a CLV of one customer relationship can lead to detrimental impacts on other customer relationships. Therefore, the CLV literature would benefit from further empirical investigations on whether CLV optimization can actually be conducted on a customer base level on such a way that the shareholder value of the firm is improved.

The findings of essay 1 indicate that if a portfolio approach is to be used in customer asset management, a resource allocation framework based on managerial judgment, not a mathematical optimization formula, should be used in the attempts to improve the return from a customer portfolio – a clear deviation from financial applications of the modern portfolio theory. Such a flexible resource allocation framework is needed in order to optimize the risk and return of a customer base, since the characteristics of customers as assets do not allow the mathematical optimization of a single portfolio. However, the basic constructs of modern portfolio theory such as return, risk and risk-return ratio can be used in customer asset management and the resulting resource allocation frameworks – these constructs can be applied to customer relationships and they improve the link between the customer asset management frameworks and firm financial performance.

4.2. Essay 2: Framework for allocating resources within a customer base for increased shareholder value creation

Essay 2 focuses on the second research question (what kind of customer portfolio model should be used if the aim is to improve shareholder value) by exploring alternative elements of customer portfolio models aimed at improving shareholder value creation.

After a review of existing customer asset management and customer portfolio literature, a conceptual framework was presented. The proposed conceptual framework consists of three alternative customer portfolio models aimed at providing a foundation for increasing firm performance. The proposed customer portfolio models (cumulative absolute return model, relative return-volatility-volume model, relative return-duration model) are presented in more detail in chapter 2.2.3.

In the empirical part of the study, the three proposed customer portfolio models were compared by using the same data from a single case study company. There are three main reasons for conducting an empirical comparison of the proposed customer portfolio models. First, creating the customer portfolios with real customer data should point out the potential challenges involved in operationalizing the proposed customer portfolio models. Second, empirical investigation should provide insights into whether customers are allocated to similar portfolios in all customer portfolio models. Third, empirical research should give information about portfolio dimensions: what dimensions could be used in a customer portfolio model aimed at increasing firm performance?
The empirical material was gathered in a forestry products firm operating internationally and headquartered in Europe. The study focused on a customer base of 1094 individual B2B customers served by six different factories. The investigation period was two years, from the beginning of 2005 to the end of 2006. The customer portfolio models were created by using data from 438 customers. 656 customers were omitted from the analysis for any of the following three reasons. First of all, some customers were omitted from the analysis as their purchases from the case study firm were too small and irregular for the sales managers to conduct a reliable duration index assessment for the relative return-duration model. The second reason for omission emerged if the customer had started the business with the case study firm during the investigation period. Third, only those customers that were active during the entire investigation period were included in the analysis. In order to compare to which kinds of portfolios the individual customers were allocated based on the different models, 20 test customers were selected randomly from the customer base. The summary illustrating the allotted portfolios for the randomly selected 20 test customers is presented in Table 6.
Table 6  Comparison of the test customers’ positions in the different customer portfolio models

<table>
<thead>
<tr>
<th>Customer</th>
<th>Cumulative absolute return model</th>
<th>Relative return-volatility-volume model</th>
<th>Relative return-duration model</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>2</td>
<td>Low-High-Low</td>
<td>Low-Low</td>
</tr>
<tr>
<td>B</td>
<td>2</td>
<td>Low-Low-Low</td>
<td>Low-Low</td>
</tr>
<tr>
<td>C</td>
<td>2</td>
<td>Low-High-Low</td>
<td>Low-Low</td>
</tr>
<tr>
<td>D</td>
<td>2</td>
<td>Low-Low-Low</td>
<td>Low-High</td>
</tr>
<tr>
<td>E</td>
<td>2</td>
<td>Low-High-Low</td>
<td>Low-Low</td>
</tr>
<tr>
<td>F</td>
<td>2</td>
<td>High-Low-Low</td>
<td>High-High</td>
</tr>
<tr>
<td>G</td>
<td>2</td>
<td>Low-High-Low</td>
<td>Low-High</td>
</tr>
<tr>
<td>H</td>
<td>3</td>
<td>Low-High-High</td>
<td>Low-Low</td>
</tr>
<tr>
<td>I</td>
<td>2</td>
<td>Low-High-Low</td>
<td>Low-Low</td>
</tr>
<tr>
<td>J</td>
<td>2</td>
<td>Low-Low-Low</td>
<td>Low-Low</td>
</tr>
<tr>
<td>K</td>
<td>2</td>
<td>Low-High-Low</td>
<td>Low-High</td>
</tr>
<tr>
<td>L</td>
<td>2</td>
<td>Low-High-Low</td>
<td>Low-Low</td>
</tr>
<tr>
<td>M</td>
<td>2</td>
<td>Low-Low-Low</td>
<td>Low-Low</td>
</tr>
<tr>
<td>N</td>
<td>2</td>
<td>Low-High-Low</td>
<td>Low-Low</td>
</tr>
<tr>
<td>O</td>
<td>2</td>
<td>Low-Low-Low</td>
<td>Low-High</td>
</tr>
<tr>
<td>P</td>
<td>2</td>
<td>Low-High-Low</td>
<td>Low-High</td>
</tr>
<tr>
<td>Q</td>
<td>2</td>
<td>Low-High-Low</td>
<td>Low-High</td>
</tr>
<tr>
<td>R</td>
<td>2</td>
<td>Low-Low-Low</td>
<td>Low-Low</td>
</tr>
<tr>
<td>S</td>
<td>1</td>
<td>Low-High-Low</td>
<td>Low-High</td>
</tr>
<tr>
<td>T</td>
<td>3</td>
<td>Low-High-Low</td>
<td>Low-Low</td>
</tr>
</tbody>
</table>

As can be seen from Table 6, there are some differences between the different customer portfolio models. First, test customers F, S and T seem to indicate challenges with the cumulative absolute return model. Test customer F is allocated to portfolio 2 (“low contribution, low volume”) even though the relative return of customer F is high. On the other hand, test customers S and T are allocated to portfolio 1 (“high contribution, high volume”) and 3 (“negative contribution, high volume”) respectively, even though both customer relationships yield actually low business volumes. These findings illustrate the fact that the profitability or economic profitability of large-volume customer
relationships can be close to zero: profitability and turnover do not necessarily correlate. It could, therefore, be considered that both relative profitability and absolute profitability / business volume should be included in the customer portfolio model to ensure a more comprehensive view of the customer relationships in the customer base.

The most interesting findings come, however, from a comparison of the relative return-volatility-volume model and the relative return-duration model. As both customer portfolio models assessed relative return with an EBDIT percentage, there are no differences among the test customers regarding the relative return dimension. However, the comparison of the risk dimensions of the two customer portfolio models brings surprising findings. In the conceptual framework, the volatility of the absolute economic profit was used to indicate future risks involved in the customer relationships in the relative return-volatility-volume model. In the relative return-duration model the customer relationship risks were assessed by a duration index. Even though both risk indicators categorized more or less the same number of customer relationships to be low risk (volatility: 133 low-risk customer relationships; duration: 148 low-risk customer relationships), the indicators label different customer relationships as low-risk or high-risk ones. The more detailed break-down of the risk assessments done by the relative return-volatility-volume model and relative return-duration model is presented in Table 7.

Table 7 Comparison of risk categorization by relative return-volatility-volume model and relative return-duration model

<table>
<thead>
<tr>
<th>Relative return-volatility-volume model</th>
<th>Low risk (≈low volatility)</th>
<th>High risk (≈high volatility)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Relative return-duration model</td>
<td>44</td>
<td>104</td>
</tr>
<tr>
<td>Low risk (≈high duration)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>High risk (≈low duration)</td>
<td>89</td>
<td>201</td>
</tr>
<tr>
<td></td>
<td>133</td>
<td>305</td>
</tr>
</tbody>
</table>

As the risk indicators of relative return-volatility-volume models and relative return-duration models give such contradictory findings that cannot be explained with simple correlations between duration and business volume or other, it can only be stated that thorough longitudinal research is needed to investigate which risk measure, economic profit volatility or duration, has most predictive power when estimating customer relationship risks and profitable customer lifetime.

Essay 2 contributes to the present research by providing empirical insights on the favorable characteristics of a customer portfolio model aimed at improving shareholder value. The findings of essay 2 indicate that relative profitability, absolute profitability/business volume and risk should be included as dimensions in the customer portfolio model to ensure a comprehensive view of the customer relationships in the customer base. These three dimensions are also aligned with the main analysis vehicle of customer asset management, the CLV. It can be said that a CLV is a multiplication of relative return, absolute business volume and a forward-looking component. Thus, the
relative return-volatility-volume model is in harmony with the CLV models: the main difference with the relative return-volatility-volume model and the CLV models is the fact that the proposed customer portfolio model portrays the three main components (relative return, absolute volume, forward-looking component/risk) as separate portfolio dimensions whereas the CLV models multiply these three components into a single figure. Thus, it can be argued that the relative return-volatility-volume model provides more information for making resource allocation decisions than the CLV calculations.

4.3. Essay 3: Roles of customer asset management in shareholder value creation

Essay 3 focuses on the third and fourth research questions: what are the customer asset management activities that can be conducted if the aim is to improve shareholder value and how to operationalize resource allocation decisions within a customer base.

After a review of existing shareholder value and customer asset management literature, a conceptual framework was presented, illustrating thirteen potential roles for customer asset management in shareholder value creation. The proposed roles of customer asset management in shareholder value creation are discussed in more detail in section 2.3 and summarized in Figure 8.

In the empirical part of the study, the customer asset management practices of three case study companies were analyzed and compared to the proposed conceptual framework. All case study firms operate in a B2B context: firm A operates in the forest industry, firm B in metals, and firm C produces and offers beverages for B2B customers. From all three case studies, two issues are investigated in particular: 1) how shareholder value creation of the customers is assessed, and 2) how customer asset management activities are differentiated in order to increase shareholder value creation from customer relationships.

The research method used in essay 3 is action research. The research methodology as well as the data collection and analysis processes are explained in more detail in section 3.3. The summary of the case study findings is illustrated in Table 8.
Table 8 Summary of case study findings

<table>
<thead>
<tr>
<th></th>
<th>Firm A</th>
<th>Firm B</th>
<th>Firm C</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Industry</strong></td>
<td>Forestry products</td>
<td>Metal</td>
<td>Beverage</td>
</tr>
<tr>
<td><strong>Customer base size</strong></td>
<td>ca. 80 customer relationships</td>
<td>ca. 225 customer relationships</td>
<td>ca. 4000 customer relationships</td>
</tr>
<tr>
<td><strong>Customer portfolio dimensions</strong></td>
<td>Absolute economic profit per customer</td>
<td>Economic profit and strategic fit of customer relationships (index of 16 constituents)</td>
<td>Value of customer relationships (index of 6 constituents)</td>
</tr>
<tr>
<td><strong>Revenue aspects of portfolio model</strong></td>
<td>All customer revenues (used to calculate economic profit)</td>
<td>All customer revenues (used to calculate economic profit); future value potential</td>
<td>Turnover, sales margin, EBIT, sales representative &amp; area manager assessments</td>
</tr>
<tr>
<td><strong>Cost aspects of portfolio model</strong></td>
<td>All P&amp;L costs (used to calculate economic profit)</td>
<td>All P&amp;L costs (used to calculate economic profit)</td>
<td>Costs to calculate sales margin &amp; EBIT</td>
</tr>
<tr>
<td><strong>Asset aspects of portfolio model</strong></td>
<td>Capital costs associated with assets (used to calculate economic profit)</td>
<td>Capital costs associated with assets (used to calculate economic profit)</td>
<td>Volume in litres</td>
</tr>
<tr>
<td><strong>Risk aspects of portfolio model</strong></td>
<td>N/A</td>
<td>Relationship strength</td>
<td>Sales representative &amp; area manager assessments</td>
</tr>
<tr>
<td><strong>Customer management concepts</strong></td>
<td>3 differentiated customer management concepts for different portfolios:</td>
<td>3 differentiated customer management concepts, flexible link to portfolios:</td>
<td>4 differentiated customer management concepts for different portfolios:</td>
</tr>
<tr>
<td></td>
<td>• “Margin and cash flow maintenance” for customers with highest economic profit</td>
<td>• “Partnership” as target strategy for customers with high economic profit</td>
<td>• “Must” for customers that are crucial for the brand &amp; visibility</td>
</tr>
<tr>
<td></td>
<td>• “Risk management” for customers with moderate economic profit</td>
<td>• “Solution”, as transitory strategy for those customer relationships which the firm seeks to move from one strategy to another</td>
<td>• “A” for customers with highest relationship value scores</td>
</tr>
<tr>
<td></td>
<td>• “Capacity optimization” for customers with negative economic profit</td>
<td>• “Product” as target strategy for customers with low economic profit</td>
<td>• “B” for customers with moderate relationship value scores</td>
</tr>
<tr>
<td><strong>Differentiation of customer management concepts</strong></td>
<td>Differentiation of:</td>
<td>Differentiation of:</td>
<td>Differentiation of:</td>
</tr>
<tr>
<td></td>
<td>• Product range</td>
<td>• Service offering</td>
<td>• Customer visits</td>
</tr>
<tr>
<td></td>
<td>• Pricing</td>
<td>• Relationship management resources</td>
<td>• Availability &amp; pricing of services</td>
</tr>
<tr>
<td></td>
<td>• Order-to-delivery process</td>
<td>• Relationship management process &amp; planning</td>
<td>• Promotions</td>
</tr>
<tr>
<td></td>
<td>• Technical support</td>
<td>• Satisfaction follow-up</td>
<td>• Marketing materials</td>
</tr>
<tr>
<td></td>
<td>• Relationship management activities</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

When comparing the case study findings with the thirteen roles for customer asset management illustrated in the conceptual framework (Figure 8), it is possible to see that different customer asset management roles gain different accents in the empirical data. First of all, all case study firms used customer asset management for targeted customer retention: all firms sought to identify the most valuable customer relationships and to serve them with high-involvement customer management concepts. Customer referrals were present only in firm B’s customer asset management model. However, it is quite likely that firms A and C also utilize customer referrals in their daily activities even
though customer referrals are not visible in their defined customer asset management activities. All case firms also aimed for **up-sales and cross-sales** within their customer asset management activities: all firms had defined extensive product and service offerings for the most valuable customers, with the specific intent of increasing up-sales and cross-sales. **Price increases** or differentiation of pricing were detected in firms A and C. Firm A used different contract lengths and thus different price levels in different customer management concepts. Similarly firm C differentiated the pricing of services: services that are offered free of charge to the most valuable customers are priced when provided to the less valuable customers. **Firm renewal (innovation) for future revenues**, on the other hand, was only discovered in firm B’s customer asset management model: firm B assessed customer relationship value potential when analyzing the strategic fit of the customer relationship and one of the customer portfolios was aimed for renewal.

**Reducing cost to serve** was strongly present in all analyzed customer asset management models: all firms differentiated their customer management concepts so that the cost to serve in low-involvement concepts could be minimized. On the other hand, it is especially interesting to notice that both **customer acquisition and reducing cost to acquire** are completely overlooked in all three analyzed customer asset management models. There can be various explanations for the absence of customer acquisition related aspects in the customer asset management models. On the one hand, all analyzed firms operate in a B2B context with limited number of potential customer relationship and long-term contracts. Therefore it could be concluded that these firms see customer acquisition as a less important aspect of customer asset management. On the other hand, it is possible that the case study firms are involved in systematic customer acquisition, but for some reason these activities are not included in the customer asset management processes. However, the limited importance of customer acquisition in customer asset management suggested by the case study firms supports the argument made by Blocker and Flint (2007) that different customer asset management models are needed in B2B and B2C contexts. After all, the majority of the current customer asset management models are based on CLV calculations used to optimize investment allocations between customer acquisition and customer retention.

**Optimizing capital invested in customer relationships** also received considerably little attention in the analyzed customer asset management models. Firms A and B calculated the economic profit generated by individual customer relationships. In order to calculate customer-specific economic profit, both firms allocated their capital costs to individual customer relationships. However, neither firm A nor firm B considered capital investments in their differentiated customer management concepts. **Business volumes / economies of scale** as a role for customer asset management was detected in firms A and C. Firm A created a “capacity optimization” customer management concept for large-volume but unprofitable customer relationships. One of the main objectives of this customer management concept is to ensure even business volumes over time and thus optimal utilization of production facilities. Firm C, on the other hand, considered customers’ business volumes in litres when assessing the overall value of customer relationships. However, it can be said that the aspects related to asset utilization are not as well represented in the analyzed customer asset management models as are aspects related to revenues and P&L costs. Again, the predominance of P&L items over balance sheet items in the existing customer asset management literature can be one explanation
behind this phenomenon. Additionally, production and other asset-intensive functions have traditionally had little interaction with functions and processes involved with managing customer relationships. Therefore, this functional separation can partially account for the lack of interest in asset-related issues in customer asset management – after all, customer asset management has its roots within marketing literature and therefore marketing function. However, if the aim of customer asset management is to increase shareholder value creation, customer management models should also acknowledge balance sheet and optimal asset utilization.

Even though only firms B and C included any kind of risk measures into their customer asset management models, all firms were involved in reducing risks of relationship termination. All firms sought to provide the most lucrative offerings and high-involvement customer management concepts for their most valuable customers. Firm A also aimed at reduced relationship termination risks by signing long-term contracts with its most valuable customers. Reducing risks to value formation to provider and reducing risk concentrations and correlations within customer base as roles for customer asset management were only evident in firm A: it had defined a “risk management” customer management concept with an objective to reduce the interdependencies in the customer base and to use the small-volume customer relationships as a buffer against business cycle variations. However, the use of customer asset management in risk management shows advancement potential in all analyzed case study firms.

To conclude, the evidence from the three case study firms indicates that B2B firms are able to acknowledge all four drivers of shareholder value (revenue, cost, assets, risks) in customer asset management. There are, however, considerable differences in the relative emphasis given to the different shareholder value drivers: all case study firms consider multiple opportunities to increase revenues and decrease costs through customer asset management, whereas opportunities to optimize asset utilization and decrease risks gets less attention.

Essay 3 contributes to the present research by providing empirical insights on how to resource allocation decisions within a customer base can be operationalized. All case study firms in essay 3 created customer portfolio models, which functioned as the basis of resource allocation decisions. In order to guide the resource allocation, all case study firms created differentiated customer management concepts, usually one concept for one customer portfolio. Thus, the empirical evidence from essay 3 suggest that portfolio-specific customer management concepts can be a suitable medium for operationalizing resource allocation decisions within a customer base.

Additionally, essay 3 contributes to the discussion on how customer asset management impacts the shareholder value creation. The findings of essay 3 indicate that the customer portfolio approach has significant benefits over the dyad and the customer base approaches: portfolio-level customer management concepts are more cost-efficient to formulate than customer-level concepts but they allow more differentiation options than firm-level customer management concepts. Additionally, the empirical evidence from all three case firms give indications that implementation of customer portfolio-specific customer management concepts result into improved shareholder value.
4.4. Essay 4: Differentiating customer management concepts based on customer portfolio model

Essay 4 further contributes to research question four by investigating how portfolio-specific customer management concepts can be formulated and executed with the aim to increase firm performance.

Based on a literature review, essay 4 proposes conceptual framework for creating portfolio-specific customer management concepts was created. In the proposed conceptual framework, customer portfolios are formed on the basis of the absolute economic profit generated by individual customer relationships. Differentiated customer management concepts are then created for each customer portfolio, with the aim of increasing the total economic profit generation in all customer portfolios. All portfolio-specific customer management concepts are managed cross-functionally, but as the costs associated with cross-functional coordination are expected to increase together with the level of cross-functionality, the cross-functionality levels of different customer management concepts are dependent on the economic profit creation in different customer portfolios.

The research method utilized in essay 4 is best described as cooperative inquiry (Heron 1971, 1996; Reason 1995) and interaction research (Gummesson 2002). The case company in essay 4 is a division of a global forestry product corporation headquartered in Europe. The research methodology as well as the data collection and analysis processes are explained in more detail in section 3.3.

After year 1, the economic profit of customer relationships was calculated by the company. The company then utilized a cumulative economic profit contribution analysis as the starting point for creating customer management concepts. The cumulative economic profit contribution analysis is relatively simple: the economic profit created by each customer is calculated and customers are ranked in a descending order, placing the customer yielding the largest economic profit first to the graph, then the second most profitable customer and so forth. The economic profit generated by each customer is added to the cumulative economic profit buildup of the previous customers on the chart in such a way that the graphical illustration ends with the customer yielding the lowest economic profit (Storbacka 2000).

Based on the analysis, three customer portfolios were created and the financial performance of each portfolio was analyzed. During year 2, the case company executed differentiated customer management concepts for the customer portfolios. After year 2 the financial performance of each portfolio was analyzed and compared with the performance during year 1.

During year 1 the customer base consisted of 76 customers. Based on the cumulative economic profit analysis (Figure 10), the 13 customers with the highest yearly economic profits were assigned to portfolio A. There were 11 customers showing negative economic profit: they formed portfolio C. The remaining 52 customers were assigned to portfolio B. The customer portfolios were created at the beginning of analysis in year 2, which enabled us to conduct a base case calculation of the economic profit contribution of the customer portfolios for the whole of year 1. During year 1 the total economic
profit created in the customer base was 2,437,174 euro. It was distributed among the three customer portfolios as follows: portfolio A 2,665,861 euro, portfolio B 1,239,038 euro and portfolio C a negative economic profit of 1,467,725 euro.

Figure 10  Cumulative economic profit analysis and customer portfolios after year 1

The characteristics of the typical customer relationships in the different portfolios were examined in order to find out the reasons for the differences in the economic profit contribution. As the cumulative economic profit contribution analysis concentrated on the actual economic profit contribution of each customer instead of the relative contribution margin, the customer relationships with large positive economic profits in portfolio A were customer relationships with considerable business volumes. Portfolio B, on the other hand, consisted of customer relationships that yielded either only slightly positive or negative economic profits. With only one exception, the business volume of customer relationships in portfolio B was quite small. The number of customer relationships in this segment was, however, considerably larger than in the other two customer portfolios. The typical customer relationship in portfolio C generated a large negative economic profit, but the majority of the customer relationships in this portfolio brought in considerable business volume.

The information on the characteristics of the typical customer relationships and the economic profit contribution in different portfolios were taken as starting points when creating the customer management concepts. The empirical evidence suggested that the company should pursue slightly different objectives in each portfolio in order to increase the overall shareholder value creation. For portfolio A the company created a customer management concept called ‘margin and cash flow maintenance’. The main objective of this concept was to increase the margin and cash flow available from these large-volume customer relationships that already created considerable positive economic profit. Portfolio B consisted of a large number of small business volume relationships that each individually had an economic profit contribution close to zero. Based on these characteristics, the company created a customer management concept called ‘risk management’ for portfolio B. Its objective was to reduce the overall business risks by reducing the interdependencies in the customer base and by using the small-volume customer relationships as a buffer against business cycle variations. For portfolio C, the company developed a customer management concept called ‘capacity
optimization’, the objective of which was to use the negative economic profit-generating but large-volume customer relationships to optimize the capacity utilization of the production facilities, thus reducing the average cost level of operations by reducing fixed and capital costs per production unit. The proposed three customer management concepts (margin and cash flow maintenance, risk management, and capacity optimization) converged with the main levers of increasing economic profit: increasing revenues, minimizing the risks associated to revenue flow, reducing costs, and optimizing the use of tangible assets.

During year 2, the three differentiated customer management concepts were applied to the three customer portfolios and implemented with varying levels of cross-functionality. Due to space limitations the main features of the concepts are only briefly summarized here. The ‘margin and cash flow maintenance’ customer management concept was aimed at a small number of large volume and profitable customer relationships, with the objective of increasing the available margin and cash flow from these customer relationships. The ‘margin and cash flow maintenance’ customer management concept was carried out with extended cross-functional cooperation, spanning sales, production, logistics, R&D, and management. It aimed at providing the customers in this portfolio with the best possible service, thus ensuring a high economic profit level also in the future. The cross-functionality of the ‘risk management’ customer management concept was more moderate. Cross-functional cooperation was naturally needed to implement the ‘risk management’ customer management concept, but most of the cross-functional cooperation requiring ad hoc meetings or similar were eliminated from the concept, as the costs associated with extended cross-functionality were not justified in customer relationships with both low economic profit and small business volumes. The ‘capacity optimization’ customer management concept was aimed at a small number of large volume customer relationships but, unlike the cash flow maintenance customers, the capacity optimization customers generated considerable negative economic profit. Due to this fact, the ‘capacity optimization’ customer management concept was implemented with no ad hoc cross-functional cooperation – all the needed cross-functionality was embedded in the business systems to ensure cost-efficiency. A broader description of the main elements of the three different customer management concepts is presented in Table 9.
<table>
<thead>
<tr>
<th></th>
<th>Portfolio A</th>
<th>Portfolio B</th>
<th>Portfolio C</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Products</strong></td>
<td>• Entire regular product range</td>
<td>• Top 20 products</td>
<td>• Top 10 products</td>
</tr>
<tr>
<td></td>
<td>• Tailor-made products</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Cross-functionality concerning products</strong></td>
<td>• Continuous cooperation between sales, production and R&amp;D</td>
<td>• Cooperation between sales and production systematized in systems</td>
<td>• Cooperation between sales and production systematized in systems</td>
</tr>
<tr>
<td><strong>Order-delivery process</strong></td>
<td>• Supply chain management solution</td>
<td>• Direct orders</td>
<td>• Direct orders</td>
</tr>
<tr>
<td></td>
<td>• Service and care by local sales office</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Cross-functionality concerning order-delivery process</strong></td>
<td>• Continuous cooperation between sales, production and logistics</td>
<td>• Some cooperation between sales and production</td>
<td>• Cooperation between sales and production systematized in systems</td>
</tr>
<tr>
<td><strong>Pricing</strong></td>
<td>• 12-month agreement</td>
<td>• 3-month agreement</td>
<td>• Market price</td>
</tr>
<tr>
<td><strong>Cross-functionality concerning pricing</strong></td>
<td>• Cooperation between sales and management</td>
<td>• Cooperation between sales and management</td>
<td>• No cross-functional cooperation</td>
</tr>
<tr>
<td><strong>Technical support</strong></td>
<td>• Customized on-site support</td>
<td>• Emergency on-site support</td>
<td>• Emergency on-site support</td>
</tr>
<tr>
<td></td>
<td>• Regular technical meetings</td>
<td>• Technical manager visits when appropriate</td>
<td>• Quality reports when appropriate</td>
</tr>
<tr>
<td></td>
<td>• Regular technical manager visits</td>
<td>• Quality reports when appropriate</td>
<td>• Standard certifications</td>
</tr>
<tr>
<td></td>
<td>• Quality reports</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Standard certifications</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Cross-functionality concerning technical support</strong></td>
<td>• Continuous cooperation between sales, production and R&amp;D</td>
<td>• Some cooperation between sales, production and R&amp;D</td>
<td>• Minimal ad hoc cooperation between sales, production and R&amp;D</td>
</tr>
<tr>
<td><strong>Relationship management</strong></td>
<td>• Annual customer meetings</td>
<td>• Sales manager visits when appropriate</td>
<td>• Information on the roles and responsibilities of provider’s personnel</td>
</tr>
<tr>
<td></td>
<td>• Regular visits on the vice president level</td>
<td>• Sales representative visits when appropriate</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Regular sales manager visits</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Regular sales representative visits</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Visits to sites</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Continuous customer planning</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Cross-functionality concerning relationship management</strong></td>
<td>• Continuous cooperation between sales and management</td>
<td>• No cross-functional cooperation</td>
<td>• No cross-functional cooperation</td>
</tr>
</tbody>
</table>
After year 2, the calculations were repeated in order to assess the effectiveness of the customer management concepts. During year 2 the company acquired two new customers and these were assigned for their first customer relationship year to portfolio B. Hence, the customer base in year 2 consisted of 78 customers: 13 in portfolio A, 54 in portfolio B, and 11 in portfolio C. During year 2 the total economic profit created in the customer base was 2,344,584 euro. It was distributed among the three customer portfolios as follows: portfolio A 2,821,984 euro, portfolio B 874,854 euro and portfolio C -1,352,254 euro. The economic profit contributions and customer portfolios after year 2 are illustrated in Figure 11, and the comparison of the economic profit contributions of the entire customer base and different portfolios in years 1 and 2 is presented in Table 10.

![Diagram](image)

**Figure 11** Cumulative economic profit analysis and customer portfolios after year 2

The external operating environment for the case company deteriorated considerably during the analysis period as the entire industry entered a downturn and the average price level decreased substantially: for example, the profits of the three largest European forestry products companies decreased on average by 52.9% in one year. Due to the changes in the operating environment, the slight reduction in the overall economic profit contribution of the customer base could not be considered as a failure of the differentiated customer management concepts. On the contrary, if comparing the economic profit development of the case company (-4.2%) to the average development of the operating profits of the peer group firms (-52.9%) it can be concluded that the implementation of the customer portfolio-specific customer management concepts helped the case study company to improve its financial performance. In particular, the company managed to increase the economic profit contribution of portfolio A by 5.9% and to reduce the negative economic profit contribution of portfolio C by 7.9% (see Table 10). Therefore it can be argued that the differentiated and cross-functionally implemented ‘margin and cash flow maintenance’ customer management concept actually helped the company to boost its revenues, while the ‘capacity optimization’ customer management concept helped to simultaneously control the costs. The decline in the overall economic profit contribution seems to be a result of a revenue reduction in portfolio B, and this is likely to be driven by the external price pressure and not the actions taken by the company itself. This conclusion is supported by interview findings among the key persons in the case company.
Table 10  Financial performance of different portfolios in analysis year 1 and 2

<table>
<thead>
<tr>
<th>Economic profit contribution (€)</th>
<th>Analysis year 1</th>
<th>Analysis year 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Entire customer base</td>
<td>2,437,174</td>
<td>2,334,584</td>
</tr>
<tr>
<td>Portfolio A</td>
<td>2,665,861</td>
<td>2,821,984</td>
</tr>
<tr>
<td>Portfolio B</td>
<td>1,239,038</td>
<td>874,854</td>
</tr>
<tr>
<td>Portfolio C</td>
<td>-1,467,725</td>
<td>-1,352,254</td>
</tr>
</tbody>
</table>

Essay 4 contributes to the present research by emphasizing the importance of cross-functionality in implementing customer portfolio specific customer management concepts. The use of portfolio-specific customer management concepts in customer asset management brings forth the need for cross-functionality. Srivastava et al. (1998) point out that an active management of marketing-finance interface is needed in order to ensure optimal financial performance. According to them, marketing should not conduct marketing actions just based on a marketing viewpoint; marketing should be aware of the potential impact of marketing actions to e.g. production run length, inventory levels and working capital, and conduct marketing actions in such a way that the shareholder value creation at the firm’s level is maximized. However, the findings of essay 4 indicate that marketing should take one step forward still from acknowledging the impact of marketing actions to other functions and processes: customer asset management activities should include all actions that are directly related to managing customer relationships, regardless of in which functional domain these actions are conducted.
5 DISCUSSION

The present chapter presents the final results of the study and elaborates on its theoretical and managerial contributions. Additionally, the limitations of the present research are discussed and avenues for further research are suggested.

5.1 Results

The purpose of the present research has been to create a framework for allocating resources with customer portfolios across business-to-business customer relationships for improved shareholder value. The preliminary framework, based on the literature review, was presented in section 2.4., in Figure 9. The final framework for allocating resources within a business-to-business customer portfolio for improved shareholder value is presented in Figure 12.

### Dominating Ideas

- **Shareholder value improvement as the aim.** Customer asset management aims to improve firm performance. The optimal financial performance is ultimately judged by the shareholders of the firm and the optimal financial performance is reached when the shareholder value is maximized during the shareholder’s investment period.

- **Economic profit as the measure of shareholder value.** Economic profit is an appropriate proxy for the shareholder value captured from a single customer relationship as it acknowledges both the operating and financial expenses and it allows individual customer relationship level analysis.

- **Customer assets differ from financial assets.** Customer relationships differ fundamentally from investment instruments as investment targets in terms of interconnectedness, risk, return, risk-return ratio, and resource allocation options.

### Design

- **Portfolio approach instead of dyad or customer base approaches.** The customer portfolio approach is more cost-efficient than the dyad approach, it allows more differentiation alternatives than the customer base approach, and it is not limited to CLV calculations.

- **Multiple portfolios needed.** Due to the challenges in using mathematical formulas (modern portfolio theory, CLV) in guiding resource allocation, customer portfolio models should consist of several customer portfolios.

- **Three-dimensional portfolio model.** A customer portfolio model aimed at making resource allocation decisions for improved shareholder value should categorize customer relationships in terms of their relative profitability, absolute business volume and risk.

### Operations

- **Affecting all four drivers of shareholder value.** Resource allocation decisions should affect all four drivers of shareholder value: revenue, cost, asset utilization, and risk.

- **Thirteen roles in improving shareholder value.** Customer asset management can assume thirteen roles in improving shareholder value creation: affecting customer retention, affecting customer acquisition, affecting customer referrals, increasing up-sales & cross-sells, enabling price increases, enabling firm renewal/innovation for future revenues, reducing cost to serve, reducing cost to acquire, optimizing capital invested in customer relationships, managing business volumes for economies of scale, reducing risks of relationship termination, reducing risks to value formation to provider, and reducing risk concentrations and correlations within customer base.

- **Portfolio-specific customer management concepts.** Customer portfolio specific customer management concepts are a viable option to operationalize resource allocation decisions in customer asset management.

- **Cross-functional operations.** Customer asset management should include all actions related to managing as profitable current and future customer relationships as possible, regardless of their functional domain. In order to achieve cross-functional coordination and implementation, customer asset management should aim at advancing common firm-wide objectives such as increasing shareholder value.

Figure 12 Framework for allocating resources across business-to-business customer relationships for improved shareholder value

In the following sections, the proposed framework is discussed in more detail: first elaborating the findings related to the dominating ideas guiding customer asset management, then detailing the findings related to the customer asset management design, and finally explaining the findings related to the customer asset management operations.
5.1.1. Dominating ideas

The first and foremost dominating idea in the proposed framework relates to the overall objective of customer asset management. As the purpose of the present study has been to create a framework for allocating resources with customer portfolios across business-to-business customer relationships for improved shareholder value, the main objective of customer asset management in the proposed framework is to improve the shareholder value creation. This objective is in line with the theoretical origins of customer asset management, i.e. marketing performance and market-based assets literature (cf. Srivastava et al. 1998).

To put it simply, shareholder value is created when a company generates earnings on invested capital in excess of the cost of capital adjusted for risk and time (e.g. Stewart 1991; Black et al. 1998; Rappaport 1998). In the existing literature, several measures for shareholder value have been proposed, ranging from discounted future cash flows (e.g. Black et al. 1998; Rappaport 1998) to Tobin’s q (Tobin 1969; Lewellen & Badrinath 1997, Anderson et al. 2004). In the conceptual framework, the use of economic profit as the measure of shareholder value creation is proposed. Economic profit defines the net operating profit after tax (NOPAT) and subtracts the capital charge for the economic book value of a firm’s assets. Thus economic profit gives an estimate of the true profit that accrues to shareholders, after all operating and financial expenses have been deducted. However, economic profit as a stand-alone measure does not account for the growth opportunities inherent in the companies’ investment decisions. Therefore shareholder value creation can be expressed as the discounted present value of all economic profit that the company is expected to generate in the future. Economic profit combines the attractive features of both the operations-based and the capital-market-based measurements: it acknowledges both the operating and financial expenses and allows for an individual customer relationship level analysis. Also, empirical evidence has shown that a positive economic profit leads to an increase in shareholder wealth (Bacidore et al. 1997; Kleiman 1999).

An important dominating idea related to customer asset management is how the customer asset is perceived by the managers. The proposed framework highlights the awareness of the fundamental differences between investment instruments and customer relationships as investment targets. Based on the analysis of the modern portfolio theory (Markowitz 1952) and the characteristics of customer relationships, the differences between investment instruments and customer relationships as investment targets can be categorized into five classes: interconnectedness, risk, return, risk-return correlation, and resource allocation. Even though investment instruments can be regarded to be independent from both the actions of the investor and from each other, the same assumption cannot be extended to customer relationships: customer relationships are interconnected, both to the firm and to each other. Due to this interconnectedness, it cannot be assumed that customer relationship specific risks would be diversified away in a large customer base, as suggested by modern portfolio theory. Secondly, as the customer relationship interconnectedness makes it impossible to diversify away customer-specific risks, systematic market risks cannot be the sole basis for investment calculations: information about customer-specific risks is also needed. Additionally, modern portfolio theory’s assumptions of risk’s indifference over time and for investment levels must be challenged: it is highly likely that customer relationship risks
vary both over time and based on the investments made in the customer relationship. Finally, the definition of risk is different for investment instruments and customer relationships. Modern portfolio theory defines risk as the unpredictability of return. On the other hand, there is no commonly agreed definition for customer relationship risk.

Unlike with investment instruments, the expected return for investments in customer relationships cannot be accurately estimated before initiating the customer relationship. Additionally, the historical return cannot be considered to give sufficient information on the expected return of the customer relationships as firms are able to influence the behavior of their customers. Finally, in investment instruments the investor has to take into account the transaction costs in the return calculations. When investing in customer relationships, the return calculations should also take into account the indirect costs and capital costs associated with the customer relationship in question. Customer relationships also differ from investment instruments in their risk-return ratios: whereas modern portfolio theory assumes a positive correlation between risk and return in investment instruments, it is expected that this correlation does not always hold in customer relationships. This means that it is not possible to form an efficient portfolio from customer relationships: there may be abnormal returns from customer relationships and the risk-return ratio of customer relationship can be affected by the firm. Finally, there are differences between how resource allocation is approached in investment instrument and customer relationship contexts. Unlike when investing in investment instruments, the firm rarely knows the return and risk of a customer relationship prior to initiating the relationship. Second, in a customer relationship context firms may encounter various entry and exit barriers: customer relationships may be difficult to initiate or terminate and customer-specific resources can be difficult to transfer from one customer to another. Additionally, in a customer relationship the customer is also active in deciding the business volume that takes place within the relationship; thus, the investment volume cannot be solely decided by the firm. Finally, firms may have objectives for customer relationships in addition to return maximization at a given risk level: for example, certain business logics may favor a stable business volume over profitable but short-term customer relationships.

5.1.2. Design

The vast majority of current customer asset management research is being built around the concept of customer lifetime value, CLV. Even though the concept of CLV is highly logical and it encompasses a compelling argument, several researchers have expressed their concern about the relatively slow and sometimes misguided adoption of the CLV models by practitioners (e.g. Guilding & McManus 2002; Verhoef et al. 2002; Thomas et al. 2004). Additionally, due to the CLV models’ orientation towards B2C relationships and direct marketing, many customer asset management frameworks draw heavily on customer lifetime value maximization and customer acquisition-retention optimization. However, these tactics are not optimally suited to B2B context, which is characterized with relative power symmetry between the provider and the customer and a limited number of potential customer relationships.

In addition to the challenges associated with CLV calculations expressed in the existing literature, the findings of the present research indicate another significant challenge with
CLV models. If simplified, CLV is a single figure that is a result from a formula “current absolute return multiplied with a forward-looking component”. This ‘forward-looking component’ in most CLV models is operationalized by projecting customer returns into the future and discounting them back to the present date. However, the findings of essay 2 indicate that even the present absolute return is a hazardous measure to draw any conclusions from in terms of designing customer asset management activities. As relative profitability and absolute business volume do not necessarily correlate, the same absolute return can be created by vastly different customer relationships: ranging from small-volume high-profitability relationships to large-volume low-profitability relationships. This same challenge also exists in CLV calculations. In addition, drawing conclusions from numerical customer lifetime values is further complicated by the fact that a CLV also includes a third component in addition to the relative profitability and absolute business volume: the forward-looking component (i.e. risk). Therefore CLV as a stand-alone numerical value gives very little guidance of managers of business-to-business relationships in terms of which kind of customer asset management activities should be directed to a particular customer relationship in order to improve shareholder value creation.

Due to these challenges associated with multiplied numerical indicators of customer relationships, the present study proposes that a customer portfolio model should be used to guide resource allocation decisions in a customer base. The customer portfolio approach is acknowledged by Kumar and George (2007) as the third potential approach of designing customer asset management activities alongside the more clear-cut dyad and customer base approaches. The findings of the present research indicate that the customer portfolio approach is a viable alternative for making resource allocation decisions, substituting the expensive dyad approach (customer level customer management concepts) and the crude customer base approach (firm-level customer management concepts). The customer portfolio management is already a fact of life in certain organizations: Terho and Halinen (2007) provide an overview of the customer portfolio practices in seven organizations. The customer portfolio approach has several benefits: a customer portfolio approach of designing customer asset management activities is more cost-efficient than a customer-level approach but it allows more differentiation options than a firm-level approach. Additionally, the customer portfolio approach offers a route to circumventing the above-mentioned challenges in using numerical CLV calculations as the starting point of making resource allocations. Finally, the use of a customer portfolio model in making resource allocation decisions related to customer asset management is also supported by the identified differences between investment instruments and customer relationship as investment targets. The comparison revealed that there are foundational differences between customer relationships and investment instruments as assets under management relating to interconnectedness, risk, return, risk-return ratio, and resource allocation. Due to these differences, the modern portfolio theory’s aspiration to identify a single efficient investment portfolio that maximizes return at a given risk level is not applicable in a customer relationship context. Instead, if a portfolio approach is to be used in customer asset management, a resource allocation framework based on managerial judgment, not a mathematical optimization formula, should be used in the attempts to improve the return from a customer portfolio. Therefore, the proposed customer portfolio model
consists of several customer portfolios and functions as framework guiding the needed resource allocation decisions instead as a mechanistic optimization formula.

As the overall objective of customer asset management is to facilitate as profitable current and future customer relationships as possible (Hogan et al. 2002b), the proposed customer portfolio model categorizes customer relationships in terms of the two most important indicators of current and future profitability: return from customer relationships and the risks associated with this return. However, due to the above-explained challenges associated with absolute return, it is divided in the proposed customer portfolio model into two components: relative return and absolute business volume. Thus, the proposed framework includes a customer portfolio model consisting of three dimensions: relative return, absolute volume, and risk. The proposed customer portfolio dimensions are also aligned with the basic constructs of modern portfolio theory, return and risk, which were deemed as suitable constructs to be applied to customer relationships in order to improve the link between the customer asset management frameworks and firm financial performance.

The findings of the research also provide insights concerning the operationalization of the customer portfolio dimensions. According to modern marketing performance literature, the marketing actions should aim at increasing shareholder value at the firm level (e.g. Srivastava et al. 1998; Rust et al. 2004a; Rao & Bharadwaj 2008). Various authors have developed conceptual frameworks linking marketing actions to shareholder value and firm financial performance, often through market-based assets and/or relational assets (e.g. Srivastava et al. 1998; Doyle 2000; Rust et al. 2004a; Vargo & Lusch 2004; Bush et al. 2007). However, there are fewer studies elaborating on how marketing’s contribution to shareholder value creation and firm financial performance should be measured. The present study discussed different alternatives for measuring the contribution of marketing and customers to shareholder value, ranging from discounted future cash flows (e.g. Black et al. 1998; Rappaport 1998) to Tobin’s q (Tobin 1969; Lewellen & Badrinath 1997, Anderson et al. 2004). It was concluded that the optimal measure to indicate marketing’s contribution to shareholder value creation and firm performance should acknowledge both the operating and financial expenses and allow individual customer relationship level analyses. As economic profit meets both of these requirement, the present study proposes it as the measure to be used in illustrating marketing’s impact on shareholder value creation and firm performance. Thus, the present study suggests that the economic profit is the most suitable measure to operationalize the relative return dimension in the proposed customer portfolio model.

Regarding the risk dimension of the proposed customer portfolio model, the findings of the present research are less conclusive. According to Srivastava et al. (1998) and Doyle (2000), risk reduction is one of the most important factors through which relational assets can support shareholder value creation. However, as pointed out by Hibbard et al. (2003), there are currently few studies on relationship risks. Due to the lack of comprehensive research on customer relationship risks, all researchers have proposed their own risk measures: customer lifetime (Reinartz & Kumar 2000, 2002; Ang & Taylor 2005; Garland 2005), profitable customer lifetime or duration (Reinartz & Kumar 2003; Storbacka 2006), risk-adjusted discount rates in CLV calculations (Ryals 2002, 2003; Ryals & Knox 2005) and systematic risk and customer beta (Dhar & Glazer 2003). The present study has conceptualized and empirically experimented with two
customer relationship risk measures: return volatility and duration. However, the present study lacks appropriate theoretical and empirical depth to propose the use of any specific customer relationship risk measure in the proposed customer portfolio model. Thus more research on customer relationship risks is needed before suggestions on the conceptualization and the measurement of customer relationship risks can be provided.

5.1.3. Operations

The conceptual framework for customer asset management proposed in the present study addresses all drivers of shareholder value: revenue, cost, asset utilization, and risks. Even though customer asset management is seen as a link between shareholder value formation and marketing (Stahl et al. 2003; Gupta & Lehmann 2003; Rust et al. 2004b), the previous customer asset management literature discusses the different drivers of shareholder value with varying intensity levels, with noticeably more emphasis on revenue and cost drivers than asset and risk drivers.

Under the four drivers of shareholder value, the present study identified thirteen distinct roles that customer asset management can have in shareholder value creation: affecting customer retention, affecting customer acquisition, affecting customer referrals, increasing up-sales & cross-sales, enabling price increases, enabling firm renewal/innovation for future revenues, reducing cost to serve, reducing cost to acquire, optimizing capital invested in customer relationships, managing business volumes for economies of scale, reducing risks of relationship termination, reducing risks to value formation to provider, and reducing risk concentrations and correlations within customer base.

The proposed framework suggests that the resource allocation decisions made on the basis of the customer portfolio model should be implemented by creating portfolio-specific customer management concepts, each aimed at improving shareholder value in their own respect. However, adopting the customer portfolio approach to designing customer asset management activities implies formulating and implementing customer management concepts within the boundaries of a single firm at the same time – a clear deviation from the traditional implicit or explicit assumptions that one firm utilizes one marketing strategy during one period of time (e.g. Zou and Cavusgil 2002; Hunt and Derozier 2004). Conceptually, it seems viable that multiple simultaneous customer management concepts could be superior in supporting shareholder value creation compared to undifferentiated, firm-wide customer management concepts. Nevertheless, more research is needed regarding the use of multiple customer management concepts is needed before their benefits can be conceptualized or empirically shown. One of the few existing empirical studies on differentiated offerings and communication strategies has been conducted by Albert (2003). Additionally the results by Terho and Halinen (2007) indicate that some firms differentiate their offerings and customer management based on customer portfolios.

The findings of the present research concur with the conclusions of Terho and Halinen (2007) in the respect of the context-dependency of customer portfolios. It seems that formulating portfolio-specific customer management concepts is above all a context-dependent issue: each firm should consider its unique position in terms of customer base
structure, business logic, competitive situation, and strategic objectives, and formulate the appropriate portfolio-specific customer management concepts by seeking to affect the relevant shareholder value drivers. Due to the contextual nature of portfolio-specific customer management concepts, the availability of different suitable customer portfolio models, and the vast number of potential permutations from the thirteen roles of customer asset management in shareholder value creation, it is not possible to create a normative list of portfolio-specific customer management concepts.

The use of portfolio-specific customer management concepts in customer asset management also brings forth the need for cross-functionality. Srivastava et al. (1998) point out that an active management of marketing-finance interface is needed in order to ensure optimal financial performance. According to them, marketing should not conduct marketing actions just based on a marketing viewpoint; marketing should be aware of the potential impact of marketing actions to e.g. production run length, inventory levels and working capital, and conduct marketing actions in such a way that the shareholder value creation at the firm’s level is maximized. However, in this study it is proposed that marketing should take one step forward still from acknowledging the impact of marketing actions to other functions and processes: customer asset management activities should include all actions that are directly related to managing customer relationships, regardless of in which functional domain these actions are conducted.

This broader view on marketing and customer management concepts is in line with the larger paradigmatic change within marketing. As system theory suggests, businesses always operate as complete systems and thus firm performance cannot be managed entirely through functional subsystems, such as marketing (Miller 1965; Duncan 1972; Kast & Rosenzweig 1972; Reidenbach & Oliva 1981; Ackoff 1999). In recent years, marketing scholars have embraced this line of thinking, and prominent researchers such as Vargo and Lusch (2004) have suggested that marketing is evolving towards a service-dominant logic. In the service-dominant logic, the ultimate objective of marketing is not to optimize marketing variables as such but to ensure optimal co-creation of value for both the customer and the company. This value is co-created in a longitudinal process between the company and its customers, and therefore customer management concepts need to coordinate the provider’s activities over time as well as cross-functionally.

This line of thinking places new demands on customer management concepts. If the connection to the customer is relational instead of transactional and the value is co-created with customers, and not created in production facilities and then distributed to customers (value-in-exchange), successful customer management concepts can no longer be formulated and executed within the traditional marketing function. If marketing is seen as a longitudinal, social, and economic process between the provider and the customer (e.g. Berry 1983; Zeithaml et al. 1985; Grönroos 1994; Gummesson 1994), then the customer management concept needs to coordinate the provider’s activities with the customer’s practices, over time as well as cross-functionally.

However, implementing cross-functional concepts that are formulated from a viewpoint of any single function is almost impossible. Thus, customer management concepts will not be truly cross-functional if they are not targeted at objectives that are common for all functions and the firm as a whole. One of such objectives is improving the firm’s
financial performance and shareholder value creation. Therefore, portfolio-specific customer management concepts have the potential of being successful in both cross-functional formulation and implementation as they are geared solely towards increasing shareholder value creation at the firm’s level.

5.2. Theoretical contributions

It is possible to identify two streams within the current customer asset management literature: CLV models (cf. Dwyer 1989) and the financial portfolio model influenced models (Hopkinson & Lum 2002; Ryals 2002; Dhar & Glazer 2003). Both of these literature streams utilize models originating from finance: the origins of CLV models can be traced back to discounted cash flow models and project finance while portfolio-based models have taken the financial modern portfolio theory and the capital asset pricing model (CAPM) as the starting point. Regardless of the heavy reliance on financial theories in essentially all existing customer asset management literature, there has been no thorough analysis of the compatibility of the financial theories to the customer relationship context. The findings of the present research indicate that there are fundamental differences between customer relationships and investment instruments as investment targets. Due to these differences, both modern portfolio theory and discounted cash flow models have underlying assumptions that are incompatible with the characteristics of customer relationships. Modern portfolio theory applications can provide insights about the risk-return ratios of different customer relationships and CLV models can estimate the maximum amount of money to be used in retaining a particular customer relationship. However, none of the existing customer asset management frameworks can provide definitive suggestions on how to allocate resources between different customer relationships or which marketing actions to use in each relationship. The financial theories are created for managing money. Customer asset management, on the other hand, is aimed at managing customer relationships in order to make money. Therefore the financial theories or their applications do not grasp the complexity and dynamics of customer relationships. Luckily for both marketing academics and practitioners, marketing and customer relationship management cannot be reduced into mathematical algorithms.

The majority of the existing customer asset management literature suggest that the resource allocation within a customer base can be conducted either by the dyad approach (e.g. Verhoef & Donkers 2001; Ryals 2003; Venkatesan & Kumar 2004) in which the needed lifetime calculations are conducted on an individual customer level and the activities are designed to create customer-specific management concepts; or the customer base approach (e.g. Blattberg & Deighton 1996; Berger & Nasr 1998; Blattberg et al. 2001; Gupta & Lehmann 2003; Rust et al. 2004b) in which the lifetime calculations are conducted on a firm’s level and activities are designed to create a firm-level management concept. In addition to the clear-cut dyad and customer base approaches, some authors (e.g. Reinartz & Kumar 2000, 2003; Verhoef & Donkers 2001; Bell et al. 2002; Venkatesan & Kumar 2002) have acknowledged an intermediate way of designing customer asset management activities: the customer portfolio approach. To the best of the author’s knowledge, the present study is the first comprehensive study demonstrating that the portfolio approach is a viable alternative for CLV calculations in customer asset management, at least in B2B customer bases.
Additionally, the present research contributes to the current literature by providing empirical insights on the favorable characteristics of a customer portfolio model aimed at improving shareholder value. The findings of the present research indicate that relative profitability, absolute profitability/business volume and risk should be included as dimensions in the customer portfolio model to ensure a comprehensive view of the customer relationships in the customer base. These three dimensions are also aligned with the main analysis vehicle of customer asset management, the CLV. It can be said that a CLV is a multiplication of relative return, absolute business volume and a forward-looking component. Thus, the relative return-volatility-volume model is in harmony with the CLV models; the main difference with the relative return-volatility-volume model and the CLV models is the fact that the proposed customer portfolio model portrays the three main components (relative return, absolute volume, forward-looking component/risk) as separate portfolio dimensions whereas the CLV models multiply these three components into a single figure. Thus, it can be argued that the relative return-volatility-volume model provides more information for making resource allocation decisions than the CLV calculations.

Finally, the present study contributes to the discussion on how customer asset management can be used to increase shareholder value (Stahl et al. 2003; Gupta & Lehmann 2003; Rust et al. 2004b) by providing an alternative conceptual framework based on economic profit. With this contribution, the present study adds also to the existing literature on customer portfolios within the relationship marketing paradigm. The current customer portfolio research within the relationship marketing paradigm has concentrated on developing, testing and comparing different portfolio models (e.g. Dubinsky & Ingram 1984; Turnbull & Zolkiewski 1997; Reinartz & Kumar 2003; Ang & Taylor 2005; Kumar et al. 2007). Most researchers have also suggested some overall objectives for each resulting customer portfolio. However, there has been a lack of a solid theoretical foundation for formulating management concepts for the different customer portfolios. The present research has investigated the main drivers of shareholder value based on the economic profit approach and, based on this, outlined thirteen different roles for customer asset management in increasing shareholder value. This framework provides the first steps towards providing theoretical foundations for creating management strategies for different customer portfolios aimed at increasing shareholder value.

The main theoretical contributions of the study discussed above are summarized in Table 11.
Table 11  Summary of the main theoretical contributions of the study

<table>
<thead>
<tr>
<th>Aspect of customer asset management</th>
<th>Main theoretical contributions of the present study</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dominating ideas</td>
<td>• Customer relationships differ from investment instruments as investment targets. Thus, financial resource allocation theories cannot be applied directly to customer relationships.</td>
</tr>
<tr>
<td>Design</td>
<td>• Customer portfolio approach is a viable alternative to CLV calculations in customer asset management.</td>
</tr>
<tr>
<td></td>
<td>• A customer portfolio model aimed at making resource allocation decisions for improved shareholder value should categorize customer relationships in terms of their relative profitability, absolute business volume and risk.</td>
</tr>
<tr>
<td>Operations</td>
<td>• Theoretical framework outlining the available alternative actions for improving shareholder value through customer asset management.</td>
</tr>
</tbody>
</table>

5.3. Managerial implications

In addition to the theoretical contributions discussed above, the present study provides some implications for management practices. The managerial framework for managing business-to-business customer relationships as assets is illustrated in Figure 13.

The proposed managerial framework for managing business-to-business customer relationships as assets can be described as a process.

1) The present study suggests that the starting point of customer asset management framework formulation is evaluating how each customer relationship contributes
to the shareholder value creation. The present study discussed various measures of shareholder value creation and proposed economic profit as a suitable measure as it acknowledges both operating and capital costs while allowing customer relationship level analyses.

2) After the shareholder value contribution of each customer relationship is assessed, a customer portfolio model is created. Managerially, customer portfolio models provide an interesting framework for customer asset management in B2B firms: the existing customer asset management frameworks are mainly based on CLV calculations and optimization of acquisition and retention spending — and therefore these models have had limited application potential in a B2B context. As the empirical research illustrates, customer portfolio models can be created in B2B customer bases with relative ease. When selecting the appropriate customer portfolio model for implementation, the results of the present study indicate that the portfolio model should include at least dimensions of relative economic return and customer relationship risk. The relative economic return can be illustrated in a straightforward manner with economic profit percentage. On the other hand, at the moment there are several alternatives for companies to assess customer relationship risks: customer lifetime, profitable customer lifetime or duration, risk-adjusted discount rates in CLV calculations, systematic risk and customer beta, and return volatility. The current study operationalized two customer relationship risk measures: volatility of absolute economic profit and duration index. In addition to relative economic return and customer relationship risk dimensions, managers may want to consider complementing the customer portfolio model with a third dimension: absolute business volume as it effectively illustrates the differences between economic profitability and business volume of different customer relationships.

3) After the creation of the customer portfolio model, customer asset management activities are designed separately for each portfolio with the help of portfolio-specific customer management concepts. In order to influence the shareholder value creation as effectively as possible, the portfolio-specific customer management concepts should seek to affect all four drivers of shareholder value creation: revenue, cost, asset utilization, and risk. However, when implementing portfolio-specific customer management concepts it must be noted that both the customer portfolio model and the shareholder value drivers are decision aids for managers and not mechanistic tools: the roles of customers in the particular business logic have to be understood thoroughly before portfolio-specific customer management concepts can be created. For example, in certain businesses it might be good business sense to maintain relationships with unprofitable customers as they might be valuable as references or in helping to achieve the optimal capacity utilization rate of production facilities. In order to support the managers in creating portfolio-specific customer management concepts, the present study outlines 13 different roles for customer asset management, all of which are usable in B2B firms. The study also illustrated various ways to distinguish customer management concepts in order to actualize customer asset management decisions. Managers in B2B firms can use the proposed 13 different roles for customer asset management as a long list of options to affect shareholder
value creation through customer asset management. From this long list managers can then select the roles that suit their firms’ needs and business models; thus building their own individual customer asset management frameworks, which can then be realized through differentiated customer management concepts.

4) After creating portfolio-specific customer management concepts, these concepts must be implemented. It is important to note that it is likely that the customer management concepts are likely to include variables that are outside the domain of functional marketing. Thus, in order to ensure the success of customer asset management, the implementation of customer management concepts should be conducted cross-functionally.

5) Finally, the contribution of each customer portfolio to shareholder value creation should be measured systematically. Continuous and systematic portfolio performance evaluation also enables developing the initially conceived portfolio-specific customer management concepts further: if some of the portfolios are not generating as much economic profit as expected, the customer management concept can be fine-tuned accordingly.

In addition to the presented managerial framework for managing business-to-business customer relationships as assets, the present study provides managerial insights in terms of the role of sales in implementing customer asset management, the use of financially oriented customer metrics, and the role of customer asset management in providing inputs into strategy processes.

First, the present study proposes that in order to reap the full benefits of customer asset management in increasing shareholder value, the marketing strategies used to design customer asset management activities should contain all variables under firm control – and thus not be limited to marketing variables. The findings of the research suggest that such cross-functional customer management concepts can only be implemented if they are geared towards goals which are shared by the entire organization, and the use of shareholder value was presented as one such goal. The present study also provides some empirical examples on how cross-functional customer management concepts have been implemented in B2B firms. However, the theoretical part of the present study leaves the coordination responsibility of customer asset management unanswered: who should be responsible for coordinating customer asset management activities throughout the organization? Even though conceptually customer asset management is all about customer relationship management and organic growth, in most firms there are no executives with titles such as “vice president of customer management” or “senior vice president of organic growth”. It is interesting to note that in the majority of the investigated case studies the responsibility of coordinating customer asset management activities did not reside within functional marketing but within functional sales. However, after a closer examination, the central role of sales in implementing customer asset management in B2B firms seems logical. In the majority of B2B firms, the business is conducted with a limited number of large customer relationships, each often assigned to a specific person responsible for managing the customer relationship in question. Additionally, many B2B firms are involved in creating strategic account management programs for their largest and most important customers, aimed at securing these customer relationships and to develop them further. At the same time, functional
marketing in B2B firms is often seen as a support function, not directly involved in managing customer relationships. Therefore, in B2B firms it is often sales which is most involved in managing customer relationships – and thus in the best position to assume the responsibility of coordinating customer asset management.

Second, there is a growing concern that marketing and customer-related issues are not discussed enough at top management level (McGovern et al. 2004). At the same time, the current use of marketing metrics at the board and CEO level seems relatively bleak. According to Ambler et al. (2004), the most popular marketing metrics to reach top management are very traditional: profitability, sales volume, and gross margin. Even though it is certain that top management has little use for unfiltered marketing data (McGovern et al. 2004), no marketing or customer metrics at top management level translates easily to no discussion on marketing or customers at top management level.

The present study provides new insights into creating customer metrics that have a strong link to finance and shareholder value – and thus are especially suitable for relaying information to cross-functional audiences such as top management and for making strategic resource allocation decisions.

Based on the research findings on the differences between customer relationships and investment instruments as assets under management, customer metrics aimed at making resource allocation decisions should cover at least three viewpoints: return, risk, and risk-return ratio. The return metrics should be calculated down to the economic profit level (i.e. take into account also the capital costs associated with assets) as the accounting profit is an insufficient indicator of shareholder value creation. Additionally the return metrics should differentiate between the current return and return potential: considerable shareholder value creation options could be found from customers that are currently not that profitable but have significant return potential. The return metrics should also set apart the relative return and absolute business volume: these two measures do not necessarily correlate and for some business models the absolute business volume is an important driver of shareholder value creation. However, based on the above comparison of customers and investment instruments, it is difficult to make a recommendation about whether to use expected or historical return measures. The modern portfolio theory requires the use of expected return, which in a customer relationship context could translate to measure such as customer lifetime economic profit. On the other hand, the financial markets have the opportunity to utilize longitudinal market-wide data in making the expected return projections, while for customer relationships, firms have to make decision based on partial firm-specific data – or with no data at all. Therefore, and due to the reported challenges in accurately predicting the customer lifetime value (Berger et al. 2003; Malthouse & Blattberg 2005), the use of historical return measures can also be justified.

Risk metrics are also needed for top management decision-making. However, the risk metrics are considerably more complicated to develop than return metrics. In one part this difficulty originates from the fact that there is no universal definition of customer relationship risk. For another part, the difficulty of creating customer relationship risk metrics can be explained by the contextual nature of customer relationship risks: a customer relationship risk measure well suited for one industry or business logic could be completely unsuitable within another business context. Regardless of these challenges, several authors have suggested customer relationship risk indicators ranging
from customer lifetime (Ang & Taylor 2005; Garland 2005; Reinartz & Kumar 2000, 2002), profitable customer lifetime or duration (Reinartz & Kumar 2003; Storbacka 2006), return volatility (Hopkinson & Lum 2002; Stahl et al. 2003) to systematic risk and customer beta (Dhar & Glazer 2003). Nevertheless, all the presented risk metrics remain only preliminary ideas before further research on customer relationship risks is conducted.

The third proposed customer metric category, risk-return ratio, is also needed for making educated resource allocation decisions – especially due to the fact that risk and return in customer relationships do not correlate in a similar manner as in investment instruments. Unfortunately, the lack of research on customer relationship risk metrics is compounded in risk-return metrics: there are practically no studies that bring insights into the risk-return relationship in customer relationships, the studies by Ryals (2003) and Ryals and Knox (2005, 2007) on risk-adjusted customer lifetime value being exceptions. The findings of the present research indicate that there could be at least two alternative routes for creating risk-return customer metrics. First, calculating risk-adjusted customer lifetime economic profit could convey the needed information about the impact of risk to expected returns. Second, it is possible to illustrate the distribution of risk and return in the customer base by creating customer portfolio models which have return and risk as the portfolio dimensions.

Third, the role of customers in strategy processes has traditionally been limited to providing aggregate insight on the development of demand or to providing a platform for product and/or service innovations. Regarding customers as assets providing current and future revenues opens new interesting approaches to utilizing customer insight in strategy processes. First, the notion of varying levels of risks between different customer relationships should be actively employed in strategic planning. As modern investors tend to favor investment targets with focused business ideas and targeted business portfolios, firms have very limited opportunities to manage their business risks by diversifying operations into various businesses. Therefore customers and customer portfolios offer a framework for business managers to actively manage business risks, within the boundaries of the current business set-up. Second, the opportunity to distinguish customer management concepts for different customer portfolios creates interesting opportunities for business model and business concept innovation. Currently in most organizations there is no structured process for generating business model or business concept innovations and the use of customer insight in these processes is unplanned and uncoordinated at best: individual development ideas might bourgeon from customer understanding, but the more comprehensive development steps are seldom based on thorough understanding of customer base potential. Customer asset management provides firms with detailed information about the revenue potential of their customer base: how are turnover, profitability and risk distributed among different customers relationships. Combining such information with detailed understanding on customer processes and practices provides a solid platform for innovating business models and concepts: the new business models and concepts can be designed to simultaneously support firm long-term financial performance and to support customers in their own value-generating processes and practices.
5.4. Limitations of the research

The aim of the present research is to contribute to the current customer asset management literature by creating a framework for managing business-to-business customer relationships as an investment portfolio for improved shareholder value. This definition poses certain conceptual limitations for the application and the theoretical contribution of the research findings, which were discussed in more detail in chapter 1.4.

In addition to the limitations posed by the research aim, perhaps the most considerable limitation of the present study is associated with the chosen research method and the dual role of the researcher as both an academic researcher and a management consultant. It could be argued that as a part of the management consultant team, the researcher has had the opportunity to impose her own mental models to the case study companies, thus affecting the research results. The biased nature of action and interaction of researchers is an unavoidable feature of these research methods. In order to support assessing the reliability and the validity of the research findings the researcher has sought to explain all decisions made during the research process throughout the research report. Additionally, the researcher has evaluated the empirical interaction processes and has come to a conclusion that all case study firms were knowledgeable and experienced organizations in the field of customer relationship management. Thus, it is less likely that the researcher alone, as only a part of the consultant team, would have succeeded in consciously manipulating the interaction process and its results. However, the possibility of the transporting researcher’s own mental models to case study firms and thus research findings have to be borne in mind when evaluating the results of the present study. The researcher herself recognizes her own mental models especially in the way case study firms have named their customer management concepts in Essays 3 and 4.

Additionally, the execution of empirical research creates certain limitations. In essay 2, the empirical data was collected during a period of two years. Even though a research spanning two years can be considered a longitudinal study, the investigation period was too short to enable the calculation of volatility of absolute economic profit for the relative profit-volatility-volume model; thus in the empirical research volatility was substituted with a measure calculating the change in absolute EBDIT during the two years. Additionally, in the empirical research the economic profit dimension of all analyzed customer portfolio models was substituted with earnings before depreciation, interests and taxes (EBDIT). Even though it was possible to calculate the needed economic profitability level of 0% from the EBDIT information, in further studies the actual calculation of economic profit should be strived for. In essay 4, the empirical part of this study was based on data collected from one case study company operating in a B2B context over a period of two years. In order to gain reliable evidence on the impact of portfolio-specific customer management concepts on firm performance, further longitudinal empirical research is needed. After all, the successful implementation of new cross-functional customer management concepts is likely to take several years, and the results may not be visible in the very beginning. The impact of differentiated customer management concepts on firm performance could also be further examined by comparing the performance of the case study companies to a reference group of similar firms that have not implemented portfolio-specific customer management concepts.
5.5. Suggestions for further research

The findings of the present research open topics for further research. In the following, four identified avenues for further research are discussed briefly: 1) customer relationship risk, 2) the use of multiple customer management concepts, 3) the use of customer portfolio approach of designing customer asset management activities in a B2C context, and 4) the link between customer asset management and value co-creation literature.

First, the concept of customer relationship risk calls for further research. As the literature review indicated, there is currently no common definition of customer relationship risk – even though all asset allocation theories suggest that an understanding of risks is an important variable in making resource allocation decisions between risky assets such as customer relationships. At the moment it is possible to find various competing measures for customer relationship risk in the marketing literature, ranging from customer lifetime (Reinartz & Kumar 2000, 2002; Ang & Taylor 2005; Garland 2005), to customer beta (Dhar & Glazer 2003). The present study operationalized and experimented with two alternative customer relationship risk measures: the volatility of absolute economic profit and the duration index. However the contradictory results from the experimentation call for further longitudinal research. The entire concept of customer relationship risk requires elaboration: can customer relationship risks in customer asset management context be categorized as relationship termination risks, risks related to the value formation for the provider, and the risk concentrations and correlations within the customer base? After the concept of risk is defined in more detail, further research should be conducted to investigate which measure has the most predictive power when estimating customer risks and profitable customer lifetime. Additionally, the context or industry-specificity of risk indicators should be investigated further: are risk indicators universal or should each business context tailor their own indicators for risk.

Second, the issue of portfolio-specific customer management concepts should be investigated further. The present research proposes that the use of multiple customer management concepts simultaneously could be an effective framework in implementing customer asset management and thus in increasing shareholder value. The findings of the current study indicate that the multiple customer management concepts can be formulated and implemented simultaneously within the borders of a single firm. However, further longitudinal research is needed in order to validate the potential impact of multiple customer management concepts on shareholder value creation. Additionally, further research is needed regarding the content of the differentiated customer management concepts. First, the current research does not provide any insight regarding the optimal number of different customer management concepts or the optimal degree of differentiation from each other. Second, the development of theoretical foundations for creating portfolio-specific customer management concepts should be continued as the present research covers only financial aspects of customer relationships, potentially overlooking other important customer relationship attributes.

Third, the potential of using customer portfolio approach in designing customer asset management activities with business-to-consumer relationship should be investigated. The present research was motivated by the B2C orientation of the current customer
asset management applications and the unsuitability of CLV calculations and acquisition-retention optimization for business-to-business relationships. The findings of the research indicate that the currently dominant approaches for designing customer asset management activities, the dyad and the customer base approach, could also be substituted with the customer portfolio approach – at least in a B2B context. However, the theoretical foundations of the customer portfolio approach to designing customer asset management activities do not limit it to any specific context. Thus, it would be beneficial to investigate the applicability of customer portfolio approach to business-to-consumer relationships as well.

After the publication of the seminal article by Vargo and Lusch (2004) on the service-dominant logic for marketing, the marketing scholars have been involved in an intense debate about the possibility to converge various previously separate research streams into a new dominant logic for marketing. One fundamental proposition of the service-dominant logic is that the value is always co-created by both the provider and the customer. To the best of the author’s knowledge, customer asset management literature has been evolving separately from the service-dominant logic and value co-creation literature. However, it is likely that both research streams would benefit from a dialogue between them: customer asset management literature could be enhanced by the deeper understanding of the value co-creation processes whereas the service-dominant logic and value co-creation literature could gain insights from customer asset management literature, especially regarding how the value co-creation is translated to financial value capture for the provider and why this financial value capture varies between different customer relationships and customer portfolios.
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APPENDIX 1 LIST OF ESSAYS INCLUDED IN THE THESIS

1) Nenonen, Suvi (2008): Why finance does not help customer asset management – challenges in applying financial theories to customer relationship management (a previous version of the paper was presented in the Academy of Marketing Science Annual Conference 2008 in Marketing Metrics track)

2) Nenonen, Suvi (2007): Customer portfolio models in customer asset management – empirical comparison of customer portfolio models (a previous version of the paper was presented in the Industrial Marketing & Purchasing Conference 2007)

3) Nenonen, Suvi & Storbacka, Kaj (2008): The role of customer asset management in shareholder value creation – an empirical investigation (the paper was presented in the Industrial Marketing & Purchasing Conference 2008)

4) Nenonen, Suvi & Storbacka, Kaj (2008): Customer asset management for business-to-business relationships: differentiating cross-functional customer management concepts for improved firm performance (a previous version of the paper was presented in the Academy of Marketing Science World Congress 2007 in Marketing Strategy track)
PART 2
Essay 1

WHY FINANCE DOES NOT HELP CUSTOMER ASSET MANAGEMENT - CHALLENGES IN APPLYING FINANCIAL THEORIES TO CUSTOMER RELATIONSHIP MANAGEMENT

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2009

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WHY FINANCE DOES NOT HELP CUSTOMER ASSET MANAGEMENT - CHALLENGES IN APPLYING FINANCIAL THEORIES TO CUSTOMER RELATIONSHIP MANAGEMENT

Abstract

During recent years, a growing body of customer asset management literature has proposed that customer relationships could be viewed as assets and that firms should use frameworks influenced by finance in making decisions on how to manage each customer relationship for maximized return. However, only few marketing practitioners have adopted the use of customer asset management. The present study investigates the potential reasons behind the low adoption of the customer asset management frameworks by the practitioners by analyzing the theoretical foundations of customer asset management frameworks. The findings of the research indicate that the current finance-influenced customer asset management frameworks are unlikely to provide reliable customer relationship management suggestions due to the fundamental differences between the units of analysis of financial theories and customer asset management: customer relationships differ from investment instruments in terms of interconnectedness, risk, return, risk-return ratio, and resource allocation.

Key words: customer asset management, modern portfolio theory, customer lifetime value, shareholder value, marketing metrics
1 INTRODUCTION

During the 1990s marketing scholars became increasingly aware of the fact that traditional functional, product-oriented marketing was no longer meeting the needs of marketing practitioners: the traditional quest for product market performance did not necessarily translate into the best financial performance (Srivastava et al. 1998). The marginalization of traditional marketing has raised fears about the marginalization of entire marketing, especially at top management level (Doyle 2000; McGovern et al. 2004).

Some researchers argue that this decline in marketing’s status within organizations originates in the lack of evidence that links marketing activity to shareholder value creation (Rust et al. 2004a; Srivastava et al. 1999). In their seminal article, Srivastava et al. (1998) propose a framework for aligning marketing with financial viewpoints. According to them, marketing should take an active role in managing the marketing-finance interface: marketing actions should not be guided only by marketing’s own objectives but by a thorough understanding of the potential impacts of marketing actions to firm financial performance. Since then, the need to better understand the link between marketing actions and firm financial performance has resulted in new lines of research such as marketing performance (Sheth & Sisodia 2002; Rust et al. 2004a; Grønholdt & Martensen 2006; Bush et al. 2007; O’Sullivan & Abela 2007; Seggie et al. 2007), brand equity (e.g. Baldinger 1990; Farquhar 1990; Aaker 1992; Keller 1993), customer equity (e.g. Blattberg & Deighton 1996; Hogan et al. 2002b; Rust et al. 2004b; Kumar & George 2007), and customer asset management (e.g. Bell et al. 2002; Hogan et al. 2002b; Bolton et al. 2004; Kumar & George 2007).

Customer asset management literature proposes that customer relationships could be viewed as assets and that firms should allocate their tangible and intangible resources in such a way that the return from current and future customer relationships is maximized (Hogan et al. 2002b). Regarding the resource allocation decisions, researchers propose that customer equity calculations (e.g. e.g. Blattberg & Deighton 1996; Hogan et al. 2002b; Rust et al. 2004b; Kumar & George 2007) or modern portfolio theory applications (Hopkinson & Lum 2002; Ryals 2002; Dhar & Glazer 2003) provide sufficient information for making decisions on how much to invest in each customer relationship.

The reasoning behind customer asset management is engaging. First, it is not difficult to understand the analogies between customer relationships and assets. An asset is something a company invests in to gain revenues in the future. In this respect, customer relationships fulfill these main characteristics of an asset: they are resources that require investments and they can generate cash flows in the future. Additionally, the cash flows generated by customer relationships vary both from one relationship to another and over time, thus making the active management of these assets, i.e. customer asset management, necessary. Second, the thought of finding a framework for simultaneously increasing shareholder value and demonstrating the return on marketing investments is surely an appealing one. Third, the calculation models based on financial theories bring much needed rigor in making the customer relationship management decisions and
make it easier to communicate marketing actions across functional boundaries and to top management.

However, despite the apparent conceptual appeal of customer asset management, the practitioners have not embraced its use on a large scale. Most of the customer asset management frameworks presented in the marketing literature are conceptual ones or tested by hypothetical examples. Very few studies present any empirical evidence of how customer asset management is or could be conducted in practice, studies by Ryals (2003) and Rust et al. (2004b) being one of the exceptions.

As Gummesson (2001) proposes, the potential deviations between the theory and the observable reality call for a recalibration of the theory or an entirely new paradigm. Thus, the present research focuses on investigating one potential reason behind the slow adoption of the customer asset management frameworks by the practitioners: the possible mismatch between the financial origins of the customer asset management frameworks and the application area of these frameworks – the customer relationships. In particular, the present research seeks to analyze the differences between investment instruments and customer relationships as investment targets. This understanding is then used to assess the current customer asset management frameworks (CLV models, modern portfolio theory applications): how well do these finance-originated frameworks take into account the characteristics of customer relationships as investment targets.

The present paper is organized as follows. First, the existing customer asset management approaches and their financial origins are investigated. Second, the underlying assumptions of modern portfolio theory, the most influential financial resource allocation theory, are investigated and the applicability of these assumptions to customer relationships is analyzed. Third, the similarities and differences between modern portfolio theory and customer lifetime value calculations are discussed. Finally, the theoretical contributions and the managerial implications of the paper are discussed and further areas for research are suggested.

2 CUSTOMER ASSET MANAGEMENT: TWO FINANCIAL FOUNDATIONS

Customer asset management can be defined as the optimized use of a firm’s tangible and intangible assets in order to make current and future customer relationships as profitable as possible (Hogan et al. 2002b). Echoing this definition, the need to create frameworks and calculation models to steer resource allocation between different customer relationships resides at the core of customer asset management literature. When analyzing the different resource allocation approaches, it is possible to identify two different schools of thought within customer asset management, each influenced by different financial approaches: the discounted cash flow models (the customer lifetime value models), and the modern portfolio theory applications.

The majority of the current customer asset management literature is built around the term of customer lifetime value (CLV). CLV as a term can be traced by to Dwyer (1989) and it is most commonly defined as the present value of the expected revenues less the costs from a particular customer. This definition links CLV models to discounted cash flow models and project finance. Kumar and George (2007) present an
overview of the existing CLV frameworks and synthesize the use of CLV in making resource allocation decisions into two approaches: aggregate and disaggregate. Adopting a disaggregate approach means conducting the needed CLV calculations on an individual customer level. After this, resource allocation decisions are made for each customer separately, with an aim to increase the overall sum of CLVs. Examples of a disaggregate approach are presented by e.g. Verhoef and Donkers (2001), Ryals (2003), and Venkatesan and Kumar (2004). On the other hand, the use of an aggregate approach means that the CLV calculations are conducted on the level of a firm, i.e. the average CLV of all firm’s customers is estimated. The resource allocation decisions are then made at a firm level, affecting the drivers of the customer lifetime value (e.g. pricing, promotion, loyalty programs, channel choices). Examples of aggregate approach are presented by e.g. Blattberg and Deighton (1996), Berger and Nasr (1998), Blattberg et al. (2001), Gupta and Lehmann (2003) and Rust et al. (2004b).

In addition to the CLV-based customer asset management literature, some researchers have taken the financial modern portfolio theory (Markowitz 1952) and the capital asset pricing model (CAPM) (Sharpe 1964; Litner 1965a, 1965b) as the starting points for creating customer asset management frameworks (Hopkinson & Lum 2002; Ryals 2002; Dhar & Glazer 2003). In these models, the central concepts of financial modern portfolio theory and CAPM such as required return, risk-free return, systematic (market) risk, and beta are applied to the context of customer relationships. One of the purest applications of CAPM to customer asset management was made by Dhar and Glazer (2003). In their study, Dhar and Glazer (2003) calculate the customer betas by comparing the cash flows from an individual customer to the cash flows of the entire customer portfolio and depict an efficient frontier for customers. According to Dhar and Glazer (2003), the risk-adjusted return for a firm can be increased by assembling a customer base with favorable risk and return characteristics.

Even though the two different schools of thought within customer asset management (CLV models and modern portfolio theory applications) originate from different financial approaches, they share an equal dependence on their financial origins. Considering the strong reliance on frameworks borrowed from another discipline, it is interesting that currently there seems to be no literature investigating the applicability of either discounted cash flow models or modern portfolio theory in a customer relationship context. Although most customer asset management literature draws influences from discounted cash flow models through the use of CLV calculations, the present paper begins the investigation of the applicability of financial frameworks to customer relationships from modern portfolio theory. This decision is based on the fact that modern portfolio theory is the most influential theory illustrating asset management decisions under uncertainty and thus it outlines several assumptions regarding investment instruments and resource allocations in financial markets shared by the majority of financial frameworks. After the logical similarities and differences between customers and investment instruments are identified from the viewpoint of modern portfolio theory, the findings are then considered in the light of discounted cash flow models.
3 MODERN PORTFOLIO THEORY: OPTIMIZING RISK AND RETURN AS THE CORNERSTONES OF FINANCE

The objective of the present research is to investigate whether there are any logical challenges in using frameworks originating from finance in managing customer relationships. In order to achieve this aim, the differences and similarities of the units of analysis of modern portfolio theory and customer asset management are analyzed. In modern portfolio theory, the unit of analysis is an individual investment instrument. In customer asset management, the unit of analysis is a customer relationship. Thus, the following chapters focus on investigating the differences and similarities between investment instruments and customer relationships in the light of modern portfolio theory. However, first the basic premises of the modern portfolio theory are outlined. In this way the underlying assumptions regarding investment instruments (such as stocks, bonds, commodities) and their context can be understood – to be later compared to customer relationships.

Modern portfolio theory is used to explain the behavior of rational investors, the use of diversification to optimize investment portfolios, and investment instrument pricing. The capital asset pricing model (CAPM) is one of the key concepts of modern portfolio theory, described in more detail in the works by Litner (1965a, 1965b) and Sharpe (1964).

Modern portfolio theory is built on the notion that investors are rational and risk averse. The only two variables relevant for investors when making investment decisions are the return of the investment instrument (expected mean return) and the risk associated with the investment instrument (historical volatility of the mean return): for a riskier investment, the investor will require a higher expected return – and vice versa. Each investment instrument / portfolio can be described in the risk-return space. Within risk-return space one can identify efficient frontiers which describe the portfolios that have the lowest possible level of risk for a given level of return. Therefore, a rational investor would only invest in a portfolio residing on an efficient frontier. Which efficient frontier the investor chooses depends on his individual risk aversion. The portfolios alongside the same efficient frontier can be compared to a measure called the Sharpe ratio. The Sharpe ratio illustrates a portfolio’s return above the risk-free rate (i.e. additional return) compared to the risk of the portfolio. The portfolio with the highest Sharpe ratio on the efficient frontier is called the market portfolio. If a straight line is drawn through the market portfolios of all efficient frontiers, one creates the capital market line. This means that all portfolios on the capital market line have superior risk-return rates (or Sharpe ratios) compared to any other portfolios on the efficient frontiers – and based on the foundations of modern portfolio theory, it is impossible to create a portfolio from risky assets that has a risk-return rate above the capital market line.

Modern portfolio theory also distinguishes systematic risk from specific risk. Specific risk is associated with a particular investment instrument. Systematic (market) risk is used to illustrate the risk common to all investment instruments. Modern portfolio theory is not concerned with specific risks as it assumes that specific risks can be diversified out in portfolios consisting of a sufficient number of investment instruments. The capital asset pricing model (CAPM), on the other hand, is the means of applying
modern portfolio theory to resource allocation decision; it is a formula that calculates the required return for a correctly priced asset that is added to the market portfolio (i.e. a portfolio residing at the capital market line, with optimal risk-return rates). A central measure in the CAPM equation is the beta coefficient, which illustrates the sensitivity of the investment instrument to the general market movements. In other words, the beta coefficient describes how sensitive an investment instrument is to systematic (market) risk. In practice, the beta coefficient allows the calculation of price for any individual asset if the expected return of the market and the risk-free rate of interest are known.

4 CUSTOMERS DIFFER FROM INVESTMENTS INSTRUMENTS – LIMITED APPLICABILITY OF MODERN PORTFOLIO THEORY

The direct application of modern portfolio theory-based models has also been considered outside the domains of finance, especially in relation to product portfolio optimization (e.g. Anderson 1981; Wind & Mahajan 1981). However, the possibly incompatible assumptions of financial markets and product portfolios, possibly undermining direct application of financial portfolio models to product portfolios, have been pointed out (Devinney et al. 1985). These challenges voiced by the product portfolio researchers further accentuate the need to consider the underlying assumptions of modern portfolio theory and CAPM and their applicability to a customer relationship context.

Building on the findings related to product portfolios by Devinney et al. (1985), the differences between investment instruments and customer relationships as investment targets can be categorized into five classes: interconnectedness, risk, return, risk-return correlation, and resource allocation. Perhaps the most fundamental difference between investment instruments and customer relationships relates to interconnectedness. Even though investment instruments can be regarded to be independent from both the actions of the investor and from each other, the same assumption cannot be extended to customer relationships. Customer relationships are interconnected, both to the firm and to each other. The actions made by the firm in one customer relationships are conducted in order to create an effect in this particular customer relationship. For example, a firm may initiate a marketing campaign aimed at increasing cross-sales in a particular customer segment, thus potentially increasing the returns from this customer segment. Additionally, changes in one customer relationship are likely to affect at least some other customer relationships. For example, a firm’s decision to terminate an unprofitable customer relationship may create negative word of mouth, leading to several profitable customers ending their relationships with the firm – a scenario utterly unthinkable with modern portfolio theory and investment instrument context.

Due to the interconnectedness of customer relationships, it cannot be assumed that customer relationship specific risks would be diversified away in a large customer base as modern portfolio theory suggests. Secondly, as the customer relationship interconnectedness makes it impossible to diversify away customer specific risks, systematic market risk cannot be the sole basis for investment calculations: information of customer specific risks is also needed. Additionally, modern portfolio theory’s assumptions of the indifference of risk over time and for investment levels must be challenged: it is highly likely that customer relationship risks vary both over time and
based on the investments made into the customer relationship. Finally, the definition of risk is different for investment instruments and customer relationships. Modern portfolio theory defines risk as the unpredictability of return. On the other hand, there is no commonly agreed definition for customer relationship risk: it can be considered to be e.g. the unpredictability of cash flows, the threat of customer relationship termination, or the probability of fostering profitable customer relationships.

The expected return for investment instruments is estimated in financial portfolio models by utilizing the accumulated market-wide historical data that has been gathered over several decades by collectively acknowledged parties such as stock exchanges. Therefore is can be said that the historical data gives sufficient indication on the future return of investment instruments, barring any abnormalities in the markets. However, similar market-wide historical customer data cannot be accumulated: information on customer relationships is considered proprietary information and thus firms are not willing to exchange this information freely. Therefore, firms have access only to firm-specific historical data that does not necessarily give a comprehensive view of the customers that can be engaged in relationships with various firms simultaneously. Additionally, the historical return cannot be considered to give sufficient information on the expected return of the customer relationships. This is mainly explained by the fact that firms are able to influence the behavior of their customers – an opportunity that is not open for investors investing in investment instruments. This opportunity should not be overlooked in customer asset management: in fact, the greatest profit improvement potential for many firms could actually come from improving the currently unprofitable customer relationships and not from fostering the already profitable ones. Finally, in investment instruments the investor has to take into account the transaction costs in the return calculations. When investing in customer relationships, the return calculations should also take into account the indirect costs and capital costs associated with the customer relationship in question.

Customer relationships differ from investment instruments also in their risk-return ratios: whereas modern portfolio theory assumes a positive correlation between risk and return in investment instruments, it is expected that this correlation does not always hold in customer relationships. This has notable implications. First, the absent positive risk-return correlation dissolves two central concepts of modern portfolio theory: efficient portfolio and capital market line. On the other hand, it simultaneously opens the door for the possibility for abnormal returns from customer relationships. Finally, similar to return and risk, the risk-return ratio of customer relationship is also not indifferent to the acts of the investor.

Finally, there are differences between how resource allocation is approached in investment instrument and customer relationship contexts. Unlike when investing in investment instruments, the firm rarely knows the return and risk of a customer relationship prior to initiating the relationship – an issue that hinders the mathematical optimization of the customer base. Second, modern portfolio theory assumes that that resources can be allocated freely without any entry or exit barriers and that the investor is the sovereign decision-maker in choosing the investment volumes. However, in a customer relationship context, firms may encounter various entry and exit barriers: customer relationships may be difficult to initiate or terminate and customer-specific resources can be difficult to transfer from one customer to another. Additionally, in a
customer relationship the customer is also active in deciding the business volume that takes place within the relationship; thus, the investment volume cannot be solely decided by the firm. Finally, firms may have objectives for customer relationships in addition to return maximization at a given risk level: for example, certain business logics may favor stable business volume over profitable but short-term customer relationships. For investors in investment instruments, the return maximization at a given risk level is the only objective.

The above discussion on the differences of investment instruments and customer relationships as investment targets is summarized in Table 1.

**Table 1 Differences between investment instruments and customer relationships as investment targets**

<table>
<thead>
<tr>
<th>Investment target characteristics</th>
<th>Investment instruments</th>
<th>Customer relationships</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interconnectedness</td>
<td>• Investment instruments are independent from each other and the actions of the investor</td>
<td>• Customer relationships are often interconnected to each other and are affected by the actions of the firm</td>
</tr>
<tr>
<td>Risk</td>
<td>• Diversification leads to reduced variance: specific risk can be diversified away</td>
<td>• Customers are interconnected: specific risks cannot be diversified away</td>
</tr>
<tr>
<td></td>
<td>• Systematic market risk is enough for calculations</td>
<td>• Systematic market risk is not enough for calculations as specific risks cannot be diversified away</td>
</tr>
<tr>
<td></td>
<td>• Risk is stable over time and indifferent to varying investment amounts</td>
<td>• Risk can vary over time and based on investment level variations</td>
</tr>
<tr>
<td></td>
<td>• Universal definition of risk</td>
<td>• Multiple definitions of risk</td>
</tr>
<tr>
<td>Return</td>
<td>• Expected return can be forecasted by market-wide historical data</td>
<td>• Firm-specific historical data might not be enough to forecast expected return, return potential has also to be considered</td>
</tr>
<tr>
<td></td>
<td>• Transaction costs should be considered in return calculations</td>
<td>• In addition to transaction costs, non-direct and capital costs should also be considered in return calculations</td>
</tr>
<tr>
<td>Risk-return ratio</td>
<td>• Risk and return have a positive correlation: existence of efficient portfolios and capital market line</td>
<td>• Risk and return do not necessarily have a positive correlation: no efficient portfolios or capital market line</td>
</tr>
<tr>
<td></td>
<td>• It is impossible to create a portfolio with a risk-return rate above the capital market line</td>
<td>• Possibility of customer relationship with abnormal returns</td>
</tr>
<tr>
<td></td>
<td>• Risk-return ratio is independent from the acts of the investor</td>
<td>• Risk-return ratio can be affected by the firm</td>
</tr>
<tr>
<td>Resource allocation</td>
<td>• Risk and return are known prior to making investment decisions</td>
<td>• Risk and return are seldom known prior to initiating a relationship</td>
</tr>
<tr>
<td></td>
<td>• Resources can be allocated freely (both investment &amp; divestment)</td>
<td>• Challenges in reallocating customer-specific resources &amp; in ending customer relationships</td>
</tr>
<tr>
<td></td>
<td>• Resource allocation volume can be decided freely</td>
<td>• Customers are active participants in deciding the volume of customer relationship</td>
</tr>
<tr>
<td></td>
<td>• Return optimization at a given risk level is investor’s only objective</td>
<td>• Firms may have other objectives in addition to return optimization</td>
</tr>
</tbody>
</table>
5 CHALLENGES IN USING DISCOUNTED CASH FLOW MODELS IN CUSTOMER ASSET MANAGEMENT

As explained earlier, most customer asset management frameworks are not based on modern portfolio theory but on customer lifetime value calculations. However, many of the identified challenges in applying modern portfolio theory to customer relationships are also relevant when considering discounted cash flow models – and thus CLV applications.

First, the challenges related to the interconnectedness of customer relationships are also relevant when discussing discounted cash flow models and CLV calculations. Simple discounted cash flow models assume that various investment instruments are independent from each other. Even though in theory it is possible to create more advanced discounted cash flow models that acknowledge the sensitivity of cash flows to the possible changes in other customer relationships, modeling all possible ways to affect customer relationships and all possible reactions to these actions by both the targeted customers and other customers would in practice result in overly complex algorithms.

Second, similar to modern portfolio theory, discounted cash flow models and CLV applications also assume total freedom for firms regarding their resource allocation decisions. However, in reality there are considerable challenges in reallocating customer-specific resources and in ending customer relationships. Additionally, the acquisition-retention optimization suggested by several CLV models is significantly restrained by the fact that the risk and return of a prospective customer relationship are seldom known prior to initiating the relationship, and that customers are active participants in deciding the business volumes in the customer relationships. Finally, neither discounted cash flow models nor the existing CLV applications acknowledge that firms can have other objectives in addition to straight-forward return optimization.

In addition to above-mentioned logical challenges related to interconnectedness and resource allocation, other authors have pointed out other shortcomings of CLV models in customer asset management. First, various authors have brought forward the challenges involved in calculating CLV: assembling customer-level industry-wide customer data, selection of the appropriate model, extensive modeling, difficulty of including and predicting factors not related to the firm itself or its customers, assumption that customers are all equally risky and that risk is time invariant, difficulty of estimating the needed variables, and the challenges related to estimating the overall reliability and sensitivity of the results (Bell et al. 2002; Hogan et al. 2002a; Verhoef & Langerak 2002; Gupta & Lehmann 2003; Nasr Bechwati & Eshghi 2005). Second, studies conducted by Berger et al. (2003) as well as Malthouse and Blattberg (2005) indicate that current CLV models seem to have challenges in predicting future customer lifetime value accurately enough for business purposes. Third, there are reported managerial challenges in utilizing even properly calculated CLV information ranging from negative word-of-mouth associated with letting unprofitable customers go, disfavoring certain demographic segments, to applying marketing strategies that are inconsistent with corporate overall objectives (Nasr Bechwati & Eshghi 2005).
6 DISCUSSION

In recent years, a considerable conceptual development has taken place within customer asset management research: customer lifetime value (Dwyer 1989) has been accepted as the main method for estimating the value of customer assets, several calculation models for customer lifetime with varying levels of sophistication value have been proposed, customer asset has been conceptualized as the main construct linking marketing actions and firm performance (Stahl et al. 2003; Rust et al. 2004b), the link between customer lifetime value and firm market valuation has been empirically verified (Gupta & Lehmann 2003), and models have been proposed for guiding the allocation of marketing budget between acquisition and retention activities based on customers’ lifetime values (e.g. Blattberg & Deighton 1996; Berger & Nasr-Bechwati 2001; Reinartz et al. 2005).

Through these development steps, customer asset management research has provided some answers to the pursuit of balanced marketing-finance interface called for by Srivastava et al. (1998): customer asset management has provided language and measures for discussing customer relationships and their impact on firm performance across functional borders, to top management, and to the external investors. However, the ability to calculate accurately customer lifetime value or the ability to conceptually or empirically demonstrate the link between customer assets and shareholder value creation provides little guidance for an active management of customer relationships for increased shareholder value.

The findings of the present research indicate that customer asset management will not find the needed frameworks for managing customer relationships for improved shareholder value from financial theories. Both modern portfolio theory and discounted cash flow models have underlying assumptions that are incompatible with the characteristics of customer relationships. Modern portfolio theory applications can provide insights about the risk-return ratios of different customer relationships and CLV models can estimate the maximum amount of money to be used in retaining a particular customer relationship. However, none of the existing customer asset management frameworks can provide definitive suggestions on how to allocate resources between different customer relationships or which marketing actions to use in each relationship. The financial theories are created for managing money. Customer asset management, on the other hand, is aimed at managing customer relationships in order to make money. Therefore the financial theories or their applications do not grasp the complexity and dynamics of customer relationships. Luckily for both marketing academics and practitioners, marketing and customer relationship management cannot be reduced into mathematical algorithms.

7 MANAGERIAL IMPLICATIONS

Managerially, the present research provides insights for practitioners in two ways: regarding the use of existing customer asset management frameworks and the development of marketing metrics. First, the findings of the study indicate that all existing customer asset management frameworks, whether based on CLV calculations or modern portfolio theory, should be used mainly as information sources and not as resource allocation decision frameworks. Due to the fundamental differences between investment instruments and customer relationships, the models based on financial
theories are not likely to grasp the full spectrum of possibilities and limitations in managing customer relationships and thus the resource allocation recommendations of these models cannot be guaranteed to yield an optimal financial result. However, in certain specific contexts the use of the existing customer asset management can be recommended. First, if the aim is to calculate the value of the customer asset and not to manage it, then the current CLV models are likely to provide sufficient results. The valuation of the customer asset has become a true managerial task due to the new IFRS 3 accounting standard, which requires companies to assess the value of customer bases in acquisitions and to activate the value of the acquired customer base to the consolidated balance sheet. Second, as Gupta and Lehmann (2003) point out, the concepts and models of customer lifetime value originate in the field of direct and database marketing. Thus the use of CLV models in making resource allocation decisions can be justified in contexts where the number of available customer relationships is considerable and where the customer relationship management is more or less limited to promotions aimed at customer acquisition or retention.

Secondly, the findings of the present research provide interesting new ideas regarding the development of marketing metrics. There is a growing concern that marketing and customer-related issues are not discussed enough at top management level (McGovern et al. 2004). At the same time, the current use of marketing metrics at the board and CEO level seems relatively bleak. According to Ambler et al. (2004), the most popular marketing metrics to reach top management are very traditional: profitability, sales volume, and gross margin. Even though it is certain that top management has little use for unfiltered marketing data (McGovern et al. 2004), no marketing or customer metrics at top management level translates easily to no discussion on marketing or customers at top management level. Even though it was concluded that modern portfolio theory is not applicable for making customer relationship management decisions, the basic construct of modern portfolio theory such as return, risk, and risk-return ratio can be applied to customer relationship management. As these constructs have their roots in finance and shareholder value creation, they could be expanded into marketing metrics that are especially suitable for relaying information to cross-functional audiences such as the top management.

8 SUGGESTIONS FOR FURTHER RESEARCH

Even though the findings of the present research suggest that current finance-influenced customer asset management frameworks are unlikely to provide comprehensive and context-independent guidance regarding resource allocation for improved shareholder value, it should be concluded that customer asset management research has nothing more to provide to academic marketing. On the contrary, it is suggested that the existing customer asset management frameworks should be considered as the first development phase of customer asset management, conceptualizing the link between marketing actions and shareholder value as well as creating the needed language and concepts for managing the marketing-finance interface. For the next development phases, it is proposed that a more profound dialogue is initiated between customer asset management research and other marketing research paradigms, especially relationship marketing. Over the last three decades, several concepts and frameworks have been developed within relationship marketing research that could provide customer asset
management with the needed insights for outlining the entire spectrum of available customer asset management actions, the dynamics of customer relationships, and the possible ways to evaluate the outcomes of different resource allocation alternatives – both in financial and non-financial terms.
REFERENCES


Essay 2

CUSTOMER PORTFOLIOS IN CUSTOMER ASSET MANAGEMENT – EMPIRICAL COMPARISON OF CUSTOMER PORTFOLIO MODELS

Suvi Nenonen

2009

A previous version of the paper was presented in the Industrial Marketing & Purchasing Conference 2007
CUSTOMER PORTFOLIOS IN CUSTOMER ASSET MANAGEMENT – EMPIRICAL COMPARISON OF CUSTOMER PORTFOLIO MODELS

Abstract

Customer asset management has been presented as a potential bridge between firm performance and marketing. Even though customer asset management literature has evolved during the last years, the majority of the frameworks remain conceptual and not adopted by practitioners. It has been suggested that customer portfolio models could be an effective framework for customer asset management, especially in business-to-business relationships. The present study investigates the use of customer portfolio models in customer asset management by creating three alternative customer portfolio models aimed at providing a foundation for increasing firm performance. After the conceptual formulation, the customer portfolio models were evaluated empirically by using data from the same case study firm. The results of the study indicate that customer portfolio models incorporating economic profitability, customer relationship risks and business volume as portfolio dimensions provide insights for effective customer asset management in business-to-business contexts.

Key words: customer asset management, customer portfolio, firm performance
1 INTRODUCTION

In recent years, the importance of customer asset management or customer equity management has been widely acknowledged in marketing literature (e.g. Hogan et al. 2002b; Gupta & Lehmann 2003; Kumar et al. 2006; Rust et al. 2004), and it has been suggested that customer asset management could be the link between firm performance and marketing (e.g. Stahl et al. 2003; Gupta et al. 2004; Berger et al. 2006). Echoing this emphasis, for example the Marketing Science Institute has listed ‘impact of customer equity on firm value’ as one of their primary research priorities for 2006-2008.

The body of literature on customer asset management has increased considerably during the last few years. The majority of the existing customer asset management studies are based on the calculation of the customer lifetime value: either all customers in the customer base (e.g. Verhoef & Donkers 2001; Venkatesan & Kumar 2004) or the average customer in the customer base (Blattberg & Deighton 1996; Berger & Nasr 1998; Blattberg et al. 2001; Gupta & Lehmann 2003; Rust et al. 2004). After the calculation of the lifetime value, the present models continue to suggest how to optimize the value of the customer asset mathematically either via customer-level customer management concepts or by modifying the customer management concept on an aggregate level.

Yet, the majority of the proposed customer asset management frameworks remain as conceptual ones, not tested empirically. One reason for the lack of empirical research might relate to the fact that the customer lifetime value (CLV) based models, even though popular in academia, require extensive calculations based on substantial assumptions. Only a few researchers (e.g. Venkatesan & Kumar 2002; Johnson & Selnes 2004; Kumar et al. 2007) have presented the use of customer portfolios or segments as an intermediate use of analysis, even though customer portfolios could lessen both the estimation and customer management concept formulation burden often associated with more traditional, CLV-based, customer asset management models.

The present study investigates how customer portfolio models could be used in customer asset management. Customer portfolios relevant to customer asset management are formed when the customer relationships of a single firm are divided into customer portfolios based on the monetary value capture from these relationships. After the customer portfolios are formed, portfolio-specific customer management concepts are being created in order to direct customer asset management activities for an improved firm performance.

The use of customer portfolios in customer asset management creates a logical link to segmentation literature. There is a well-established body of research both on market segmentation (e.g. Wind 1978; Dickson & Ginter 1987; Piercy & Morgan 1993; Griffith & Pol 1994; Dibb & Simkin 2001; Sausen et al. 2005) and customer segmentation (Rangan et al. 1992; Storbacka 1997; Garland 2005; Helgesen 2006; Blocker & Flint 2007). Additionally, the topic of customer portfolios has also been investigated in the IMP Group (e.g. Fiocca 1982; Campbell & Cunningham 1983; Zolkiewski & Turnbull 2000, 2002). However, these lines of research have mostly been conducted separately. Understanding the similarities and differences between different segmentation and
relationship portfolio models could considerably enrich the understanding of the use of customer portfolios in customer asset management.

The purpose of the study can be divided into three parts: 1) discussing the existing customer and market segmentation models and the relationship portfolio models within the IMP literature in order to create a pre-understanding for creating customer portfolio models for customer asset management use, 2) creating alternative customer portfolio models with different levels of complexity, aimed at providing a foundation for increasing a firm’s performance, and 3) empirically evaluating the created customer portfolio models and exploring their differences.

The study is organized as follows: first, an overview of the current customer asset management literature is given. Second, the identified segmentation and relationship portfolio research traditions are discussed. Third, the use of customer portfolio models in customer asset management is discussed in more detail, leading to a proposed conceptual framework consisting of three alternative customer portfolio models. After this, the proposed customer portfolio models are evaluated empirically, using data from the same case study firm. Finally, the theoretical and managerial implications of the study are examined along with the limitations and suggestions for further research.

2 CUSTOMER ASSET MANAGEMENT – MAXIMIZING THE FINANCIAL VALUE CAPTURE FROM CUSTOMER RELATIONSHIPS

Customer asset management can be defined as the optimized use of a firm’s tangible and intangible assets in order to facilitate as profitable current and future customer relationships as possible (Hogan et al. 2002b). Even though the majority of the researchers seem to concur with a definition along similar lines, customer asset management is no cohesive school of thought. On the contrary, the very definition of the customer asset varies from one researcher to another. Blattberg and Deighton (1996) define customer asset as the sum of all discounted profits from all customers of the company. Hogan et al. (2002b) expand the definition made by Blattberg and Deighton (1996) by stating that a company’s customer asset is derivative of both the existing and potential customer assets. Both of these example definitions see that the customer asset is a figure, the amount of money that can be made from the current and prospective customer relationships. In this study it is proposed, however, that the customer asset is defined as the customer relationships the company has and will have with its customers. The relationship is a fruitful unit of analysis compared to a financial figure: by managing the relationship the financial outcome of the relationship can be affected.

The majority of the current customer asset management literature is built around the term of customer lifetime value (CLV). CLV as a term can be traced by to Dwyer (1989) and it is most commonly defined as the present value of the expected revenues less the costs from a particular customer. The majority of the existing CLV models are built around three basic elements: revenue from the customer, costs of serving the customer and customer retention rate. The more simplistic CLV models have later been extended to include e.g. sensitivity for cash flows that vary in timing and amount (Berger & Nasr 1998; Reinartz & Kumar 2000), customer risks (Hogan et al. 2002a;
Ryals & Knox 2005), different relationship types (Roemer 2006), networking and learning potential (Stahl et al. 2003), different levels of buyer-seller dependence (Roemer 2006), and factors like supply chain interactions (e.g. Niraj et al. 2001). Gupta et al. (2006) provide a comprehensive review of possible alternative approaches to calculating CLV: recency-frequency-monetary value models, probability models, econometric models, persistence models, computer science models, and diffusion/growth models.

However, various authors have pointed out that there are challenges associated to CLV models ranging from the calculation of the CLV, practical utilization of the CLV models, to the B2C emphasis of the CLV models. The challenges involved in calculating CLV are brought forward by Bell et al. (2002), Hogan et al. (2002a), Verhoef and Langerak (2002), Gupta and Lehmann (2003), and Nasr Bechwati and Eshghi (2005): assembling customer-level industry-wide customer data, selection of the appropriate model, extensive modeling, difficulty of including and predicting factors not related to the firm itself or its customers, assumption that customers are all equally risky and that risk is time invariant, difficulty of estimating the needed variables, and the challenges related to estimating the overall reliability and sensitivity of the results. Even if the above mentioned challenges are overcome, the underlying challenge associated with CLV models remains: how well does the past behavior of the customer predict his future behavior and thus lifetime value? Studies conducted by Berger et al. (2003) as well as Malthouse and Blattberg (2005) indicate that current CLV models seem to have challenges in predicting future customer lifetime value accurately enough for business purposes.

Several researchers have also been concerned about the relatively slow and sometimes misguided adoption of the CLV models by practitioners (e.g. Guilding & McManus 2002; Verhoef et al. 2002; Thomas et al. 2004). Gupta and Lehmann (2003) argue that in order to promote wider use of customer asset management among senior executives and investors, these frameworks should not require too laborious modeling or the existence of too complex and comprehensive customer data. Even a utilization of a properly calculated CLV information is not as straightforward as it might seem: e.g. Nasr Bechwati and Eshghi (2005) illustrate the managerial challenges involved in utilising the CLV information ranging from negative word-of-mouth associated with letting unprofitable customers go, disfavoring certain demographic segments, to applying marketing strategies that are inconsistent with corporate overall objectives. Finally, as Gupta and Lehmann (2003) point out that the concepts and models of customer lifetime value originate in the field of direct and database marketing – and the focus on this domain continues still. Therefore it can be argued that the use of customer asset management frameworks focusing mainly on customer retention and acquisition optimization are not optimally suited to a B2B context in which customer relationships are long-term in nature and the options to acquire new customer relationships are more limited than in a B2C context.

In addition to the CLV-based customer asset management literature, some researchers have taken the financial modern portfolio theory and the capital asset pricing model (CAPM) as the starting points for creating customer asset management frameworks (Hopkinson & Lum 2002; Ryals 2002; Dhar & Glazer 2003). In these models, the central concepts of financial modern portfolio theory and CAPM such as required
return, risk-free return, systematic (market) risk, and beta are applied to the context of customer relationships. One of the purest applications of CAPM to customer asset management has been made by Dhar and Glazer (2003). In their study, Dhar and Glazer (2003) calculate the customer betas by comparing the cash flows from an individual customer to the cash flows of the entire customer portfolio and depict an efficient frontier for customers.

Even though models influenced by the financial portfolio theory provide an interesting alternative to the more traditional CLV models, there are some challenges associated with them. First of all, the financial portfolio theory-influenced models have been less extensively studied than the CLV-based models. Additionally, the direct application of financial modern portfolio theory and CAPM to a customer relationship context is somewhat problematic. For example, the work done by Dhar and Glazer (2003) does not challenge the underlying assumptions of financial markets such as the relationship between risk and return. Additionally, the study assumes that customers or customer groups can be acquired and divested without too much difficulty and that there is no interconnectedness between customers. Even with the abovementioned limitations, the financial portfolio theory-influenced models are valuable in that they always acknowledge the risks involved in customer relationships and that they often take the capital costs associated with asset utilization into consideration – issues that are often neglected in the traditional CLV models.

Regardless of the school of thought, the core of customer asset management is directing the right customer asset management activities to the right customers in order to maximize the return from customer relationships. Kumar and George (2007) argue that there are two ways of directing customer asset management activities: aggregate and disaggregate. Adopting a disaggregate approach means conducting the needed calculations on an individual customer level and then directing the customer asset management activities through customer-level customer management concepts (e.g. Verhoef & Donkers 2001; Ryals 2003; Venkatesan & Kumar 2004). On the other hand, the use of an aggregate approach means that the calculations are conducted on a firm level (e.g. average CLV within a firm) and that the activities are directed by a firm-level customer management concept affecting the drivers of the customer asset (e.g. pricing, promotion, loyalty programs, channel choices). Examples of an aggregate approach are presented by e.g. Blattberg and Deighton (1996), Berger and Nasr (1998), Blattberg et al. (2001), Gupta and Lehmann (2003) and Rust et al. (2004).

In addition to the aggregate and disaggregate approaches, there is also a third way of directing customer asset management activities: the customer portfolio approach. In the customer portfolio approach the needed calculations are conducted on the customer level. Based on this information, customers are divided into customer portfolios and the customer asset management activities are directed based on portfolio-specific customer management concepts. The segment approach has several benefits: portfolio-level customer management concepts are more cost-efficient than customer-level customer management concepts but they allow more differentiation options than firm-level customer management concepts. Additionally, the customer portfolio approach is not limited to the use of CLV calculations – even though it does not exclude its use either. As several researchers (e.g. Reinartz & Kumar 2000, 2003; Verhoef & Donkers 2001; Bell et al. 2002; Venkatesan & Kumar 2002) have included customer portfolios or
segments in their customer asset management frameworks, it can be concluded that customer portfolios could be a viable customer asset management framework in addition to the existing CLV models. Echoing this development, Blocker and Flint (2007) suggest that CLV and segmentation approaches should be developed in parallel, especially in B2B contexts where the development of CLV applications seems to have been lagging behind the development steps taken in B2C sector.

Table 1 summarizes the above-presented overview of the customer asset management literature.

Table 1 Overview of the customer asset management literature

<table>
<thead>
<tr>
<th>Main background in financial theory</th>
<th>CLV-models</th>
<th>Financial portfolio theory influenced models</th>
</tr>
</thead>
<tbody>
<tr>
<td>Discounted cash flow models / project finance</td>
<td>Modern portfolio theory &amp; capital asset pricing model</td>
<td></td>
</tr>
<tr>
<td>Disaggregate approach (examples)</td>
<td>• Verhoef &amp; Donkers (2001)</td>
<td>• Hopkinson &amp; Lum (2002)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Dhar &amp; Glazer (2003)</td>
</tr>
<tr>
<td>Aggregate approach (examples)</td>
<td>• Blattberg &amp; Deighton (1996)</td>
<td>not available / not applicable?</td>
</tr>
<tr>
<td></td>
<td>• Berger &amp; Nasr (1998)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Rust, Lemon &amp; Zeithaml (2004)</td>
<td></td>
</tr>
<tr>
<td>Customer portfolio approach</td>
<td>• Reinartz &amp; Kumar (2003)</td>
<td>not available</td>
</tr>
<tr>
<td></td>
<td>• Venkatesan &amp; Kumar (2002)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Gupta &amp; Lehmann (2005)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Kumar, Petersen &amp; Leone (2007)</td>
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</table>

3 THE ORIGINS AND APPLICATIONS OF CUSTOMER PORTFOLIO MODELS

Before proceeding to a more thorough investigation of the use of customer portfolio models in customer asset management, the existing customer portfolio models in other research traditions should be reviewed. It is possible to identify three different terms which all aim at dividing the customer base into smaller and more informative sections in order to facilitate better decision-making, strategy creation, and resource allocation: market segmentation, customer segmentation, and relationship portfolios.

All three concepts have common roots in cluster analysis. The goal of the majority of cluster analysis procedures is to find groups which are both internally cohesive (homogeneous) and externally isolated (heterogeneous) (e.g. Cormack 1971; Anderberg 1973). Therefore, the ultimate segments or portfolios are as different as possible from each other, but as homogeneous as possible within. Traditionally, dividing the current and potential customers into smaller groups is an effort made to tackle the demand
heterogeneity inherent in all markets. The idea of using segmentation to match the heterogeneous need in the market with the heterogeneous resources of the firm was already discussed by Alderson (1957, 1965), and more recently by Hunt and Morgan (1995) and Priem (1992).

The first segmentation studies were inspired by economics: they concentrated on matching and manipulating the demand in the markets with the available supply from the firm (e.g. Smith 1956; Alderson 1957, 1965). Following this emphasis, Dickson and Ginter (1987:5) define market segmentation as follows: “Market segmentation is a state of demand heterogeneity such that the total market demand can be disaggregated into segments with distinct demand functions. Each firm’s definition, framing, and characterization of this demand heterogeneity will likely be unique and form the basis for the firm’s marketing strategy.” From this definition it is important to notice two important features of market segmentation studies. First of all, market segmentation research concentrates on the overall demand in the markets: the aggregate demand is seen as more relevant that the current customer base of the firm. Secondly, the market segmentation forms the segments based on the demand functions, or in other words the utility functions, of the customers. If value that is co-created in a customer relationship is divided into value capture (the value to the provider) and value creation (value to the customers), it can be said that market segmentation research is mainly interested in the value creation (for more detailed discussion on value co-creation, please refer to Payne et al. 2008). Examples of market segmentation studies can be found from e.g. Wind (1978), Dickson and Ginter (1987), Piercy and Morgan (1993), Griffith and Pol (1994), Dibb and Simkin (2001), as well as Sausen et al. (2005).

Customer segmentation studies differ from market segmentation in that the analyses are primarily limited to the customer base of a particular firm: segmentation is conducted to understand the need heterogeneity present in the customer base (e.g. Albert 2003; Badgett & Stone 2005; Ulaga & Eggert 2006). Even though the concept of a customer base can be extended to cover both the existing and potential customers of a firm, the analyses are not conducted on an aggregate market level. Traditionally, customer segmentation research focuses on value creation – similar to market segmentation. Due to their similar origins and assumptions, the line between market and customer segmentation studies is relatively fine; in fact, many studies refer merely to ‘segmentation research’, making no difference whether the market or the customer base is subject to segmentation. However, especially in industrial markets the difference between the market and the firm’s customer base can sometimes be of considerable importance.

The product-orientation of early marketing inspired the creation of relationship marketing that considers the customer or the customer relationship as the main unit of analysis (e.g. Shostack 1977; Berry 1983; Grönroos 1990, 1994; Gummesson 1994). Relationship marketing has also produced segmentation and portfolio models that reflect this customer-orientation. Especially the researchers within the Industrial Marketing and Purchasing Group (IMP) have investigated the use of relationship portfolios. Krapfel et al. (1991) and Leek et al. (2006) propose relationship typologies that help in choosing the appropriate relationship management mode. Fiocca (1982) and Campbell and Cunningham (1983) utilize customer portfolio analysis to support industrial (marketing) strategy development. Olsen and Ellram (1997) as well as
Bensaou (1999) created portfolio frameworks to support effective supply chain management. Dickson (1983) created a framework for distributor portfolio analyses that can be used to understand and manage better the power dynamics in distribution channels. The relationship portfolios differ from market and customer segmentation models also in respect of the value focus: relationship portfolios are also interested in the value capture from the customer relationships (the value to the provider) as opposed to value creation to the customers. Therefore, the IMP-originated portfolio models are aimed at describing the relationship base, gaining better understanding of the relationship base, and/or providing tools for the management and measurement of the relationship base. For overviews of the IMP-originated portfolio models, please see e.g. Zolkiewski and Turnbull (2000, 2002) and Sanchez and Sanchez (2005).

It is important to notice that the terminology around segmentation and portfolio models is not commonly determined and agreed upon. Therefore it is worth elaborating on what the term ‘customer portfolio’ denotes in this study. The present study concurs with the fundamental notions that the objective of creating portfolios is to find groups which are both internally homogeneous and externally heterogeneous (e.g. Cormack 1971; Anderberg 1973). Additionally, in this study the portfolio creation efforts are directed towards the customer base of a firm – thus leaving the ‘market’ and the potential customer relationships within it outside the scope of the portfolio model. However, as the aim of the research is to create a framework for managing business-to-business customer relationships as an investment portfolio for improved shareholder value, the portfolio models relevant to this study focus on the monetary value capture from the customer relationships or issues directly influencing the monetary value capture. Thus, in the present study portfolio models are used as a conceptual framework unveiling clusters within a customer base, each having a different effect on the shareholder value creation of the firm. These customer portfolios are then used as a framework for guiding resource allocation decisions for improved shareholder value creation.

4 CUSTOMER PORTFOLIO MODELS IN CUSTOMER ASSET MANAGEMENT – AN ALTERNATIVE FRAMEWORK FOR MANAGING CUSTOMER RETURN AND RISK

The following Table 2 summarizes the customer portfolio models that can logically be linked to the customer asset management research tradition: i.e. they build upon the existing customer asset management literature, or they include as dimensions or are explicitly aimed at increasing customer lifetime value, customer profitability, customer equity, or shareholder value.
Several sub-groups can be identified from the identified customer portfolio models by looking into their origins. Several customer portfolio models directly associated with the customer asset management research tradition utilize the CLV model as the basis for their portfolio model: Reinartz and Kumar (2000), Hansotia (2004) and Thomas et al. (2004) use CLV as the main influencer of their models while others complement CLV thinking with other theoretical influences - Reinartz and Kumar (2003) complement CLV with customer lifetime duration literature while Johnson and Selnes (2004) combine CLV and exchange relationship development literature. Another distinct group
of customer portfolio models are being built on customer profitability research (Shapiro et al. 1987; Storbacka 1994, 1997; Niraj et al. 2001; Ang & Taylor 2005). The third cluster of customer portfolio models comes from the domains of the IMP Group (Dubinsky & Ingram 1984; Turnbull & Zolkiewski 1997). Finally, several customer portfolio models are being built on the general segmentation research (Rangan et al. 1992; Elliott & Glynn 1998). The wide variety in the theoretical foundations of different customer portfolio models can be explained by the selection criteria used to select customer portfolio models relevant to the present study: objectives such as increasing customer lifetime value, customer profitability, customer equity, or shareholder value can be argued to be common for all marketing researchers and practitioners, and therefore the same issue has been approached from various starting points.

As the overall objective of customer asset management is to facilitate as profitable current and future customer relationships as possible (Hogan et al. 2002b), also the customer portfolio models should provide assistance in managing two aspects of customer relationships: return from customer relationships and the risks associated with this return.

With only one exception (Johnson & Selnes 2004), all identified portfolio models include some indicator of return from customer relationships as one of the portfolio dimensions. The analysis of the customer portfolio models reveals several proxies that can be used to operationalize return from customer relationships: revenue from customers (Hansotia 2004), price or net price (Shapiro et al. 1987; Rangan et al. 1992; Turnbull & Zolkiewski 1997), margin or profit contribution (Dubinsky & Ingram 1984; Ang & Taylor 2005), profitability (Storbacka 1994, 1997; Elliott & Glynn 1998; Niraj et al. 2001; Zeithaml et al. 2001; Reinartz & Kumar 2002; Garland 2005), customer lifetime value (Reinartz & Kumar 2000, 2002), economic profitability (Storbacka 2006), and the overall value of customers to the firm (Venkatesan & Kumar 2002, 2007). Some researchers approach the return from customer relationships from the cost perspective, analyzing the cost to serve customers (Shapiro et al. 1987; Rangan et al. 1992) or the acquisition and retention costs (Thomas et al. 2004).

The treatment of the other important variable in customer asset management, risk, varies considerably in the identified customer portfolio models. In the present study three customer portfolio dimensions are categorized as having the characteristics of a risk proxy: customer lifetime, profitable customer lifetime, and share of wallet. The most commonly used proxy of risk is customer lifetime (Reinartz & Kumar 2000, 2002; Ang & Taylor 2005; Garland 2005) or profitable customer lifetime or duration (Reinartz & Kumar 2003; Storbacka 2006). Also the use of share of wallet as one of the customer portfolio dimensions can be considered to illustrate the risk level of the customer relationship (Venkatesan & Kumar 2002). Even though it can be argued that the most sophisticated CLV calculations acknowledge the risk differences between various customers, given the various alternatives to calculate the CLV in practice it would be daring to suggest that the mere use of CLV as a customer portfolio dimension fulfils the need to understand customer risks fully. Therefore it can be stated that the majority of the identified customer portfolio models do not explicitly address the risk associated with the customer relationships – even though the concept of risk is considered as one
of the key concept of both customer asset management and financial modern portfolio theory.

5 CONCEPTUAL FRAMEWORK

The aim of the study is to create alternative customer portfolio models with different levels of complexity, aimed at providing a foundation for increasing firm performance, and to evaluate them empirically. The notion that improving firm financial performance is the main objective of marketing has been acknowledged by various researchers (e.g. Day & Fahey 1988; Srivastava et al. 1998; Doyle 2000; Zou & Cavusgil 2002; Kumar & Petersen 2005). There are, however, several different measures for assessing firm performance, ranging from discounted future cash flows (e.g. Black et al. 1998; Rappaport 1998) to Tobin’s q (Tobin 1969; Lewellen & Badrinath 1997; Anderson et al. 2004). In this paper it is argued that the optimal firm financial performance is ultimately judged by the shareholders of the firm. Thus, the optimal firm financial performance is reached when the shareholder value is maximized in the long-term. To put it simply, shareholder value is created when a company generates earnings on invested capital in excess of the cost of capital adjusted for risk and time (e.g. Stewart 1991; Black et al. 1998; Rappaport 1998). In the current study, economic profit was chosen as the proxy of firm performance and return from customer relationships due to its favorable characteristics: it acknowledges both the operating and financial expenses, it allows individual customer relationship level analysis, and empirical evidence shows that positive economic profit leads to an increase in shareholder wealth (Bacidore et al. 1997; Kleiman 1999). Therefore, all proposed three customer portfolio models have economic profit as one of their fundamental dimensions.

The three evaluated customer portfolio models are of different levels of complexity. The first one, cumulative absolute return model, is based on the cumulative economic profit contribution analysis, building on the work done by Storbacka (2000) on customer profitability. The cumulative economic profit contribution analysis is relatively simple: the economic profit created by each customer is calculated and customers are placed in descending order – starting with the customer with the largest economic profit and finishing with the customer with the lowest economic profit.

The cumulative absolute return model results in three different portfolios: portfolio 1 of customers with the highest economic profit contribution, portfolio 2 of customers with economic profit contribution close to zero, and portfolio 3 of customers with negative economic profit contribution. It is projected that both portfolios 1 and 3 consist of customer relationships with relatively large business volumes, whereas portfolio 2 is expected to contain small business volume customer relationships. This assumption is based on the findings by Storbacka (1997), which indicate that the profitability dispersion in the customer base increases as a function of relationship volume. Figure 1 illustrates the cumulative absolute return model.
Cumulative economic profit contribution of customers

Customers arranged according to absolute economic profit

Portfolio 1
High contribution, high volume

Portfolio 2
Low contribution, low volume

Portfolio 3
Negative contribution, high volume

Figure 1 Cumulative absolute return model

The cumulative absolute return model, however, lacks the risk dimension called by the premises of customer asset management and financial modern portfolio theory. In the two remaining customer portfolio models the need to assess risks is solved in alternative ways. The second customer portfolio model, *relative return-volatility-volume model*, is a direct descendant of financial modern portfolio theory (Markowitz 1952) with its dimensions of relative economic return (i.e. economic profit percentage), economic profit volatility, and sales volume. In this customer portfolio model the risk is assessed by the volatility of the absolute economic profit: thus it can be said that this customer portfolio model defines risk as the unpredictability of cash flows from customer relationships.

It is important to notice, that the relative return-volatility-volume model deviates from the return-variance model proposed by Markowitz (1952) with one notable exception: it separates ‘return’ into relative return level (economic profitability) and absolute business volume (sales volume). This deviation is needed due to the innate differences of customer relationships and investment instruments as investment targets. According to financial modern portfolio theory, it is possible to identify one single efficient investment portfolio that maximizes the return on a given risk level. Based on this information, the investor makes sovereign decisions on investment volume, investment instrument acquisitions, and on investment instrument divestments in order to reach the optimal portfolio. These fundaments of efficient markets do not, however, apply to customers as investment targets as both the volume in customer relationships as well as the acquisition of new or termination of old customer relationships depends both on the company and the customer. Due to these limitations, a purely mathematical optimization of the entire customer base is impossible. The relative return-volatility-volume customer portfolio model generates eight different portfolios with different combinations of relative return, volatility and volume levels; e.g. low return + low volatility + low volume portfolio, high return + high volatility + high volume portfolio and so forth. The relative return-volatility-volume model is illustrated in Figure 2.
The third customer portfolio model, \textit{relative return-duration model}, uses the same indicator of relative return (i.e. economic profit percentage) as the relative return-volatility-volume model. However, in this customer portfolio model the risk is illustrated by a concept of duration. The concept of duration or profitable customer duration has earlier been presented by Reinartz and Kumar (2003) and Storbacka (2006). In this study, duration is defined to be an approximation of the time over which the firm expects to maintain positive economic profitability in a particular customer relationship. Therefore this customer portfolio model defines risk as the probability of fostering profitable customer relationships. As it is not possible to create a mathematical formula that calculates the actual duration in terms of time for all customer relationships, the duration has to be estimated by using an index as a proxy. A suitable duration index would consist of measures related to risks related to the customer relationship.

The relative return-duration model creates four different portfolios. Portfolio 1 consists of customers with high relative return and low estimated duration whereas portfolio 2 contains customer with high relative return and high estimated duration. Portfolio 3 is composed of customer with low relative return and low estimated duration. Finally, portfolio 4 consists of customers with low relative return and high estimated duration. Figure 3 illustrates the relative return-duration model.
Finally, the three proposed customer portfolio models are summarized in Table 3.

**Table 3 Summary of the proposed customer portfolio models**

<table>
<thead>
<tr>
<th></th>
<th>Cumulative absolute return model</th>
<th>Relative return-volatility-volume model</th>
<th>Relative return-duration model</th>
</tr>
</thead>
<tbody>
<tr>
<td>Return dimension</td>
<td>Absolute economic profit</td>
<td>Relative economic profitability</td>
<td>Relative economic profitability</td>
</tr>
<tr>
<td>Risk dimension</td>
<td>N/A</td>
<td>Volatility of absolute economic profit</td>
<td>Duration of positive economic profitability</td>
</tr>
<tr>
<td>Business volume</td>
<td>N/A</td>
<td>Absolute turnover</td>
<td>N/A</td>
</tr>
</tbody>
</table>

**6 EMPIRICAL RESEARCH**

There are three main reasons for conducting an empirical comparison of the proposed customer portfolio models. First, creating the customer portfolios with real customer data should point out the potential challenges involved in operationalizing the proposed customer portfolio models. Second, empirical investigation should provide insights into whether customers are allocated to similar portfolios in all customer portfolio models. Third, empirical research should give information about customer portfolio model dimensions: what dimensions could be used in a customer portfolio model aimed at increasing firm performance?

The empirical material was gathered in one case study firm, operating internationally in forestry products business and headquartered in Europe. The study focused on a customer base of 1094 individual B2B customers served by six different factories. The investigation period was two years, from the beginning of 2005 to the end of 2006. The empirical material was gathered from two main sources. The customer specific
information on sales volumes, tonnages and earnings before depreciation, interests and taxes (EBDIT) was collected from the corporate databases. The information needed to create the duration index for the relative return-duration model was collected by questionnaires sent to 52 sales managers. The return rate of questionnaires was 100%.

The three alternative customer portfolio models proposed in the conceptual framework were evaluated with the same data from the case study firm. The empirical research deviated from the conceptual framework only on one occasion: instead of economic profit proposed in the conceptual framework as the proxy of firm financial performance, in the case study earnings before depreciation, interests and taxes (EBDIT) were used instead. This deviation from the conceptual framework was imposed by the inconsistent data on physical asset value: some of the physical assets had already been depreciated from the balance sheet and there was no consistent approach within the case study company to valuate such assets. In the absence of reliable asset valuation, the calculation of economic profit was not feasible. This challenge was taken into account by estimating an EBDIT percentage (EBDIT 19%) that corresponds with an economic profit level of zero. This was then used to recalibrate the customer portfolio models in such a way that they illustrate the economic profit creation of the customer base, even though the actual economic profit was not calculated.

The customer portfolio models were created by using data from 438 customers. 656 customers were omitted from the analysis for any of the following three reasons. First of all, some customers were omitted from the analysis as their purchases from the case study firm were too small and irregular for the sales managers to conduct a reliable duration index assessment for the relative return-duration models. The second reason for omission emerged if the customer had started the business with the case study firm during the investigation period. Third, only those customers that were active during the entire investigation period were included in the analysis. In order to compare to which kinds of portfolios the individual customers were allocated based on the different models, 20 test customers were selected randomly from the customer base. The allocation of these test customers in different models was later analyzed.

*Cumulative absolute return model*

The total EBDIT contribution of the customer base in 2006 was 167,469,334 euro. The portfolio (high contribution, high volume) consisted of the customers who contributed to the cumulative EBDIT growth by at least 0.2 percent (107 customers). The third portfolio (negative contribution, high volume) consisted of the customers whose EBDIT contribution was negative (30 customers). The second portfolio (low contribution, low volume) consisted of the customers with a contribution to the cumulative EBDIT growth of between 0.19 and 0.0 percent (301 customers). The resulting portfolios of the cumulative absolute return model are illustrated in Table 4.
Table 4 Summary of the cumulative absolute return model

<table>
<thead>
<tr>
<th>Portfolio</th>
<th># of customers</th>
<th>Total EBDIT</th>
</tr>
</thead>
<tbody>
<tr>
<td>1: High contribution, high volume</td>
<td>107</td>
<td>147 247 073</td>
</tr>
<tr>
<td>2: Low contribution, low volume</td>
<td>301</td>
<td>24 952 666</td>
</tr>
<tr>
<td>3: Negative contribution, high volume</td>
<td>30</td>
<td>-4 730 405</td>
</tr>
</tbody>
</table>

Relative return-volatility-volume model

When forming the relative return-volatility-volume model, decisions had to be made about the threshold values of relative return, volatility and volume: when would a figure be deemed “low” and when “high”. In the study, the relative return was measured with an EBDIT percentage. An EBDIT level of 19% was selected as the threshold value as this was estimated to be equivalent to the economic profit level of 0%. Therefore all customer relationships generating an EBDIT above 19% were estimated to contribute positively to overall economic profit creation. The volatility, the measure of risk in this model, could not be calculated from only two data points in time. Therefore the volatility was substituted with a measure calculating the change in absolute EBDIT from year 2005 to 2006. As the nature of the case firm’s business is rather irregular, customer relationships with an EBDIT change exceeding 75% were regarded as high risk relationships. Finally, turnover was chosen as the proxy of business volume. The mean value of turnovers generated by the analyzed customer relationships was 2,919,176 euro in 2006. All customer relationships generating a turnover below this threshold level were regarded as low volume relationships. The resulting portfolios of the relative return-volatility-volume model are illustrated in Table 5.

Table 5 Summary of the relative return-volatility-volume model

<table>
<thead>
<tr>
<th>Portfolio</th>
<th># of customers</th>
<th>Total EBDIT</th>
</tr>
</thead>
<tbody>
<tr>
<td>1: High relative return, high volatility, high volume</td>
<td>17</td>
<td>61 249 664</td>
</tr>
<tr>
<td>2: High relative return, low volatility, high volume</td>
<td>1</td>
<td>909 650</td>
</tr>
<tr>
<td>3: High relative return, low volatility, low volume</td>
<td>25</td>
<td>5 140 471</td>
</tr>
<tr>
<td>4: High relative return, high volatility, low volume</td>
<td>30</td>
<td>10 584 410</td>
</tr>
<tr>
<td>5: Low relative return, low volatility, low volume</td>
<td>95</td>
<td>8 382 665</td>
</tr>
<tr>
<td>6: Low relative return, high volatility, low volume</td>
<td>197</td>
<td>12 563 004</td>
</tr>
<tr>
<td>7: Low relative return, high volatility, high volume</td>
<td>61</td>
<td>60 507 256</td>
</tr>
<tr>
<td>8: Low relative return, low volatility, high volume</td>
<td>12</td>
<td>8 132 214</td>
</tr>
</tbody>
</table>
**Relative return-duration model**

When creating the relative return-duration model, the same judgment was made concerning the threshold level for an economic profit percentage as in a relative return-volatility-volume model: all customer relationships generating an EBDIT above 19% were regarded as high relative return relationships. The duration of customer relationships was estimated by creating an index illustrating the strength of customer relationships and risks involved in them. In this particular case the duration was assessed by looking into 10 parameters: payment behavior, credit rating, production fit, inventories kept by the case firm for the customer, share of customer’s business volume, relationship strength, openness towards cooperation and information sharing, contact level at the customer, customer’s purchase behavior, and number of product types purchased. All parameters were given a score from 1 to 5. The index was calculated by giving equal weights to all parameters. In the study it was decided that the top 33% of customer relationships based on the duration index were deemed as high duration customer relationships while the remaining 67% were labeled low duration relationships. The resulting portfolios of the relative return-duration model are illustrated in Table 6.

**Table 6 Summary of the relative return-duration model**

<table>
<thead>
<tr>
<th>Portfolio</th>
<th># of customers</th>
<th>Total EBDIT</th>
</tr>
</thead>
<tbody>
<tr>
<td>1: High relative return, low duration</td>
<td>50</td>
<td>48 886 739</td>
</tr>
<tr>
<td>2: High relative return, high duration</td>
<td>23</td>
<td>28 997 456</td>
</tr>
<tr>
<td>3: Low relative return, low duration</td>
<td>240</td>
<td>40 473 666</td>
</tr>
<tr>
<td>4: Low relative return, high duration</td>
<td>125</td>
<td>49 111 473</td>
</tr>
</tbody>
</table>

**Comparison of customer portfolio models**

All the created alternative customer portfolio models were evaluated with the data from the single case study firm. This enabled effective comparison of the chosen portfolio models: it was possible to compare to which kinds of portfolios the individual customers were allocated based on the different models. The summary illustrating the allotted portfolios for the randomly selected 20 test customers is presented in Table 7.
Table 7 Comparison of different customer portfolio models

<table>
<thead>
<tr>
<th>Customer</th>
<th>Cumulative absolute return model</th>
<th>Relative return-volatility-volume model</th>
<th>Relative return-duration model</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>2</td>
<td>Low-High-Low</td>
<td>Low-Low</td>
</tr>
<tr>
<td>B</td>
<td>2</td>
<td>Low-Low-Low</td>
<td>Low-Low</td>
</tr>
<tr>
<td>C</td>
<td>2</td>
<td>Low-High-Low</td>
<td>Low-Low</td>
</tr>
<tr>
<td>D</td>
<td>2</td>
<td>Low-Low-Low</td>
<td>Low-High</td>
</tr>
<tr>
<td>E</td>
<td>2</td>
<td>Low-High-Low</td>
<td>Low-Low</td>
</tr>
<tr>
<td>F</td>
<td>2</td>
<td>High-Low-Low</td>
<td>High-High</td>
</tr>
<tr>
<td>G</td>
<td>2</td>
<td>Low-High-Low</td>
<td>Low-High</td>
</tr>
<tr>
<td>H</td>
<td>3</td>
<td>Low-High-High</td>
<td>Low-Low</td>
</tr>
<tr>
<td>I</td>
<td>2</td>
<td>Low-High-Low</td>
<td>Low-Low</td>
</tr>
<tr>
<td>J</td>
<td>2</td>
<td>Low-Low-Low</td>
<td>Low-Low</td>
</tr>
<tr>
<td>K</td>
<td>2</td>
<td>Low-High-Low</td>
<td>Low-High</td>
</tr>
<tr>
<td>L</td>
<td>2</td>
<td>Low-High-Low</td>
<td>Low-High</td>
</tr>
<tr>
<td>M</td>
<td>2</td>
<td>Low-Low-Low</td>
<td>Low-Low</td>
</tr>
<tr>
<td>N</td>
<td>2</td>
<td>Low-High-Low</td>
<td>Low-Low</td>
</tr>
<tr>
<td>O</td>
<td>2</td>
<td>Low-Low-Low</td>
<td>Low-High</td>
</tr>
<tr>
<td>P</td>
<td>2</td>
<td>Low-High-Low</td>
<td>Low-High</td>
</tr>
<tr>
<td>Q</td>
<td>2</td>
<td>Low-High-Low</td>
<td>Low-High</td>
</tr>
<tr>
<td>R</td>
<td>2</td>
<td>Low-Low-Low</td>
<td>Low-Low</td>
</tr>
<tr>
<td>S</td>
<td>1</td>
<td>Low-High-Low</td>
<td>Low-High</td>
</tr>
<tr>
<td>T</td>
<td>3</td>
<td>Low-High-Low</td>
<td>Low-Low</td>
</tr>
</tbody>
</table>

As can be seen from Table 7, there are some differences between the different customer portfolio models. First, test customers F, S and T seem to indicate challenges with the cumulative absolute return model. Test customer F is allocated to portfolio 2 (“low contribution, low volume”) even though the relative return of customer F is high. On the other hand, test customers S and T are allocated to portfolios 1 (“high contribution, high volume”) and 3 (“negative contribution, high volume”) respectively, even though both customer relationships yield actually low business volumes. These findings illustrate the fact that the profitability or economic profitability of large-volume customer relationships can be close to zero: profitability and turnover do not necessarily correlate. It could, therefore, be considered that both relative profitability and absolute profitability / business volume should be included in the customer portfolio model to ensure a more comprehensive view on the customer relationships in the customer base.
The most interesting findings come, however, from a comparison of the relative return-volatility-volume model and the relative return-duration model. As both customer portfolio models assessed relative return with an EBDIT percentage, there are no differences among the test customers regarding the relative return dimension. However, the comparison of the risk dimensions of the two customer portfolio models brings surprising findings. In the conceptual framework, the volatility of the absolute economic profit was used to indicate future risks involved in the customer relationships in the relative return-volatility-volume model. In the relative return-duration model the customer relationship risks were assessed by a duration index. Even though both risk indicators categorized more or less the same number of customer relationships to be low risk (volatility: 133 low-risk customer relationships; duration: 148 low-risk customer relationships), the indicators label different customer relationships as low-risk or high-risk ones. A more detailed breakdown of the risk assessments made by the relative return-volatility-volume model and relative return-duration model is presented in Table 8.

Table 8 Comparison of risk categorization by relative return-volatility-volume model and relative return-duration model

<table>
<thead>
<tr>
<th>Relative return-volatility-volume model</th>
<th>Relative return-duration model</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low risk (Volatility)</td>
<td>Low risk (Duration)</td>
</tr>
<tr>
<td>44</td>
<td>44</td>
</tr>
<tr>
<td>High risk (Volatility)</td>
<td>High risk (Duration)</td>
</tr>
<tr>
<td>104</td>
<td>104</td>
</tr>
<tr>
<td>133</td>
<td>133</td>
</tr>
<tr>
<td>305</td>
<td>305</td>
</tr>
</tbody>
</table>

As the risk indicators of relative return-volatility-volume models and relative return-duration model give such contradictory findings that cannot be explained with simple correlations between duration and business volume or other, it can only be stated that thorough longitudinal research is needed to investigate which risk measure, economic profit volatility or duration, has most predictive power when estimating customer relationship risks and profitable customer lifetime.

7 DISCUSSION

The need to establish the link between marketing and firm performance is unlikely to grow any less important in the future. Several authors (e.g. Stahl et al. 2003; Gupta et al. 2004; Berger et al. 2006) have proposed that customer asset management could be the needed link between marketing and firm performance. The present study investigated the use of customer portfolio models in customer asset management by creating three alternative customer portfolio models that were all aimed at providing a foundation for improving firm performance. After the conceptual formulation, the customer portfolio models were evaluated empirically by using data from the same case study firm.

The present study contributes to the current discussion on customer asset management in three ways: how marketing’s contribution to firm performance should be measured, what kind of customer portfolio models can be used to direct customer asset
management activities, and how to incorporate risk of customer relationships into customer asset management.

First, the present study investigated various measures for firm performance ranging from discounted future cash flows (e.g. Black et al. 1998; Rappaport 1998) to Tobin’s q (Tobin 1969; Lewellen & Badrinath 1997; Anderson et al. 2004). It was concluded that the optimal measure to indicate marketing’s contribution to firm performance should acknowledge both the operating and financial expenses and allow individual customer relationship level analyses. Due to these requirements, economic profit was chosen as the proxy of marketing’s impact on firm performance and return from customer relationships.

Second, the present study provided new insights into the customer portfolio approach of directing customer asset management activities. The present study concluded that the customer portfolio approach has benefits over the more dominant CLV-based customer asset management approaches: segment-level customer management concepts are more cost-efficient to formulate than customer-level customer management concepts but they allow more differentiation options than firm-level customer management concepts. Even though several researchers (e.g. Reinartz & Kumar 2000, 2003; Verhoef & Donkers 2001; Venkatesan & Kumar 2002) have included customer portfolios or segments in their customer asset management frameworks, very few researchers have compared different customer portfolio models with the same empirical data (the study by Helgesen (2006) being one of the exceptions) as is done in this study.

Third, this study seeks to contribute to the academic discussion on customer risks in customer asset management. Customer relationship risk is still a relatively under-researched topic in a customer asset management context. Several researchers have proposed their own risk measures: customer lifetime (Reinartz & Kumar 2000, 2002; Ang & Taylor 2005; Garland 2005), profitable customer lifetime or duration (Reinartz & Kumar 2003; Storbacka 2006), risk-adjusted discount rates in CLV calculations (Ryals 2002, 2003; Ryals & Knox 2005) and systematic risk and customer beta (Dhar & Glazer 2003). However, as practically no studies have been conducted that compare the predictive power of different risk measures, no risk indicator can be said to have a dominant position in customer asset management literature.

8 MANAGERIAL IMPLICATIONS

Managerially, customer portfolios provide an interesting framework for customer asset management – especially in a B2B context as the current CLV applications often have an explicit or implicit B2C focus. As the empirical research illustrates, customer portfolios can be created in B2B customer bases with relative ease. However, when implementing customer portfolios it must be noted that customer portfolio model is a decision aid for managers and not a mechanistic tool: the roles of customers in the particular business logic have to be understood thoroughly before portfolio-specific customer management concepts can be created. For example, in certain businesses it might be good business sense to maintain relationships with unprofitable customers as they might be valuable as references or in helping to achieve the optimal capacity utilization rate of production facilities.
When selecting the appropriate customer portfolio model for implementation, the results of the present study indicate that the customer portfolio model should include at least dimensions of relative economic return and customer relationship risk. The relative economic return can be illustrated in a straightforward manner with an economic profit percentage. On the other hand, at the moment there are several alternatives for companies to assess customer relationship risks: customer lifetime, profitable customer lifetime or duration, risk-adjusted discount rates in CLV calculations, systematic risk and customer beta, and return volatility. The current study operationalized two customer relationship risk measures: volatility of absolute economic profit and duration index. The present study illustrated one potential implementation challenge related to the duration index. As it is not possible to create a mathematical formula that calculates the actual duration in terms of time for all customer relationships, the duration has to be replaced by a duration index, estimated by the management for each customer relationship separately. This can lead into a situation in which the management is unable to approximate a correct duration index estimate for each customer relationships – thus leaving some customer relationships outside the customer portfolio model. In addition to relative economic return and customer relationship risk dimensions, managers may want to consider complementing the customer portfolio model with a third dimension: absolute business volume. The business volume dimension should help in providing the needed insight for customer portfolio-specific customer management concept creation as it effectively illustrates the differences between the economic profitability and business volume of different customer relationships.

Additionally, marketing metrics that can be derived from customer portfolios created for customer asset management (e.g. economic profitability of customers, economic profit contribution of the customer base, risks in customer relationships) are more business-oriented than the traditional marketing metrics, thus supporting more efficient communication across functional borders and with top management.

9 LIMITATIONS AND SUGGESTIONS FOR FURTHER RESEARCH

Empirical data for the research was collected during a period of two years. Even though a research spanning two years can be considered a longitudinal study, the investigation period was too short to enable the calculation of volatility of absolute economic profit for the relative profit-volatility-volume model; thus in the empirical research volatility was substituted with a measure calculating the change in absolute EBDIT during the two years. Additionally, in the empirical research the economic profit dimension of all analyzed customer portfolio models was substituted with earnings before depreciation, interests and taxes (EBDIT). Even though it was possible to calculate the needed economic profitability level of 0% from the EBDIT information, in further studies the actual calculation of economic profit should be strived for. Finally, in order to conduct longitudinal comparisons between the three alternative customer portfolio models, the analysis was limited to less than 50% of case firm’s customer base. It is possible that analysis of the entire customer base could have yielded somewhat different results than presented in this study.
The present study also raises several interesting research questions. First of all, the contradictory empirical results of customer relationship risk indicators (economic profitability in relative return-volatility-volume model; duration in relative return-duration model) call for further longitudinal research. The entire concept of customer relationship risk requires elaboration: does customer relationship risk mean the unpredictability of cash flows as in finance (e.g. volatility as an indicator), the threat of customer relationship termination (e.g. relationship longevity as an indicator), or the probability of fostering profitable customer relationship (e.g. duration or profitable customer lifetime as an indicator)? After the concept of risk is defined in more detail, further research should be conducted to investigate which measure has the most predictive power when estimating customer risks and profitable customer lifetime. Additionally, the context or industry-specificity of risk indicators should be investigated further: are risk indicators universal or should each business context tailor its own indicators for risk. Second, the issue of portfolio-specific customer management concepts should be investigated further. Regardless of which customer portfolio model will later be found out to be the most suitable to be used in B2B contexts, overall prescriptive portfolio-specific customer management concepts would considerably support the tasks of practitioners when implementing customer asset management. However, before such prescriptive customer management concepts can be created, more research is needed in order to understand the different roles of customers in customer asset management. Currently, researchers widely acknowledge customers as a source of revenue and profits while some researchers also point out the importance of referrals (Kumar et al. 2007) and economies of scale (Johnson & Selnes 2004). However, a thorough understanding of the all relevant customer roles in customer asset management and of the interconnectedness of these roles is needed before prescriptive customer management concepts can be suggested to different customer portfolios in different customer portfolio models.
REFERENCES


Essay 3

THE ROLE OF CUSTOMER ASSET MANAGEMENT IN SHAREHOLDER VALUE CREATION – AN EMPIRICAL INVESTIGATION

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THE ROLE OF CUSTOMER ASSET MANAGEMENT
IN SHAREHOLDER VALUE CREATION
– AN EMPIRICAL INVESTIGATION

Abstract

The research described in this paper aims at creating a framework describing how customer asset management can influence both P&L and balance sheet drivers of shareholder value. Extant literature on customer asset management is mainly concerned with earnings as a driver of shareholder value, giving less attention to the other drivers (capital structure, risk). We argue that economic profit should be used as a measure of shareholder value creation as it acknowledges both the operating and financial expenses and allows individual customer relationship level analysis. Hence, the developed framework suggests that the drivers of shareholder value can be divided into four main categories: revenue, cost, asset utilization, and risk. In the article we identify thirteen distinct roles for customer asset management that influence the four shareholder value drivers. Furthermore, we report empirical research consisting of three longitudinal B2B case studies describing customer asset management aimed at improving shareholder value creation. The findings of the empirical research suggest that B2B firms are able to acknowledge all suggested four shareholder value drivers in customer asset management and that firms should differentiate their customer management concepts in order to move customer asset management beyond traditional acquisition-retention optimization.

Key words: customer asset management, shareholder value, customer management
1 INTRODUCTION

There is a growing concern that marketing and customer-related issues are not discussed enough at top management level (McGovern et al. 2004). Some researchers argue that this decline in marketing’s status within organizations originates in the lack of evidence that links marketing activity to shareholder value creation (Rust et al. 2004; Srivastava et al. 1999). Thus, in recent years various researchers have concluded that the main objective of marketing and marketing strategies is to improve a firm’s financial performance (e.g. Day & Fahey 1988; Srivastava et al. 1998; Doyle 2000; Zou & Cavusgil 2002; Kumar & Petersen 2005). Marketing Science Institute has also reacted to the issue by selecting e.g. the following research priorities for 2006-2008: integrating financial and non-financial performance metrics, the impact of marketing actions and marketing strategy on a firm value, and the impact of customer equity on firm value.

As a result of the efforts to link shareholder value and marketing, it has been suggested that customer relationships could be viewed as assets and that customer asset management could bridge the chasm between finance and marketing (Stahl et al. 2003; Gupta & Lehmann 2003; Rust et al. 2004). The first step towards using customer asset management in shareholder value management is to acquire a more thorough understanding of shareholder value as a concept: how is shareholder value assessed and how can customer asset management help in increasing shareholder value formation? Finance states that shareholder value is created when a company generates earnings on invested capital in excess of the cost of capital adjusted for risk and time (e.g. Stewart 1991; Black et al. 1998; Rappaport 1998). This definition implies that shareholder value can be increased by affecting company’s earnings, capital structure, and/or risk level.

However, the current customer asset management literature takes a relatively limited view on these drivers of shareholder value. Customer asset management can be defined as the optimized use of a firm’s tangible and intangible assets in order to make current and future customer relationships as profitable as possible (Hogan et al. 2002b) and the majority of the customer asset management frameworks are built around the concept of customer lifetime value (CLV). Due to these emphases, customer asset management literature is mainly concerned with P&L statements and a single driver of shareholder value (earnings), giving considerably less attention to the balance sheet and other drivers (capital structure, risk level).

Additionally, the applications of customer asset management frameworks reveal two areas for further research. First, a majority of the customer asset management frameworks remain conceptual – illustrating the need to gain empirical evidence on how firms apply customer asset management in practice. Second, customer asset management applications in a B2B context seem to have been lagging behind compared to developments in B2C (Blocker & Flint 2007). Therefore, more information is needed on what could be the appropriate customer asset management frameworks in B2B contexts, which are often characterized by a limited number of long-term customer relationships and considerable capital asset investments.

The present study seeks to explore the abovementioned research gap via two research objectives: 1) to create a framework describing how customer asset management can influence the different drivers of shareholder value creation and 2) to investigate
empirically customer asset management aimed at improving shareholder value creation in a B2B context.

The paper is structured as follows: first, we discuss the different measures and drivers of shareholder value. Second, we make a review of current customer asset management literature, focusing on how the extant research can be linked to shareholder value creation. Third, we develop a conceptual framework that illustrates the potential roles of customer asset management in shareholder value creation. Fourth, we report the empirical research consisting of three longitudinal B2B case studies and discuss its implications for customer asset management theory. Finally, we examine the managerial implications and the limitations of the study and suggest areas for further research.

2 DRIVERS OF SHAREHOLDER VALUE

A firm’s optimal financial performance is ultimately judged by the shareholders. Thus, it can be argued that the optimal financial performance is reached when long-term shareholder value is maximized. To put it simply, shareholder value is created when a company generates earnings on invested capital in excess of the cost of capital adjusted for risk and time (e.g. Stewart 1991; Black et al. 1998; Rappaport 1998). Several measures for shareholder value have been proposed in the literature, and these measures can be roughly divided into firm-operations based and capital-market based measures. The performance of the firm’s operations can be measured for example by discounted future cash flows (e.g. Black et al. 1998; Rappaport 1998), return on investment (Buzznel & Gale 1987; Jacobson 1988, 1990), sales (Dekimpe & Hassens 1995), price (Boulding & Staelin 1995), cost (Boulding & Staelin 1993) and the economic profit of economic value added (Stewart 1991; Kleiman 1999). Other shareholder value indicators are based on capital market data. The efficient market theory states that all information on future expected earnings shall be taken into account in stock prices (Fama 1970). Thus, measures such as market-to-book (M/B) ratio (Hogan et al. 2002a), Tobin’s q, (Tobin 1969; Lewellen & Badrinath 1997; Anderson et al. 2004) and the market value added (MVA) (Stewart 1991; Griffith 2004) could be considered as indicators of shareholder value creation.

Some of the capital-market based measures, such as market-to-book value and Tobin’s q, do not allow us to assess the contribution of an individual customer to the company’s shareholder value creation. Accounting-based ratios, such as ROI and sales, allow customer-level analysis but they concentrate on the accounting profit instead of the more relevant economic profit. We, therefore, use economic profit as the measure of shareholder value creation in this paper. Economic profit gives an estimate of the true profit that accrues to shareholders after all operating and financial expenses have been deducted. Thus, economic profit combines the attractive features of both the operations-based and the capital-market-based measurements: it acknowledges both the operating and financial expenses and allows individual customer relationship level analysis. Also, empirical evidence has shown that positive economic profit leads to an increase in shareholder wealth (Bacidore et al. 1997; Kleiman 1999).

Several authors have investigated how shareholder value creation can be increased. Rappaport (1998) and Black et al. (1998) have identified seven value drivers that affect the shareholder value and its creation: sales growth rate, operating profit margin,
income tax rate, working capital investment, fixed capital investment, cost of capital and value growth duration. Srivastava et al. (1998) suggest that the firm value is driven by increasing the cash flows, accelerating the cash flows, reducing the volatility and vulnerability of cash flows, and enhancing the residual value of cash flows. Stewart (1991) has identified six shareholder value drivers: net operating profits after taxes, the tax benefit of debt associated with the target capital structure, the amount of new capital invested for growth, the after-tax rate of return of the new capital investments, the cost of capital for business risk, and the future period of time over which the company is expected to generate a return exceeding the cost of capital from its new investments. Leibowitz (2000) argues that the main determinant of shareholder value is the franchise spread, the return that the company is able to earn on new investments over the cost of capital. Chen et al. (2002) identify four value drivers for a company’s stock: the company’s current assets and the cash flows derived from them, the present value of growth opportunities, options to reduce risks, and options to add flexibility.

Even though the authors presented above represent different schools of thought within finance, we argue that the drivers of shareholder value can - from a marketing point of view - be divided into four main categories: revenue, cost, asset utilization, and risk. These drivers of shareholder value are illustrated in Figure 1.

![Figure 1 Drivers of shareholder value](image)

3 CUSTOMER ROLES IN DRIVING SHAREHOLDER VALUE

Even though customer asset management is seen as a link between shareholder value formation and marketing (Stahl et al. 2003; Gupta & Lehmann 2003; Rust et al. 2004), the current customer asset management literature discusses the different drivers of shareholder value with varying intensity levels, with noticeably more emphasis on revenue and cost drivers than asset and risk drivers.

The strong emphasis on certain drivers of shareholder value can be explained by the historical roots of customer asset management literature. The majority of the current customer asset management literature is built around CLV models. CLV as a term can be traced by to Dwyer (1989) and it is most commonly defined as the present value of the expected revenues less the costs from a particular customer. The majority of the existing CLV models are built around three basic elements: revenue from the customer, costs of serving the customer and customer retention rate. Most often, the CLV models are used to optimize investment allocation between customer acquisition and customer retention. The more simplistic CLV models have later been extended to include e.g. sensitivity for cash flows that vary in timing and amount (Berger & Nasr, 1998; Reinartz & Kumar 2000), customer risks (Hogan et al. 2002a; Ryals & Knox 2005, 2007), and networking and learning potential (Stahl et al. 2003). From a shareholder value creation
point of view, it can be argued that the CLV models focus mainly on direct stable revenue from the customer and costs – with some more advanced models also incorporating the risk perspective.

However, if it is accepted that all of a firm’s operations are performed in order to provide service to customers, it can be argued that customer asset management has linkages to all aspect of business. Thus, customer asset management should affect all drivers of shareholder value - including asset and risk drivers. In the following section we present the potential roles that customers and customer asset management can have in shareholder value creation

**Increased revenues.** Customer asset management can help increase revenues by enlarging the number of customers (customer retention, customer acquisition, customer referrals), augmenting revenues from existing customers (up-sales/cross-sales, price increases) and by ensuring future revenues by firm renewal/innovation. The existing CLV models discuss customer retention and customer acquisition, but provide little guidance concerning the other potential roles of customers in increasing revenues. The importance of customer referrals as an aid in customer acquisition has just recently been acknowledged in the customer asset management literature (Stahl et al. 2003; Kumar et al. 2007; Villanueva et al. 2007). A few papers also discuss the importance of up-sales and cross-sales in maximizing the value of customer assets (Stahl et al. 2003; Bolton et al. 2008). However, the remaining potential customer roles in increasing revenues (price increases, firm renewal/innovation) are almost entirely neglected by the current customer asset management literature: Stahl et al. (2003) present one of the few articles that acknowledge that customer bases offer opportunities for active price increases and that the knowledge created within one relationship could yield cash flows in other contexts as well.

**Decreased costs.** Costs of a firm can also be affected by customer asset management: it can help to reduce costs to serve existing customer and reduce costs to acquire new customers. The CLV model presented by Berger and Nasr-Bachwati (2001) propose how a fixed promotion budget should be allocated between customer acquisition and retention. However, the existing CLV models take the costs associated with individual acquisition and retention activities as fixed variables that cannot be lowered by enhancing firm processes. Additionally, it can be argued that as the CLV models focus on allocating promotion budgets, they do not cover all costs that a company has to cover in order to serve its customers – after all, the majority of customer relationships also include other activities (and thus costs) than just promotional ones. However, customer asset management could also be used to reduce costs to serve and costs to acquire customers: for example Stahl et al. (2003) discuss how the experience curve can be utilized to reduce relationship costs.

**Optimized asset utilization.** Customer asset management can be used to optimize asset utilization in two ways: by optimizing the capital invested in customer relationships and by managing business volumes for economies of scale. Rather paradoxically, the current customer asset management literature has not been interested in studying the link between traditional assets in the balance sheet and the customer asset: the vast majority of the customer asset management studies limit themselves to exploring the effects of customer relationships to the profit and loss statement, ignoring the capital employed in
managing customer relationships and the balance sheet effects. Similarly, the current studies on how customer asset management can be used to achieve optimal asset utilization and economies of scale are in a minority within the current literature. To the best of the present authors’ knowledge, only two current customer asset management studies acknowledge the existence of economies of scale – and, thus, the importance of optimal asset utilization (Stahl et al. 2003; Johnson & Selnes 2004).

**Decreased risks.** If a customer relationship is defined as a process between a provider and a customer aimed at value formation, customer asset management can be used to reduce risks in three ways: reduce relationship termination risks, reduce risks related to value formation for the provider, and reduce the risk concentrations within the customer base. Even though relatively few studies explicitly discuss risks and customer asset management, it is possible to identify literature on both reducing risks of relationship termination and reducing risks to value formation to the provider. Relationship termination risks have been approached with concepts such as customer lifetime (e.g. Ang & Taylor 2005; Garland 2005; Reinartz & Kumar 2000, 2002), profitable customer lifetime or duration (Reinartz & Kumar 2003; Storbacka 2006), relationship strength (e.g. Storbacka et al. 1994; Donaldson & O’Toole 2000), and relationship stress (Holmlund-Rykönen & Strandvik 2005). On the other hand, risks related to value formation for the provider have been illustrated by concepts like risk-adjusted customer lifetime value (Ryals 2002, 2003; Ryals & Knox 2005, 2007), vulnerability of cash flows (Stahl et al. 2003), volatility (Hopkinson & Lum 2002; Stahl et al. 2003), and customer beta (Hopkinson & Lum 2002; Dhar & Glazer 2003). However, the current customer asset management literature provides little insight into how to manage risk concentrations and correlations within the customer base – even though common sense suggests that a customer base with a strong reliance on a limited number of or highly correlating customer relationships, customer portfolios, or geographies is riskier than a more diversified, uncorrelated customer base.

**4 CONCEPTUAL FRAMEWORK**

There are, as the above overview of both shareholder value literature and customer asset management literature indicates, thirteen distinct roles for customer asset management that influence the four shareholder value drivers (revenue, cost, assets, risk). These thirteen roles are summarized in Figure 2.
5 EMPIRICAL RESEARCH

The empirical material used in the present study has been created through consulting engagements. The dual role of a researcher and a consultant creates a logical link to action research. Action research as a term was introduced by Kurt Lewin in 1946. Rapaport (1970, 499) defines action research as follows: action research aims to contribute both to the practical concerns of people in an immediate problematic situation and to the goals of social science by joint collaboration within a mutually acceptable ethical framework. Reason and Bradbury (2006a, 2) concur with similar definition: “So action research is about working towards practical outcomes, and also about creating new forms of understanding, since action without reflection and understanding is blind, just as theory without action is meaningless.”

Action research has stimulated several related research methods such as cooperative inquiry (Heron 1971, 1996; Reason 1995), clinical research (e.g. Normann 1970; Schein 1987) and interaction research (Gummesson 2002). In addition to the above-mentioned principle of dual objectives (practice and theory), all action research inspired research methods share the principle of participatory worldview: research is done ‘with’ rather than ‘on’ people and all active participants are fully involved in generating the new knowledge. These principles of action research are well visible in the present study. First, even though the study is aimed at generating new theoretical understanding on customer asset management, the practical benefits experienced by the client organizations have been at least as important objectives for the research process as the theory generation. Second, the research processes described in the present research are conducted as collaborative processes between the representatives of the client organizations and the consulting team.

Empirical research comprised three longitudinal case studies. All case study firms operate in a B2B context: firm A operates in the forest industry, firm B in metals, and firm C produces and offers beverages for B2B customers.

According to Susman and Evered (1978), action research can be viewed as a cyclical process with five phases: diagnosing (identifying or defining a problem), action
planning (considering alternative courses of action for solving a problem), action taking
(selecting a course of action), evaluating (studying the consequences of an action), and
specifying learning (identifying general findings). The diagnosis phase of the action
research process in all case studies consisted of 1-2 meetings with the project team,
interviews with key individuals in the organizations (4 interviews with firm A, 3
interviews with firm B, 4 interviews with firm C), and reviews of the existing data-
material provided by the company. Project team meetings were participated by 4-8
representatives of the client organization and the consulting team of 3-4 members. In
these first project team meetings the problem definition was clarified and the suitable
interviewees and background materials were identified in cooperation with the
consulting team and the representatives of the client organizations. The interviewees in
all organizations represented executive vice president and senior manager level
positions involved in general management or the management of customer
relationships. All interviews are in-depth theme interviews, in which no formal
interview questionnaire were used but the interviewees were encouraged to elaborate
freely upon topics related to customer relationship management and the challenges of
their organizations. All interviews lasted 1-2 hours and they were conducted and
documented by two members of the consulting team. The existing data-materials
provided by the firms covered the number of customers in the customer base, the
calculation of economic profit for each customer relationship, the characteristics
(business volume, product mix, and behavioral data) of firms’ customer portfolio
models, and descriptions of the customer asset management activities applied.

During the action planning phase, the consulting teams and the representatives of the
client organizations met in several (3-8) project meetings in which the appropriate
customer portfolio models and the customer management concepts were designed. The
action taking phase was mostly conducted by the client organizations, even thought the
consulting teams remained in close contact with the clients during the implementation
phase through phone calls, emails, project meetings, and training workshops targeted to
client organizations’ middle management and operative staff. The evaluation phase was
again conducted in a close cooperation with the consulting teams and the representatives
of the client organizations: the project teams convened in 1-2 meetings in which the
consequences of implementing customer portfolios and customer management concepts
were analyzed and discussed.

The final phase of the action research project, specifying learning and identifying
general findings, were conducted in two stages. First, the general findings for the client
organizations were identified in joint project meetings with the consulting teams and the
representatives of the client organizations. Second wave of learning specification
occurred when the authors were involved in writing the research report. During this
time, the authors selected the three case studies to be included in research report. The
selection among tens of client engagements was based on two criteria: 1) the action
planning phase had resulted in a decision which included the implementation of
customer portfolio model and matching customer management concepts, and 2) the
client functioned in a B2B context. The three case studies portrayed in the present
research were the only three cases that fulfilled the both criteria. After this, the data and
observations accumulated during the consulting project were analyzed through the
iterative process of categorization and abstraction described by Thomas (1993). First,
both authors carried out an independent review of the three case studies and proposed
categorization of customer asset management actions based on the theoretical
framework (Roles of customer asset management in shareholder value creation, Figure
2). After this the researchers compared the cases and their findings dispassionately and
debating whether and how each data item should be included in the analysis. These
debates ensure sensitivity to the dialogue between data and theory and involve
clarifying the meaning, wording and linking between data points, themes and actions.

The reflection that occurs in the learning specification phase is the main element that
separates action research from consulting. Reflection is non-linear, non-sequential,
iterative process of systematic combination that aims at matching theory with reality
(Dubois and Gadde 2002). The important word is combining: the aim is to combine data
gathering with data analysis, compare the evolving framework with existing theory from
literature, and put side by side the evidence and experiences from many simultaneous
interventions in order to see patterns and sharpen the constructs used to describe reality
(Eisenhardt 1989). The process of reflection is highly creative and thus well suited to
generate new theory.

Case A: Forestry products

Firm A is a division of a global forestry product corporation, headquartered in Europe.
With firm A, our analysis period covered two years. Firm A operates in an industry that
is characterized by a limited number of long-term customer relationships. During
analysis year 1 firm A had 76 active customer relationships, and during analysis year 2
firm A’s customer base consisted of 78 customers.

In order to direct customer asset management activities, firm A analyzes its customer
base with a cumulative economic profit contribution analysis. The cumulative economic
profit contribution analysis is relatively simple: the absolute economic profit created by
each customer is calculated and customers are ranked in a descending order, placing the
customer yielding the largest economic profit first to the graph, the customer with the
second largest economic profit next, and finally ending the graphical illustration with
the customer yielding the lowest economic profit (Storbacka 2000). The economic profit
was calculated by deducting first the customer-specific costs from the customer-specific
turnover. After this, the general costs were also allocated to the different customers
based on their business volumes. Then, all of the firm’s assets were allocated to the
different customers based partially on their actual asset utilization and partially on the
customers’ business volumes. The final step in calculating the customer-specific
economic profit was subtracting the capital charges for that part of the firm’s assets
allocated to the customer relationship in question from the customer-specific profit.

Based on the cumulative economic profit analysis, firm A has created three customer
portfolios. During analysis year 1, the 13 customers with the highest yearly economic
profits were assigned to portfolio A. There were 11 customers showing negative
economic profit, which formed portfolio C. The remaining 52 customers, with close to
zero economic profit, were assigned to portfolio B. Closer analysis of the customer
portfolios revealed that the customer relationships with large positive economic profits
in portfolio A were customer relationships with considerable business volumes.
Portfolio B, on the other hand, consisted of customer relationships that yielded either
only slightly positive or negative economic profits. The number of customer relationships in this portfolio was, however, considerably larger than in the other two customer portfolios. The typical customer relationship in portfolio C generated a large negative economic profit, but the majority of the customer relationships in this portfolio brought in a considerable business volume.

Based on this information, firm A created three differentiated customer management concepts for the customer portfolios in order to maximize overall shareholder value creation. For portfolio A the firm created a customer management concept called “margin and cash flow maintenance”. The main objective of this concept was to increase the margin and cash flow available from these large-volume customer relationships that already created a considerable positive economic profit. In practice, customers in portfolio A were provided with access to the entire regular product range as well as an option for tailor-made products. The order-delivery process for A customers was conducted with a sophisticated supply chain management solution and the pricing was done by using a 12-month agreement. Additionally, customers in portfolio A had access to a wide range of technical support services: customized on-site support, regular technical meetings and technical manager visits, quality reports, and standard certifications. Finally, firm A managed the customer relationships in portfolio A with various relationship management activities: annual customer meetings, regular visits at vice president level, regular sales manager and sales representative visits, visits to sites, and continuous customer planning.

For portfolio B, firm A created a customer management concept called “risk management”. The objective of this customer management concept was to reduce the overall business risks by reducing the interdependencies in the customer base and by using the small-volume customer relationships as a buffer against business cycle variations. Due to their lower economic profit contribution, customers in portfolio B received less extensive service than customers in portfolio A. Customers in portfolio B had access to the top 20 products that are priced using a 3-month contract. The order-delivery process is managed by direct orders and local sales offices. B customers are provided with certain technical support services: emergency on-site support, technical manager visits and quality reports when appropriate, and standard certifications. Relationship management activities targeted to customers in portfolio B are limited to sales manager and sales representative visits – but only when deemed appropriate by firm A.

For portfolio C, the firm developed a customer management concept called “capacity optimization”, the objective of which was to use the negative economic profit generating but large-volume customer relationships to optimize the capacity utilization of the production facilities, thus reducing the average cost level of operations by reducing fixed and capital costs per production unit. The customer management concept for portfolio C reflects the fact that this portfolio generates negative economic profit – but the volume from these customer relationships is still regarded as important. Customers in portfolio C have access only to the top 10 products. Orders regarding these top 10 products are only accepted as direct orders and they are priced by using a market price. The technical support services for customers in portfolio C are limited to emergency on-site support, quality reports when appropriate, and standard certifications. The relationship management activities targeted to customers in portfolio C are kept to a
minimum: C customers are provided with up-to-date information on the roles and responsibilities of firm A’s personnel, but site visits are not encouraged.

During the analysis period, the economic profit contribution of portfolio A increased from 2,665,861€ to 2,821,984€ and the negative economic profit contribution of portfolio C declined from -1,467,725€ to -1,352,254€. However, the economic profit contribution of portfolio B decreased during the analysis period from 1,239,038€ to 874,854€, leading to the reduction of the overall economic profit contribution of the entire company from 2,437,174€ to 2,334,584€. While the reduction of the total economic profit contribution is true, it should be noted that the external operating environment for the case study company deteriorated considerably during the analysis period: the entire industry entered a downturn and the average price level dropped considerably. Therefore the slight reduction in the overall economic profit contribution of the customer base is likely to have been caused by external factors and not firm A’s own actions.

**Firm B: Metal**

Firm B is a division of a global metal product corporation, headquartered in Europe. With firm B, our analysis period covered one and a half years. The customer case of firm B is slightly less concentrated than firm A’s: during analysis year 1 firm B had 256 active customer relationships, and during the first half of analysis year 2 firm B had 222 customer relationships.

The starting point of directing customer asset management activities in firm B was the creation of a customer portfolio model. The customer portfolio model was created by using two dimensions: economic profit and the strategic fit of customer relationships. The strategic fit was assessed by using four parameters: relationship strength, customer relationship value potential, reference value, and current production fit. All these four strategic fit parameters had been divided into multiple constituents in order to support assessing customer relationships. Relationship strength was approximated by analyzing firm B’s share of wallet, length of contracts, length of relationships, customer participation in special customer programs, and the level of customer contacts. The customer relationship value potential was estimated by valuating the customer’s growth rate, the possibility to differentiate offering for the customer, the possibility to create a partnership with the customer, and the possibility to increase revenue and/or profits from the customer relationship in the future. Reference value was analyzed by assessing firm B’s reputation at the customer and the possibility to use the customer as a promotional case in firm B’s marketing materials. Finally, current production fit was estimated by analyzing the cost efficiency of production and product line utilization.

With the needed information on the customers’ economic profit and strategic fit, firm B created four portfolios. “Renewal” portfolio contained customers with a positive economic profit and high strategic fit. “Cash Flow” customers also had a positive economic profit but, unlike “Renewal” customers, had low strategic fit. Customers in the “Capacity” portfolio had negative economic profit and high strategic fit. “Monitor” customers yielded negative economic profit and had low strategic fit.
Interestingly, firm B defined three differentiated customer management concepts based on the customer portfolio information: one target customer management concept for “Renewal” and “Cash Flow” customers (i.e. customers with positive economic profit), one target customer management concept for “Capacity” and “Monitor” customers (i.e. customers with negative economic profit), and one transitory customer management concept for those customers whose customer portfolio status requires a considerable change in the way the customer relationship is currently managed.

The customer management concept aimed for “Renewal” and “Cash Flow” customers is called “Partnership”. Within the “Partnership” customer management concept, firm B provides its customers with all of its products, all available strategic services (common strategy development, value chain optimization, third-party collaboration), all available business support services (ERP integration, common business plan, risk management, order input web application), all available sales and marketing services (training, technical marketing support), and all available application engineering, production and logistics services (process optimization, design support, product optimization, logistics optimization, prioritized deliveries, scrap management, customer-specific mill certificate). Additionally, within the “Partnership” customer management concept, firm B has a nominated account team for each customer which utilizes full-scale account management process and partnership business plan. Customer satisfaction is followed up by relationship reviews and satisfaction questionnaires.

The customer management concept aimed for “Capacity” and “Monitor” customers is called “Product”. Within this customer management concept, firm B provides its customers with all of its products – similar to the approach in the “Partnership” customer management concept. However, the “Product” customer management concept allows considerably more limited access to services: only two business support services (risk management, order input web application) and two application engineering, production and logistics services (scrap management, customer-specific mill certificate) are available within the “Product” customer management concept. In addition to this, the customer relationship management within the “Product” customer management concept is less extensive than in the “Partnership” customer management concept: each customer has a nominated sales representative, relationship management process is limited to daily sales and delivery encounters, customer relationship planning is conducted via contact management and sales follow-up, and customer satisfaction is analyzed via a satisfaction questionnaire.

The third customer management concept, “Solution”, was created as a transitory customer management concept for those customer relationships which have to be moved from a “Partnership” customer management concept to a “Product” customer management concept based on their customer portfolio status (i.e. customers generated negative economic profit and were categorized to “Capacity” or “Monitor” portfolios). As in “Partnership” and “Product” customer management concepts, within a “Solution” customer management concept customers also have access to all of firm B’s products. The “Solution” customer management concept allows access to all the same business support services, sales and marketing services, and application engineering, production and logistics services as the “Partnership” customer management concept. However, no strategic services are offered within the “Solution” customer management concept. Additionally, the customer relationship management within the “Solution” customer
management concept is slightly more limited than in the “Partnership” customer management concept: all customers are appointed to a named account manager who utilizes a basic account management process and solution business plan. Customer satisfaction is analyzed through satisfaction questionnaires.

During the 18-month analysis period, firm B considerably increased its economic profit. During the first 12 months firm B started implementing the differentiated customer management concepts, making an economic profit of 1,549,685 €. During the next 6 months, firm B made an economic profit of 1,567,521 €, giving a forecast economic profit growth rate of over 100% for the entire fiscal year. However, when assessing the impact of customer asset management activities on the improved financial result, it must be acknowledged that in parallel with customer management concept differentiation firm B initiated a process efficiency program that is also likely to contribute to the economic profit increase.

**Firm C: Beverage**

Firm C is a division of a European beverage company, responsible for sales to B2B customers such as restaurants, hotels, bars, nightclubs, and cafeterias. With firm C, our analysis period covered four years. During the analysis period, firm C’s customer base consisted of ca. 4,000 customers.

Firm C analyzes its customer base by using six different criteria illustrating the value of customer relationships. These dimensions of customer relationship value are turnover, sales margin, EBIT, volume in litres, assessment by the sales representative, and assessment by the area manager. The assessments by the sales representative and the area manager focus on assessing the potential and risks involved in the customer relationship. From this information, firm C created three customer portfolios: portfolio A consists of customers with the highest customer relationship value scores (top 10%), portfolio B consists of the next 25%, and portfolio C consists of the remaining 65% of the customer base.

In addition to these three customer portfolios, firm C created a “Must” customer portfolio. The 25 “Must” customers are those that are crucial for building Firm C’s brand, Firm C has made a considerable investments in customer’s premises, or the customer has a strong link to a target that firm A is sponsoring. After adding the “Must” portfolio, firm C has four distinct customer portfolios. For these four portfolios, firm C created individual customer management concepts that differed from each other in terms of customer visits, availability and pricing of services, promotions, and marketing materials.

For “Must” customers, firm C defined three different customer visits: analysis visits that focus on analysing and following up the customer’s situation, sales visits that are mainly aimed at presenting new products and making adjustments to customer’s current product range, and social calls that focus more on managing the softer sides of the customer relationships. Each “Must” customer must receive 12 or 18 customer visits per year: 18 if the customer does not belong to a hotel or restaurant chain and 12 if the customer is a part of a chain. In addition to beverages and their distribution, firm C is able to provide its customers with various services: promotional services, training
services, sales planning services, category planning services, equipment services, analysis services, information services, and installation services. All these services are available to “Must” customers without additional fees or charges. Additionally, firm C places considerable effort on planning promotions and events in cooperation with “Must” customers. Finally, “Must” customers have unlimited access to all of firm C’s marketing materials.

Customers in portfolio A, on the other hand, are visited 12 times a year, irrespective of their possible association to hotel or restaurant chains. However, these 12 customer visits are limited to analysis visits and sales visits; social calls are not allowed to be conducted with customers in portfolio A. This remains the main distinguishing factor between customers in the “Must” and A portfolio: ‘A’ customers have access to all the same services, promotion cooperation and marketing materials as “Must” customers, without additional fees.

For portfolio B, firm C created slightly more streamlined customer management. Non-chain customers in portfolio B are visited 9 times a year, and the nature of these customer visits is limited to analysis and sales visits. B customers that are members of a hotel or a restaurant chain are only visited 6 times annually. Interestingly, all these visits are so-called basic customer visits, which are not distinguished by their nature or content – therefore these customers are met each time with the same basic agenda covering all aspects of relationship management from situation analysis to the presentation of new products. B customers have access to the entire range of services, but with an additional price for each service used. Firm C provides some promotion planning cooperation for customers in portfolio B, and these customers have more limited access to firm C’s marketing materials than “Must” and A customers.

Customers in portfolio C have access to the most limited customer management concept – after all, the majority of the customers in this portfolio were making a loss during analysis year 1. C customers are visited 2 or 3 times a year, depending on whether or not they belong to a chain – and all these customer visits are so-called basic customer visits. Customers in portfolio C do not have access to firm C’s services without some exceptions such as equipment services, which are crucial for the basic operations for distributing and selling beverages. All services provided to C customers are also priced individually. Finally, firm C provides customers in portfolio C with very limited promotion planning cooperation and limited access to marketing materials.

During the four-year analysis period, firm C has managed to increase its profits considerably: in analysis year 1 firm C made an EBIT of 4 million €, and by the end of analysis year 4 firm C increased its EBIT over five-fold to 21.5 million €. However, it cannot be concluded that the entire profit improvement is due to successful customer asset management – even though it has had a considerable impact. During the analysis period firm C also focused its offering communication to address specific end-use segments. These simultaneous development efforts have probably also influenced the recorded EBIT improvement.

6 DISCUSSION

The findings of the three case studies are summarized in Table 1.
Table 1 Summary of case study findings

<table>
<thead>
<tr>
<th></th>
<th>Firm A</th>
<th>Firm B</th>
<th>Firm C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Industry</td>
<td>Forestry products</td>
<td>Metal</td>
<td>Beverage</td>
</tr>
<tr>
<td>Customer base size</td>
<td>ca. 80 customer relationships</td>
<td>ca. 225 customer relationships</td>
<td>ca. 4000 customer relationships</td>
</tr>
<tr>
<td>Portfolio dimensions</td>
<td>Absolute economic profit per customer</td>
<td>Economic profit and strategic fit of customer relationships (index of 16 constituents)</td>
<td>Value of customer relationships (index of 6 constituents)</td>
</tr>
<tr>
<td>Revenue aspects of portfolio model</td>
<td>All customer revenues (used to calculate economic profit)</td>
<td>All customer revenues (used to calculate economic profit); future value potential</td>
<td>Turnover, sales margin, EBIT, sales representative &amp; area manager assessments</td>
</tr>
<tr>
<td>Cost aspects of portfolio model</td>
<td>All P&amp;L costs (used to calculate economic profit)</td>
<td>All P&amp;L costs (used to calculate economic profit)</td>
<td>Costs to calculate sales margin &amp; EBIT</td>
</tr>
<tr>
<td>Asset aspects of portfolio model</td>
<td>Capital costs associated with assets (used to calculate economic profit)</td>
<td>Capital costs associated with assets (used to calculate economic profit)</td>
<td>Volume in litres</td>
</tr>
<tr>
<td>Risk aspects of portfolio model</td>
<td>N/A</td>
<td>Relationship strength</td>
<td>Sales representative &amp; area manager assessments</td>
</tr>
</tbody>
</table>
| Customer management concepts | 3 differentiated customer management concepts for different portfolios:  
- “Margin and cash flow maintenance” for customers with highest economic profit  
- “Risk management” for customers with moderate economic profit  
- “Capacity optimization” for customers with negative economic profit | 3 differentiated customer management concepts, flexible link to portfolios:  
- “Partnership” as target strategy for customers with high economic profit  
- “Solution”, as transitory strategy for those customer relationships which the firm seeks to move from one strategy to another  
- “Product” as target strategy for customers with low economic profit | 4 differentiated customer management concepts for different portfolios:  
- “Must” for customers that are crucial for the brand & visibility  
- “A” for customers with highest relationship value scores  
- “B” for customers with moderate relationship value scores  
- “C” for customers with low relationship value scores |
| Differentiation of customer management concepts | Differentiation of:  
- Product range  
- Pricing  
- Order-to-delivery process  
- Technical support  
- Relationship management activities | Differentiation of:  
- Service offering  
- Relationship management resources  
- Relationship management process & planning  
- Satisfaction follow-up | Differentiation of:  
- Customer visits  
- Availability & pricing of services  
- Promotions  
- Marketing materials |

When comparing the case study findings with the thirteen roles for customer asset management illustrated in the conceptual framework (Figure 9), it is possible to see that different customer asset management roles gain different accents in the empirical data. First of all, all case study firms used customer asset management for targeted customer retention: all firms sought to identify the most valuable customer relationships and to serve them with high-involvement customer management concepts. Customer referrals were present only in firm B’s customer asset management model. However, it is quite likely that firms A and C also utilize customer referrals in their daily activities even
though customer referrals are not visible in their defined customer asset management activities. All case firms also aimed for up-sales and cross-sales within their customer asset management activities: all firms had defined extensive product and service offerings for the most valuable customers, with the specific intent of increasing up-sales and cross-sales. Price increases or differentiation of pricing were detected in firms A and C. Firm A used different contract lengths and thus different price levels in different customer management concepts. Similarly firm C differentiated the pricing of services: services that are offered free of charge to the most valuable customers are priced when provided to the less valuable customers. Firm renewal (innovation) for future revenues, on the other hand, was only discovered in firm B’s customer asset management model: firm B assessed customer relationship value potential when analysing the strategic fit of the customer relationship and one of the customer portfolios was aimed for renewal.

Reducing cost to serve was strongly present in all analyzed customer asset management models: all firms differentiated their customer management concepts so that the cost to serve in low-involvement concepts could be minimized. On the other hand, it is especially interesting to notice that both customer acquisition and reducing cost to acquire are completely overlooked in all three analyzed customer asset management models. There can be various explanations for the absence of customer acquisition related aspects in the customer asset management models. On the one hand, all analyzed firms operate in a B2B context with a limited number of potential customer relationship and long-term contracts. Therefore it could be concluded that these firms see customer acquisition as a less important aspect of customer asset management. On the other hand, it is possible that the case study firms are involved in systematic customer acquisition, but for some reason these activities are not included in the customer asset management processes. However, the limited importance of customer acquisition in customer asset management suggested by the case study firms supports the argument made by Blocker and Flint (2007) that different customer asset management models are needed in B2B and B2C contexts. After all, the majority of the current customer asset management models are based on CLV calculations used to optimize investment allocation between customer acquisition and customer retention.

Optimizing capital invested in customer relationships also received considerably little attention in the analyzed customer asset management models. Firms A and B calculated the economic profit generated by individual customer relationships. In order to calculate the customer-specific economic profit, both firms allocated their capital costs to individual customer relationships. However, neither firm A nor firm B considered capital investments in their differentiated customer management concepts. Business volumes / economies of scale as a role for customer asset management was detected in firms A and C. Firm A created a “capacity optimization” customer management concept for large-volume but unprofitable customer relationships. One of the main objectives of this customer management concept is to ensure even business volumes over time and thus optimal utilization of production facilities. Firm C, on the other hand, considered customers’ business volumes in litres when assessing the overall value of customer relationships. However, it can be said that the aspects related to asset utilization are not as well represented in the analyzed customer asset management models as are aspects related to revenues and P&L costs. Again, the predominance of P&L items over balance sheet items in the existing customer asset management literature can be one explanation...
behind this phenomenon. Additionally, production and other asset-intensive functions have traditionally had little interaction with functions and processes involved with managing customer relationships. Therefore, this functional separation can partially account for the lack of interest in asset-related issues in customer asset management – after all, customer asset management has its roots within marketing literature and therefore marketing functions. However, if the aim of customer asset management is to increase shareholder value creation, customer management models should also acknowledge balance sheets and optimal asset utilization.

Even though only firms B and C included any kind of risk measures into their customer asset management models, all firms were involved in reducing the risks of relationship termination. All firms sought to provide the most lucrative offerings and high-involvement customer management concepts for their most valuable customers. Firm A also aimed for reduced relationship termination risks by signing long-term contracts with its most valuable customers. Reducing risks to value formation to provider and reducing risk concentrations and correlations within customer base as roles for customer asset management were only evident in firm A: it had defined a “risk management” customer management concept with an objective to reduce the interdependencies in the customer base and to use the small-volume customer relationships as a buffer against business cycle variations. However, the use of customer asset management in risk management shows advancement potential in all analyzed case study firms.

To conclude, the evidence from the three case study firms indicate that B2B firms are able to acknowledge all four drivers of shareholder value (revenue, cost, assets, risks) in customer asset management. There are, however, considerable differences in the relative emphasis given to the different shareholder value drivers: all case study firms consider multiple opportunities to increase revenues and decrease costs through customer asset management, whereas opportunities to optimize asset utilization and decrease risks gets less attention.

Theoretically, the present study contributes to the discussion on how customer asset management can be used as a link between shareholder value formation and marketing (Stahl et al. 2003; Gupta & Lehmann 2003; Rust et al. 2004). Second, the findings of the empirical research support the argument presented in the conceptual framework of the present study: there is potential to complement the existing customer asset management literature that has focused mainly on CLV models and acquisition-retention optimization to incorporate other drivers of shareholder value creation as well. Third, the findings of the present empirical study emphasize the importance of differentiating customer management concepts in order to move customer asset management beyond acquisition-retention optimization: customer management concept in its broader sense seems to be a suitable media for translating customer asset management models into action. In this respect the conclusions of the present study are aligned with the findings provided by Terho and Halinen (2007) who investigated the customer portfolio practices of seven companies. In their research Terho and Halinen (2007) found out that companies seek to guide their sales efforts, customer treatment, offering configuration, and relationship development based on the customer portfolios. Fourth, the present study is likely to deepen the existing knowledge of value creation in relationships (e.g. Walter et al. 2001; Möller & Törrönen 2003; Ulaga 2003; Ulaga &
Eggert 2005), especially regarding the financial value creation for the provider. Fifth, the findings of the present study contribute to the existing literature on customer segments and portfolios (e.g. Fiocca 1982; Campbell & Cunningham 1983; Krapfel et al. 1991; Zolkiwski & Turnbull 2000, 2002; Sanchez & Sanchez 2005; Leek et al. 2006). So far the majority of the existing customer portfolio studies have concentrated on developing, testing and comparing different customer portfolio models. However, there has been a lack of a theoretical foundation for formulating customer management concepts for the different customer portfolios: the current literature focuses more on the categorisation of customer relationships than the outcome of this categorisation, i.e. the management of customer portfolios. The present study provides the first steps towards providing theoretical foundations for creating customer management concepts for different customer portfolios, aimed at increasing the financial value creation for the provider.

7 MANAGERIAL IMPLICATIONS, LIMITATIONS AND AREAS FOR FURTHER RESEARCH

This study opens interesting opportunities for managers in B2B firms: the existing customer asset management frameworks are mainly based on CLV calculations and optimization of acquisition and retention spending – and therefore these models have had limited application potential in a B2B context. The study outlines 13 different roles for customer asset management, all of which are usable in B2B firms. The study also illustrated various ways to differentiate customer management concepts in order to actualize customer asset management decisions. Managers in B2B firms can use the proposed 13 different roles for customer asset management as a long list of options to affect shareholder value creation through customer asset management. From this long list managers can then select the roles that suit their firms’ needs and business models; thus building their own individual customer asset management frameworks, which can then be realized through differentiated customer management concepts.

On the other hand, it must be acknowledged that the proposed roles for customer asset management outline all possible ways to affect shareholder value creation through customer asset management. Additionally, the present paper suggests only that firms should differentiate their customer management concepts in order to actualize their customer asset management decisions - without providing a framework guiding such differentiation. Therefore, it should be acknowledged that the present paper is of an exploratory nature and does not provide normative guidance for creating customer asset management frameworks or for differentiating customer management concepts. Additionally, the empirical investigation was done through three B2B case studies; therefore the applicability of the proposed roles for customer asset management has not been investigated in a B2C context.

The present study opens interesting opportunities for further research. First, the same effort to expand the customer asset management frameworks beyond optimizing acquisition and retention costs should also be done in a B2C context. Additionally, the brief review of current customer risk literature revealed that more research is needed in the area of customer risk management; in particular, the concepts of customer base risk correlation and concentration are left to minimal attention in the current literature.
Third, the development of theoretical foundations for creating portfolio-specific customer management concepts should be continued as the present research covers only the financial aspects of customer relationships, potentially overlooking other important customer relationship attributes.
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Essay 4

CUSTOMER ASSET MANAGEMENT FOR BUSINESS-TO-BUSINESS RELATIONSHIPS: DIFFERENTIATING CROSS-FUNCTIONAL CUSTOMER MANAGEMENT CONCEPTS FOR IMPROVED FIRM PERFORMANCE

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FOR BUSINESS-TO-BUSINESS RELATIONSHIPS:
DIFFERENTIATING CROSS-FUNCTIONAL CUSTOMER MANAGEMENT CONCEPTS FOR IMPROVED FIRM PERFORMANCE

Abstract

As an effort to link marketing activities to shareholder value, several authors have proposed that customer relationships should be regarded as assets and that marketing can improve firm financial performance through customer asset management. Even though considerable conceptual development has taken place in the field of customer asset management, the majority of the existing frameworks are not optimally suitable for business-to-business relationships. This paper explores customer asset management in a B2B context, arguing that B2B firms should use customer portfolio models in their customer asset management activities. It is also suggested that cross-functional customer management concepts should be used in operationalizing customer asset management in a B2B context. The present study illustrates the implementation of the proposed customer asset management framework in a B2B company. The results of the study suggest that differentiated customer management concepts formulated on the basis of customer portfolios can help companies in improving shareholder value creation.

Key words: customer asset management, customer management concept, business-to-business-relationships, customer portfolio, shareholder value
1 INTRODUCTION

During the last two decades, marketing researchers have increasingly emphasized that the main objective of marketing is to improve firm performance and shareholder value creation (e.g. Day & Fahey 1988; Srivastava et al. 1998; Srivastava et al. 1999; Doyle 2000; Kumar & Petersen 2005; Rao & Bharadwaj 2008). As an effort to link marketing activities to shareholder value, several authors have proposed that marketing should assume the responsibility for firm financial performance by accumulating and managing market-based assets such as intellectual assets and relationships to customers and suppliers (Srivastava et al. 1998; Doyle 2000; Rust et al. 2004a; Vargo & Lusch 2004; Bust et al. 2007).

Customer equity as a market-based asset linking shareholder value and marketing has received an increasing amount of interest among the marketing scholars since the 1990s (e.g. Blattberg & Deighton 1996; Hogan et al. 2002b; Rust et al. 2004b; Kumar & George 2007) and The Journal of Service Research dedicated a special issue to a related topic of “Managing customers for value” in 2006 (e.g. Berger et al. 2006; Kumar et al. 2006; Shah et al. 2006). In recent years, considerable conceptual development has taken place within customer equity research: customer lifetime value (Dwyer 1989) has been accepted as the main method for estimating customer equity, several calculation models for customer lifetime with varying levels of sophistication value have been proposed, the link between customer lifetime value and a firm’s market valuation has been empirically verified (Gupta & Lehmann 2003), and models have been proposed for guiding the allocation of marketing budget between acquisition and retention activities based on customers’ lifetime values (e.g. Blattberg & Deighton 1996; Berger & Nasr-Bechwati 2001; Reinartz et al. 2005).

However, the ability to calculate accurately customer lifetime value, or the ability to conceptually or empirically demonstrate the link between customer equity and shareholder value creation, provides little guidance for an active management of customer relationships for increased customer equity. Therefore in the present study it is proposed that customer equity (defined as the sum of discounted profits from current and future customer relationships) is conceptually separated from customer asset management, which can be defined as the optimized use of a firm’s tangible and intangible resources in order to facilitate as profitable current and future customer relationships as possible (Hogan et al. 2002b).

Customer asset management as an organizational capability and process has to answer two main questions: how to design the right customer asset management activities for different customers for increased shareholder value customers and how to implement these activities. In the current literature, the question of designing activities for different customers is usually answered by customer lifetime value (CLV) calculations. In their overview of different approaches to maximizing customer equity, Kumar and George (2007) find out that the vast majority of customer asset management applications are based on CLV optimization.

However, as Gupta and Lehmann (2003) point out, the concepts and models of customer lifetime value and customer equity originate in the field of direct and database marketing. Unfortunately, the CLV applications do not seem to meet the needs of
business-to-business relationships equally well: the development of CLV applications in a B2B context seems to be lagging behind the B2C sector (Blocker & Flint 2007). There can be several reasons for the hesitant adoption of CLV applications in the B2B sector. First, a reliable calculation of customer lifetime value might be challenging in customer relationships spanning over several decades. Second, acquisition-retention optimization (an integral part of various CLV applications) can be challenging in a context characterized by a limited number of large volume customer relationships. After all, in the majority of the B2C customer relationships there is a significant power asymmetry between the provider and the customer: the provider is a considerably larger player in the market than an individual consumer and each consumer generates only a limited share of the provider’s business. Such asymmetry enables successful acquisition-retention optimization: terminating an individual customer relationship does not have a considerable impact on the overall business of the provider and there are always several new potential consumers to be targeted with acquisition campaigns. However, B2B customer relationships are often much more symmetrical than B2C customer relationships: the customer and the provider can be of equal size or the customer can even be a larger player than the provider. Additionally, B2B customer bases are often characterized by a limited number of customer relationships and thus the relative importance of each customer relationship is considerably larger than in B2C customer bases. Finally, the number of potential customer relationships is also much more restricted in a B2B context than in a B2C context, further limiting the applicability of acquisition-retention optimization. Due to these challenges in using CLV applications in B2B contexts, Blocker and Flint (2007) suggest that segmentation or portfolio applications should be investigated in order to develop customer asset management applications suitable to B2B relationships.

Regarding the second main question of customer asset management, the implementation of customer asset management activities, the current literature offers rather limited advice. If simplified, the majority of the existing customer asset management frameworks consist of four phases: evaluate the customer base, select appropriate marketing actions, observe the results of the marketing actions, and the feedback loop to the customer base evaluation phase (e.g. Bell et al. 2002; Berger et al. 2002; Bolton et al. 2004; Berger et al. 2006). However, the content of the marketing actions phase varies from one author to another and often the issue is discussed on a very superficial level. Additionally, very few studies provide any conceptual frameworks or empirical evidence regarding the actual implementation of the marketing actions; implementation is almost seen as a completely problem-free issue – a misunderstanding that is fast corrected by any marketing practitioner.

Drawing on the above discussion, the purpose of the present research is twofold. First, the paper seeks to investigate how a customer portfolio approach can be used in a B2B context in designing customer asset management activities. Second, the present study examines how customer asset management activities can be implemented in business-to-business relationships through customer portfolio-specific customer management concepts. This paper contributes to the theoretical discussion on how marketing creates shareholder value (e.g. Day & Fahey 1988; Srivastava et al. 1998; Srivastava et al. 1999; Doyle 2000; Kumar & Petersen 2005), examines different alternatives for measuring the contribution of marketing and customers to shareholder value, and
proposes and tests the use of economic profit as a measure. Additionally, the paper provides insights into the practical means of increasing shareholder value through customer asset management, an area that has been given little attention in previous studies.

The paper starts with an overview of the current customer asset management literature and the existing approaches in designing customer asset management activities. Next, different viewpoints on the implementation of customer asset management activities are discussed, with a special emphasis on the resulting need for cross-functionality. Shareholder value improvement is presented as the overall objective for customer asset management activities as it is linked directly both to the financial performance of the firm and the successful cross-functional coordination of customer asset management activities. Based on these notions, a conceptual framework for customer asset management in a B2B context is presented. This framework suggests using customer portfolio-specific customer management concepts as the means for implementing customer asset management activities. The conceptual framework is then illustrated with a case study. Finally, the theoretical contributions of the paper are discussed and further areas for research are suggested.

2 THEORETICAL BACKGROUND

2.1 Customer asset management: three approaches to designing marketing activities for maximized customer relationship value

The majority of the current customer asset management literature is built around the term of customer lifetime value (CLV). CLV as a term can be traced by to Dwyer (1989) and it is most commonly defined as the present value of the expected revenues less the costs from a particular customer. The more simplistic CLV models have later been extended to include e.g. sensitivity for cash flows that vary in timing and amount (Berger & Nasr 1998; Reinartz & Kumar 2000), customer-specific variations (Crowder et al. 2007), customer risks (Hogan et al. 2002a; Ryals & Knox 2005, 2007), different acquisition modes (Villanueva et al. 2007b), different relationship types (Roemer 2006), channel quality (Dong et al. 2007), networking and learning potential (Stahl et al. 2003), different levels of buyer-seller dependence (Roemer 2006), competitive environment and game theory (Villanueva et al. 2007a), and factors like supply chain interactions (e.g. Niraj et al. 2001).

As defined in this paper, the core of customer asset management is designing the right customer asset management activities for different customers in order to maximize the return from customer relationships. From the existing literature it is possible to identify three approaches to designing customer asset management actions, set apart by their target group definition: dyad, customer portfolio, and customer base approach. In their article, Kumar and George (2007) present two main ways of designing customer asset management activities, both based on CLV calculations. The first method presented by Kumar and George (2007) is called a disaggregate approach, in which the CLV calculations are conducted on an individual customer level after which customer asset management activities are designed for with the help of customer-level concepts (e.g. Verhoef & Donkers 2001; Ryals 2003; Venkatesan & Kumar 2004). However, in order to clarify the differences between the three identified approaches to designing customer
asset management activities, in this study it is proposed that the disaggregate approach is called the dyad approach: customer asset management actions are designed for each dyadic customer relationship separately. The second approach presented by Kumar and George (2007) is labeled as the aggregate approach. The use of the aggregate approach means that the CLV calculations are conducted at the level of a firm (e.g. average CLV within a firm) and that the activities are designed by a firm-level concept affecting the drivers of the customer asset (e.g. pricing, promotion, loyalty programs, channel choices). Examples of aggregate approach are presented by e.g. Blattberg and Deighton (1996), Berger and Nasr (1998), Blattberg et al. (2001), Gupta and Lehmann (2003) and Rust et al. (2004b). In this study the aggregate approach is called the customer base approach as this approach seeks to improve shareholder value by designing customer asset management activities at the customer base level.

However, various authors have pointed out that there are challenges associated to using CLV based customer asset management models ranging from the calculation of the CLV, practical utilization of the CLV models, to the B2C emphasis of the CLV models. The challenges involved in calculating CLV are brought forward by Bell et al. (2002), Hogan et al. (2002a), Verhoef and Langerak (2002), Gupta and Lehmann (2003), and Nasr Bechwati and Eshghi (2005): assembling customer-level industry-wide customer data, selection of the appropriate model, extensive modeling, difficulty of including and predicting factors not related to the firm itself or its customers, the assumption that customers are all equally risky and that risk is time invariant, the difficulty of estimating the needed variables, and the challenges related to estimating the overall reliability and sensitivity of the results. Even if the above mentioned challenges are overcome, the underlying challenge associated with CLV models remains: how well does the past behavior of the customer predict his future behavior and thus lifetime value? Studies conducted by Berger et al. (2003) as well as Malthouse and Blattberg (2005) indicate that current CLV models seem to have challenges in predicting future customer lifetime value accurately enough for business purposes. Several researchers have also been concerned about the relatively slow and sometimes misguided adoption of the CLV models by practitioners (e.g. Guilding & McManus 2002; Verhoef et al. 2002; Thomas et al. 2004). Gupta and Lehmann (2003) argue that in order to promote wider use of customer asset management among senior executives and investors, these frameworks should not require too laborious modeling or the existence of too complex and comprehensive customer data. Even a utilization of properly calculated CLV information is not as straightforward as it might seem: e.g. Nasr Bechwati and Eshghi (2005) illustrate the managerial challenges involved in utilizing the CLV information ranging from negative word-of-mouth associated with letting unprofitable customers go, disfavoring certain demographic segments, to applying marketing strategies that are inconsistent with corporate overall objectives. Finally, as Gupta and Lehmann (2003) point out, the concepts and models of customer lifetime value originate in the field of direct and database marketing – and the focus on this domain continues still. Therefore it can be argued that the use of customer asset management frameworks focusing mainly on customer retention and acquisition optimization are not optimally suited to a B2B context in which customer relationships are long-term in nature and the options to acquire new customer relationships are more limited than in a B2C context.
In addition to the dyad and customer base approaches, there is also a third way of designing customer asset management activities: the customer portfolio approach. In the customer portfolio approach the needed calculations are conducted at customer level. Based on this information, customers are divided into customer portfolios and the customer asset management activities are designed based on portfolio-level concepts. The customer portfolio approach has several benefits: portfolio-level concepts are more cost-efficient than customer-level concepts but they allow more differentiation options than firm-level concepts. Additionally, the customer portfolio approach is not limited to the use of CLV calculations – even though it does not exclude its use either. As several researchers (e.g. Reinartz & Kumar 2000, 2003; Verhoef & Donkers 2001; Bell et al. 2002; Venkatesan & Kumar 2002) have included portfolios or segments in their customer asset management frameworks, it can be concluded that customer portfolio models could be an alternative customer asset management framework in addition to the existing CLV models.

Even though the use of customer portfolios has not been investigated in great detail within customer asset management literature, there is a considerably body of research on relationship portfolios within the Industrial Marketing and Purchasing Group (IMP). A common nominator among the IMP-originated portfolio models is the fact that they are aimed at describing the relationship base, gaining better understanding of the relationship base, and/or providing tools for the management and measurement of the relationship base. Krapfel et al. (1991) and Leek et al. (2006) propose relationship typologies that help in choosing the appropriate relationship management mode. Fiocca (1982) and Campbell and Cunningham (1983) utilize customer portfolio analysis to support industrial (marketing) strategy development. Olsen and Ellram (1997) as well as Bensaou (1999) created portfolio frameworks to support effective supply chain management. Dickson (1983) created a framework for distributor portfolio analyses that can be used to understand and manage better the power dynamics in distribution channels. For overviews of the IMP-originated portfolio models, please see e.g. Zolkiewski and Turnbull (2000, 2002) and Sanchez and Sanchez (2005).

2.2 Implementing customer asset management: activities also outside marketing functions

As presented in the previous chapter, there are three main approaches to designing customer asset management activities to the right customers: dyad approach, customer base approach, and customer portfolio approach. However, designing the right actions for each customer relationship is only the first part of the customer asset management process: after an intellectual design task, the customer asset management activities have to be executed.

The majority of the existing customer asset management frameworks contain at least the following four phases: evaluating the customer base, selecting appropriate marketing actions, observing the results of the marketing actions, and the feedback loop to the customer base evaluation phase (e.g. Bell et al. 2002; Berger et al. 2002; Bolton et al. 2004; Berger et al. 2006). However, there seems to be no common understanding among the researchers about the range of activities suitable for customer asset management. Bell et al. (2002) acknowledge customer acquisition, retention, cross-selling, and relationship termination as potential customer asset management actions. In
a similar vein, Berger et al. (2006) consider acquisition, retention, and relationship development as customer asset management activities. On the other hand, Bolton et al. (2004) provide a differing list of customer asset management activities, consisting of six categories: price, service quality programs, direct marketing promotions, relationship marketing instruments (such as reward programs), advertising/communications, and distribution channels. Berger et al. (2002) take a broader view on customer asset management activities. They state that the selection of customer asset management activities is not solely determined by the CLV calculations but also affected by the firm’s marketing strategy. Even though Berger et al. (2002) do not provide a comprehensive list of potential customer asset management actions, topics such as marketing mix elements and loyalty programs are considered a part of the customer asset management activity repertoire.

If the conceptual frameworks providing guidance for the selection of appropriate customer asset management activities are scarce and only partially coherent, there is an even larger research gap regarding the empirical investigation of customer asset management implementation. Very few studies present any empirical evidence on how customer asset management is or could be conducted in practice, studies by Ryals (2003) and Rust et al. (2004b) being one of the exceptions. Even fewer in number are those studies that have been empirically investigated in an industrial business-to-business context as most studies in customer asset management have either an explicit or implied focus on business-to-consumer relationships and/or service companies. One exception to this rule is the study conducted by Venkatesan and Kumar (2004) who apply their customer lifetime value framework for customer selection and resource allocation to a business-to-business manufacturing company.

In the present research the available customer asset management activity repertoire is derived from the definition and the origins of customer asset management. As discussed above, customer asset management can be defined as the optimized use of a firm’s tangible and intangible resources in order to facilitate as profitable current and future customer relationships as possible (Hogan et al. 2002b). Additionally, customer asset management as a research tradition has its roots in the quest for linking marketing activities to shareholder value (Srivastava et al. 1998; Doyle 2000; Rust et al. 2004a; Vargo & Lusch 2004; Bust et al. 2007). Srivastava et al. (1998) point out that an active management of marketing-finance interface is needed in order to ensure optimal financial performance. According to them, marketing should not conduct marketing actions just based on marketing’s viewpoint; marketing should be aware of the potential impact of marketing actions to e.g. production run length, inventory levels and working capital, and conduct marketing actions in such a way that the shareholder value creation at a firm’s level is maximized. However, in this study it is proposed that customer asset management should still take one step forward from acknowledging the impact of marketing actions to other functions and processes: customer asset management concepts should include all actions that are directly related to managing current and future customer relationships to be as profitable as possible, regardless of in which functional domain these actions are conducted.

This broader view on the available customer asset management is in line with the larger paradigmatic change within marketing. As system theory suggests, businesses always operate as complete systems and thus firm performance cannot be managed entirely
through functional subsystems such as marketing (Miller 1965; Duncan 1972; Kast & Rosenzweig 1972; Reidenbach & Oliva 1981; Ackoff 1999). In recent years, marketing scholars have embraced this line of thinking. Vargo and Lusch (2004) have suggested that marketing is evolving towards a service-dominant logic, in which the ultimate objective of marketing is not to optimize marketing variables as such but to ensure optimal co-creation of value for both the customer and the company. This value is co-created in a longitudinal process between the company and its customers, and therefore marketing strategies need to coordinate the provider’s activities over time as well as cross-functionally.

This line of thinking places new demands on customer asset management concepts. If the connection to the customer is relational instead of transactional and the value is co-created with customers, and not created in production facilities and then distributed to customers (value-in-exchange), successful customer asset management concepts can no longer be formulated and executed within the traditional marketing function. If marketing is seen as a longitudinal, social, and economic process between the provider and the customer (e.g. Berry 1983; Zeithaml et al. 1985; Grönroos 1994; Gummesson 1994), then the customer asset management concept needs to coordinate the provider’s activities with the customer’s practices, over time as well as cross-functionally.

2.3 Coordinating the cross-functional implementation of customer asset management: shareholder value as the common nominator

It was proposed in the previous chapter that customer asset management concepts should include all actions related to managing profitable current and future customer relationships regardless of their functional domain and that these customer asset management concepts should be implemented cross-functionally.

However, implementing cross-functional customer asset management concepts that are formulated from a viewpoint of any single function is almost impossible. Thus, customer asset management concepts will not be truly cross-functional if they are not targeted at objectives that are common for all functions and the firm as a whole. One of such objectives is improving the firm’s financial performance and shareholder value creation. Therefore, portfolio-specific customer asset management concepts have the potential of being successful in both cross-functional formulation and implementation if and as they are geared towards increasing shareholder value creation at the firm’s level.

The optimal financial performance is ultimately judged by the shareholders of the firm. Thus, it can be argued that the optimal financial performance is reached when the shareholder value is maximized in the long-term. To put it simply, shareholder value is created when a company generates earnings on invested capital in excess of the cost of capital adjusted for risk and time (e.g. Stewart 1991; Black et al. 1998; Rappaport 1998). Several measures for shareholder value have been proposed, and these measures can be roughly divided into firm-operations-based and capital-market-based measures. The performance of the firm’s operations can be measured for example by discounted future cash flows (e.g. Black et al. 1998; Rappaport 1998), return on investment (Buzznel & Gale 1987; Jacobson 1988, 1990), sales (Dekimpe & Hassens 1995), price (Boulding & Staelin 1995), cost (Boulding & Staelin 1993) and economic profit or economic value added (Stewart 1991; Kleiman 1999). Other shareholder value
indicators are based on capital market data. According to the efficient market theory, all information on future expected earnings are taken into account in stock prices (Fama 1970). Hence, market capitalization as such is an interesting measure, especially in relation to the book (accounting) value of the firm, i.e. market-to-book (M/B) ratio (Hogan et al. 2002a). Another capital market based measures of shareholder value are Tobin’s q which is the ratio of firm’s market value to the current replacement costs of its assets (Tobin 1969; Lewellen & Badrinath 1997; Anderson et al. 2004) and the market value added (MVA), which is the difference between a firm’s market value and its capital employed (Stewart 1991; Griffith 2004).

Before shareholder value oriented customer asset management concepts can be formulated, there has to be agreement on the measure used to approximate the shareholder value creation. Some of the capital-market-based measures, such as market-to-book value and Tobin’s q, do not allow assessing the contribution of an individual customer to the company’s shareholder value creation. Additionally, the stock market bubbles have shown that the efficient market theory has its shortcomings when applied in the real world. Thus, basing the shareholder value analysis on for example share price can be misleading. Accounting-based ratios, such as ROI and sales, allow customer-level analysis but they concentrate on the accounting profit instead of the more relevant economic profit. Therefore the use of economic profit as the measure of shareholder value creation is proposed. Economic profit defines the net operating profit after tax (NOPAT) and subtracts the capital charge for the economic book value of a firm’s assets. Thus economic profit gives an estimate of the true profit that accrues to shareholders after all operating and financial expenses have been deducted. However, economic profit as a stand-alone measure does not account for the growth opportunities inherent in the companies’ investment decisions. Therefore shareholder value creation can be expressed as the discounted present value of all economic profit that the company is expected to generate in the future. Economic profit combines the attractive features of both the operations-based and the capital-market-based measurements: it acknowledges both the operating and financial expenses and allows individual customer relationship level analyses. Also, empirical evidence has shown that positive economic profit leads to an increase in shareholder wealth (Bacidore et al. 1997; Kleiman 1999).

Several authors have investigated how shareholder value creation can be increased. Rappaport (1998) and Black et al (1998) have identified seven value drivers that affect the shareholder value and its creation: sales growth rate, operating profit margin, income tax rate, working capital investment, fixed capital investment, cost of capital, and value growth duration. Srivastava et al. (1998) suggest that the firm value is driven by growing the cash flows, accelerating the cash flows, reducing the volatility and vulnerability of cash flows and enhancing the residual value of cash flows. Stewart (1991) has identified six shareholder value drivers: net operating profits after taxes, the tax benefit of debt associated with the target capital structure, the amount of new capital invested for growth, the after-tax rate of return of the new capital investments, the cost of capital for business risk, and the future period of time over which the company is expected to generate a return exceeding the cost of capital from its new investments. Leibowitz (2000) argues that the main determinant of shareholder value is the franchise spread, the return that the company is able to earn on new investments over the cost of capital. Chen et al. (2002) identify four value drivers for a company’s stock: the
company’s current assets and the cash flows derived from them, the present value of
growth opportunities, options to reduce risks, and options to add flexibility. Even
even though the authors presented above represent different schools of thought within
finance, it can be argued that the drivers of shareholder value can - from a marketing
point of view - be divided into four main categories: revenue, cost, asset utilization, and
risk.

3 CONCEPTUAL FRAMEWORK

To summarize the above literature review, a successful customer asset management in a
business-to-business relationship context is built on a series of foundations. First, there
are three main approaches to designing customer asset management activities for
different customers: dyad, customer portfolio, and customer base approach. It was
deemed that the CLV-oriented dyad and customer base approaches are less suitable for
business-to-business relationships, especially due to the challenges in estimating CLV
accurately enough in highly long-term customer relationships and in using acquisition-
retention optimization in a context characterized by a limited number of potential new
customer relationships. Thus, the use of the customer portfolio approach was proposed
for designing customer asset management activities in a B2B context.

Second, it was proposed that customer asset management should include all actions
related to rendering current and future customer relationships as profitable as possible
regardless of their functional domain and that the implementation of customer asset
management should be conducted cross-functionally.

Third, in order to achieve cross-functional coordination and implementation, customer
asset management should aim at advancing common firm-wide objectives such as
increasing shareholder value.

Fourth, economic profit was deemed to be an appropriate proxy for the shareholder
value captured from a single customer relationship and four distinct drivers of
shareholder value were identified: revenue, cost, asset utilization, and risk.

Based on these propositions, a conceptual framework for managing customer
relationships as assets in a business-to-business relationship context is proposed. In this
framework, the customer base of a firm is divided into customer portfolios on the basis
of how individual customer relationships contribute to shareholder value, the overall
objective of customer asset management. Differentiated customer management concepts
are then created for each portfolio, with the aim of increasing the total economic profit
generation in all customer portfolios. In this research, customer management concepts
are defined as portfolio-specific offerings which outline both the products and services
offered to the customers as well as the target service level. Thus the term customer
management concept is not limited to any functional domain: the customer management
concept can include any variables that are linked to products and services or that have
an effect to the service level experienced by the customer. The customer management
concepts are created in order to affect all identified drivers of shareholder value:
revenue, cost, asset utilization, and risk. Finally, all portfolio-specific customer
management concepts are managed cross-functionally, but as the costs associated with
cross-functional coordination are expected to increase together with the level of cross-
functionality, the cross-functionality levels of different customer management concepts are dependent on the economic profit creation in different customer portfolio. The proposed conceptual framework is summarized in Figure 1.

Figure 1 Conceptual framework for customer asset management in a B2B context

The proposed conceptual framework has similarities with the previously proposed customer asset management frameworks by Bell et al. (2002). Compared to the framework provided by Bell et al. (2002), the current framework introduces a new phase on customer portfolio creation, has a more robust link to the shareholder value creation, and provides more insight on how to design appropriate management concepts for each customer portfolio. Additionally, the proposed conceptual framework brings forth the need for cross-functional implementation and coordination of customer asset management, a topic not elaborated by Bell et al. (2002).

4 EMPIRICAL RESEARCH

The research method utilized in the present study is best described as cooperative inquiry (Heron 1971, 1996; Reason 1995) and interaction research (Gummesson 2002). Cooperative inquiry is one of the research approaches based on the action research tradition founded by Lewin (1946). Cooperative inquiry believes in doing research ‘with’ rather than ‘on’ people. In cooperative inquiry, all active participants are fully involved in making research decisions as co-researchers and new knowledge is created through a research cycle among four different types of knowledge: propositional, practical, experiential, and presentational knowledge. Gummesson (2002) proposes that interaction and communication with groups of managers can play a crucial role in research and that testing concepts through such interaction is “an integral part of the whole research process” (Gummesson, 2002:345).

The empirical research comprised a single longitudinal case study. The case company is a division of a global forestry product corporation headquartered in Europe. The case
study company was chosen based on accessibility, since this was the only company in which the authors had conducted cooperative inquiry related to customer portfolios which also calculates the economic profit of their customer relationships. Our analysis covered two financial years.

According to Susman and Evered (1978), action research can be viewed as a cyclical process with five phases: diagnosing (identifying or defining a problem), action planning (considering alternative courses of action for solving a problem), action taking (selecting a course of action), evaluating (studying the consequences of an action), and specifying learning (identifying general findings). The diagnosis phase of the action research process consisted of 2 meetings with the project team, interviews with key individuals in the organizations (5 interviews with 3 individuals), and reviews of the existing data-material provided by the company. Project team meetings were participated by 4-5 representatives of the client organization and the consulting team of 3 members. In these first project team meetings the problem definition was clarified and the suitable interviewees and background materials were identified. The interviewees represented executive vice president and senior manager level positions involved in the management of customer relationships. All interviews are in-depth theme interviews, in which no formal interview questionnaire were used but the interviewees were encouraged to elaborate freely upon topics related to customer relationship management and the challenges of their organization. All interviews lasted 1-2 hours and they were conducted and documented by two members of the consulting team. The provided data covered the calculation of economic profit for each customer relationship, the characteristics (business volume, product mix, and behavioral data) of the individual customer relationships, and descriptions of the customer management concepts applied.

After analysis year 1, the economic profit of customer relationships was calculated by the company and the action planning phase was initiated. During the action planning phase, the customer portfolio framework and the differentiated customer management concepts were created through a collaborative process including interventions in the forms of 6 project meetings and informal discussion with five key individuals. During the action planning phase, the company decided to utilize a cumulative economic profit contribution analysis as the starting point for creating customer management concepts. The cumulative economic profit contribution analysis is relatively simple: the economic profit created by each customer is calculated and customers are ranked in a descending order, placing the customer yielding the largest economic profit first to the graph, then the second most profitable customer and so forth. The economic profit generated by each customer is added to the cumulative economic profit buildup of the previous customers on the chart in such a way that the graphical illustration ends with the customer yielding the lowest economic profit (Storbacka 2000). Figures 2 and 3 provide graphical illustrations of cumulative economic profit analyses.

Based on the cumulative economic profit analysis, three customer portfolios were created and the financial performance of each portfolio was analyzed. Based on the analysis, three customer portfolios were created and the financial performance of each portfolio was analyzed. After this, differentiated customer management concepts were created for each portfolio (summary of the customer management concepts is presented in Table 1).
During year 2, the case company conducted the action taking phase by executing the differentiated customer management concepts for the customer portfolios. The evaluation phase was conducted at the end of analysis year 2: the project team convened in one meeting in which the financial performance of each portfolio was analyzed and compared with the performance during year 1.

Specifying learning and identifying general findings was conducted in two stages. First, the general findings for the client organizations were identified in the final joint project meetings with the consulting team and the client representatives. Second wave of learning specification occurred when the authors were involved in writing the research report. During this time, the authors compared the action research data and findings to the proposed theoretical framework (Conceptual framework for customer asset management in a B2B context, Figure 1).

5 RESULTS

During year 1 the customer base consisted of 76 customers. Based on the cumulative economic profit analysis (Figure 2), the 13 customers with the highest yearly economic profits were assigned to portfolio A. There were 11 customers showing negative economic profit: they formed portfolio C. The remaining 52 customers were assigned to portfolio B. The customer portfolios were created at the beginning of analysis in year 2, which enabled us to conduct a base case calculation of the economic profit contribution of the customer portfolios for the whole of year 1. During year 1 the total economic profit created in the customer base was 2,437,174 euro. It was distributed among the three customer portfolios as follows: portfolio A 2,665,861 euro, portfolio B 1,239,038 euro and portfolio C a negative economic profit of 1,467,725 euro.

![Figure 2 Cumulative economic profit analysis and customer portfolios after year 1](image-url)

The characteristics of the typical customer relationships in the different customer portfolios were examined in order to find out the reasons for the differences in the economic profit contribution. As the cumulative economic profit contribution analysis concentrated on the actual economic profit contribution of each customer instead of the
relative contribution margin, the customer relationships with large positive economic profits in portfolio A were customer relationships with considerable business volumes. Portfolio B, on the other hand, consisted of customer relationships that yielded either only slightly positive or negative economic profits. With only one exception, the business volume of customer relationships in portfolio B was quite small. The number of customer relationships in this portfolio was, however, considerably larger than in the other two customer portfolios. The typical customer relationship in portfolio C generated a large negative economic profit, but the majority of the customer relationships in this portfolio brought in considerable business volume.

The information on the characteristics of the typical customer relationships and the economic profit contribution in different customer portfolios were taken as starting points when creating the customer management concepts. The theoretical background and the practical experience of the involved managers suggested that the company should pursue slightly different objectives in each portfolio in order to increase the overall shareholder value creation. For portfolio A the company created a customer management concept called ‘margin and cash flow maintenance’. The main objective of this concept was to increase the margin and cash flow available from these large-volume customer relationships that already created a considerable positive economic profit. Portfolio B consisted of a large number of small business volume relationships that each individually had an economic profit contribution close to zero. Based on these characteristics, the company created a customer management concept called ‘risk management’ for portfolio B. Its objective was to reduce the overall business risks by reducing the interdependencies in the customer base and by using the small-volume customer relationships as a buffer against business cycle variations. For portfolio C, the company developed a customer management concept called ‘capacity optimization’, the objective of which was to use the negative economic profit generating but large-volume customer relationships to optimize the capacity utilization of the production facilities, thus reducing the average cost level of operations by reducing fixed and capital costs per production unit. The proposed three customer management concepts - margin and cash flow maintenance, risk management, and capacity optimization - converged with the main levers of increasing economic profit: increasing revenues, reducing costs, optimizing the use of assets, and minimizing the risks associated with revenue flow.

During year 2, the three differentiated customer management concepts were applied to the three customer portfolios and implemented with varying levels of cross-functionality. In order to keep the report concise, the main features of the customer management concepts are only briefly summarized here. The ‘margin and cash flow maintenance’ customer management concept was aimed at a small number of large volume and profitable customer relationships, with the objective of increasing the available margin and cash flow from these customer relationships. The ‘margin and cash flow maintenance’ customer management concept was carried out with extended cross-functional cooperation, spanning sales, production, logistics, R&D, and management. It aimed at providing the customers in this portfolio with the best possible service, thus ensuring a high economic profit level also in the future. The cross-functionality of the ‘risk management’ customer management concept was more moderate. Cross-functional cooperation was naturally needed to implement the ‘risk management’ customer management concept, but most of the cross-functional
cooperation requiring ad hoc meetings or similar were eliminated from the customer management concept, as the costs associated with extended cross-functionality were not justified in customer relationships with both low economic profit and small business volumes. The ‘capacity optimization’ customer management concept was aimed at a small number of large volume customer relationships but, unlike the cash flow maintenance customers, the capacity optimization customers generated considerable negative economic profit. Due to this fact, the ‘capacity optimization’ customer management concept was implemented with no ad hoc cross-functional cooperation – all the needed cross-functionality was embedded in the business systems to ensure cost-efficiency. A broader description of the main elements of the three different customer management concepts is presented in Table 1.
Table 1 Summary of the differentiated customer management concepts

<table>
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<tr>
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<th>Portfolio A</th>
<th>Portfolio B</th>
<th>Portfolio C</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Products</strong></td>
<td>• Entire regular product range</td>
<td>• Top 20 products</td>
<td>• Top 10 products</td>
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<tr>
<td></td>
<td>• Tailor-made products</td>
<td></td>
<td></td>
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<tr>
<td><strong>Cross-functionality</strong></td>
<td>• Continuous cooperation between sales, production and R&amp;D</td>
<td>• Cooperation between sales and production systematized in systems</td>
<td>• Cooperation between sales and production systematized in systems</td>
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<tr>
<td>concerning products</td>
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<tr>
<td><strong>Order-delivery process</strong></td>
<td>• Supply chain management solution</td>
<td>• Direct orders</td>
<td>• Direct orders</td>
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<td></td>
<td></td>
<td>• Service and care by local sales office</td>
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<tr>
<td><strong>Cross-functionality</strong></td>
<td>• Continuous cooperation between sales, production and logistics</td>
<td>• Some cooperation between sales and production</td>
<td>• Cooperation between sales and production systematized in systems</td>
</tr>
<tr>
<td>concerning order-delivery</td>
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<td>process</td>
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<td><strong>Pricing</strong></td>
<td>• 12-month agreement</td>
<td>• 3-month agreement</td>
<td>• Market price</td>
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<tr>
<td><strong>Cross-functionality</strong></td>
<td>• Cooperation between sales and management</td>
<td>• Cooperation between sales and management</td>
<td>• No cross-functional cooperation</td>
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<td>concerning pricing</td>
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<td><strong>Technical support</strong></td>
<td>• Customized on-site support</td>
<td>• Emergency on-site support</td>
<td>• Emergency on-site support</td>
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<td></td>
<td>• Regular technical meetings</td>
<td>• Technical manager visits when appropriate</td>
<td>• Quality reports when appropriate</td>
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<td>• Regular technical manager visits</td>
<td>• Quality reports when appropriate</td>
<td>• Standard certifications</td>
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<td>• Standard certifications</td>
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<tr>
<td><strong>Cross-functionality</strong></td>
<td>• Continuous cooperation between sales, production and R&amp;D</td>
<td>• Some cooperation between sales, production and R&amp;D</td>
<td>• Minimal ad hoc cooperation between sales, production and R&amp;D</td>
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<tr>
<td>concerning technical</td>
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<td>support</td>
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<tr>
<td><strong>Relationship management</strong></td>
<td>• Annual customer meetings</td>
<td>• Sales manager visits when appropriate</td>
<td>• Information on the roles and responsibilities of provider’s personnel</td>
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<td>• Regular visits on the vice president level</td>
<td>• Sales representative visits when appropriate</td>
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<td>• Regular sales manager visits</td>
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<td>• Regular sales representative visits</td>
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<td>• Visits to sites</td>
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<td>• Continuous customer planning</td>
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<tr>
<td><strong>Cross-functionality</strong></td>
<td>• Continuous cooperation between sales and management</td>
<td>• No cross-functional cooperation</td>
<td>• No cross-functional cooperation</td>
</tr>
<tr>
<td>concerning relationship</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>management</td>
<td></td>
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</tbody>
</table>
After year 2, the calculations were repeated in order to assess the effectiveness of the customer management concepts. During year 2 the company acquired two new customers and these were assigned for their first customer relationship year to portfolio B. Hence, the customer base in year 2 consisted of 78 customers: 13 in portfolio A, 54 in portfolio B, and 11 in portfolio C. During year 2 the total economic profit created in the customer base was 2,344,584 euro. It was distributed among the three customer portfolios as follows: portfolio A 2,821,984 euro, portfolio B 874,854 euro and portfolio C -1,352,254 euro. The economic profit contributions and customer portfolios after year 2 are illustrated in Figure 3, and the comparison of the economic profit contributions of the entire customer base and different portfolios in years 1 and 2 is presented in Table 2.

![Cumulative economic profit analysis and customer portfolios after year 2](image)

**Figure 3** Cumulative economic profit analysis and customer portfolios after year 2

The external operating environment for the case company deteriorated considerably during the analysis period as the entire industry entered a downturn and the average price level decreased substantially: for example, the profits of the three largest European forestry products companies decreased on average by 52.9% in one year. Due to the changes in the operating environment, the slight reduction in the overall economic profit contribution of the customer base could not be considered as a failure of the differentiated customer management concepts. On the contrary, if comparing the economic profit development of the case company (-4.2%) to the average development of the operating profits of the peer group firms (-52.9%) it can be concluded that the implementation of the customer portfolio-specific customer management concepts helped the case study company to improve its financial performance. In particular, the company managed to increase the economic profit contribution of portfolio A by 5.9% and to reduce the negative economic profit contribution of portfolio C by 7.9% (see Table 2). Therefore it can be argued that the differentiated and cross-functionally implemented ‘margin and cash flow maintenance’ customer management concept actually helped the company to boost its revenues, while the ‘capacity optimization’ customer management concept helped to simultaneously control the costs. The decline in the overall economic profit contribution seems to be a result of a revenue reduction in portfolio B, and this is likely to be driven by the external price pressure and not by the actions taken by the company itself. This conclusion is supported by interview findings among the key persons in the case company.
Table 2 Financial performance of different customer portfolios in analysis year 1 and 2

<table>
<thead>
<tr>
<th>Economic profit contribution (€)</th>
<th>Analysis year 1</th>
<th>Analysis year 2</th>
<th>Improvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Entire customer base</td>
<td>2,437,174</td>
<td>2,334,584</td>
<td>-4.2%</td>
</tr>
<tr>
<td>Portfolio A</td>
<td>2,665,861</td>
<td>2,821,984</td>
<td>5.9%</td>
</tr>
<tr>
<td>Portfolio B</td>
<td>1,239,038</td>
<td>874,854</td>
<td>-29.4%</td>
</tr>
<tr>
<td>Portfolio C</td>
<td>-1,467,725</td>
<td>-1,352,254</td>
<td>7.9%</td>
</tr>
</tbody>
</table>

6 DISCUSSION

The objective of this paper was to investigate how the customer portfolio approach can be used in a B2B context in designing customer asset management activities and how customer asset management activities can be implemented in business-to-business relationship through customer portfolio-specific customer management concepts. This paper contributes to the theoretical discussion on how marketing creates shareholder value (e.g. Day & Fahey 1988; Srivastava et al. 1998; Srivastava et al. 1999; Doyle 2000; Kumar & Petersen 2005). Various authors have developed conceptual frameworks linking marketing actions to shareholder value and firm financial performance, often through market-based assets such as customer equity or the customer asset (e.g. Srivastava et al. 1998; Doyle 2000; Rust et al. 2004a; Vargo & Lusch 2004; Bush et al. 2007). However, there are fewer studies elaborating on how marketing’s contribution to shareholder value creation and firm financial performance should be measured. The present study examined different alternatives for measuring the contribution of marketing and customers to shareholder value, ranging from discounted future cash flows (e.g. Black et al. 1998; Rappaport 1998) to Tobin’s q (Tobin 1969; Lewellen & Badrinath 1997, Anderson et al. 2004). It was concluded that the optimal measure to indicate marketing’s contribution to shareholder value creation and a firm’s performance should acknowledge both the operating and financial expenses and allow individual customer relationship level analysis. As economic profit meets both of these requirement, the present study proposes it as the measure to be used in illustrating marketing’s impact on shareholder value creation and firm performance.

Additionally, the paper provides insights into the practical means of designing customer asset management activities – especially in business-to-business relationships. According to Kumar and George (2007), there are two main approaches for designing customer asset management activities: the dyad approach, in which the needed lifetime calculations are conducted on an individual customer level and the activities are designed with customer-level concepts; and the customer base approach in which the lifetime calculations are conducted at a firm’s level and activities are designed with a firm-level concept. However, the present study proposed a third approach of designing customer asset management activities: the customer portfolio approach, in which the needed calculations are conducted on the customer level but the activities are designed based on portfolio-specific concepts. The customer portfolio approach has several benefits: portfolio-level concepts are more cost-efficient than customer-level concepts but they allow more differentiation options than firm-level concepts. Additionally, the customer portfolio approach has the potential of becoming a viable customer asset management framework in addition to the existing CLV models, especially in B2B.
context where the development of CLV applications seem to be lagging behind the B2C sector (Blocker & Flint 2007). After all, the customer portfolio approach circumvents the main challenges associated with applying CLV-based customer asset management applications in B2B context: it is not dependent on customer lifetime value calculations which can be difficult in truly long-term customer relationships and it does not rely on acquisition-retention optimization which can be challenging in a context characterized by a limited number of potential customer relationships.

The proposition to use customer portfolio models to increase shareholder value creates an interesting link to financial asset allocation theories. After all, customer asset management is based on the notion that the return from customer relationships to the provider varies between one customer and another and that this value can be actively managed by allocating resources between customer relationships. Additionally, customer asset management researchers generally agree on the fact that the future cash flows from the customers are always uncertain: there is an innate risk concerning the future returns on customers (e.g. Hogan et al. 2002a). This idea of future revenues from multiple assets that are subject to risk and that are optimized through resource allocation decisions provides a logical link to modern portfolio theory (Markowitz 1952). Modern portfolio theory is the most influential theory illustrating asset management decisions under uncertainty. According to modern portfolio theory, it is possible to identify an efficient investment portfolio that maximizes the return at a given risk level. The Markowitz efficient frontier depicts the optimal risk-return profiles of asset portfolios, each giving the highest expected return for each given level of risk. This means that all investments of a single investor can be optimized through one efficient portfolio. The direct application of modern portfolio theory-based models has been considered also outside the domains of finance, especially in relation to product portfolio optimization (e.g. Anderson 1981; Wind & Mahajan 1981), leading to popular applications such as the BCG growth/share matrix (Hedley 1977) and the McKinsey/GE business assessment array (Hussey 1978; Robinson et al. 1978). However, the possibly incompatible assumptions of financial markets and product portfolios, possibly undermining the direct application of financial portfolio models to product portfolios, have been pointed out (Devinney et al. 1985). It is crucial to note that customer relationships have also characteristics that do not allow a straightforward adoption of modern portfolio theory to a customer base. Thus, if a portfolio approach is to be used in customer asset management, a resource allocation framework based on managerial judgment, not a mathematical optimization formula, should be used in the attempts to improve the return from the customer base – a clear deviation from financial applications of the modern portfolio theory. Such a flexible resource allocation framework is needed in order to optimize the risk and return of a customer base, since the characteristics of customers as assets do not allow the mathematical optimization of a single portfolio. The main differences between customers and investment instruments as investment targets relate to volume and the acquisition/divestment of investments. The investment volume and the acquisition or divestment of investment instruments can be decided solely by the investor. However, these fundamentals of efficient markets do not apply to customers as investment targets, since both the volume in customer relationships and the acquisition of new or termination of old customer relationships depends on both the company and the customer. In contrast, customer portfolio models offer the companies the possibility to manage the shareholder value formation in the
customer base through multiple customer management concepts, each formulated so as to increase shareholder value in its own respect.

6.1 Managerial implications

Managerially, this paper contributes to the knowledge base of practitioners in three ways. First, the present study is one of the first to provide empirical evidence on the implementation of customer asset management among business-to-business relationships. Managerially, customer portfolio models provide an interesting framework for customer asset management in B2B firms: the existing customer asset management frameworks are mainly based on CLV calculations and the optimization of acquisition and retention spending – and therefore these models have had limited application potential in a B2B context. As the empirical research illustrates, customer portfolios can be created in B2B customer bases with relative ease.

Second, the present study describes three differentiated customer management concepts that can be applied in order to increase shareholder value creation. Although these strategies have not been tested in other companies and thus they cannot be claimed to be generic to their nature, they converge with the main levers of increasing shareholder value: increasing revenues, minimizing the risks associated with revenue flow, reducing costs, and optimizing the use of tangible assets. However, when implementing portfolio-specific customer management concepts it must be noted that the customer portfolio model is a decision aid for managers and not a mechanistic tool: the roles of customers in the particular business logic have to be understood thoroughly before portfolio-specific customer management concepts can be created. For example, in certain businesses it might be good business sense to maintain relationships with unprofitable customers as they might be valuable as references or in helping to achieve the optimal capacity utilization rate of production facilities. Therefore, as pointed out by Terho and Halinen (2007) portfolio-specific customer management concepts is a context-dependent issue and the customer portfolio model should always reflect the firm’s customer base structure, business logic, competitive situation, and strategic objectives.

Third, the paper illustrates the role of cross-functionality in implementing portfolio-specific customer management concepts and thus also gives practical examples of issues to consider when implementing cross-functional customer management concepts. Understanding the importance of cross-functional cooperation and practical examples of cross-functionality are especially important as the present research suggest that customer asset management cannot achieve a maximum impact on increasing shareholder value if customer asset management concepts are limited to the marketing function and marketing variables.

6.2 Limitations and directions for further research

The aim of the present research was to investigate how the customer portfolio approach can be used in a B2B context in designing customer asset management activities and how customer asset management activities can be implemented in business-to-business relationship through portfolio-specific customer management concepts. This definition poses certain conceptual limitations for the application and the theoretical contribution of the research findings. First, the entire research has been conducted with a specific
focus on business-to-business relationships and the empirical investigation has been executed within a business-to-business context. Therefore the applicability of the research findings in business-to-consumer contexts requires further studies. Second, the present study focuses on investigating the customer portfolio approach in designing customer asset management activities. Therefore the present study does not contribute to the academic discussion on customer lifetime value calculations or the dyad and customer base approaches of designing customer asset management activities. Third, the present study proposed that firms should differentiate their customer management concepts in order to actualize their customer asset management decisions. In order to support this customer management concept differentiation, the present research identified four main drivers of shareholder value and suggested that these drivers could be taken as the starting point for creating portfolio-specific customer management concepts. However, it should be acknowledged that the empirical research on the impact of differentiated customer management concepts to shareholder value creation is at an exploratory phase and thus does not provide normative guidance for creating customer asset management frameworks or for differentiating customer management concepts. Thus, further research is needed regarding the content of the differentiated customer management concepts. To begin with, more research is needed regarding the optimal number of different customer management concepts or the optimal degree of differentiation from each other. In addition, the development of theoretical foundations for creating portfolio-specific customer management concepts should be continued as the present research covers only financial aspects of customer relationships, potentially overlooking other important customer relationship attributes.

In addition to the theoretical positioning of the study, the execution of empirical research creates certain limitations. The empirical part of the present study was based on data collected from one case study company operating in a B2B context over a period of two years. In order to gain reliable evidence on the impact of portfolio-based customer management concepts on firm performance, further longitudinal empirical research is needed. After all, the successful implementation of new cross-functional customer management concepts is likely to take several years, and the results may not be visible in the very beginning. The impact of differentiated customer management concepts on firm performance could also be further examined by comparing the performance of the case study companies to a reference group of similar firms that have not implemented portfolio-based customer management concepts.

Finally, the potential of using the portfolio approach in designing customer asset management activities with business-to-consumer relationship should be investigated. The present research was motivated by the B2C orientation of the current customer asset management applications and the unsuitability of CLV calculations and acquisition-retention optimization for business-to-business relationships. The findings of the research indicate that the current dominant approaches for designing customer asset management activities, the dyad and the customer base approach, could also be substituted with the customer portfolio approach – at least in a B2B context. However, the theoretical foundations of the customer portfolio approach to designing customer asset management activities do not limit it to any specific context. Thus, it would be beneficial to investigate the applicability of the customer portfolio approach to business-to-consumer relationships as well.
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