The Theoretical Underpinnings of Customer Asset Management:

A Framework and Propositions for Future Research

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The Theoretical Underpinnings of Customer Asset Management: A Framework for Service Organizations with Propositions for Future Research

Abstract

Most research in customer asset management has focused on specific aspects of the value of the customer to the company. The purpose of this article is to propose an integrated framework – called CUSAMS -- that enables service organizations to comprehensively assess the value of their "customer assets" and to understand the influence of marketing instruments on them. The foundation of the CUSAMS framework is a careful specification of key customer behaviors that reflect the length, depth and breadth of the customer-service provider relationship: duration, usage, and cross-buying. This framework is the starting point for a set of theoretically based propositions regarding how marketing instruments influence customer behavior within the relationship, thereby influencing customer value. Then, building on prior research, we provide two empirical examples of how the CUSAMS framework can be used to conduct financial analyses of the return on investment from marketing expenditures designed to influence behavior and increase the value of the customer base. The framework and propositions provide the impetus for a research agenda that identifies critical issues in customer asset management.

Key Words: customer asset management, customer equity, services, customer behavior, customer retention, service usage, cross-buying

INTRODUCTION

Recently, there has been a substantial increase in interest in managing customer relationships, customer equity or the "customer asset." In particular, service organizations have recognized the value of current customers, and are seeking to increase revenues and profits through targeted marketing expenditures. To do so, they need an in-depth understanding of the underlying sources of value of current customers and how to increase the revenue streams associated with them (e.g., Zeithaml 2000). With such insights, managers can develop successful strategies to enhance firm performance (Hogan et al. 2002).

In the past decade, marketing academics and practitioners have focused on customer retention as a critical source of customer value (Grant and Schlessinger 1995). For example, Reicheld and Sasser (1996) argued that acquiring new customers is typically more costly than keeping current customers, and that long-tenure customers are more profitable. Such arguments have stimulated marketers' long-standing interest in the antecedents of customer loyalty (e.g., Crosby and Stephens 1987; Dick and Basu 1994) and purchase intentions (e.g., Anderson and Sullivan 1993). They have also stimulated the development of strategic models that balance a company's investments in customer acquisition and retention (e.g., Blattberg and Deighton 1996).

Recently, marketers have broadened the scope of their research by focusing on customer lifetime value (CLV), which is usually defined as the net present value of all future earnings from an individual customer (e.g., Berger and Nasr 1998; Gupta, Lehmann and Stuart 2001; Rust, Zeithaml and Lemon 2000). However, a close examination of these studies shows that CLV is operationalized by considering retention as the only important customer behavior and source of CLV

(e.g., Gupta, Lehmann and Stuart 2001; Kamakura, Mittal, Rosa and Mazzon 2002). Researchers have typically ignored the contribution of other customer behaviors, such as service usage and cross buying, to business performance (e.g., Blattberg, Getz and Thomas 2001). This neglect has substantial ramifications for the business performance of service organizations (cf., Reinartz and Kumar 2002). As an example, consider telecommunications companies. The number of phone minutes called per customer (i.e., usage) is an important source of revenues for telecommunications providers, as demonstrated by shifts in customer usage patterns under deregulation in the United States of America. Cross-buying of add-on services, such as call-waiting or call-forwarding, also contribute to the revenue base. Telecommunications marketers will recognize neither revenue stream if they focus on customer retention alone.

If we consider the value of the customer base for service organizations to be derived from multiple customer behaviors, we are faced with two challenges. First, the direction and size of the effects of a marketing instrument are likely to differ for each customer behavior, complicating any assessment of its influence on customer lifetime value. Second, the outcome of a particular investment intended to increase customer value is likely to differ across customers and across industries (e.g., Mittal and Kamakura 2001), so that it is difficult to derive generalizable principles regarding customer asset management. These challenges have typically been ignored in the relationship marketing and customer loyalty literature, but they are very important when service organizations attempt to manage their customer assets.

Our aim is to describe a comprehensive, theory-based framework that provides insight into the behavioral sources of CLV for service organizations, and the marketing instruments that

influence them. We will develop theoretically based propositions about how marketing instruments influence different aspects of customer behavior, and thereby CLV. We will also discuss how these effects differ across customer groups and industries. Ultimately, we will provide an agenda that identifies important research topics in customer asset management.

We begin by briefly reviewing prior research concerning CLV and customer asset management. Subsequently, we discuss our framework and set out our propositions. Then, we provide two examples of how our framework can be used to conduct financial analyses of the return on investment from marketing expenditures designed to influence behavior and increase the value of the customer base.

LINKING MARKETING ACTIVITIES TO CUSTOMER LIFETIME VALUE

Prior research has encountered three major obstacles to investigations of how marketing activities are related to CLV. First, causal relationships between marketing activities, customer behavior and CLV are complex. For example, several authors have attacked theoretical issues relevant to understanding the relationship between customer satisfaction and loyalty (Dick and Basu 1994; Oliver 1999; Wind 1970). Yet, research suggests that the theoretical relationships between CLV and its antecedents are difficult to represent in conventional --typically linear -- models (Anderson and Mittal 2000). Second, very few organizations have undertaken the extensive data collection effort, at the individual customer level, necessary to estimate these causal relationships. Third, the researcher is faced with a variety of technical challenges in estimating these statistical relationships if he/she relies on highly aggregated, cross-sectional data (Anderson Fornell and Lehman 1994; Mittal and Kamakura 2001; Mulhern 1999). As a result of these challenges, the marketing discipline's has been slow to uncover

principles of customer asset management (Kalwani and Narayandas 1995; Reinartz and Kumar 2000).

Evolution of Research Regarding Customer Asset Management for Service Organizations

The challenges to studying customer asset management are particularly severe in service industries. A common approach is to calculate CLV based on customers' self-reported purchase behavior. For example, a bank customer might be asked to provide a probability for buying additional services. However, the predictive validity of self-reported behavior is not always high (Morwitz, Steckel and Gupta 1998) and reliance on self-reports may lead to overestimation of correlations between marketing activities and behavior due to common-method variance problems and carry-over and backfire effects (Bickart 1993). Yet, researchers have been slow to develop models of individual purchase behavior for services (Rust and Metters 1996).

As companies have adopted sophisticated information technology that captures individual customer behaviors (Kannan and Rao 2001), there has been an important shift in how researchers approach customer asset management. An emerging stream of research has focused on individual customer behavior and has developed statistical models of how marketing instruments influence specific behaviors that are sources of CLV (e.g., Blattberg, Glazer and Little 1996; Verhoef et al. 2001). In particular, numerous studies have examined customer response to direct marketing efforts (e.g., Bult and Wansbeek 1995; Keane and Wang 1995). This stream of research has naturally evolved towards more comprehensive models of customer purchase behavior, especially models that incorporate a broader array of marketing instruments (e.g., Schmittlein and Peterson 1995). At the same time, researchers in services marketing have focused on the effects of key variables, such as price and

satisfaction, on customer behavior (e.g., Bolton 1998; Bolton and Lemon 1998; Mittal and Kamakura 2001). This paper brings together these two streams of literature.

Models of Customer Behavior in Service Industries

We provide an overview of prior research on the effects of marketing instruments on customer behavior in Table 1. Not surprisingly, the length of the customer-firm relationship has received considerable attention in the marketing literature (e.g., Schmittlein, Morrison and Colombo 1987; Schmittlein and Peterson 1995). In the services literature, complex models of the antecedents of the length of individual customer-firm relationships have shown that the effect of satisfaction changes over time, and discrepancies between customer expectations (i.e., comparison standards) and current service performance also play an important role (e.g., Bolton 1998; Kumar 2002).

Recently, a few studies have modeled how marketing instruments influence behaviors that reflect the depth and breadth of the customer's relationship with a service organization (e.g., Kamakura, Ramaswamy and Srivastava 1991). Research confirms that customers with higher satisfaction levels and better price perceptions have higher service usage levels (e.g., Bolton and Lemon 1999). There is also some evidence that loyalty program can stimulate service usage (e.g., Bolton, Kannan and Bramlett 2000). In contrast, the effect of satisfaction and price fairness on customers' cross-buying is reported to be very modest (e.g., Verhoef, Franses and Hoekstra 2001), and changes in satisfaction levels – not absolute satisfaction levels -- influence cross-buying (e.g., Verhoef, Franses and Donkers 2002).

Although many studies have investigated the antecedents of word-of-mouth behavior (e.g., Arndt 1967; Bearden, Netemeyer and Teel 1989; Brown, Johnson and Reingen 1987), little research has investigated the relationship between customer word-of-mouth and the value of a customer.

Notably, customer satisfaction influences word of mouth behavior (Anderson 1998), and customer word-of-mouth is a key determinant of new customer acquisition (Danaher and Rust 1996). Recently, researchers have developed statistical approaches to include the value of a customer's word-of-mouth behavior in models of customer lifetime value (e.g., Hogan, Lemon and Libai 2002a, 2002b; Wangenheim and Bayón 2002). However, there is still a need to understand the effects of marketing instruments on word-of-mouth behavior and its effect on CLV.

As this review demonstrates, there are a limited number of studies regarding the antecedents of customer behavior, and thus the value of the customer asset, in service organizations. Due to the differences in findings, it is not (yet) possible to derive general principles regarding customer asset management for services. Moreover, the antecedents of customer behavior that have been investigated are limited. While satisfaction and price fairness have received considerable attention, specific marketing variables -- such as loyalty programs, direct marketing activities, channel of acquisition and advertising -- have been almost ignored.

-- Table 1 and Figure 1 about here --

A CONCEPTUAL FRAMEWORK FOR CUSTOMER ASSET MANAGEMENT

To begin to understand the differential effects of a service organization's marketing instruments on customer behavior and ultimately on CLV, we propose a framework for Customer Asset Management of Services: "CUSAMS," illustrated in Figure 1. The CUSAMS framework characterizes the length, depth and breadth of each customer's relationship with a service organization in terms of his/her purchase behavior (Verhoef 2001). The length of a relationship concerns the duration

of a relationship. Duration is also referred to as customer retention (or defection), often defined as the probability that a customer continues (or ends) the relationship with the company. The depth of a relationship concerns behavior that reflects the intensity or usage level of services over time. Depth is also reflected in upgrading behavior, which is the purchasing of premium higher margin products instead of low cost variants. (Loyal customers are sometimes assumed to be willing to pay higher prices (cf., Reichheld 1996a; Reichheld 1996b) -- but in some markets loyal customers pay lower prices due to quantity discounts.) The breadth of a relationship primarily concerns "cross- buying" or "add-on buying" -- that is, the number of additional (different) products or services purchased from a company over time (Blattberg, Getz and Thomas 2001). For example, a customer entering a relationship with a financial service provider by opening a checking account might open a savings account in the next year. In addition to purchase behavior, CLV is influenced by non-purchase behaviors, such as word-of-mouth behavior and the provision of new product ideas that may be more difficult to observe and predict (Bettencourt 1997). Since there has been recent and extensive discussion of how non-purchase behaviors may influence overall CLV (cf., Verhoef, Franses and Hoekstra 2002; Hogan, Lemon and Libai 2002a, 2002b; and Wangenheim and Bayón 2002), we do not discuss them further herein.

The CUSAMS framework is based on a consideration of how purchase behaviors reflect the length, breadth and depth of the customer-service provider relationship. In it, service organizations invest in a diverse array of marketing activities designed to stimulate customer behavior and thereby influence the financial outcomes of the relationship. (See Figure 1.) Specifically, we consider the following four categories of marketing instruments: pricing decisions, satisfaction/quality improvement programs, relationship marketing instruments (e.g., direct marketing, loyalty programs) and distribution

channel decisions. Our framework enables an in-depth study of how each of these four categories of marketing instruments differentially influence relationship duration, customer usage and cross-buying of services. These marketing activities generate revenues (via their effect on individual customer behavior), and they also influence costs. As an added complexity, price influences demand, and also directly affects contribution margin.

The CUSAMS framework can accommodate investments in cross-functional areas (e.g., human resources or technology) that influence individual customer behavior. In addition, it accounts for external effects (outside the organization's control) that may moderate the effects of marketing activities, such as competition, economic developments, regulatory conditions or changes in the external environment. Lastly, it accounts for the effects of past behavior, such as relationship age and the number of services already purchased. Prior research suggests that such past behavior may be a good predictor of customer response to marketing actions (e.g., Roberts and Berger 1999).

Our primary goal is to provide a structure to link marketing instruments to customer behaviors to financial outcomes (CLV in terms of profit, in particular) for service organizations. The framework shows how the revenues are influenced by pricing decisions and flow through to CLV through the distinct customer purchase behaviors (and WOM, although not directly investigated in the propositions below), and how the costs flow through from the marketing instruments to CLV.

PROPOSITIONS

We now provide a set of theory-based propositions regarding the effects of the marketing instruments on the length, depth and breadth of the customer relationship. For each marketing instrument, we investigate the potential effects on the length of the customer's relationship with the

service organization, service usage levels (i.e., breadth) and cross-buying (i.e., depth). We rely on prior research (when available) to guide the propositions, and we also identify important theoretical relationships that have not been addressed in prior research.

The Influence of Price

Price and Relationship Length. In contrast with traditional approaches to understanding price and demand (e.g., Tellis 1986), studies of the effect of price on customer behavior in their relationships with service organizations do not focus only on actual prices. They also study price perceptions, such as price fairness or payment equity (e.g. Bolton and Lemon 1999; Rust, Zeithaml and Lemon 2000). In these studies, higher absolute prices lead to lower perceptions of price fairness, but price fairness is also be affected by competitors' pricing policies.

Negative changes in price perceptions over time (e.g., price fairness decreases), will probably have a larger influence than positive changes (Tversky and Kahneman 1991). For example, within the insurance industry, it is well known that when insurance premiums are increased substantially, there is an increase in defection rates. Furthermore, differences between the price perception of the service provider and its competitors can lead to regret (Tsiros and Mittal 2000). In a study of customers' credit card usage, positive price perceptions relative to competitors have a large effect on customer retention, and negative price perceptions relative to competitors have a small effect (Bolton, Kannan and Bramlett 2000).

Based on these observations, we propose the following:

$P1_{price}$: Small price changes will not influence the length of the customer's relationship with a service organization, but large price changes will have an effect.

$P2_{price}$: The length of the customer's relationship with a service organization will be affected positively

(negatively) when price perceptions improve (decrease).

P3 $_{price}$: The length of the customer's relationship with a service organization will be affected positively (negatively) when price perceptions of the company are higher (lower) than price perceptions of the competitor.

Price and Relationship Depth. Although price and demand are inversely related for most goods, there are subtle nuances to the effect of price within customer's relationships with service organizations. Price plays an important role in the acquisition of new customers. In contrast, after the relationship has been established, the role of price tends to become less prominent and experiential aspects of the relationship, such as service quality, become more important (cf., Kordupleski, Rust and Zahorik 1993; Reichheld and Sasser 1990; Rust and Zahorik 1993; Rust, Zahorik and Keiningham 1995). Price perceptions are likely to influence relationship depth and breadth when there is a price change or aspects of the consumption or purchase situation change, such as when service usage dramatically changes or competitors change their prices. Hence, marketers should collect longitudinal data on price perceptions and/or compare price perceptions with competing price perceptions.

Relationship depth is reflected in customers' usage of services, the payment of price premiums and upgrading to higher levels of service. However, our discussion will focus on service usage. Service usage is an important component of CLV for all services – but especially for intermittently or continuously provided services, such as professional, telecommunications, health, entertainment and financial services. For example, market figures of cellular phone operators reveal that despite a decreasing number of subscriptions, the total value of the customer base is increasing due to increases in average usage rates per subscriber. The influence of service usage on business performance is especially pronounced because relationship costs per customer are usually fixed, whereas revenues

grow with higher usage rates. Recall that usage refers to increased purchase and consumption of existing services (relationship breadth), rather than the purchase of additional services (relationship depth). Thus, there is likely to be a close relationship between customers' service experiences, price and subsequent usage levels.

In general, attractive pricing will lead to higher usage rates. Thus, price perceptions will have a positive influence on service usage. However, it is important to distinguish between fixed, variable rate and semi-variable pricing policies. For example, a service provider can charge a fixed price per unit of usage, a fixed subscription fee with (un)limited service usage, or a combination of a subscription fee and a variable rate. Combination pricing plans are too complex for treatment here. (See: Goldman et al. 1984; Gourville 1998; Gourville and Soman 1998; Ng and Weisser 1974; Rappoport and Taylor 1997.)[1]

P4 $_{price}$: Price perceptions will positively influence the customer's usage level for a service.

P5 $_{price}$: Variable rate pricing policies will reduce the customer's usage of a service relative to fixed subscription fee policies.

Price and Relationship Breadth. Cross-buying or add-on buying is the most important behavioral representation of relationship breadth. A key feature of cross-buying, in comparison with other purchase behaviors, is that the customer's prior consumption experiences are not necessarily relevant to the new purchase. Customers can add services to their portfolio that have little, if any, connection with the existing consumed services. Moreover, the addition of a new service is likely to require a more elaborate search and decision-making processes than decisions about repeat purchases or changes in usage levels. Consequently, the influence of competitive prices is likely to be larger for

cross-buying than for relationship length or service usage level.

Price perceptions for an added service are usually based on the customer's knowledge of the prices of services purchased from the same organization in the past, whether this information is relevant or not. We might expect a positive effect of price perceptions on customers' cross-buying of services when companies have a consistent pricing policy, whereas we might expect no effect when companies have an inconsistent policy. Equally important, customers with positive price perceptions might also have a greater tendency to seek low prices, thereby exhibiting lower cross-buying probabilities (e.g., Verhoef, Franses and Hoekstra, 2001). In these situations, the pricing policy of the service under consideration seems most likely to influence cross-buying. However, this effect may be difficult to model because price perceptions of not (yet) consumed services are difficult to obtain. Based on these observations, we propose that:

P6 $_{price}$: Price perceptions of already consumed services will have a positive influence on customers' cross-buying within service organizations that use a consistent pricing policy.

P7 $_{price}$: Competitive price perceptions will influence customers' cross-buying within a service organization.

P8 $_{price}$: Customers' transfer of price perceptions (from the already purchased services to services considered for cross-buying) will depend upon the comparability of the services.

Synthesis. Price is usually the marketing instrument best understood by marketers, due to the strong foundation provided by classical economics and the development of a rich marketing literature concerning subjective perceptions of price (e.g., Monroe 1990) and reference price effects (Kalyanaram and Winer 1995). Nevertheless, the preceding discussion indicates that the effects of price are very different for the three customer behaviors under consideration (i.e., length, usage, cross-

buying), so that the overall effect of the effects of price on CLV are not straightforward. For example, fixed versus variable rate pricing is a critical issue for service usage, whereas the comparison of price perceptions across both services sold by the same company and services sold by competing companies is a critical issue for the cross-buying of services. Furthermore, price directly influences revenue streams through contribution margin. Hence, any analysis of the effects of a price change on CLV will require a very detailed analysis of revenue streams.

The Influence of Customer Satisfaction

Satisfaction and Relationship Length. Marketers typically assume that satisfied customers are more loyal, and this assumption has been confirmed in a meta-analysis of studies of purchase intentions (Szymanski and Hise 2001). However, studies of actual customer behavior have established that the effect of satisfaction on relationship length is complex. Bolton (1998) argues that satisfaction is an indicator of the subjective expected utility from a telecommunications provider, and finds a positive effect of satisfaction on relationship length that is enhanced by relationship age. Mittal and Kamakura (2001) show that demographics, such as age and gender, moderate the effect of satisfaction on relationship length. Bolton (1998) also investigates the effect of new information on the quality of the service provider, and finds that it accounts for substantial explained variance in relationship length. Similar to price, it is evident that longitudinal data concerning customer's service experiences are important in understanding relationship length.

Negative discrepancies between a customer's satisfaction with of a service provider and its competitor (i.e., competitor performs better than company) influence customer retention, whereas positive discrepancies do not (Bolton, Kannnan and Bramlett 2000; Kumar 2002). In other words,

extant research indicates that outperforming competition does not seem to influence customer retention. However, relationship length has typically been studied in industries with high switching costs, so this finding may not generalize to other contexts. The overall pattern of results suggests that marketers studying the duration of customer-firm relationships should examine customer satisfaction data over time and customer "touches" (i.e., customer or firm initiated encounters), as well as perceptions of competitors (e.g., Bowman and Narayandas 2001). Since research in a business-to-business context suggests that customers distinguish between economic and non-economic satisfaction (Geyskens et al. 1999), it may also be useful to track the underlying dimensions of customer satisfaction.

Based on our review, we propose the following.

$P1_{sat}$: Satisfaction positively influences the length of the customer's relationship with a service organization (via a main or interaction effect).

$P2_{sat}$: Positive (negative) changes in satisfaction over time will positively (negatively) influence the length of the customer's relationship with a service organization.

$P3_{sat}$: These effects will be asymmetric: positive changes in satisfaction will have a smaller effect on duration than negative changes.

Satisfaction and Relationship Depth. A positive link between satisfaction and usage has been documented by Bolton and Lemon (1999). The underlying rationale for this link is that higher satisfaction scores reflect a higher utility of the provided service (see also Ram and Jung 1991). This higher utility will be reflected in higher or at least constant future usage rates. This suggests the following:

$P4_{sat}$: Customer satisfaction positively influences their service usage levels.

Fixed subscription fees will tend to reinforce satisfactory experiences because customers use the service more often.

Satisfaction and Relationship Breadth. As noted earlier, a customers' experiences with a particular service will not necessarily transfer to additional services offered by the same service organization. For example, Verhoef, Franses and Hoekstra (2001) find that satisfaction does not influence cross-buying in a financial services industry. Nevertheless, in companies with a high consistency among offered services, we might expect to observe a positive effect of satisfaction on customers' cross-buying behavior. However, this effect is likely to be absent for companies or industries with inconsistent quality across services – e.g., brand name or affiliation with the supplier might be more important (Verhoef 2001). The nature of the decision process is also likely to moderate the effect of satisfaction on cross-buying. For example, in service categories with elaborate decision processes (e.g., house loans), the effect of satisfaction will likely be small or absent. However, in categories with less elaborate decision processes the influence of satisfaction will be higher. Thus, we propose the following:

$P5_{sat}$: Customers' satisfaction will have a positive (no) influence on their cross-buying for organizations with a high (low) consistency among the offered services.

$P6_{sat}$: Customers' satisfaction will have a positive (no) influence on their cross-buying for organizations that offer services with a limited (elaborate) decision processes.

Synthesis. Satisfaction with prior service experiences undoubtedly has an important effect on customers' future purchase behavior. However, satisfaction is likely to play a much stronger role in influencing the length of a customer-firm relationship, compared with its influence on customers' service usage or cross-buying of additional services. Furthermore, the nature of the service organization's pricing policy and the depth of the customer's decision processes moderate the effect of satisfaction on

customer behavior. Hence, the question of whether improvements in satisfaction are likely to "payoff" by increasing customer lifetime value will be context dependent.

The Influence of Relationship Marketing Instruments

The direct marketing literature distinguishes between marketing instruments that directly stimulate product or service sales, and those that focus on the maintenance and development of customer relationships (McDonald 1998). We restrict our discussion to instruments designed to enhance current customer relationships. Marketing instruments can also be classified based upon whether they provide economic gains (e.g., special pricing discounts, free services) or social benefits to the customer (Dabholkar, Johnston and Cathey 1994; Bhattacharya and Bolton 2000). We use these two typologies to classify the most commonly used relationship marketing instruments: direct marketing designed to enhance customer relationships, economic reward programs and socially oriented loyalty programs (e.g., Bult and Wansbeek 1995; Bitran and Mondschein 1993; Dowling and Uncles 1997). Since Dowling and Uncles (1997) distinguish between marketing instruments providing immediate versus delayed rewards (i.e. frequent flyer programs), we also consider the time horizon for the effects of these instruments.

Relationship Marketing Instruments and Relationship Length. The effects of relationship marketing variables have not been extensively investigated (cf., Jain and Singh 2002), so we begin by discussing how they are likely to operate. Since direct marketing focuses on creating immediate sales, we do not expect direct marketing to influence the length of the customer-firm relationship. However, in the case of successful direct marketing policies, direct marketing may positively affect the depth and/or breadth of the relationship -- thereby increasing switching costs and inertia -- which ultimately leads to

lower defection rates. Thus, we propose that the effect of direct marketing on relationship length operates indirectly, i.e., it is mediated by the depth and breadth the relationship.

Economic reward programs increase the subjective expected utility of the customer-firm relationship by providing delayed rewards, such as free products, so it is likely that a reward program will increase relationship length. It has been difficult to empirically determine whether this effect exists because service organizations tend to differentially target their programs at customers with certain characteristics, so that members of reward programs are likely to be characterized by longer relationships independent of their membership in the program. This puzzle can be solved using models that account for the endogenous nature of the reward program (see Madalla 1983; Villas-Boas and Winer 1999). However, there are no empirical analyses of this problem (as yet). We believe that it is unlikely that service organizations accurately target their rewards programs only at customers with long relationships. If so, there is likely to be a positive effect of reward programs on relationship length. However, we note that this effect is likely to be overestimated in prior research that does not account for the endogenous nature of these programs.

In comparison with economic rewards programs, social programs provide less tangible benefits that will increase switching costs and thereby increase relationship length. Social programs can be very effective for product categories that entail a hedonic experience, such as motorcycles, or in markets where customers are highly involved, such as sports (Bhattacharya and Bolton 2000; Muniz and O'Guinn 2001; McWilliam 2000). An unresolved question is whether social programs directly influence relationship length, or whether their effect is mediated by relationship quality or socially oriented constructs, such as commitment and social satisfaction (e.g., McAlexander et al. 2000). Like reward

programs, endogeneity poses a challenge to establishing a link between social programs and the length of a customer's relationship with a service organization.

$P1_{rel}$: The positive effect of direct marketing on the length of the customer's relationship with the service organization is mediated by his/her service usage levels.

$P2_{rel}$: Reward programs will have a positive effect on the length of the customer's relationship with the service organization and on his/her service usage.

$P3_{rel}$: Social reward programs will have a positive effect on the length of the customer's relationship with the service organization. This effect will be larger in product categories with a high hedonic value and/or highly involved customers.

Relationship Marketing Instruments and Relationship Depth. A key objective of loyalty programs is to enhance relationship depth, although these programs are also intended to increase customer-firm relationship length. For example, airline loyalty programs provide many additional economic and social benefits for customers who reach a specific threshold of usage within a given time frame. Although there is considerable anecdotal evidence that loyalty programs strengthen social bonds between customers and service providers, little academic research has examined whether these programs ultimately increase usage. Some researchers argue that loyalty programs, such as frequent buyer programs in supermarkets, simply provide economic gains (i.e., volume discounts) that stimulate purchases in the short run (cf., Sharp and Sharp 1997). Do loyalty programs and other promotional instruments designed to enhance customer relationships really increase usage, willingness to pay price premiums, or encourage customers to upgrade? If so, how? As a first step at addressing these issues, we propose the following:

$P4_{rel}$: Loyalty programs will be less effective in increasing relationship depth for current heavy users of the service (i.e., a ceiling effect).

$P5_{rel}$: Relationship marketing instruments that focus on economic benefits will increase service usage

levels in the short term, but not in the long term.

$P6_{rel}$: Relationship marketing instruments that focus on social benefits will have a smaller effect on service usage levels in the short term (compared with economic benefits), but the effects will have a longer duration.

Relationship Marketing Instruments and Relationship Breadth. In existing relationships, direct marketing is an important tool to sell additional services. Such efforts are targeted at customers with high response probabilities selected with statistical techniques, such as CHAID (Roberts and Berger 1999). Direct marketing often offers attractive propositions to customers, such as economic benefits (e.g., a price reduction) that depend on the number of services purchased. Hence, customers are more inclined to purchase additional services at the supplier. In contrast, loyalty programs that create social bonds between a customer and supplier may influence cross-buying, but the effect is likely to be smaller. The effect of loyalty programs that create social bonds is likely to be mediated by the customer's attitude toward the service organization (as opposed to the sales or service representative). We propose the following:

$P7_{rel}$: Direct marketing will positively influence customers' cross-buying of services.

$P8_{rel}$: Reward programs will positively influence customers' cross-buying of services.

$P9_{rel}$: The effect of social programs on customers' cross-buying is mediated by affective attitudes towards the service organization.

Synthesis. When we consider how relationship marketing instruments influence customers' purchases of services, it is important to distinguish between the economic and social benefits delivered by a particular relationship marketing instrument. We believe that social benefits are mostly likely to

influence the depth and breadth of customer's relationships with service organizations in the long run. They will be most effective for service organizations that deliver hedonic experiences.

The Influence of Distribution Channels

Although marketers have focused considerable attention on distribution channel choice (e.g., Darian 1987), they have almost completely ignored the effect of distribution channels on customer relationships. Companies often use different channels to acquire customers than to maintain relationships with customers, termed multi-channel marketing. Keane and Wang (1995) show that the value of an individual customer depends on the acquisition channel due to different retention rates per acquisition channel. These differences arise because each channel has its own characteristics and mechanisms to attract specific customers. In our framework we distinguish between five acquisition channels: personal selling, mass media (e.g. radio, television), direct marketing channels (e.g. direct mail and telemarketing), Internet and retail outlets.

Distribution Channels and Relationship Length. In personal selling the establishment of intimate customer relationships is facilitated by the personal communication between the customer and the sales representative, so that social exchange processes are important. As a result, retention rates will probably be higher among customers acquired via this channel. In mass media, direct response commercials are used to acquire customers (e.g. Tellis, Chandy and Thaivanich 2000; Verhoef, Hoekstra and Van Aalst 2000). In contrast with direct mailings, commercials often contain brand related information and product/price related information, so that customer purchase behavior is driven by brand preference rather than price. This feature might lead to higher retention rates. Direct marketing acquisition methods usually emphasize attractive prices to attract price-sensitive customers – but these

customers may switch service providers frequently. This feature suggests that customers acquired using direct marketing channels have probably higher defection rates. At present, little is known about the effect of the Internet acquisition methods on customer loyalty. The Internet may reduce customer loyalty due to decreasing switching costs associated with increasing market transparency (e.g. Sinha 2000). On the other hand, Reichheld and Schefter (2000) argue that the web is a very "sticky" when the correct technologies are applied. Thus, if customers who are acquired on the Internet are subsequently served on the Internet, lock-in effects may cause higher loyalty. When retailers acquire customers, channel partners must assess whether the customer is loyal to the retailer or the purchased brand (i.e., manufacturer). Out-of-stock studies usually reveal higher store loyalty than brand loyalty (e.g. Campo, Gijsbrechts and Nisol 2000). However, within the insurance industry, customers are often more loyal to the middleman than to the insurance supplier. Thus, loyalty of customers' acquired by channel partners heavily depends on the relationship between the channel partner and the service organization.

Summarizing the above arguments, there are convincing reasons to assume that the acquisition channel influences the length of the relationship, but the specific direction of these effects is unknown. However, there are two underlying principles to consider. First, acquisition channels focusing heavily on price (instead of brand image and service quality) will have higher defection rates. Second, acquisition channels with more opportunities to create economic or social bonds between the customer and the service organization will have lower defection rates. Hence, to guide future research, we propose:

$P1_{chan}$: The nature of the acquisition channel will influence the length of the customer's relationship with the service organization.

$P2_{chan}$: Customers acquired through channels with (out) a focus on price will have shorter (longer) relationships with the service organization.

$P3_{chan}$: Customers acquired through channels with more (less) opportunities to create economic or social relationships will have longer (shorter) relationships with the service organization.

Distribution Channels and Relationship Depth. Similar principles are likely to hold when service organizations use channels to maintain and develop customer relationships. Channels with more opportunities to create social and/or economic bonds with the customer will have a positive influence on relationship depth. However, such channels often have higher costs, which could result in lower profits. Some researchers argue the Internet channel is an exception to the rule that higher benefits are associated with higher costs (Reichheld and Schefter 2000). We propose the following:

$P4_{chan}$: Customers who use channel(s) that the service organization has designed to maintain customer relationships will have higher service usage rates than those who do not use these channels.

$P5_{chan}$: Customers who use channels offering more opportunities for relationship development will have longer relationships and higher service usage rates than those who do not use these channels.

Distribution Channels and Relationship Breadth. We consider two important reasons why the distribution channel may influence relationship breadth. First, knowledge and intimacy with the customer are important to the creation of relationship breadth. Service organizations without personal connections to customers may attempt to simulate intimacy by creating and analyzing large databases to gain insight into customers' needs, and using this information to customize services, train employees and so forth. Second, channel characteristics may impede or facilitate the selling of some services (Campo, Gijsbrechts and Nisol 2000; Hogan et al. 2002). For example, simple services, such as car insurance, can be successfully offered through direct marketing channels. Car insurance is frequently sold over the telephone; and mortgages are sold over the Internet. However, complex financial services, such as brokerage services, are offered in a retail setting – with some remote maintenance of the relationship.

These observations suggest the following propositions.

$P6_{chan}$: Channels offering more opportunities for relationship development will be associated with greater customer cross-buying of services.

$P7_{chan}$: The ability of channels to provide additional value in the service process will positively influence customer cross-buying of services.

Synthesis. There is remarkably little research in this area, despite the importance of multiple channels to service organizations and the increasing importance of electronic channels. We believe that this topic will become a priority for service practitioners.

The Influence of Past Behavior

Past behavior -- such as relationship length, the number of services purchased, usage rate and recency of purchase -- can be informative about future behavior. The predictive power of past behavior can be substantially higher than the predictive performance of stated preferences (Verhoef and Franses 2002). This feature explains the common use of RFM segmentation methods within database marketing (e.g., Dwyer 1989; Roberts and Berger 1999). There are several theoretical reasons for observing this statistical relationship. First, past behavior reflects loyalty, via relationship age, commitment, via number of consumed products, and other relationship constructs (cf., Verhoef, Franses and Hoekstra 2002). Second, past behavior reflects inertia and/or switching costs. For example, customers who buy more products will perceive more switching costs. Third, the inclusion of past behavior is necessary in statistical models, so that we do not over or under estimate the strength of current effects of marketing variables.

Past Behavior, Relationship Length, Depth and Breadth. Past behavior will influence relationship length and depth because it is an indicator of the customers' inherent commitment to the

service organization. Rather than offer specific propositions regarding relationship length and depth, we suggest that it is important for future models of customer assets to incorporate the effects of prior experiences. We believe that past customer behavior will influence the length of the customer's relationship with the service organization and his/her service usage levels, most likely through both mean and interaction effects.

The situation regarding cross-selling is rather different. Customers consuming a large number of services might have reached their maximum potential, which reduces cross-selling probabilities severely. Thus, a negative effect of past behavior on the current consumption of new services might be expected. Second, relationship length might be considered as an indicator of the relationship life cycle. At the end of this cycle, customers may be more inclined to reduce the size of their service portfolio. Third, an important aspect of past behavior is recency – i.e., the length of time since the customer's last purchase. Fourth, the type of service may also be an indicator for future cross-buying probabilities . Therefore, we propose the following:

$P1_{past}$: Customers who have already purchased many different service offerings from the service organization will be less likely to engage in additional cross-buying (i.e., diminishing marginal returns to additional sales efforts across services).

$P2_{past}$: Length of relationship will have a non-linear relationship with cross-buying. New customers will engage in little cross-buying, mid-tenure customers will engage in greater cross-buying and late-tenure customers will engage in little cross-buying (i.e., an inverted-U relationship).

Moderators

We consider three possible moderators of the effects of marketing instruments on customer relationships: switching costs, competitive intensity and consumer uncertainty.

Switching Costs. Switching barriers can have a significant influence on customer behavior (e.g.,

Dick and Basu 1994). These barriers arise from a number of sources, such as transaction costs, costs of learning to buy from new supplier and uncertainty of the quality of other suppliers (Klemperer 1995). In markets with high barriers, customers may continue to purchase from their current supplier even when they are dissatisfied (Jones, Mothersbaugh and Beatty 2001). As a result, the influence of marketing instruments on customer behavior will be small. For example, any extension of relationship breadth will be difficult when customers are already purchasing from an alternative supplier.

$P1_{mod}$: Switching costs will decrease the magnitude of the effect of marketing instruments on the length, the customer's relationship with the service organization, his/her service usage levels, and cross-buying.

Competitive Intensity. In highly competitive markets, customers may be more keenly aware of competitive offerings and more likely to be targeted by competitor's marketing instruments. Therefore, we would expect marketing instruments aimed at increasing the customer's duration, usage or cross-buying to be less effective for the customer's current service supplier.

$P2_{mod}$: Marketing instruments designed to increase the length of customer's relationship with a service organization, service usage levels and/or cross-buying will be less effective in highly competitive markets than in less competitive markets.

Uncertainty. Recently, researchers have begun to investigate the effects of uncertainty on individual choice and purchase behaviors. Rust, Inman, Jia and Zahorik (1999) have shown that reduction in uncertainty regarding product quality over time can increase the customer's likelihood of choosing a product. In addition, Boulding, Kalra and Staelin (1999) have shown that consumers react significantly to experiences of poor service quality, and that these experiences affect future customer decisions. Therefore, we would expect customer uncertainty regarding the service organization's offerings to influence the effectiveness of marketing instruments on customer behavior.

$P3_{mod}$: Higher customer uncertainty regarding the quality of a service organization's offerings will decrease the length of the customer relationship, service usage levels, and cross-buying.

$P4_{mod}$: Higher customer uncertainty will decrease the effect of distribution channel programs on customer behavior.

$P5_{mod}$: Customer uncertainty regarding their own future behavior will increase the effect of relationship marketing instruments and pricing policies on customer behavior.

$P6_{mod}$: Customer uncertainty regarding the service organization's ability to deliver consistently in the future will decrease the effect of past behavior on customer behavior.

Summary

There is insufficient prior research to yield generalizable principles regarding customer asset management. For example, researchers have been particularly interested in the effects of price and customer satisfaction – as opposed to relationship marketing programs or distribution channels -- on relationship length, breadth and depth. However, relationship length has received more attention in the marketing literature than relationship breadth or depth.

More importantly, the direction and size of the effects of a marketing instrument differ for each customer behavior, so that it is difficult to predict the magnitude of its influence on customer lifetime value. Furthermore, investments in given marketing instruments will have different effects for different market segments and different service industries. In the next two sections, we demonstrate the ramifications of these observations for two different service organizations.

APPLYING THE CUSAMS FRAMEWORK

The primary goal of our paper is to propose a framework and a set of testable propositions for understanding customer asset management. In this section, we demonstrate how the CUSAMS

framework and propositions can be used to develop a financial model of how investments in marketing instruments influence the value of the customer base for a service organization. Within the financial model, we incorporate statistical models of individual customer behavior that have been developed in prior research by various authors. Then, in the section that follows, we use our framework to provide some empirical evidence consistent with our research propositions. Specifically, we provide two examples of how managers in service organizations have used the framework to understand the differential effects of marketing instruments on the components of customer lifetime value.

Conceptualization of Lifetime Value

Building upon prior research (e.g., Blattberg, Getz and Thomas 2001), we model the lifetime value of an individual customer *i* at time *t* as follows. The CLV originates from forecasts of the three discussed basic revenue sources:

- Continuation of the relationship
- The usage pattern for currently purchased services (*j*)
- Cross-buying or purchases of new services (*k*) conditional on purchase patterns for currently purchased services

The financial CLV equation can thus be expressed algebraically as follows, calculating the expected value of revenues from each source:

$$CLV_{it} = \sum_{t=0}^{T} Prob(Survival)_{it} \, x \, [\sum_{j=1}^{J} Usage_{ijt} \, x (Price_{ijt} - Costs_{ijt}) + \sum_{jk}^{JK} NewCrossBuying_{ijkt} \, x Usage_{ijkt} (Price_{ikt} - Costs_{ikt}) + \sum_{jk}^{JK} StopBuying_{ijkt} \, x Usage_{ijkt} (Price_{ikt} - Costs_{ikt}) - MarketingCosts_{it} - OtherCosts_{t}] \quad (1)$$

This equation explicitly recognizes that the $Price_{ijt}$ of services may have fixed and/or variable components. Also, one can distinguish between service-specific costs ($Cost_{ijt}$, j=1, . . .J) that can be assigned to an individual customer and product, marketing costs that can be assigned to an individual customer ($MarketingCosts_{it}$), and fixed costs of operations ($OtherCosts_t$). Marketing costs are directly related to the marketing variables. To simplify equation (1), we have omitted discounting to capture the time value of money (cf., Jain and Singh 2002).

The terms in equation (1) each require a behavioral sub-model that forecasts the length, depth and breadth of the relationship conditional on the company's activities, competitive activities and other factors.[2] In our case studies, the behavioral sub-models describe the length of customer-firm relationship, service usage levels and cross-buying (either addition or reduction in services) – that is, revenue sources of current customers. Although we do not consider the financial value of potential new customers, equation (1) can be extended to do so by incorporating a behavioral sub-model that describes the acquisition of new customers through marketing activities. Alternatively, Thomas (2001) suggests that customer retention models should be adjusted to account for non-acquired prospective customers.

We now briefly describe two empirical examples, to show how managers might begin to understand the differential effects of marketing variables on CLV.

TWO CASE STUDIES

This section demonstrates how service organizations can utilize the CUSAMS framework to understand the differential effects of marketing instruments on customer behavior. Two case studies are provided to illustrate how our framework and propositions provide guidelines for managerial decision-

making and future research. We describe financial calculations based on the CUSAMS framework for companies in two industries: system support services provided in a business-to-business market and financial services provided in a consumer market. We have omitted the specific details of the data collection and estimation, and (instead) focus on the financial analyses.[3]

The financial calculations from these two case studies are displayed in Table 2. We report all financial measures on a "per customer" basis, where these measures have been multiplied by a scale factor (to preserve the confidentiality of the cooperating companies). Each company's investment decisions entailed a comparison of the marginal revenues and costs of the specific investments aggregated across customers. In both examples, the financial consequences are significant, from a statistical standpoint, and substantive, from a managerial standpoint.

-- Table 2 here --

Illustration 1: Customer Asset Management of System Support Services.

This application was based on longitudinal data describing 250 American business customers' service experiences and purchases from a global company that provides system support services on a contractual basis. We describe three examples of how specific marketing activities might influence the financial value of the total customer base.

Satisfaction/Quality Improvements. First, we examine the effect of customer satisfaction or quality improvement efforts–designed to close the gap between customer perceptions of the company versus its competitors (as measured by survey ratings)–on the value of the customer relationship. In this example, eliminating this gap increases the likelihood of service contract renewal (relationship length)

and contract upgrades (relationship depth) by customers.[4] We calculated that eliminating this gap in satisfaction relative to the competition (i.e., being perceived by the customer as "as good as" the competition) would result in an increase in renewal probability that translates to a positive revenue change of $100/customer. Such an improvement would also result in an increase in upgrade probability that would translate into a positive revenue change equal to $16/customer. The total impact of this change on both renewal and upgrade (projected across the entire customer base) suggests that prospective quality improvements designed to close the gap might be a reasonable investment for the company.

Price. Second, we consider the effects of price discounts on the probability of renewal and upgrade. Interestingly, we find that price discounts do not have a significant effect on renewal, but do have a positive influence on the probability of upgrade.[5] Although price may be an important influence on first-time purchases, it appears that factors other than price are more important in the renewal decision. Our financial calculations showed that discounting prices a comparable percentage across all customers would result in a negative impact on revenue for renewals in the amount of $100/customer -- because the price discount is not offset by a corresponding increase in retention. In contrast, the effect on customer's decisions to upgrade their service contracts increases revenues by $10/customer. However, the net effect (-100+10) is a loss of $90/customer, suggesting a price discount is not a successful strategy for the company.

Service Inconsistency. Third, we examine the effects of inconsistency in service operations on the probability of service contract renewal, usage and the probability of upgrade. We found that greater inconsistency in service delivery processes, especially responsiveness (as tracked by internal

operations), led to a decrease in customers' likelihood of renewing the service contract, a decrease in overall usage of the service, and an increase in the likelihood of upgrading.[6] Translating the effects of service inconsistency into financial terms creates an interesting picture. Reducing inconsistency has a positive effect on revenues from renewals in the amount of $240/customer -- because fewer customers drop their service due to inconsistent performance. It also has a positive effect through service usage of $40/customer. Finally, reducing inconsistency decreases the likelihood of upgrade to a contract that promises more responsive service processes, so there is a negative influence on revenue of $57/customer. When the effect on all three customer behaviors is integrated, net revenues are substantially larger suggesting that improvements in key process indicators that track responsiveness may be a successful strategy for this company.

In summary, these financial calculations highlight the importance of understanding the effects of a change in a marketing variable (e.g., service quality or price) on the distinct customer behaviors that affect CLV. These calculations may suggest to managers in the system support service organization that the company would be better off investing in improvements to its overall value proposition -- thereby stimulating renewals and upgrades -- rather than discounting price. They also may provide insight for managers seeking to understand the effectiveness of improvements in service operations in influencing customer behavior and, therefore, revenues and profits.

Illustration 2: Customer Asset Management in Consumer Financial Services.

This application is based on longitudinal data describing 2000 customers of a European financial services company. We describe two examples of how marketing activities influence the financial value of the customer base: loyalty programs and changing price perceptions.

Relationship Marketing Instruments: Loyalty Programs. First, we examine the influence of loyalty programs on consumers' probabilities of repurchasing and cross-buying service contracts. We find that ending the company's loyalty program would have a negative effect on renewal and cross-buying revenues.[7] The financial consequences of terminating the loyalty program appeared to be significantly stronger for cross-buying than for renewal. Revenues from cross-buying decrease by e 1.07/customer, and revenues from renewals decrease by e 0.02/customer. Furthermore, our projections showed a further revenue decrease of e 2.20/customer, because remaining customers are more likely to drop some previously purchased services. These calculations may suggest to managers of the financial services organization that the loyalty program has a relatively large influence on the breadth of the relationship, but its effect on retention is small. However, utilizing confidential information regarding the company's costs, the results suggest that the operational costs of the loyalty program far exceeded its quantifiable monetary benefits.

Price. Second, we examine the influence of customers' perceptions of price on the value of a customer relationship. Specifically, we examine the influence of customer perceptions of "payment equity" (i.e., price fairness as measured by survey ratings) on consumers' probabilities of renewing and cross-buying financial services. When perceptions of price fairness are higher for the company than its competitors, consumers are more likely to renew and to buy additional financial services.[8] Translating this effect into financial terms, we found that if the company could improve consumers' perceptions of the payment equity such that the survey rating of each consumer is equal to or greater than that consumer's rating of the competition, this effort would result in an increase in revenue from renewals of e 0.11/customer. We distinguished between adding and dropping new services. Our financial

calculations indicated that revenues would increase e 1.68/customer due to the purchase of additional services. This result might suggest to managers that strategies to improve consumer perceptions of payment equity (i.e., price/value trade-off) might be very effective in growing revenues and profits for this company. The profitability of this strategy would depend on the size of the price-cuts, and associated marketing communication efforts, that are necessary to improve consumers' perceptions of payment equity relative to the competition.

Summary

Through these two case studies, we can begin to see the importance of understanding how an element of the marketing mix affects relationship length, breadth and depth. If marketers fail to examine the effects of a marketing strategy on each of these aspects of customer lifetime value, they may make decisions that will actually reduce, rather than enhance, the overall value of the customer asset.

CONCLUDING REMARKS

The CUSAMS framework enables service organizations to assess the complete value of their "customer assets" and to understand the influence of marketing instruments on them. Its foundation is a careful specification of key customer behaviors that reflect the length, breadth and depth of the customer-service provider relationship: duration, usage, cross-buying and customer word-of-mouth. Using the framework, we have developed a set of theoretically based propositions regarding how marketing instruments influence customer behavior within the relationship, and thereby influence customer value. It is important to recognize that, in our quest to be inclusive and broad in our approach, our discussion of the antecedents of each element of the framework has been brief. However, our

framework builds upon already developed theory regarding customer judgments and behaviors, as well as their antecedents. The value of our approach is that it assesses the differential effects of marketing mix, customer, company and contextual variables on relationship duration, usage and cross-buying and (thereby) on the overall value of the customer asset. We believe that the CUASAMS framework provides a structure for further research regarding customer asset management, and that there is still much research to be done in this growing field. The remainder of this section makes some recommendations concerning how our framework can be useful to managers and researchers.

Managerial Implications

Researchers have developed extensions to the CLV metric, such as recognizing the differential risk of various customers and the stage in the product life cycle (cf., Hogan et al. 2002), and identified managerial challenges in understanding how marketing actions influence CLV (cf., Berger et al. 2002). Recently, there has been an increasing emphasis on individual-level behavior (cf., Libai, Narayandas and Humby 2002; Bell et al. 2002). The CUSAMS framework facilitates the comparison of alternative investment decisions using the CLV metric – while retaining a focus on the sources of revenue, the dynamics of individual customer behavior.

Evaluate Marketing Actions and Other Expenditures Using the CLV Metric. The benefits of a comprehensive framework, such as the one we propose, are twofold. First, it helps service organizations to systematically investigate how they can influence customer relationships by considering how marketing actions influence different customer behaviors. Second, it provides a common metric for resource allocation decisions regarding diverse actions that a service organization might undertake.

Thus, it can be used as the basis for financial calculations of how marketing actions and other customer asset management decisions.

Implementation of this framework has some costs. First, the service firm must collect longitudinal data on customer purchase behavior (not cross-sectional self-report data). Second, measures are needed of marketing activities and service operations over time (or perceptions). Third, sophisticated analytical skills are needed to construct customer behavior models, due to their complexity. However, the financial calculations can usually be embedded in spreadsheets so that managers can evaluate alternative scenarios and conduct sensitivity analyses.

Systematically Assess Multiple Sources of Revenue. A marketing action can influence different dimensions of customer behavior in different ways, so its effectiveness must be evaluated by examining different revenue sources. We can illustrate this feature by considering our case study of the effect of the loyalty program for the financial service company. Our analyses suggested that the loyalty program was rather effective in increasing cross-buying of this company's services, but it had a relatively small effect on customer retention. However, the effect of a loyalty program may extend beyond the time frame of the analysis, so that we cannot conclude with certainty that loyalty programs are ineffective in increasing customer retention. (Naturally, we must be cautious about generalizing from this analysis within a single industry.)

Explicitly Consider the Effects of Competition on Existing Customers. Most customer asset management models do not explicitly consider the effects of competition. Instead, a customer's behavior is modeled as a function of marketing activities and other experiences associated with the service organization he/she currently patronizes (see Rust, Lemon and Zeithaml 2001 for an exception).

However, when customers are exposed to the marketing and/or operations activities of multiple service organizations, it will be important to model competitive activity (Hanssens 1980; Lambin 1970; Lambin, Naert and Bultez 1975; Urban, Johnson and Hauser 1984).

Implications for Researchers

Emergence of Dynamic Models. By understanding the dynamic effects of marketing activities and service operations over time on different customer behaviors, the marketing discipline comes closer to developing a comprehensive approach to assessing how marketing instruments influence the value of the customer asset. We believe that the marketing discipline is in the midst of a shift from a managerial focus on allocating resources to customers who are currently loyal (i.e., a reactive strategy) versus allocating resources to customers to create, maintain and enhance loyal behaviors (i.e., a proactive strategy). A comprehensive framework, such as the one we propose, enables proactive, rather than reactive strategies, that allows companies to maintain and enhance customer relationships over time.

In particular, the emergence of dynamic models of customer behavior is changing our understanding of how marketing activities operate within the context of the service provider-customer relationship. For example, Heilman, Bowman and Wright (2000) study how brand preferences and responses to marketing activity evolve over consumers' lifetimes by estimating a logit-mixture model with time-varying parameters. They find that customers become less sensitive to price over their lifetime of purchasing baby products. Recently, Hogan and Hibbard (2001) have begun to examine the customer asset utilizing an option value framework, incorporating uncertainty and risk into dynamic models of customer lifetime value.

The Critical Role of Context Effects. In our case study of the systems support company,

managers debated about the profitability of improvements in service operations. Our analyses showed that such improvements are particularly profitable for this company because they increase customer retention, service usage and cross-buying. The company discovered that it was more profitable to increase the value proposition of their services rather than discounting price (a conventional strategy) to match competitors' lower price levels. For this company, investments in improving service operations increase the value of the customer base more than other investments because these improvements are leveraged by the size of the customer base.

In the financial services industry, managers debated the profitability of loyalty programs – which most competitors provided. Prior research has shown that loyalty programs can be effective for some financial services. Our case example showed that the cooperating company's loyalty program was effective in increasing customers' cross-buying probabilities, but its effect on retention was small. Furthermore, the company discovered that the costs of the loyalty program (i.e. premium reductions and operation costs) far exceeded the monetary benefits. Managers used this information, plus their qualitative assessment of the risks of quitting the loyalty program, to make a decision about how much to spend in supporting the loyalty program.

Comparing the above two examples, we see that market context plays a powerful role in moderating the effectiveness of marketing activities on the value of the customer base. In the support services market, the value of the customer base is primarily determined by customer repatronage behavior. Hence, marketing activities that simultaneously increase retention, service usage and cross-buying have the greatest "payoff" in terms of CLV. In the financial services market, the benefits of the company's loyalty program seem to be offset by similar programs offered by the competition -- so the

revenues derived from the program do not exceed its costs. The competitive structure of the financial services market dictates that the company match -- but not exceed --competitors' loyalty programs. In summary, market context is vitally important – it is not possible to generalize about the magnitude of the effectiveness of marketing activities across industries. By looking across different market conditions, we can better understand the role of marketing activities and customer behaviors – and thus ascertain which marketing activities and customer behaviors are important to a particular service organization.

Future Research

As we continue to seek to understand the value of a customer as a strategic asset of the service organization, there is a need for additional research in five areas.

1. Methodologies and Metrics. New methodologies need to be developed to accurately model the customer relationship over time. Theory-based, dynamic models of individual customer behavior can structure the overwhelming amount of information available to managers, and help them identify key marketing actions that have the potential to increase the value of the customer asset. Critical issues that need to be addressed to accurately model customer behaviors that affect the customer asset include: modeling the non-linear nature of customer behavior (Helsen and Schmittlein 1993; Mittal, Ross and Baldasare 1998), accounting for customer heterogeneity (Mittal and Kamakura 2001), allowing response function parameters to vary over time (e.g., Heilman, Bowman and Wright 2000), accounting for simultaneity among current customer behaviors (as suggested by Berger et al. 2002), and allowing error terms across equations to be correlated.

2. Empirical Studies and Meta-Analyses. Managers and practitioners also need empirical studies to understand the effects of specific marketing activities on revenue sources that link to customer value

(Szymanski and Henard 2001). Our understanding of these relationships is growing. However, many studies have focused on a single industry, or a limited number of marketing factors. Moreover, studies sometimes rely on self-report measures, rather than studying actual customer behavior.

3. Understanding Competitive Effects. Additional research is needed to understand how competitors influence the value of the customer asset. As service organizations build a strong understanding of customers' utility functions at a given point in time, and seek to meet the customers' needs better than competitors, service organizations may lose sight of new opportunities for differentiation and success in the marketplace.

4. In-Depth Analysis of Individual Companies. Third, we believe that case studies examining the processes service organizations undergo to implement customer asset management systems would also be valuable. Many service organizations have had CRM systems in place for several years (Ferguson 2001), so the time is ripe for service organizations to take the next step to developing usable customer asset management tools.

5. Developing the Theory of the Customer Asset. Finally, significant research is needed to understand what it really means to consider the customer as an asset of the company. If the customer is an asset, what does that mean for researchers and managers. Specifically, future research in this area could examine the following. Do customer assets "behave" like other assets? Do customer assets appreciate or depreciate? Should financial and accounting theories of assets and asset management apply to the customer as well?

Summary

Our goal in this paper was three-fold. First, we sought to develop an integrated, conceptual

framework for customer asset management in services. Second, we sought to show how elements of the marketing mix might influence different aspects of the customer asset in different ways. Third, we sought to outline propositions and directions for future research, linking traditional marketing theory to emerging paradigms (see also *Journal of Service Research* August 2002). We believe that the results of this endeavor suggest that there remains much work to do in this developing area of marketing research and practice.

Table 1

Classification of CLV Research and Examples

	Marketing Actions Antecedents of Lifetime Value	
CLV Research Issues	**No**	**Yes**
Calculation of Lifetime Value	Berger and Nasr (1998), Dwyer (1989)	Not relevant
Application of Lifetime Value	Mulhern (1999), Reinartz and Kumar (2000), Thomas (2001)	Keane and Wang (1995)
Statistical Models of Lifetime Value Components	Schmittlein and Peterson (1995), Thomas 2001	Anderson (1998), Bhattacharya (1998), Bolton (1998), Bolton and Lemon (1999), Mittal and Kamakura (2001), Verhoef, Franses and Hoekstra (2000)
DECISION SUPPORT SYSTEMS and Strategic Models Utilizing Customer Lifetime Value	Blattberg and Deighton (1996)	Bitran and Monshein (1996), Rust, Lemon and Zeithaml (2001)

Table 2

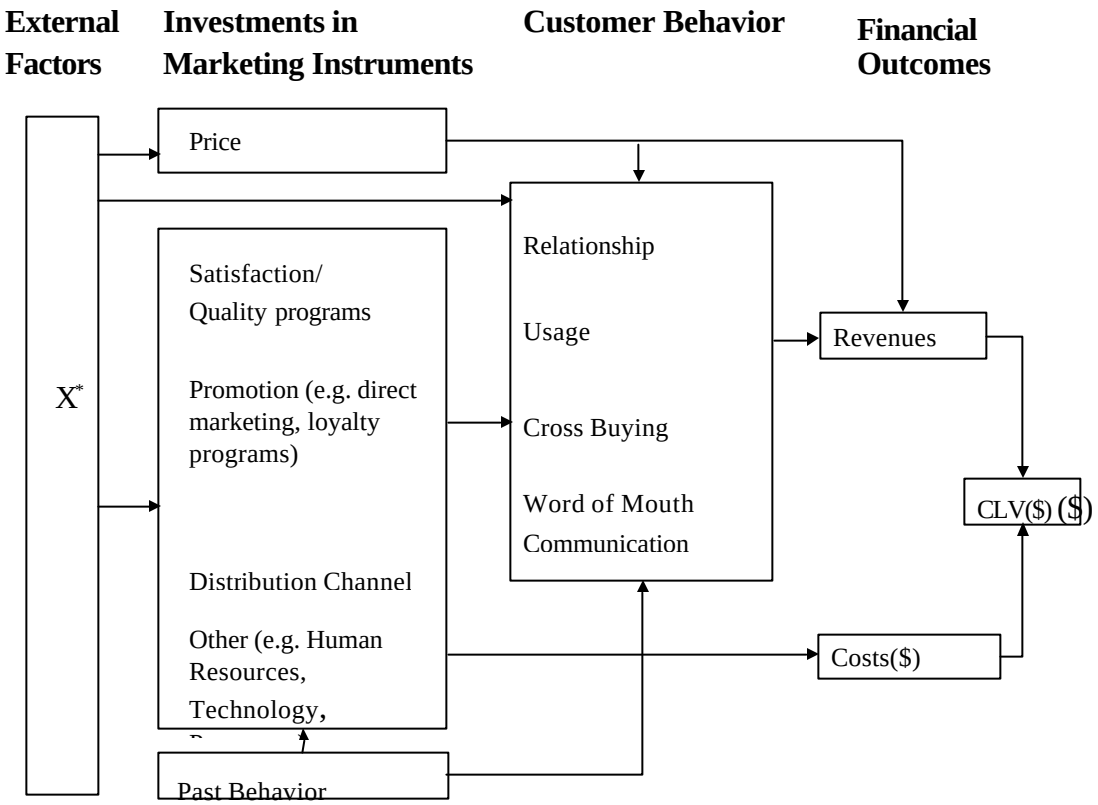
Financial Calculations*

Industry	Decision Alternative Evaluated	Revenue Source (Direction of Effect of Action on Revenues)	Monetary Amount (Per Customer)
Support Services	Process Improvements to Increase Customer Satisfaction	Renewal of Contracts (+)	+$100
		Upgrade of Contracts (+)	+ 16
		Net Effect (+)	Positive
	Price Discounts Applied Equally to All Customers	Renewal of Contracts (ns)	-100
		Upgrade of Contracts (+)	+ 10
		Net Effect (-)	Negative
	Reduce Inconsistency in Service Responsiveness	Renewal of Contracts (+)	+$240
		Usage of Contracts (+)	+ 40
		Upgrade of Contracts (-)	- 57
		Net Effect	Positive
Financial Services	Discontinuation of Loyalty Program	Renewal of Contracts (-)	-e 0.02
		Cross-Buying: Adding Services (-)	-1.07
		Cross-Buying: Decreasing Services (-)	-2.20
		Net Effect (-)	Negative
	Changing Prices and Communications to Improve Perceptions of Price Fairness	Renewal of Contracts (+)	+ 0.11
		Cross-Buying: Adding Services (+)	+ 1.68
		Cross-Buying: Decreasing Services (+)	0.0
		Net Effect	Positive

* "+" indicates the decision alternative has a positive effect on the revenue source, "-" indicates negative effect on revenue source, "ns" indicates effect is insignificant in the behavioral sub-model ($p > 0.05$). Monetary values are disguised by multiplying by a common scale factor.

Figure 1

Conceptual Framework



* competition, economic-developments, regulatory

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ENDNOTES

[1] It is sufficient to observe that companies with high fixed subscription fees may induce customers to have high usage rates, because they will enhance the cost-benefit ratio of the service, whereas companies with high variable rates may induce customers to limit their usage. In the combination of a fee subscription and variable rate policy, both mechanisms may be at work. We also note that in order to make higher usage rates more attractive, service organizations often use usage reward programs.

[2] As the purpose of this article is to provide an overview of our customer asset management framework, we do not describe such behavioral sub-models here. The reader is referred to prior research in this area for details of such models.

[3] All details of data collection, sample information and model estimation and analyses for these case studies are available from the authors.

[4] This result is consistent with existing research regarding satisfaction and regret avoidance that predicts that customers will rely on perceptions of satisfaction and comparison standards when making decisions, particularly decisions under uncertainty (e.g., Bell 1985; Kahneman and Tversky 1979; Loomes and Sugden 1986; Oliver 1997).

[5] This result is consistent with the literature and theory of reference price effects (e.g., Kalyanaram and Winer 1995).

[6] These results are consistent with service quality research that suggests that consumers attend to "experience" (i.e., "process") quality when making purchase decisions (Anderson, Fornell and Rust 1997; Juran 1988; Parsuraman, Zeithaml and Berry 1988). They are also consistent with several studies that indicate that greater inconsistency may influence consumer decisions via decreases in perceived control (Hui and Bateson 1991).

[7] This result is consistent with research on loyalty programs which suggests that customers who are members of loyalty programs perceive higher switching costs and are motivated by usage rewards (Dowling and Uncles 1997;

Bolton, Kannan and Bramlett 2000).

[8] This result is consistent with the payment equity research (Bolton and Lemon 1999; Bolton, Kannan and Bramlett 2000; Verhoef, Franses and Hoekstra 2001).

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