

Customer Value Management: An Overview and Research Agenda

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Customer value management has become important in marketing practice and marketing science. In this article we provide an overview of the literature on customer value management. We specifically focus on literature exploring the determinants of customer retention, customer expansion and customer lifetime value. Our overview shows that some results are consistent throughout a number of studies and are hence more generalizable, such as that commitment can be considered an important determinant of customer retention. However, our investigation also reveals some important research gaps. Based on this, a research agenda consisting of nine research areas is outlined. Important future research issues concern the relationship between brand- and customer value management, and the development of models for optimizing CLV.

Keywords

customer value management, customer retention, customer lifetime value, customer expansion, multi-channel management

1. Introduction

One of the most prominent developments in marketing in recent years has been the growing importance of customer relationships and the therewith increasing availability of individual customer data in large customer databases. Companies, such as Tesco (UK retailer), Capital One (financial services) and Harrah's Entertainment are known for their successful use of customer data in their marketing strategy. These companies make use of customer data to target customers more effectively, to develop and extend customer relationships, and enhance customer learning. For example, Capital One uses the information obtained through past interactions with customers to learn how to create a more effective customer strategy. The gambling company Harrah's identifies their best customers and potential cross-selling opportunities with the help of their comprehensive customer database.

The increasing availability of customer data has also created a new, very fruitful research area within marketing science: Customer Value Management Research. Many modeling-oriented researchers have now entered this field to study topics such as the prediction of customer lifetime value and the development of models for customer-specific offers (e.g. *Fader/Hardie/Lee* 2005; *Rust/Verhoef* 2005). Likewise, special conferences on customer value management have been organized (*Kumar/Lemon/Parasuraman* 2006). Moreover, several overview papers have appeared in different journals (e.g. *Villanueva/Hanssens* 2007, *Rust/Chung* 2006, *Gupta/Zeithaml* 2006; *Neslin et al.* 2006, *Gupta et al.* 2006). Together



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these articles already provide excellent reviews of the extant literature. Our paper differs from these papers in several aspects. First, we provide a comprehensive overview of the total field of customer value management including several important aspects of customer value management, while other overview papers mainly focus on one single aspect (i.e. customer lifetime value (Gupta et al. 2006, multi-channel (Neslin et al. 2006), modeling-related aspects (Villanueva/Hanssens 2007; Kamakura et al. 2005), specific contexts (e.g. retailing) (Kumar/Shah 2004), marketing metrics (Lehmann/Reibstein 2006) or the link between customer metrics and financial performance (Gupta/Zeithaml 2006)). Second, this is the first paper that provides a detailed overview of published studies on determinants of both customer retention and customer expansion. This allows us to draw some initial empirical generalizations on these determinants.

In this paper, we thus aim to provide a comprehensive overview of the research conducted in the field of customer value management. Building on this overview, we then identify areas where more thorough insights are required and suggest some promising avenues for future research. We will start with discussing the development of customer value management. Next, we will provide a list of research areas and list the most influential articles. Finally, we end with an extensive research agenda and a conclusion.

2. Customer Value Management

Following recent developments in the marketing literature we believe that customer value is one of the essential metrics in customer management (Kumar/Reinartz 2006). Moreover, as customers differ in value (Reinartz/Krafft/Hoyer 2004; Tirenni/Kaiser/Herrmann 2007), firms can efficiently allocate resources among customers. This notion has induced the importance of customer value management within organizations. **Customer Value Management** (CVM) entails the optimization of the value of a company's customer base. CVM focuses on the analysis of individual data on prospects and customers. The resulting information is used to acquire customers and to drive customer behavior with the developed marketing strategies in such a way that the value of all current and future customers is optimized.

Within CVM, customer lifetime value (CLV) is the central metric. CLV is defined as the discounted value of all expected future customer profits in a determined time period (Bolton/Lemon/Verhoef 2004). The underlying idea is that customers can be considered as important assets of the company, which should be cultivated and activated.

From a managerial perspective, customer value management is a learning system, in which customer strategies can be constantly improved based on continuous evaluations of prior customer strategies. Companies can

increase the value of their customer base by (1) *attracting new customers*, (2) *increasing customer retention*, and (3) *creating customer expansion*. This should occur in a balanced and coordinated manner. Firms focusing too much on customer retention and neglecting customer acquisition will at some point face difficulties because their customer base becomes too „old“. Moreover, variety-seeking behavior can weaken the customer base. Also, interdependencies between the strategies should be considered (McAlister/Pessemier 1982). For instance, Lewis (2005) shows that large acquisition discounts have a negative impact on customer retention rates, resulting in lower lifetime values. Hence, the acquisition and retention strategy cannot be viewed separately from one another.

3. Customer Value Management Research

In recent years there has been extensive research in the area of customer value management and its predecessors. It has been one of the most heavily researched themes within marketing science (e.g. Stremersch/Verniers/Verhoef 2007). In order to classify research in this domain, we will draw on a conceptual framework of the Customer Value Management process, which is based on Bolton/Lemon/Verhoef (2004). This framework is displayed in Figure 1. It reveals that the development of customer strategies is based on customer analysis. Customer strategies affect customer acquisition and customer behavior, but also involve costs. Customer lifetime value (CLV) is the result of the generated revenues and the costs of those strategies and should finally be related to firm value (Gupta/Lehmann/Stuart 2004; Gupta/Zeithaml 2006).

Based on this framework, six general research themes emerge:

- 1) Research on Customer Analysis: Methods and Technical Issues
- 2) Research on Customer Acquisition Methods
- 3) Research on Determinants of Customer Retention and Customer Expansion
- 4) Research on Customer Lifetime Value and Links with Firm Value
- 5) Research on Channels in Customer Value Management
- 6) Research on the Implementation of Customer Value Management

We will now proceed with an extensive overview of each research stream.

3.1. Theme 1: Customer Analysis

This theme can be divided in two sub-themes: (1) models predicting customer behavior, and (2) specific technical problems with modeling customer behavior. In the first sub-theme, researchers have developed models to predict customer behavior, such as response to mailings and cus-

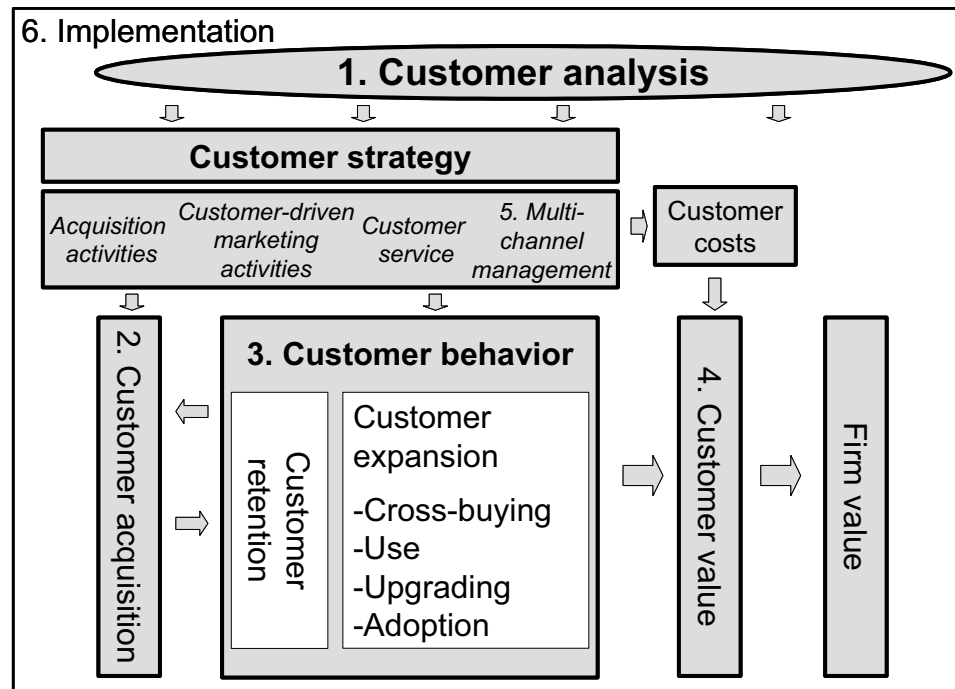


Figure 1: Customer Value Management Process

customer retention/churn¹. These models usually concern econometric techniques such as logit models and decision trees (e.g. CHAID). *Bult/Wansbeek* (1995) is the first paper that discusses the use of logit models for predicting response to a mailing. A very insightful paper is a recent paper by *Neslin et al.* (2006), who discuss results of a churn tournament. They describe, empirically classify and test several methods to predict customer churn. Logit and decision tree-models turn out to perform best. *Lemmens/Croux* (2006) find in their paper that the computer science technique „bagging and boosting” yields the best customer churn predictions.

The second theme within this research area deals with technical issues when modeling customer behavior (*Kamakura et al.* 2005). These issues may concern aspects such as data fusion (*Kamakura/Wedel* 1997; *Kamakura et al.* 2003), sample selection problems (*Donkers et al.* 2006), endogeneity (*Leenheer et al.* 2007), and modeling rare events (*Donkers/Franses/Verhoef* 2003).

Data fusion is applied when researchers have data from several sources that do not match perfectly. A specific example would be a database-analyst who has customer satisfaction data from a specific sample of the customer database and who wants to combine these with media exposure data that are available for another group of customers. Specific statistical techniques have been developed to fuse such data (e.g. *Kamakura/Wedel* 1997; *Kamakura et al.* 2003; *Gilula/McCulloch/Rossi* 2006).

Sample selection problems arise because events only occur for a certain non-random group of customers. For example, direct mail response is only observed for cus-

tomers receiving direct mailings. As non-random selection methods are used for selecting these customers, parameters may be biased when one does not account for these selection effects. *Donkers et al.* (2006) provide an econometric solution for this problem. However, they also show that not accounting for these effects does not dramatically change the pursued mailing strategy.

Endogeneity is an important issue in econometric models used within marketing (*Franses* 2005; *Shugan* 2004). Endogeneity can also be problematic when assessing the impact of marketing instruments in the context of customer management. One specific issue concerns the impact of loyalty programs on customer purchase behavior. Loyalty program members may enter a program because they already expect to be loyal in the near future, which may provide them with rewards. The effect of a loyalty program may then easily be overestimated in a regression not accounting for this effect. *Leenheer et al.* (2007) therefore apply instrumental variable estimation techniques to control for this self-selection effect and assess the true impact of loyalty programs for supermarkets. *Gensler et al.* (2007) compare several methods to deal with self-selection effects and find that hybrid matching has the highest predictive validity.

The last specific issue concerns the handling of rare events. Rare events are a very relevant issue in CVM, as for instance only a small number of customers churn over time in contractual services. To solve this problem, the number of customers with a rare event (i.e. churners) can be oversampled. However, this is not without problems. When oversampling of the rare event also entails an oversampling of one of the predictor variables, such as age, estimates can be biased and less efficient. *Donkers/Franses/Verhoef* (2003) describe with a Monte-

¹ Churn is another term for customer defection and comes from the telecommunication industry. Customer defection or churn is mathematically $1 - \text{customer retention}$.

Carlo study and a real-life application how oversampling can be accounted for in a logit model.

3.2. Theme 2: Customer Acquisition Methods

Research within this theme originates from the direct marketing literature. It mainly focuses on which customers should be selected for a one-shot direct mailing. Having a rather practical orientation, scientific research in this area only came up in the mid-1990s. One of the most prominent papers in this area is that by *Bult/Wansbeek* (1995), in which a logit model with a profit function is used to select customers. Other researchers have built on this work. The developed models mainly use behavioral data, such as RFM-data (recency, frequency and monetary value) to predict response to mailings (*Rossi/McCulloch* 1996). *Krafft/Peters* (2005) provide an excellent overview of research in this area in this journal. Recently, *Donkers et al.* (2006) added to this literature stream by presenting a model which aims to predict response and donation amount in a charity setting. Thereby, they extend prior research that mainly focused on response. In a recent working paper, *Van Diepen/Donkers/Franses* (2006) develop a further extended model that also accounts for competitive effects. In their dynamic direct mailing response model with competitive effects, they incorporate a customer's purchase and promotion history and account for dynamic competitive interactions among the charity funds sending mailings. They show that sending more direct mailings leads to an increase in revenues of all charity funds. *Von Wangenheim/Bayón* (2007) show the significance of word-of-mouth from existing customers to acquire new customers. In a study on the use of different models for acquisition purposes, *Verhoef et al.* (2003) show that most firms still tend to use simple heuristics and models for selecting customers. Models advocated in the scientific literature, such as logit models, are rarely applied. This implies that scientific researchers in this area should pay more attention to the diffusion of the developed models in industry.

3.3 Theme 3: Determinants of Customer Retention and Customer Expansion

Determinants of customer behavior have been of interest in marketing for a long time. Until the end of the 1990s, researchers mainly related customer perceptions on, for example, commitment and trust to customer's stated and intended behavior asked in the same questionnaire. There are several disadvantages of this research methodology, such as common-method variance, response consistency, and the discrepancy between what customers say and what customers do (*Bolton/Lemon/Verhoef* 2004; *Chandon/Morwitz/Reinartz* 2005). For instance, customers stating to be loyal may still switch to another supplier if this supplier has an attractive offer.

Due to the increasing availability of customer databases, researchers are now able to study actual customer behav-

ior and observe customer churn, cross-buying, upgrading behavior etc. This observed customer behavior can then be linked to customer perceptions collected in surveys and to marketing instruments, such as loyalty programs and direct mailings. One of the first articles applying this methodology is *Bolton* (1998). She investigated the impact of customer satisfaction and recent experience with a mobile phone operator on relationship duration. Since that article, several studies have been published building on her work. We will continue with an in-depth discussion of the determinants of customer retention and customer expansion in order to discern common, more generalizable findings and areas where additional insights are still required.

3.3.1. Determinants of Customer Retention

In Table 1 we provide an overview of studies on the antecedents of actual customer retention. Hence, we explicitly do not include studies that consider the antecedents of loyalty intentions (e.g. *Hoyer/Herrmann/Huber* 2006), as within Customer Value Management, the focus is on studying actual customer behavior (*Bolton/Lemon/Verhoef* 2004). In Table 1 we report the context of the study and the model used. We have grouped the antecedents of customer retention in two groups (*Verhoef* 2003): customer relationship perceptions and marketing instruments. Relationship perceptions concern (1) satisfaction/quality, (2) commitment/trust, (3) price perceptions/payment equity, and (4) other perceptions. While satisfaction involves the cognitive and backward-looking evaluation of the relationship, commitment/trust to a greater extent contain the affective and forward-looking evaluation (*Bolton/Lemon/Verhoef* 2004). Some studies have also investigated distinct forms of commitment, such as calculative and continuance commitment. Calculative and continuance commitment consider possible negative consequences of switching (i.e. switching costs and loss of economic and psychological benefits) as a reason to continue a relationship. Price perceptions/payment equity involves the more economic evaluation of a relationship focusing on the fairness of the price given the delivered product or service (*Bolton/Lemon* 1999). With respect to the marketing instruments, we distinguish between (1) below-the-line advertising (i.e. direct mailings), (2) above-the-line advertising (i.e. mass marketing communication, television advertising), and (3) loyalty and relationship programs.

Our overview shows that retention has been studied in multiple industries. However, service industries, such as financial services and the telecommunication industry, are most frequently studied. Authors have used several models. Most frequently used are models for binary dependent variables (i.e. (nested) logit, logistic regression, and probit), which is not unexpected given the binary nature of the retention variable. Our overview shows that satisfaction is clearly the most frequently studied antecedent. There is some evidence for a positive effect of satisfaction on customer retention, yet the evi-

Table 1¹

Overview of Studied Antecedents of Customer Retention

Study	Context	Model	Customer Relationship Perceptions and Characteristics				Marketing Instruments		Comments
			Satisfaction/ Quality	Commitment/ Trust	Price/ Payment Equity	Other	Below the line ad- vertising	Above the line ad- vertising	
Bottom/ Lemon/ Bramlett (2006)	Support services in business markets	Random- intercepts regression using marginal maximum likelihood method	(+)	n.a.	(-)	(+) extreme outcomes within contract	n.a.	n.a.	Study of factors affecting firm's service contract renewal decision. They use more objective measures for satisfaction and quality.
Verhoef/ Langerak/ Donkers (2007)	Automobile market Brand retention	Nested logit model	(+)	(+) Trust	(+)	(+) switching cost (+) prior ties (+) brand equity	n.a.	n.a.	Brand retention studied in combination with dealer retention. Dealer value derived from nested logit model affects brand retention only for volume brands.
Verhoef/ Langerak/ Donkers (2007)	Automobile market Dealer retention	Nested model	(+)	(+) Trust	Effect of payment equity moderated by brand tier	(+) switching costs (+) prior ties	n.a.	n.a.	See above.
Evanschitzky et al. (2006)	Mass transit service	Structural equation analysis	N.S.	(+) Affective (+) Continuance	n.a.	n.a.	n.a.	n.a.	Affective commitment effect stronger than continuance commitment effect.
Lemmens/ Croux (2006)	Wireless telecommunic ations	Bagging and stochastic gradient boosting classification trees techniques	n.a.	n.a.	n.a.	(-) equipment days (+) change in usage level	n.a.	n.a.	Churn prediction study.
Gustafsson/ Johnson/ Roos (2005)	Telecommuni cations	OLS regression	(+) * Prior churn (-)	(+) Affective (+) Calculative	N.S.	n.a	n.a.	n.a.	Effect of affective commitment disappears when satisfaction is included due to multi-collinearity.
Seiders et al. (2005)	Retailing (apparel and home furnishings)	Regression analyses	(+) * Income (+) *Convenience (-) *Convenience * Competition	n.a.	n.a.	(+) Involvement (+) Relationship age (+) Convenience (+) Competition	n.a.	(+)	Retention defined as repurchase visits.
Capraro/ Broniarczyk/ Srivastava (2003)	Health insurance	Hierarchical logistic regression	(+)	n.a.	n.a.	(-) Consumer's objective/ subjective knowledge about alternatives	n.a.	n.a.	Study assesses customer's likelihood to defect.

¹ Effects of a variable is given in brackets (+/-), * indicates interaction, moderating effect, n.a. indicates “not available”, N.S. stands for “not significant”effect

Verhoef (2003)	Insurance services	Probit model for customer retention, Hierarchical modeling	(+) * Relationship age	(+) Affective	N.S.	(+) customer share	Past	n.a.	n.a.	(+) Loyalty programs	Satisfaction and payment equity are antecedents of affective commitment.
Lemon/White/Winer (2002)	Entertainment	Logit model	N.S.	n.a.	n.a.	n.a.		n.a.	n.a.	n.a.	Effect of satisfaction fully mediated by future usage expectations.
Mittal/Kamakura (2001)	Automobile market (car repurchase)	Binary model	(+) * female (-) * education (+) * age (-) * family size	n.a.	n.a.	n.a.		n.a.	n.a.	n.a.	Functional form between satisfaction and repurchase behavior highly nonlinear.
Bolton/Kannan/Bramlett (2000)	Financial services (Credit card)	Logistic regression	(+)	n.a.	n.a.	(+) transactions (+) Repatronage intentions (-) Regret	Number of	n.a.	n.a.	N.S.	Membership in loyalty program does not <i>per se</i> affect retention, but it moderates effects of service evaluations on retention.
Reinartz/Kumar (2000)	Catalog retailing (noncontractual setting)	Negative binominal distribution NBD/Pareto model	N.S.	n.a.	n.a.	n.a.		n.a.	n.a.	n.a.	Relationship between lifetime duration and profitability is weak. Short-term high spenders equally important.
Bolton (1998)	Cellular telecommunications	Proportional hazard regression	(+) * Experience	n.a.	n.a.	(-) Perceived loss (+) Experience		n.a.	n.a.	n.a.	Longer relationship (experience) with provider decreases impact of new information (new experience).

dence is not conclusive. This is not entirely unexpected, since there has been intensive doubt as to this relationship (Grant/Schlesinger 1995). One reason might be that in the described studies satisfaction is measured before customers defect. As a consequence, several events might have occurred (i.e. service failures) between the measurement of satisfaction and customer defection. These events are not captured in the satisfaction measurement, limiting the predictive ability of satisfaction for customer retention. Other authors emphasize the potential non-linear nature of the satisfaction-retention relationship (Agustin/Singh 2004; Mittal/Kamakura 2001). There is also evidence that other variables might moderate the relationship between customer satisfaction and retention. Among the moderator variables examined in literature are customer characteristics (i.e. relationship age, education) and environmental variables (i.e. competition). As the described studies each investigate different moderator effects, it is not possible to come up with generalizable statements on which variables moderate the relationship.

Only a few studies have considered commitment as an antecedent of customer retention. Convincingly, these studies all report a positive effect of all considered forms of commitment on customer retention. One rationale for this stronger effect of commitment compared to satisfaction is that commitment is more forward-looking (i.e. enduring desire to continue the relationship) than satisfaction. Price perceptions or payment equity are also infrequently studied. Evidence for an effect of price perceptions on customer retention is rather weak. Moreover, Gustafsson/Johnson/ Roos (2005) argue that this effect might be completely mediated by satisfaction. Apart from these three antecedents of customer retention, the impact of several other variables on customer retention has also been investigated. For example, Verhoef/Lange-rak/Donkers (2007) consider the effect of brand equity, prior ties and switching costs, while Seiders *et al.* (2005) find positive effects of involvement, relationship age, convenience, and competition. Given the few number of studies investigating these variables, no generalizable findings can be deduced.

Customer retention researchers have hardly studied the effect of marketing instruments. Insights on the effect of both below- and above-the-line advertising on retention are lacking. Yet, in a study in a related field, Venkatesan/ Kumar (2004) find a non-linear effect of direct communications on purchase frequency. Initially, the effect is positive, however, when the direct communication becomes too intensive, the effect turns negative (inverted U-shape). This finding suggests an impact of direct communication on customer retention as well. Three studies investigate the effect of loyalty and/or relationship programs on customer retention and all find a positive relationship. We note, however, that none of these studies corrects for the endogenous nature of these programs (Leenheer *et al.* 2007). Hence, the effect might be less strong than reported.

Thus, overall our overview finds strong evidence for a positive effect of commitment on retention and a positive effect of loyalty programs. Less strong evidence is provided for a positive link between satisfaction and retention; there is, however, substantial evidence that this link is moderated by customer characteristics and/or environmental variables. There is not much evidence on the impact of below- and above-the-line advertising on customer retention; here, a more thorough investigation is desirable.

3.3.2. Determinants of Customer Expansion

Customer expansion can be created by selling more products or services to a customer, upgrading customers to higher service levels, increasing the usage of services, and by the adoption of newly developed products or services (Bolton/Lemon/Verhoef 2004, 2007). In addition to studies examining these metrics of customer expansion, a number of studies investigate the antecedents of customer share or share of wallet. Customer share of customer *i* at supplier *X* is usually defined as the percentage of products or services purchased in a certain defined market or category at a certain supplier. Share of wallet of customer *i* at supplier *X* is usually defined as the percentage of money spent in a market or category at a certain supplier *X*. Depending on its definition in the particular case, customer share therewith comprises the other metrics. Hence, we consider five metrics for customer expansion: (1) cross-buying, (2) service usage, (3) upgrading, (4) new product/service adoption, and (5) customer share/share of wallet. In Table 2 we provide an overview of studies investigating the antecedents of each of these metrics of customer expansion. The determinants are categorized in the same fashion as in Table 1.

There are only two studies that investigate determinants of cross-buying (Li/Sun/Wilcox 2005; Verhoef/Franses/Hoekstra 2001). These studies find a positive effect of satisfaction, which is moderated by several other variables. The lack of studies on this topic clearly shows that more research on cross-buying is required. Three studies examine the antecedents of service usage. All three studies show a positive effect of satisfaction on service usage, while two studies reveal that payment equity also has a certain impact. One study finds that loyalty programs might increase service usage.

Antecedents of service upgrading have only gained marginal attention. The three reported studies provide diverging findings (Bolton/Lemon/Verhoef 2007; Von Wangenheim 2006; Ngobo 2005). There is, however, some evidence that more satisfied customers are more likely to upgrade. The study of Bolton/Lemon/Verhoef (2007) counter-intuitively shows that poor service quality may actually positively affect upgrading. New product or service adoption has also been studied infrequently in a customer value management context. While Kama-kura/Kossar/Wedel (2004) make a methodological contribution to this field, only Prins/Verhoef (2007) study

actual determinants of new service adoption. This study is also the only study in our overview that includes both above- and below-the-line advertising as antecedents. They show that advertising for the specific new service and brand advertising both affect adoption timing. However, this effect is much smaller than the effect of targeted direct communications.

Several studies investigate the antecedents of customer share. The popularity of this metric can be explained by the notion that customer share is considered as one of the best metrics for behavioral customer loyalty (e.g. Four-nier/Yao 1997, Verhoef 2003). Four studies show a positive effect of satisfaction on customer share, while two other studies not reporting a positive main effect show a significant positive interaction effect. Thus, there is substantial evidence that satisfaction positively affects customer share, though this effect can be moderated by other variables. There is some evidence that relationship quality as reflected by, for example, commitment positively affects customer share. This variable has, however, been less frequently studied than customer satisfaction. Evidence on the effect of price perceptions is also scarce. Studies including this variable only find weak effects. Comparable to the area of customer retention research discussed previously, the effect of marketing instruments is rarely considered. There has been some attention to the effect of loyalty program membership. The current findings suggest a positive effect of loyalty program membership on customer retention that even remains when one accounts for the endogenous nature of loyalty program membership (Leenheer et al. 2007).

Overall, this overview shows that it is difficult to generalize the findings on the determinants of customer expansion, as customer expansion is multi-dimensional and the number of studies per dimension is limited. The only more or less generalizable statement that can be made based on this research overview is that satisfaction is positively related to customer share. Thus, more research on the determinants on the different dimensions of customer expansion is clearly required.

3.4. Theme 4: Research on CLV

For customer value management it is very important to gain insights in the expected long-term profitability of customers. In Table 3 we provide an overview of some important studies in this area. Research on this topic can be divided into three general streams. One research stream focuses on the modeling and prediction of CLV. The second research stream develops models that aim to optimize customer strategies in such a way that the CLV is maximized. The third stream of research links CLV to firm performance. In Table 3 we provide a schematic overview of this research.

Berger/Nasr (1998) provide an extensive overview of quite simple models to calculate CLV. Gupta/Lehmann/Stuart (2004) calculate the expected value of the total customer base using publicly available data on aggregate

Table 2

Overview of Studies on Determinants of Customer Expansion

Study	Context	Model	Customer Relationship Perceptions and Characteristics				Marketing Instruments		Comments	
			Satisfaction/ Quality	Commitment/ Trust	Price/ Payment equity	Other	Below the line ad- vertising	Above the line ad- Program vertising		
Cross-buying										
Li/Sun/ Wilcox (2005)	Banking service	Structural multivariate Probit Model/HB framework	(+) (+) * age (+) * female	n.a.	n.a.	(-) Competition (+) Switching costs (-) Education (+) Female (+) Income	n.a.	n.a.	Dynamic cross-buying model taking into account sequential purchasing of financial services due to household lifecycle effects.	
Verhoef/ Franses/ Hoekstra (2001)	Financial services	Ordered Probit Model	(+) *Relationship age	n.a.	(+) *Relationship age	n.a.	(+)	n.a.	(+) Study also looks at differences between satisfaction at focal supplier and competing supplier.	
Service Usage										
Wangenheim (2006)	Airlines	Tobit 2	(+)	n.a.	n.a.	(+) Competitiveness of choice (+) Past usage (+) Use of direct channel	(+)	n.a.	n.a.	Upgrading is also studied (see below).
Bolton/ Kannan/ Bramlett (2000)	Financial services (Credit card)	Tobit	(+) * Gain (product rating)	n.a.	(+) * Loss (+) * Gain (-) *Gain*LPM	(+) Number of prior transactions (+) specific service experiences	n.a.	n.a.	(+)	Regret (Loss or Gain) –defined with respect to competitors' offering Loyalty program membership (LPM)
Bolton/Lemon (1999)	Telecommuni- cations Interactive TV entertainment	Tobit System of equations	(+)	n.a.	(+)	(+) Future usage expectations	n.a.	n.a.	n.a.	
Upgrading										
Bolton/Lemon/ Verhoef (2007)	Computing system support services	Binary model with random parameters	(+) (-) * poor service quality (observed)	n.a.	(+) (-) * poor service quality	(+) poor service quality	n.a.	n.a.	n.a.	Firm's decision to upgrade conditional on the decision to renew contract. Study combines perceptions with contract level data on quality and price.
Wangenheim (2006)	Airlines	Tobit Model	n.a.	n.a.	n.a.	(+) Prior transactions	N.S.	n.a.	n.a.	Usage is also studied (see above).

Ngobo (2005)	Theater service	Nested model Multinomial logit	logit	N.S.	n.a.	n.a.	(-) Education (+) Service experience * Customer characteristics	n.a.	n.a.	n.a.	Dynamic migration of consumers upward (from occasional buyers to subscribers) vs. downward migration (opposite direction)
New Service Adoption											
Prins/ Verhoef (2007)	Telecommunications	Split-hazard model		n.a.	n.a.	n.a.	n.a.	(+)	(+) Service advertising (+) Brand advertising	n.a.	
Kamakura /Kossari/ Wedel (2004)	Pharmaceutical Industry	Split-hazard model		n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	Methodology proposed for targeting physicians for a new drug.
Customer Share/ Share of Wallet											
Coil et al. (2007)	Banking service	Two-level latent class regression model		(+) * income (-) * income	n.a.	n.a.	(-) past share of wallet	n.a.	n.a.	n.a.	
Van Doorn/ Verhoef (2007)	Professional logistic service	3sls with splines		(+) * Negative critical incident	n.a.	(+) * Negative critical incident	(+) customer share	Past customer share	n.a.	n.a.	This study also shows presence of nonlinear effects.
Leenheer et al. (2007)	Retailing	OLS with IV-estimation		n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	(+)	Data used of GFK panel. No customer data from customer database.
Verhoef (2003)	Insurance services	Tobit2		(+) *Relationship age	(+) Affective	N.S.	(-) Past customer share (+) Service type (damage, car & life insurance)	(+)	n.a.	(+)	Satisfaction and payment equity antecedents of affective commitment.
Mägi (2003)	Retailing (grocery purchases)	OLS regression with centered data		(+) * Economic orientation (only SOP) (-) * Personalizing orientation (+) * Aggregate purchase volume	n.a.	n.a.	(-) Economic shopping orientation	n.a.	n.a.	N.S. (-) Competing card ownership (only SOP)	Two measures of customer share: share-of-purchases (SOP) and share-of-visits (SOV).
Bowman/ Narayandas (2001)	Frequently purchased goods	OLS		(+)	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	Non-linear quadratic effect of satisfaction.
DeWulf/ Odekerken-Schröder/ Iacobucci (2001)	Retailing	Multigroup Structural Equation Model		(+)	(+)	n.a.	n.a.	N.S.	n.a.	N.S.	Direct mailings and provided rewards (relationship program) have positive effect on relationship investments, which positively affects relationship quality. Relationship quality includes satisfaction, trust and commitment.
Macintosh/ Lockshin (1997)	Retailing	Structural Equation Model		n.a.	n.a.	(+) (Relationship quality)	n.a.	n.a.	n.a.	n.a.	

retention rates, acquisition costs and margins for five firms. They develop a model that uses aggregate data, but which is more sophisticated than the ones described by *Berger/Nasr* (1998), as it simultaneously considers the development of current customers and the acquisition of new customers and their subsequent development. Recently, also more sophisticated empirical models have been developed and applied for CLV predictions at the individual customer level. Typically, these models use individual data on customer retention, customer expansion, and customer costs to calculate CLV. An extensive overview of these models is provided in *Donkers/Verhoef/De Jong* (2007). They also compare the performance of different models in a contractual setting. Remarkably, they demonstrate that simple models (i.e. next year's profit is this year's profit) perform as well or even better than more complicated models, such as multivariate probit models that account for cross-buying. *Fader/Hardie/Lee* (2005) mainly focus on developing prediction models for CLV in non-contractual settings (i.e. catalogues). They use NBD-type of models to predict the next purchase and purchase quantity, thereby heavily building on *Schmittlein/Peterson's* (1994) earlier work in this area.

As noted, CLV optimization is an important aspect of CVM. Traditional direct marketing models as discussed previously (*Bult/Wansbeek* 1995) usually only optimize the profitability of a single direct mailing. However, taking into account potential long-term consequences of, for instance, direct mailings might be more optimal. For example, a first direct mailing may create interest in the product, but not lead to a purchase. A second mailing might be required to trigger the purchase. Only taking into account the response to the first mailing would in this situation thus lead to a sub-optimal solution. Furthermore, potential negative long-term effects due to customer irritation if too many mailings are sent have to be considered.

Several researchers present models to optimize the mailing or contact strategy, thereby optimizing customer profitability or CLV. *Reinartz/Thomas/Kumar* (2005) show how firms should allocate resources between acquisition and retention in order to optimize customer profitability. *Rust/Verhoef* (2005) develop a model that simultaneously determines the optimal number of mailings and relationship magazines to be sent to each customer during a year to maximize the one-year profit of an individual customer. They show that their model performs better than several alternative models and the mailing strategy the firm actually applied. Although both studies do not explicitly consider the optimization of CLV, they are nonetheless included in our overview, since they investigate related constructs.

Venkatesan/Kumar (2004) develop a model optimizing the marketing intervention mix in a business-to-business setting. They demonstrate that using CLV instead of other applied metrics, such as RFM and share of wallet,

leads to higher firm profitability. However, their model does not account for the potential endogeneity of the marketing mix instruments. In sum, the studies in Table 3 all show that firms can achieve significant gains if they focus on optimizing customer profitability or customer lifetime value. Yet, research in this area is still in its early phases. For example, CLV is in many studies still weakly operationalized (for instance only considering a very short time period), while the issue of endogeneity is not solved.

The link between CLV and firm performance is the final stream within CLV-research. The most important study on this issue is *Gupta/Lehmann/Stuart* (2004). They show that their customer base valuations are a good proxy for the firm value for three of the five included firms (i.e. Capital One). The other two firms were both internet firms: Amazon and e-bay. Hence, the discrepancies might be attributed to turbulence in the Internet environment. Moreover, the proposed model does not account for network effects, which is especially important for auction-sites, such as e-bay. *Skiera/Wiesel* (2007) extend the *Gupta/Lehmann/Stuart* (2004) model and also show clear links between the calculated value of the customer base and firm value. Hence, there seems to be substantial evidence that CLV is linked to firm value. Together with the results of the studies on optimization of CLV and more conceptual work in this area (*Gupta/Lehmann* 2005), there is increasing evidence that CLV is a very important metric for firms.

3.5. Theme 5: Research on Channels in Customer Value Management

An important development in today's business practice is the increasing number of channels used by firms and customers. The introduction of channels, such as the Internet and mobile commerce, has created tremendous opportunities for firms to be in touch with their customers. For firms it is essential to develop a multi-channel strategy that fits customer's needs and optimizes CLV. Research in this area is scarce. *Neslin et al.* (2006) provide an overview of existing research in this area and show opportunities for future research.

From a CVM perspective, especially the impact of multi-channel usage on customer loyalty and customer profitability is extremely relevant. *Ansari/Mela/Neslin* (2005) study the effect of customer migration from the catalogue to Internet on customer sales. They show that multi-channel customers spend more than customers buying through catalogues. However, they also show that multi-channel customer tend to become less loyal over time. The latter effect might be attributed to the open nature of the Internet. *Venkatesan/Kumar/Ravishanker* (2007) examine the effect of interaction characteristics and channel attributes on the adoption of an additional channel. Their study also indicates that multi-channel customers tend to be more profitable.

Teerling et al. (2007) investigate the impact of a customer's use of a retailer's informational website on the

Table 3
Overview of CLV Studies

Study	Context	Model	Main Results
Models predicting CLV			
Donkers/Verhoef/De Jong (2007)	Financial Services	Several models: <ul style="list-style-type: none">- OLS models- Logit- and duration models for retention- Multi-variate probit models to account for cross-buying- Tobit2 models	Comparison shows that simple models predict CLV quite well.
Wangenheim (2006)	Airlines	Tobit2	Study looks at predicting CLV in the early phase of the relationship and shows that this is possible. Regular updating of CLV estimates is recommended.
Fader/Hardie/Lee (2005)	Online CD Retailing	NBD-model	RFM-variables have a (partly nonlinear) effect on CLV.
Lewis (2005)	Newspaper	Structural model with customer heterogeneity	Study also looks at effect of price and learning effects of customers during the relationship. Models perform better than competing models for prediction revenues for 36-month period (no CLV).
Malthouse/Blattberg (2005)	Several industries	Regression models with lagged effects.	Study mainly focuses on whether CLV can be predicted. Show that models perform poor in finding the actual best customers (55% misclassified).
Gupta/Lehmann/Stuart (2004)	Several industries	Aggregated model based on Berger and Nasr (1998) and extended with acquisition.	Focus on linking CLV to firm value (see section below).
Rust/Lemon/Zeithaml (2004)	Airlines	Multinomial logit model for choice, markov model to calculate CLV from switching matrix	Model is used to calculate return on marketing interventions.
Schmittleim/Peterson (1995)	Industrial Buying	NBD-model and Poisson Model	Study looks at prior purchase patterns and infers expected future profitability. No CLV measure.
Berger/Nasr (1998)	No	Several models are proposed to calculate CLV using aggregated retention rates, growth rates etc.	
Models for Optimizing CLV			
Rust/Verhoef (2005)	Financial Services	Hierachical Bayes model	Study develops model that optimizes the individual marketing intervention mix for a one-year period. Focuses on one-year profit (no CLV).
Reinartz/Thomas/Kumar (2005)	High-tech manufacturer	Probit two-stage least square model	Model links acquisition and retention spending. Optimal acquisition and retention spending is calculated to achieve optimal customer profitability (no CLV).
Venkatesan/Kumar (2004)	High-tech manufacturer	Generalized gamma model for interpurchase times to derive purchase frequency Regression model for contribution margin	Optimal resource allocation strategy for each customer is developed. CLV is only calculated for one year.
Linking CLV with Firm Value			
Gupta/Lehmann/Stuart (2004)	Several industries	Aggregated model based on Berger and Nasr (1998) and extended with acquisition.	Authors show clear links between CLV calculations and firm value for three of five studied firms.
Skiera/Wiesel (2007)	Several industries	Extend model of Gupta/Lehmann/Stuart (2004)	Study also shows clear link between CLV and firm value.

customer's purchases in the store of that retailer. Their results indicate that the addition of such a website may be detrimental for customer sales, which might again be due to the open nature of the Internet. *Gensler et al.* (2007) investigate the effect of the migration of customers to Internet banking on customer profitability. Using matching techniques, their results reveal that Internet-banking customers are more profitable than non-Internet-banking customers. *Verhoef/Neslin/Vroomen* (2007) investigate the so-called research shopper phenomenon. A research shopper searches in one channel and purchases in another, with this phenomenon mainly occurring for the Internet channel. Strategies such as increasing channel lock-in, decreasing cross-channel synergies, and improving channel attributes may probably counter the research shopper problem.

3.6. Theme 6: Implementation of CVM

Empirical research in this area is scarce. Many published articles are case-based and provide best practices from leading consultant companies, such as Bain and Company (e.g. *Rigby/Reichheld/Shefter* 2002). Only recently, some researchers have focused on the implementation side. These studies mainly take a CRM-perspective. *Reinartz/Krafft/Hoyer* (2004) show a positive relationship between CRM-implementation and firm performance. Yet, a too technical focus may have detrimental effects on firm performance. *Jayachandran et al.* (2005) examine the key drivers and outcomes of relational information processes and the role of technology in implementing CRM. Their results show that relational information processes play a vital role in enhancing an organization's customer relationship performance. By moderating the influence of relational information processes on customer relationship performance, technology used for CRM plays an important and supportive role. According to *Bohling et al.* (2006), manager's perceived success of a CRM initiative critically depends on the CRM initiative being supported by top management. Implementation hurdles that were cited by the respondents are a lack of necessary resources and an insufficient focus on change management. Technical complexity was not perceived as a problem.

Recently, *Van Bruggen/Wierenga* (2005) studied CRM performance from a user perspective of the CRM-systems. They show that CRM systems are successful in organizations that reward customer-centric behavior and that have an analytical decision style. The discussed research mainly focuses on the implementation of CRM-systems. However, there is no research on how CVM is used in practice, and how this may affect performance.

4. Research Agenda

As noted, the literature on customer value management is still relatively new. Certainly if one compares this literature with the extensive literature using scanner data

from companies as AC Nielsen and GFK (see *Leeflang/Wittink* 2001)². Based on our research overview and insights from the literature, we have defined nine areas where research progress is required.

4.1. Developing and extensive testing of an overall customer retention model

Numerous studies investigate the antecedents of customer retention. However, still it is difficult to deduce generalizable findings, since the research is quite fragmented and results are mixed. What is needed are studies that develop a general model that explains customer retention and is tested in numerous industries and countries (see for example *Nijs et al.* 2001 for such a study in the area of promotions). Only then, more generalizable results can be deduced. There is also a lack of studies which focus on customer retention under changing market conditions. For example, the increasing liberalization of markets in Western Europe of several markets (e.g. energy), may create interesting research opportunities on which factors determine customer retention in a liberalizing market.

Hence, we define the following research questions:

- Can we develop a general model explaining customer retention? Which models explain and predict customer retention best?
- How does the effect of the determinants of customer retention differ between industries and market environments?
- How does the effect of the determinants of customer retention differ between countries? What is the role of culture and a country's economic characteristics?
- Which factors determine customer retention under changing market conditions, such as market liberalization? What is the impact of market conditions (e.g. market turbulence, advertising pressure) on customer retention and its determinants?

4.2. Further Understanding of Customer Expansion

Our overview clearly shows a lack of studies on the four dimensions of customer expansion: cross-buying, service usage, upgrading, and new product adoption. Moreover, studies on this topic use different models and include different variables. Hence, we believe it is of essential

² One might argue that research in CVM does not differ that much from research on consumer repeat purchase behavior using panel data. There are, however, some clear differences. First, CVM mainly uses data available from customer databases, where only behavior at one supplier is observed. Second, the studied instruments are typically different. There is a focus on direct communication and loyalty programs, while one also studies the effect of customer relationship perceptions in CVM. Third, as our overview shows, research is mainly executed in service industries, while research on repeat purchasing behavior is mainly executed in the area of fast-moving consumer goods.

importance that more studies devote themselves to investigating the antecedents of customer expansion. An interesting issue is also whether loyalty drives customer expansion, or whether customer expansion over time influences customer loyalty. Moreover, it is unclear how firms should create customer expansion. Which strategies are best? Should firms either use more aggressive cross-selling strategies, or should they use more subtle relationship-based strategies?

We have formulated the following research questions:

- Which models can be used to further understand the determinants of cross-buying, service usage, upgrading, and new product adoption?
- What are the differences between the antecedents of the several components of customer expansion? How do these differ from the determinants of customer retention?
- Does customer loyalty drive customer expansion or does customer expansion drive loyalty? And how does this relationship develop over time?
- What is required for customer expansion: aggressive cross-selling strategies or more subtle relationship-based strategies? And what is the impact of these strategies on CLV?

4.3. Including Competitive Actions

The majority of the models in the literature does not consider competitive actions. One explanation for this is that data on competitive interactions are not available in customer databases, since these usually comprise information on marketing interventions of only one product or service provider. Competitive actions will, however, affect customer behavior. A related point is that most models do not account for competitors' reaction to marketing actions. Yet, this is a quite relevant issue, and not including competitive actions may result in biased parameter estimates (e.g. *Leeflang/Wittink* 1996). Hence, in order to understand the effect of own actions on customer behavior and the resulting customer value, it is crucial to include these variables in future models. Recent examples of studies incorporating competitive dynamics are *Prins/Verhoef* (2007) and *Van Diepen/Donkers/Franses* (2006). These two studies are only first attempts to include competitive actions in customer value management models. For example, there is no research considering how competitive marketing actions affect customer retention over time, while the inclusion of competitive reactions on marketing actions is totally lacking. Finally, from a strategic marketing policy perspective, it is important to understand whether moving to a more relational-oriented strategy decreases a customer's vulnerability to competitive actions.

We define the following research questions:

- How can we assess the impact of competitive actions on individual customer behavior (i.e. retention, cross-

buying)? Which data are required? Which models should be used?

- How sensitive are customers to competitive actions? Does this sensitivity differ between customer groups?
- How should firms react towards competing actions aimed at their customers? Should they act differently depending on customer characteristics?
- Does adopting a more relationship-based strategy make customers less vulnerable for competitive actions?

4.4. Effect of Advertising

Another important limitation of most currently used models is that they mainly focus on the effect of direct or relationship marketing instruments directed at individual customers, such as direct mailings, e-mails, and loyalty programs. While more research in this area can also be encouraged, findings on the effects of mass advertising are largely lacking. A recent attempt to study the effect of mass advertising is provided in *Prins/Verhoef* (2007). They study how both own direct marketing instruments and own and competitive mass advertising affect the adoption of a newly introduced service among existing customers of a mobile phone operator.

The lack of other studies tackling this issue can probably be attributed to several problems with integrating mass advertising into existing models. First, data on mass advertising are usually not collected in customer databases. This problem could be solved by looking at internal company data or external data from market research companies. The second problem is more severe. Mass advertising only varies between different time periods and not between different customers. Hence, in order to study the effect of mass advertising, sufficient data on customer behavior over time is required. Most studies usually only have two or perhaps three observations of customer behavior over time. Another way to solve this problem is to collect customer perceptions on advertising and the resulting brand equity. These perceptions can then be included in the model instead of the actual advertising data (e.g. *Rust/Lemon/Zeithaml* 2004). Finally, we see a continuing growth in online-advertising expenditures. However, there is a lack of knowledge on the effect of online-advertising on customer behavior.

We define the following important research questions:

- What is the impact of mass advertising on customer retention and expansion? Is there a direct effect, or might this relationship be mediated by brand-perceptions?
- To what extent does the impact of above-the-line advertising differ from the impact of direct communications?
- Does the impact of mass advertising on customer behavior differ between customers? Which customers

- are more sensitive to mass advertising? Which customers are more affected by below-the-line advertising?
- What is the optimal mix between mass advertising and below-the-line advertising? Would it be possible to give up mass advertising and completely switch to below-the-line advertising?
- What is the impact of online-advertising on customer behavior?
- How can we assess the impact of the brand on customer lifetime value?
- How can we allocate brands to customers or customers to brands?
- Can firms move customers from one brand to another brand? And when and how should firms accomplish this movement?
- Under what circumstances should firms follow a brand-oriented strategy and under which circumstance should a customer-based strategy be pursued? Can these strategies be combined in an effective manner? And what is the impact of moving from one strategy (strategic marketing policy shift) to another on performance?

4.5. Brand Management and Customer Management

Related to the prior research issue is the relationship between brand- and customer management. Although both disciplines deal with customers, they are often separated, both in marketing literature and in marketing practice, and have different mind sets. *Leone et al.* (2006) discusses these differences. They distinguish between the brand equity perspective and the customer equity perspective. They argue that the brand equity perspective focuses more on growth opportunities and has more prescriptive guidelines, while it lacks clear customer segmentation and a focus on quantifying marketing efforts. The customer equity perspective emphasizes the bottom-line financial value, while it lacks a thorough understanding of network effects, the impact of competition and the creation of organic growth. This may lead to tension within organizations between people responsible for brands and people responsible for customer value management. For example, while CVM managers will constantly ask themselves what the effect of their actions is on CLV, brand managers may mainly be interested in how they can create strong and distinctive brands, which should be potentially successful in the market place. To bridge this potential gap between brand and customer value management, concepts and models should be developed that integrate both perspectives.

Another important issue in the relationship between brand management and customer value management is that many firms have a multi-brand strategy. As a consequence, customers of the same firm may be customers of different brands. However, there might be a misfit between a customer and a brand, when for instance an affluent customer buys a lower-price brand, while the majority of the affluent customers buy higher-priced brands. The analysis of customer data enables the detection of these misfits. The question is, however, whether and how firms should deal with this issue. Finally, from a more strategic level firms need guidance whether they should follow a more brand-oriented marketing strategy or a more customer focused strategy.

Our derived important research issues are the following:

- What is the relationship between brand and customer equity? How do they overlap? And what are the differences between the two?

4.6. Limited Set of Future Indicators

Models on the customer level usually mainly include explanatory variables that focus on the past, such as past purchase behavior and perceptions of a firm based on experiences with that firm in the past. *Zeithaml et al.* (2006) are looking for so called forward-looking customer metrics. These metrics focus more on future actions of customers. *Zeithaml et al.* (2006) particularly state that it would be useful to include future customer needs and goals.

On the market level, problems may be even larger. Models are estimated given the current market environment. In mature and stable markets, these models will behave quite well. However, in rather turbulent markets the determinants of customer behavior may vary substantially over time. For example, in the telecom market new technologies are constantly introduced, while with these new technologies new firms enter the market. For example, since the introduction of „Google Talk” Google can now be considered as a competitor of telecom companies.

We define the following research questions within this research gap:

- Which future-oriented indicators or metrics might be useful to understand and predict future customer behavior?
- How can we incorporate future customer needs and goals in our current models?
- How stable are the model results in turbulent environments? What is for example the lifetime of a churn prediction model in these environments? How frequently should these models be updated?
- How should currently developed models be adjusted to account for environmental effects? How can qualitative insights on market developments be incorporated in these models?

4.7. Further development of models for optimizing CLV

Our overview only showed a limited number of models for individual CLV optimization. Moreover, these models have their limitations. For example, most currently developed models within CVM do not account for customer heterogeneity. There are some exceptions. Recently, *Rust/Verhoef* (2005) used hierarchical Bayes techniques to develop an optimal individual marketing-intervention mix. More applications can certainly be considered. For example, it would be valuable to estimate individual effects of changes in customer satisfaction or service quality in order to develop an optimal service mix for each individual customer. We believe there is a pressing need to develop such models. Moreover, models are required that account for the endogenous nature of many individual marketing actions. Finally, there is an ongoing debate on whether we have the right models to predict CLV and under which circumstance we can predict CLV adequately.

Hence, we have formulated the following research questions:

- How can CLV optimization models incorporate customer heterogeneity in such a way that optimal individual or segment customer strategies are developed?
- How can we integrate the endogeneity of many individual marketing actions in CLV optimization models?
- Do we have the right models to predict CLV? And under which circumstances can CLV be predicted adequately?

4.8. Implementing CVM

So far, research has focused on the implementation of CRM systems. However, CVM also comprises questions as, for instance, how customer data can be used to optimize customer profitability. This customer centric data-driven management is nowadays becoming more common in firms. Research on the implementation is, however, case-based and mainly appears in practitioner-oriented management journals. We believe there is a need for more scientific research on this topic. An interesting research topic is the cooperation between customer intelligence and marketing. Whereas customer intelligence employees will focus on data-analysis and fact-based decision-making, marketers will be more inclined to use qualitative heuristics. A good cooperation is, however, essential for a successful implementation of CVM.

The following research questions are raised:

- Which factors determine the successful application of CVM in practice? What is the role of data quality, analytical models, and management culture?
- How does the implementation of CVM change decision-making in marketing departments? Will the decision-making of marketers become more data-based?

- How far should firms go in implementing CVM in their organization? What are the dark sides of focusing too much on customer data?
- How can the cooperation between customer intelligence and marketing in organizations be improved? Which skills should be developed in the customer intelligence department and which skills are important for marketers?

4.9. Customer Contact Management

The emerging stream of contact channels creates huge challenges for firms (*Neslin et al.* 2006). For CVM, several topics require a more thorough investigation. The impact of multi-channel usage on customer loyalty and profitability is still unresolved. Moreover, firms have to manage each contact channel, and develop a multi-channel strategy. Is there for instance an optimal multi-channel strategy? *Neslin et al.* (2006) already developed an extensive list of potential research issues. Another very important issue in today's marketing practice is the increasing use of search engines in the search process of customers. Firms have to pay these search engines per click. From a CLV perspective, however, it is very relevant to look not only at the quantity, but also at the quality of the provided leads.

We provide the following research questions:

- What is the impact of multi-channel usage on customer loyalty and profitability/CLV?
- How can models consider an optimal multi-channel strategy in separate phases of the buying process (i.e. search, purchase, after-sales)?
- How can firms manage marketing campaigns across different channels?
- What is the impact of forced customer migration to another channel on CLV? And how can firms mitigate probable negative effects?
- Can the CLV-metric be used to implement a differentiated payment system towards search engines, depending on the quality of the provided leads?

5. Management Implications

This paper provides several implications for managers. First, there is now clear evidence that adopting CVM principles, such as acknowledging that customers differ in value and acting on these differences, leads to increased performance. Using these principles, firms can more efficiently allocate resources to their most promising customers and optimize CLV, which should finally lead to higher firm value.

Second, our overview provides some relevant results on how to influence customer retention and customer expansion. Creating committed customers is one of the strongest tools to ensure customer retention. To generate

customer expansion, active cross-selling efforts, for instance through direct marketing, are required. Satisfaction also, according to a number of studies, has a positive effect on customer retention and expansion. The strong emphasis which is placed on satisfaction in marketing practice thus seems justified. However, a cautionary note has to be placed here. First, the evidence of the positive impact of satisfaction on customer value is not unambiguous. Second, a severe drawback of the satisfaction construct is that it is a backward-looking metric. Hence, a challenge for marketing research and practice alike is to develop more forward-looking metrics that are more diagnostic with respect to the future of a relationship, and hence customer value.

Finally, our research overview shows that firms should actively manage their channels and understand how their multi-channel strategies affect customer behavior. In particular, the often-voiced truth that multi-channel customer are more profitable, requires some modification, as the increased profitability can also be attributed to increased marketing efforts.

6. Conclusion

Customer Value Management has become important both in practice and in marketing science. Due to an increasing availability of customer data, several new opportunities have arisen. In this article, we have provided an overview of Customer Value Management. We started with a discussion of the essence of CVM. Subsequently, we discussed six research areas in CVM, with a specific focus on the determinants of customer retention and customer expansion, and CLV-models. While some issues have been researched quite extensively, we could identify several areas that require more attention. Based on this, we have formulated a research agenda with topics on which more knowledge should be generated.

Furthermore, despite efforts from researchers to drive the implementation of customer value management and the related models – for instance through churn tournaments or implementing for instance NBD-models in Excel to facilitate their usage – practitioners are still reluctant to adopt the suggested models. To alter this, researchers have to clearly demonstrate and communicate that their models outperform the heuristics typically used by practitioners. Also, researchers have to continue their efforts to make their work more accessible, by for instance implementing their models in standard software. It is also desirable that more marketing executives put the models and heuristics they use at the moment to the test and consider implementing state of the art models.

We hence believe that joint effort from researchers and practitioners alike is necessary to tackle the points addressed in our research agenda and drive the field forward, since customer value management can only prosper if it is applied in „real” settings. Hence, we hope that

this research agenda will inspire researchers and practitioners alike to conduct further research in the fruitful field of CVM.

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