Profitable Customer Management: Measuring and Maximizing Customer Lifetime Value

By V. Kumar and Bharath Rajan

Managing for customer loyalty is not the same as managing for profitability. By concentrating on measuring and improving Customer Lifetime Value (CLV), companies can help ensure they focus appropriate resources on the most profitable customers and avoid spending on customers who cost money.

Loyal customers cost less to serve, pay more than other customers, and attract more customers through word of mouth. If you agree with these three claims, it is time to revisit them and find out why they may not be true.

Our research has shown that loyal customers know their value to the company and demand premium service, believe they deserve lower prices, and spread positive word of mouth only if they feel *and* act loyal. Then why do companies pursue the claims listed above, and what is their logic in doing so? The answer lies in the premise that loyalty equals profitability. With this premise as the base, companies maximize backward-looking metrics such as RFM (Recency of purchases, Frequency of purchases, and Monetary value of purchases), PCV (Past Customer Value), and SOW (Share of Wallet). Managing customers for loyalty, however, does not amount to managing them for profitability. On the contrary, the loyalty-profitability link must be managed *simultaneously*. How is this achieved?

We propose that measuring and maximizing Customer Lifetime Value (CLV) will help companies address this issue. When using the CLV paradigm, companies can make consistent decisions over time about which customers and prospects to acquire and retain, as well as those not to acquire and retain, and also determine the level of resources to be spent on the various micro-segments. Further, we have found that selecting and nurturing customers based on the CLV approach increases future profitability of the customers.

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Customer Lifetime Value: A Forward-looking Metric

What is CLV, and how can we measure it? CLV can be defined as:

> "The sum of cumulated cash flows—discounted using the weighted average cost of capital (WACC)—of a customer over his or her entire lifetime with the company."

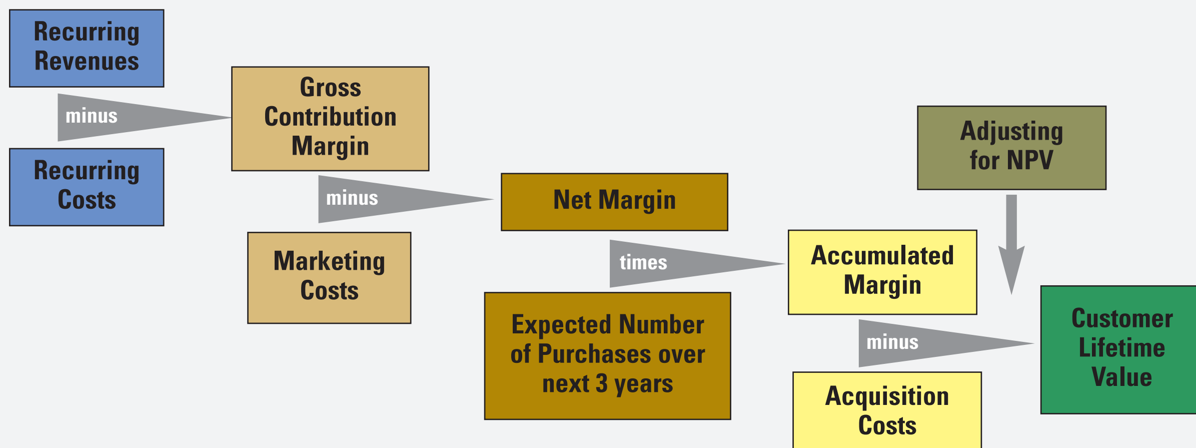
Although a true CLV measure implies measuring the customer's value over his or her lifetime, for most applications it is three years. This time period is due to three reasons—product life cycle, customer life cycle, and an 80% of profit that can be accounted for in three years. Figure 1 explains the approach to measuring CLV.

The CLV framework can be modeled using three main components: contribution margin, marketing cost, and probability of purchase in a given time period. Each of these models has a set of drivers and predictors, and the models are estimated simultaneously. By applying this modeling approach, managers can estimate the CLV for each customer of the firm. The calculation of CLV for all customers helps the firm rank customers on the basis of their contribution to profits. This would help firms in developing and implementing customer-specific strategies that can maximize customer lifetime profits and lifetime duration. In other words, CLV helps the firm treat each customer differently, based on his or her contribution, rather than treating all customers the same.

To test if CLV is really better than the backward-looking metrics, we rank-ordered customers of a large high-tech services company from best to worst according to each metric (RFM, PCV, and CLV) using the first 48 months of data from one of our studies. We compared the total revenue, costs, and profits from the top 15% of the customers. For the next 24 months, the net value generated by the customers who were selected based on CLV score was about 45% greater than that generated by customers selected based on the traditional metrics. This shows that using CLV to select customers is far more effective than using the traditional metrics.

Having identified CLV as the best metric to manage customers profitably, let us try to answer the three important questions virtually all firms in every industry typically face:

1. How do we determine which types of customers and future prospects to retain, grow, acquire, or win back?
2. How do we determine which types of customers and future prospects *not* to retain, grow, acquire, or win back?



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3. How much should be spent on the various micro-segments to retain, grow, acquire, and win back these customers?

1. How do we determine which types of customers and future prospects to retain, grow, acquire, or win back?

In an effort to identify the types of customers and prospects to acquire and retain, we need to determine whom to acquire and retain, how to make customers profitably loyal, how to grow customers by managing their life cycle, and how to retain customers and prevent churn.

Whom to Acquire and Retain?

This is a fundamental question to which every company seeks a response. The CLV metric suggests that retaining *profitable* customers increases the firm's overall profitability, and it advocates that acquiring and retaining profitable customers should be the guiding principle. When companies pursue this approach, however, they encounter three common pitfalls:

- Considering the customer acquisition rate and customer retention rate as principal metrics of marketing performance,
- Focusing too much on the current cost of customer acquisition and retention and not enough on a customer's long-term value, and
- Treating acquisition and retention as independent activities and attempting to maximize both rates.

In the first pitfall, companies often consider the customer acquisition rate (the percentage of people targeted by a direct-marketing effort who actually become customers) and customer retention rate (the duration of a customer's relationship with the firm) as the principal metrics of their marketing performance. This is because the two metrics are easy to understand and track, and companies have had a long-standing attraction toward garnering more market share.

While concentrating on these two rates may be valid in a contractual setting, such as in magazine or cable services subscription, using acquisition and retention rates as measures of overall performance may lead to the problem of diminishing returns. Every firm needs to understand that, as acquisition rates and retention rates increase, profits do not always increase beyond a certain point. Therefore, firms should make decisions to acquire or retain the next customer only if the cost of doing so is less than the value the customer brings back, either through his or her own future purchases or through positive word of mouth and referrals. Many firms have realized this and have taken steps to reward managers who are profitable—and not the ones who only maximize metrics such as acquisition and retention rates. This leads directly into the next pitfall of balancing acquisition and retention: focusing too much on short-term profit.

In the second pitfall, managers look to get the most out of each customer by focusing only on the short-term profitability or the next transaction and not on long-term profitability. This problem occurs when companies group their customers into one of the following four buckets: those customers who are easy to acquire and easy to retain; those who are hard to acquire but easy to maintain; those who are easy to acquire but hard to retain; and those who are hard to acquire and hard to retain. Such a classification makes managers target only those customers who are easy to acquire and easy to maintain as per the false assumption that acquisition costs and retention costs are the major drivers of customer profitability. This would not be a problem if each classification of customers were equally profitable, but that often is not the case.

By studying a catalog retailer, we analyzed the relationship between acquisition costs, retention costs, and customer profitability. In this study, a cohort of customers was tracked over a three-year time period. This cohort was split into one of four buckets based on the cost to acquire and retain the customers. Then, based on the transaction behavior of these customers, we determined how much each of the four customer groups contributed to the overall profitability of the cohort. Figure 2 shows the results of this study.

The largest segment—the Casual customers (32%)—was easy to acquire and retain, but they accounted for only 20% of the profits. This proves that customers who are easy to acquire and retain may not yield the most profits. The smallest segment—the Low-Maintenance customers (15%)—generated the largest profits (40% of the total profits). The Royal customers, who were diffi-

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Figure 2: Acquiring and Retaining Profitable Customers Across Three Industries

	Low Acquisition Cost	High Acquisition Cost
High Retention Cost	**HIGH-MAINTENANCE CUSTOMERS** 25% of Customers 15% of Profits	**ROYAL CUSTOMERS** 28% of Customers 25% of Profits
Low Retention Cost	**CASUAL CUSTOMERS** 32% of Customers 20% of Profits	**LOW-MAINTENANCE CUSTOMERS** 15% of Customers 40% of Profits

cult to acquire and retain, consisted of 28% of the total customer base and contributed 25% of the profits. The least-profitable group of customers—the High-Maintenance customers—was easy to acquire but hard (expensive) to retain. This group of customers contributed only 15% to the total profits even though they constituted 25% of the total customer base. We also can generalize these trends and findings for other firms and industries, with variations in distribution of profits and customers.

Therefore, targeting customers who are easy to acquire and easy to retain may not ensure profitable customer management. The CLV-based approach suggests managers look at customers who are most profitable to acquire and profitable to retain, optimize acquisition and retention costs simultaneously, and link such efforts directly to overall profitability. This leads us to the third pitfall of balancing acquisition and retention: treating acquisition and retention as independent activities and attempting to maximize both rates.

In the third pitfall, companies treat acquisition and retention departments independent of each other. The lack of interdependence between the two departments would result in the acquisition department trying to acquire the most customers possible while the retention department worked on retaining all the customers acquired by the acquisition department. In other words, the acquisition department would be concentrating only on acquiring Casual and High-Maintenance customers, owing to their low acquisition cost, while grossly ignoring the highly profitable Royal and Low-Maintenance customers.

Therefore, the key to striking a balance between acquisition and retention lies in efficient resource allocation between customer acquisition and retention. In business environments where decisions about allocating marketing resources increasingly occur at the individual level, it is critical for marketers to understand that customers who are easy to acquire and retain may not be the most profitable customers. The resource-allocation decision should not only be in terms of acquisition and retention, but also should be on the level of choices

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between various communication channels to ensure customer profitability.

How to Make Customers Profitably Loyal

After selecting the customers to acquire and retain based on their value to the firm, what is the next step? Firms have been segmenting their customers based on loyalty. We suggest CLV as the basis for segmenting customers. So how can a firm migrate from loyalty to CLV-based segmentation? The answer lies in segmenting not only on the basis of loyalty, but also on the basis of profitability. Figure 3 illustrates the process of segmenting customers based on loyalty and profitability.[1]

Figure 3: Managing Loyalty and Profitability

	Low Loyalty	High Loyalty
High Profitability	**BUTTERFLIES** Can contribute high profit potential to the firm. Managerial Implications: • Ensure satisfaction for each transaction they make. • Do not focus on cultivating long-term customer commitment toward the firm. • Converting them to loyal customers is seldom possible. Ensure profits as long as they are with the firm. • Do not invest in them after they have stopped purchasing from the firm.	**TRUE FRIENDS** Have the potential to contribute the most profits. Managerial Implications: • Focus on building long-term relationships. • Send the right number of communication messages. Flooding them with offers would only chase them away from the firm. Consistent intermittently spaced communication. • Make them buy intensively over time from the firm. • Focus on retaining these customers.
Low Profitability	**STRANGERS** Exhibit the lowest potential to contribute profits. Managerial Implications: • Do not focus on cultivating relationships with these customers. • Ensure profits from every transaction.	**BARNACLES** Show little potential to contribute profits. Managerial Implications: • These customers are a drain on company's resources. • Converting these customers into profitable customers involves measuring size and share of wallet. • If share of wallet is low, focus on up-selling and cross-selling. • If size of wallet is small, impose strict cost control.

Source: Adapted from Werner J. Reinartz and V. Kumar, "The Mismanagement of Customer Loyalty," *Harvard Business Review*, July 2002.

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From Figure 3 it becomes clear that True Friends are the most valuable customers. They are satisfied with the company's offerings and are comfortable engaging with the firm's processes. They buy steadily and regularly (but not intensively) over time and offer the highest profit potential for the firm. In managing these True Friends, firms should indulge in consistent, yet intermittently spaced, communication. Firms should strive to achieve attitudinal and behavioral loyalty among these True Friends.

Butterflies are customers who, although staying for only a short term, offer high profits for the firm. These customers, although profitable, are transient because they enjoy finding the best deals and avoid building a stable relationship with any single provider. A classic mistake made in managing these accounts is continuing to invest in them and, in some cases, overinvest even after they stop purchasing. In order to manage this type of customer, firms should look for ways to enjoy their profits while they can and find the right moment to cease investing in such customers.

Barnacles are those customers who offer low profitability for the firm despite being long-term customers. They do not generate satisfactory return on investments (ROI) because their size and volume of transactions are too low. Like barnacles on the hull of a cargo ship, they only create additional drag. Yet they sometimes can become profitable when managed properly. To do so, firms should determine whether the problem is a small size of wallet or a small share of the wallet. If the size of wallet is small, then strict cost control measures can reduce loss to the firm. If the share of wallet is found to be low, specific up-selling and cross-selling can extract profitability.

Marketing resources have to be diverted to Butterflies since Barnacles do not offer high profits. But not all Butterflies become True Friends, so how do we identify which Butterfly is likely to become a True Friend and not a Barnacle?

We conducted a study that identified the various drivers that affect the customer-firm relationship. These drivers included spending level, level of cross-buying, degree of focused buying, average interpurchase time, amount of purchase returns, loyalty membership, frequency of marketing communication, and customer-initiated contacts. Using these drivers, we can distinguish which Butterflies will become True Friends and not Barnacles. This helps companies to migrate customers from one quadrant to the other. Managers will have to be cautious in deciding which customers to invest in. We will discuss resource allocation later in the article.

Strangers are the firm's least-profitable customers because, as the name suggests, they have very little fit with the products and services. The key strategy in managing these customers is to identify them early and refrain from making any relationship investment as these customers have no loyalty toward the firm and bring in no profits. The firm's aim should be to extract maximum profit from every transaction with these customers.

Once the customer segmentation has been done, companies must aim to build a loyalty program with the overall objective of achieving maximum profitability. To implement such a program, three fundamental objectives must be fulfilled: building and enhancing behavioral loyalty, cultivating attitudinal loyalty, and linking loyalty to profitability. When these objectives are fulfilled, it enables organizations to recognize the patronage customers provide and reward them accordingly.

In one of our studies, we proposed a two-tiered reward structure that could discriminate customers based on their purchase behavior, attitude, profile, and profitability potential without alienating the customers and build and sustain loyalty without sacrificing customer profitability. Tier 1 rewards represent a standard, one-dimensional rewards strategy where customers get rewarded instantly based on their total spending. These programs are administered at the aggregate level to build loyalty across all customers. It should be noted that the majority of loyalty programs today fall under this category, and they reward behavioral loyalty mostly at the aggregate level.

Tier 2 rewards, on the other hand, are forward looking. They are aimed at influencing customer attitude and behavior in the future. Tier 2 rewards are more selective and reward specific customers to cultivate their behavioral loyalty and enhance behavioral and attitudinal loyalty. This tier of rewards is administered by deciding who should be rewarded, the type of

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Table 1: Comparison of Customer-Based Metrics

	Users in Single Channel	Users in Two Channels	Users in Three or More Channels
Revenue	$4,262	$5,736	$16,100
SOW	20%	35%	60%
PCV	$6,681	$10,874	$25,625
Likelihood of staying active	11%	15%	54%
CLV	$7,672	$10,325	$28,980

reward, and the amount of the reward. When used judiciously, such loyalty programs and rewards structures can aid managers in identifying which types of customers to acquire and retain.

How to Grow Customers

In an effort to grow and serve customers, many firms venture into at least a few different channels. In many cases, these channels not only offer customers a chance to make purchases via multiple channels, but they also offer customers the chance to search for product information in one or more channels and purchase in a completely different channel. With each channel servicing a different set of customers and providing varying levels of services, this approach leads to a reduction in the overall service cost, resulting in an increase in the firm's profitability. Therefore, it would be profitable for firms to start operating across multiple channels and target multichannel shoppers.

How can a firm identify these multichannel shoppers? We conducted a study to identify the drivers of multichannel shoppers using information such as customer characteristics, supplier-specific characteristics, and customer demographics. Customer characteristics include factors such as number of different product categories a customer has bought from the firm, amount of product returns, frequency of Web-based contacts, tenure of the customer with the firm, and frequency of customer purchases. The higher the frequency of these factors, the higher the likelihood of multichannel shopping. Supplier-specific factors include the number of different channels used for contact, type of contact channel, and channel mix. Here, again, the higher the degree of the supplier-specific factors, the higher the likelihood of multichannel shopping. Customer demographics refer to the number of employees in the firm serving customers, annual sales of the firm, and the industry category.

After identifying the multichannel shoppers, firms need to know if they are more likely to buy in the future, likely to spend more money, and more profitable than single-channel customers. A helpful tool to determine this would be the list of customer-based metrics that firms commonly measure. These include how much a customer spends (revenue), the percentage of money a customer spends on that firm's products versus a competitor's products (SOW), the customer's past profitability (PCV), the likelihood that a customer will buy in the future (likelihood of staying active), and the Customer Lifetime Value (CLV). For a business-to-business (B2B) firm, these metrics were compared for customers who shopped in one, two, and three or more channels.

From Table 1, which shows the results of this study, it becomes evident that, as a customer shops across more channels (from one channel to three or more channels), the customer spends more revenue with the firm, spends a higher proportion on the focal firm

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(rather than with a competitor), has a higher past profitability (which is correlated with future profitability), and has a higher likelihood of buying in the future. Therefore, if a firm wants to identify candidates in order to encourage shopping in multiple channels, it needs to see which customers show the right signs of being potential multichannel shoppers based on the drivers and then try to leverage those drivers to encourage multichannel shopping behavior.

After knowing that multichannel shoppers tend to be more profitable than single-channel shoppers, firms would want to know which channel a customer is likely to adopt next and when the adoption is likely to happen. Several behavioral and psychological aspects that determine the choice and timing of channel adoption are:

- Channel-related attributes—the travel cost involved and immediate product availability.
- Purchase-related attributes—the total quantity of items a customer purchases in a single shopping trip, the number of product categories bought by a customer in a single trip, and the level of price discounts.
- Frequency-related attributes—the customer's purchase frequency and the frequency of marketing communications.
- Customer heterogeneity—these factors make the customer accept new channels and thereby shop across different channels.

These drivers help predict the adoption of channels by customers. The more channels a customer adopts, the more revenue the firm will generate. The time that a customer takes to adopt a channel can be predicted using a modified proportional hazard model. We tested this model on a sample of customers from a business-to-consumer (B2C) retail firm consisting of single-channel and two-channel shoppers. We developed a marketing campaign to target the single-channel shoppers, encouraging them to adopt the second channel. Similarly, we targeted the two-channel shoppers to adopt a third channel. The sample size for this specific implementation was 3,800 customers, of which 1,902 were in the test group, with the remaining in the control group. We monitored the shopping behavior of the test group for 12 months and found that if the customers were spending $400 on average in one channel, they were now spending about $720 when they added another channel to their shopping portfolio. The average marketing campaign cost, including the discount, was about $40, but it increased revenue by $320. Therefore, the return on investment was about eight times (or 800%). It is clear that contacting the right customers at the right time to encourage adopting another channel results in higher profitability and, thereby, helps a firm in growing customers.

How to Retain Customers and Prevent Churn

Retaining customers is a crucial function for any organization. Customer attrition impacts a firm in several ways. The primary impact is the loss of revenue from customers who have defected. Second, attrition results in the lost opportunity for the firm to recover the acquisition cost incurred on the customer. This puts an undue burden on the firm to break even. Third, the firm loses the opportunity to up-sell and cross-sell to customers who have defected, and this can be treated as a loss of potential revenue. Fourth, there are some lost social effects, such as influencing other customers on product/service adoption and potentially negative word of mouth. Further, firms must also invest additional resources to replace lost customers with new customers. This drains the firm's resources, which are already impacted by the loss of customers to competitors.

This is what is happening at Sprint. For the quarter ending June 2008, Sprint's churn rate of approximately 2% was nearly double that of Verizon, the industry leader. At the end of the first half of 2008, Sprint had lost about two million subscribers both from its (less profitable) prepaid and (more profitable) post-paid plans. Further, the average amount paid by each customer for monthly service continued to shrink, down 7% to $56 from a year before. When contrasted with the customer acquisitions of Verizon (1.3 million in the first quarter of 2008) and Vodafone (1.5 million in the first quarter of 2008), this clearly shows the financial and managerial damage customer churn can cause.

As part of a rebuilding effort, however, Sprint devoted resources to curb customer churn. It managed to contain the churn rate of its post-paid customers to just under 2% by the end of the second quarter of 2008, down from 2.5% in the first quarter of 2008. This

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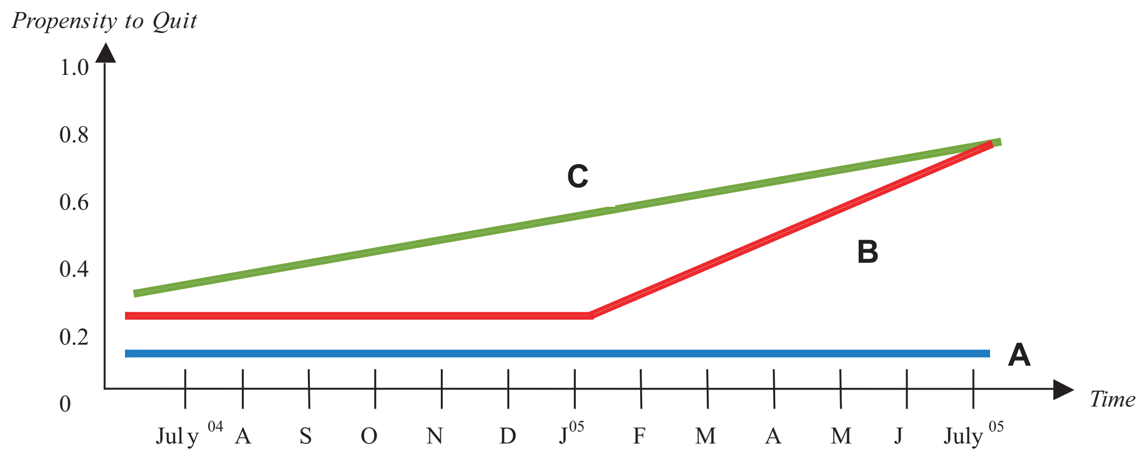

reduced its annual churn rate to around 8% from 10%.

Many firms have realized the importance of controlling the churn and have adopted or are in the process of adopting analytic tools to predict and prevent attrition. Before developing this strategy, a company needs to answer the following questions:

- How do we identify the customers who are likely to defect?
- When are they likely to defect?
- Should those customers be intervened? If so, when should it be done?
- How much should we spend to avoid the attrition of a particular customer?

There are two components to predicting churn. One is to know the customers who are likely to defect, and the other is to know when they are likely to defect. Most models that predict churn can answer both these questions by building a propensity-to-quit model. These models provide the probability of a customer quitting at a particular point in time.

To decide on the intervention necessity, it is essential for managers to study the customer-quitting tendencies. For instance, consider three customers—Customer A, Customer B, and Customer C. Figure 4 illustrates their predicted propensity to quit over time (July 2004 to July 2005). Customer A does not intend to quit and is denoted by a straight line. Although Customer B does not exhibit a quitting tendency initially, it shows an increase in propensity to quit from January 2005. Customer C shows a strong tendency to quit from early on, represented by a steep curve. Clearly, Customers B and C are likely to quit in the near future, and they are the customers that need intervention.

Once the company decides which customers need intervention, it has to identify when to intervene. The answer to this question lies in a proactive intervention strategy. To prevent customer attrition, the firm should intervene when customers show a strong tendency to quit. Figure 5 shows the time periods in which Customers B and C should be intervened.

Points I_1 and I_2 in Figure 5 denote the intervention points when customers B and C should be intervened, and this is followed by a decrease in propensity to quit on the part of the customers. Customer B is being intervened in May 2005, and Customer C in October 2004. The reason for the time lag between the customer interventions stems from their respective propensities to quit. While Customer C is intervened early on, Customer B can be intervened at a later stage. Companies can decide the intervention channel and the type of offer based on individual customer characteristics. Thus, proactive intervention strategies help companies preempt customer attrition and thereby increase ROI.

Another key element of an intervention strategy is the amount of resources to spend on each customer, which is directly linked to the worth of the customers or

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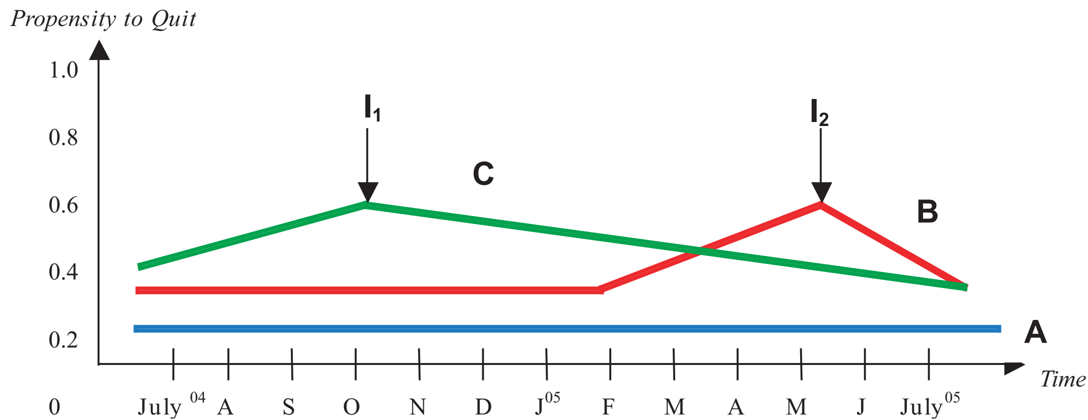
Figure 5: Proactive Intervention Strategy



their lifetime value. Suppose the firm has an intervention strategy of spending $100 per customer. It does not make business sense to offer this promotion to a customer whose CLV is $50. Instead, the firm should intervene with an offer that costs less than $50. Ideally, firms should design a number of different intervention strategies with varying costs so as to cater to all customers.

In a recent study involving a telecommunications firm, we tested the strategy to prevent attrition of customers. We created a test group and control group that had 2,601 customers and 2,602 customers, respectively. There was no intervention for the control group. For customers in the test group, however, we predicted propensity to quit and identified those customers who are likely to quit. Based on the CLV of each customer, we designed customer-specific intervention strategies for all vulnerable customers. The average revenue per customer in both groups was $600 per year. The total cost of intervention for the firm was $40,000 for the test group. The intervention saved 643 customers for the firm. By multiplying the number of customers by the average revenue contribution per customer, the total revenue gain was $385,800 for the group that was intervened. Thus, even after taking into account the cost of intervention, the firm had a net revenue gain of $345,800 by preventing attrition, and the return on investment was close to 860%, or 8.6 times the investment.

Customer churn can have an adverse effect on the profitability and even the survival of a business. The key to retaining customers is to identify early on the customers who are likely to quit and intervene to prevent attrition. While churn models help identify these customers, the intervention strategy based on CLV helps to intervene effectively to retain valuable customers.

2. How do we determine which types of customers and future prospects not to retain, grow, acquire, or win back?

Every firm would offer an array of products that serves a wide variety of customers. Some are long-term customers, and some transact only in the short term. Some are more profitable to the company than others. So how can the company measure and understand how its individual marketing actions are affecting the purchasing behavior of such a diverse group of customers? Because CLV captures customers' past behavior, their projected future behavior, and the marketing costs to maintain them, it can help identify customers who are *not* to be retained. CLV can serve as an important guide in deciding who *not* to follow. It can also guide managers in understanding how their actions influence customer behavior and analyzing the effectiveness of their marketing initiatives.

To analyze this facet of CLV, we studied a B2C retail-

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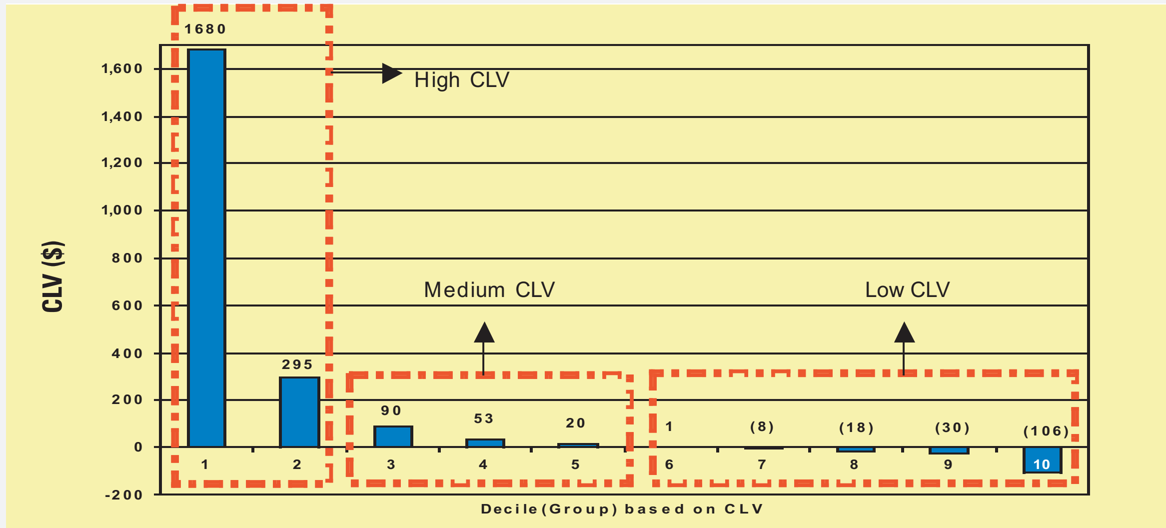
Figure 6: Customer Segmentation Based on CLV Scores



er selling apparel, shoes, and accessories for men and women. We considered more than 300,000 customers from the firm's database, calculated their individual CLV scores, and obtained a distribution of CLV scores. Based on the scores, the customers were segmented into 10 deciles. The customers in the top two deciles constituted high CLV customers; the customers in segments three through five constituted medium CLV customers, and the customers in the bottom five deciles constituted low CLV customers.

We gleaned some interesting insights about customer profitability. The top 20% of customers accounted for 95% of the profits, and the retailer was actually losing money with 30% of the customers. This is because several customers in low CLV segments had negative CLV scores. Figure 6 illustrates the 10 deciles of customers.

How does a company identify these high and low CLV customers? We performed a customer profile analysis to determine this. The analysis showed that the most profitable customers—i.e., high CLV customers—were professionally employed and married women in the 30 to 49 age group. They had children and a high household income. High CLV customers typically were members of the store's loyalty program, lived closer to the store, and shopped through multiple channels. The typical low CLV customer, on the other hand, was a low-income unmarried male customer in the 24 to 44 age group, primarily a single-channel shopper, lived further from the store, and did not own a home. By performing such profile analyses, firms can put a face on customers' CLV and, therefore, effectively manage their customers.

After identifying the high and low CLV customers, we classified customers into a two-by-two matrix and recommended several segment-specific marketing strategies to the firm. Figure 7 provides the customer matrix.

It was suggested that minimal spending should be allotted to the customers with low CLV scores and high current SOW. For customers with high CLV scores and high current SOW, the current level of spending should be maintained. Customers with low CLV and low current SOW should be encouraged to cross-buy from different product categories and higher-valued products. In the case of customers with high CLV and low current SOW, firms should take measures to stimulate those customers' interests by cross-selling across different product categories and promoting higher-value purchases.

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Figure 7: Marketing Actions of the Firm Using CLV and SOW

	High Current SOW	Low Current SOW
High CLV	***Maintain current level of marketing***	***Stimulate more interest through cross-selling and higher-value products***
Low CLV	***Minimal marketing spending***	***Invest to encourage cross-buying and spending on higher-valued goods***

The impact of cross-buying can be greatly improved if firms identify and target the right customers. In our research involving a catalog retailing firm, we identified the drivers of cross-buying, the impact of cross-buying on revenue, and other metrics. We identified the drivers of cross-buying and classified them as exchange characteristics and customer characteristics. The exchange characteristics were the average time between purchases, the ratio of product returns, and focused buying. The customer characteristics were composed of the age of the head of the household and household income. To study the impact of cross-buying, we compared the values of customer-based metrics, such as revenue and contribution margin per order and orders per month before and after an increase in the level of cross-buying (i.e., after the customer started purchasing from an additional category). When comparing the group means, we found that the revenue and contribution margin per order per customer of the catalog retailer and the number of orders in a given time period increased significantly with each level of cross-buying. Therefore, understanding the relationship of these variables with cross-buying will help firms select customers with a higher likelihood of cross-buying and retain only those customers.

This study also had important implications on product returns. If a customer buys more, the opportunity for returning the products also increases. Therefore, should we attempt to cross-sell to those customers whose returns are higher? The results indicate that even though cross-buying increases with an increase in the ratio of product returns relative to the purchase amount, the ratio of product returns has a negative impact on cross-buying beyond a certain threshold.

There could be two explanations for this occurrence. First, there may be a disparity between the customer's expectation of the product and the firm's actual product offering. That is, if a customer has to return a significant proportion of products purchased, the customer would then start questioning the firm's ability to offer products that satisfy his or her needs. Second, a higher ratio of returns may be due to customers misusing the product-return system.

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3. How much should be spent on the various micro-segments to retain, grow, acquire, and win back these customers?

Having identified the types of customers to retain and not to retain, it might be useful to ascertain how much should be spent on the customer segments in order to retain them. There are two CLV-based strategies that can help the firm accomplish this: (1) optimal resource allocation for a given buying level and (2) up-selling and cross-selling to retained customers.

Optimal Resource Allocation

Most managers are faced with budgetary constraints while making decisions regarding where, how, and on whom they are going to spend the marketing resources. Of course, it would not be prudent to contact all customers. As seen from the previous sections, targeting customers who are easy to acquire and retain is a flawed approach that could lead to firms using their limited marketing budget to chase unprofitable or low-profit customers while ignoring high-profit customers. How should managers spend their resources?

The answer lies in evaluating customers based on their profitability and not on how easy they are to acquire and retain. The optimal allocation strategy evaluates customers based on their future profitability and recommends appropriate marketing initiatives that need to be taken. The best customers are those who are chosen based on their CLV and future profitability. Once the company decides which customers to contact, the following questions arise:

- How responsive are these customers to various channels of contact (e-mail, telephone, direct mail, etc.), and what is the right mix of these channels?
- Should the firm contact the customer through e-mail, make a promotional telephone call, or should a sales representative contact the customer?
- If the company uses a mix of communication strategies, how does it extract the most from every communication effort? What is the sensitivity of each customer to these communication efforts?

These are some common issues companies face in implementing marketing initiatives. Generating the maximum bang for the buck depends significantly on the company's contact strategy, frequency, and various modes of communication. Therefore, the following factors are considered in deciding the optimal resource allocation:

- The cost involved in communicating through a particular channel,
- The customer's response when contacted through a particular channel,
- The frequency of communication,
- The customer contact levels across different channels, and
- The expected profit level from each customer.

Figure 8 provides a practical demonstration of how a company can implement a resource allocation strategy. By segmenting customers based on their current SOW and CLV, we can see that customers in cell 1 have a low SOW and low customer value—they are of little value to the firm, and managers should refrain from investing in these customers to avoid loss. Customers in cell 2 have a high customer value and low SOW. Firms should adopt a conversion strategy in this case and invest in upgrading and cross-selling products to these customers. Customers in cell 3 have a very high SOW but exhibit low customer value. Firms should shift resources from cell 3 to cell 2 with the goal of increasing the SOW of the customers in cell 2. Customers in cell 4 have a high SOW and a high customer value. They should be the main targets for customer loyalty programs, and firms should invest heavily in these customers to maintain their loyalty and maximize their profitability.

We applied this strategy to a B2B firm, and the results were encouraging. After segmenting the customers based on their SOW and CLV, we provided detailed recommendations regarding the optimal level of contacts. Figure 9 summarizes the results of these recommendations.

As shown in Figure 9, the B2B firm was consistently overspending on the low CLV customers (cells 3 and 4), a classic example of how firms pursue low-value customers and spend their valuable marketing resources on them. Specifically, the firm was using the very expensive face-to-face channel of contact very frequently, thus increasing the marketing spending dramatically. By adopting a CLV-based approach, the spending level was reduced by half, and profits increased by more than 200% for these customers.

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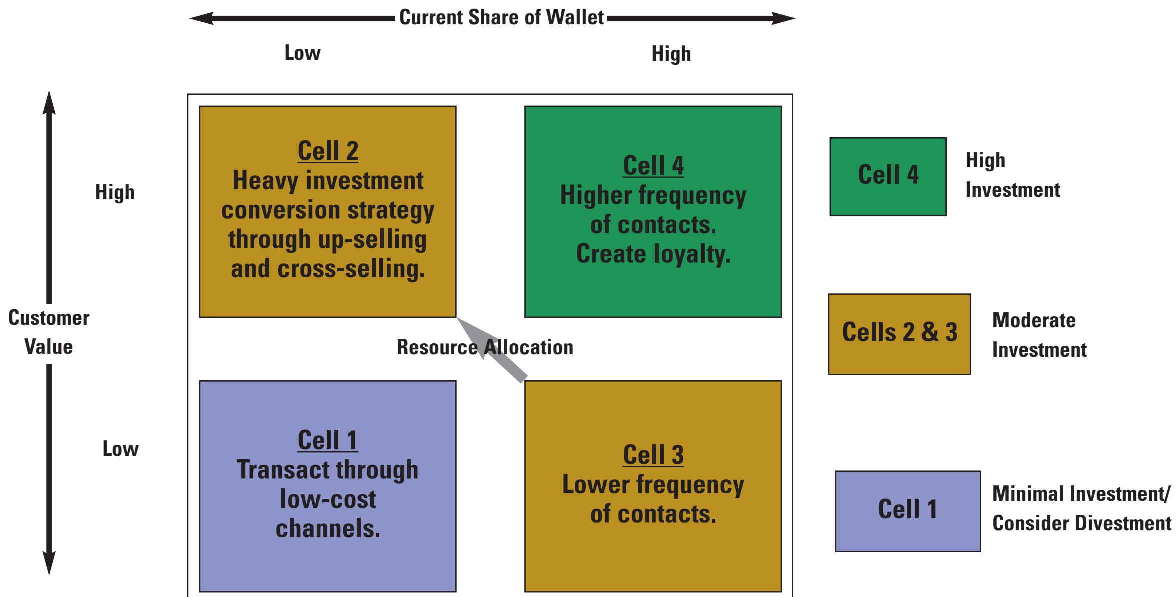
Figure 8: Optimal Resource Allocation Strategy



With regard to the high CLV customers, the firm was consistently underspending (cells 1 and 2). This prevented the firm from fully exploiting the profit potential of these high CLV customers. By adopting a CLV-based approach, we suggested doubling the marketing spending on these customers and contacting them more frequently by using face-to-face contacts, direct mail, and telesales. These measures unlocked the true potential of these high-value customers and resulted in a tremendous increase in profits from them. Such a reallocation of marketing resources generated 100% more revenue for the firm and 70% more profits. Therefore, by carefully monitoring the purchase frequency of customers, the interpurchase time, and the contribution toward profits, managers can determine the frequency of marketing initiatives in order to maximize CLV.

Up-selling and Cross-selling to Retained Customers

While these studies advocate cross-selling in order to profitably retain customers, would cross-selling always lead to higher profits across different customers? The answer is no. We have found that not all profitable customers necessarily buy more products, and not all customers who buy more products are necessarily profitable. Therefore, firms need to exercise caution while cross-selling. Further, firms should evaluate cross-selling decisions in comparison with up-selling and not-selling decisions as well.

One major issue facing any business is to predict what its customers are going to purchase next. Consider a financial services firm that offers a list of services ranging from banking to credit card services to retirement planning and mortgages. If a customer opens a savings and checking account in the first quarter, will

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Figure 9: Optimal Resource Allocation Strategy for a B2B Firm

	Low Current SOW	High Current SOW
High CLV	**Cell 1** **Cost Reduction ($):** Current Spending: $1,008 Optimal Spending Limit: $2,197 **Face-to-Face Meetings:** Current Frequency: once every 7 months Optimal Frequency: once every 5 months **Direct Mail/Telesales:** Current Interval: 6 days Optimal Interval: 2 days **Profits:** Current Profit: $109,364 Optimal Profit: $178,092	**Cell 2** **Cost Reduction ($):** Currently Spending: $1,385 Optimal Spending Limit: $2,419 **Face-to-Face Meetings:** Current Frequency: once every 3 months Optimal Frequency: once every month **Direct Mail/Telesales:** Current Interval: 6 days Optimal Interval: 5 days **Profits:** Current Profit: $534,888 Optimal Profit: $905,224
Low CLV	**Cell 3** **Cost Reduction ($):** Currently Spending: $819 Optimal Spending Limit: $433 **Face-to-Face Meetings:** Current Frequency: once every 5 months Optimal Frequency: once every 13 months **Direct Mail/Telesales:** Current Interval: 10 days Optimal Interval: 13 days **Profits:** Current Profit: $7,435 Optimal Profit: $12,030	**Cell 4** **Cost Reduction ($):** Currently Spending: $1,291 Optimal Spending Limit: $612 **Face-to-Face Meetings:** Current Frequency: once every 2 months Optimal Frequency: once every 10 months **Direct Mail/Telesales:** Current Interval: 8 days Optimal Interval: 8 days **Profits:** Current Profit: $10,913 Optimal Profit: $28,354

the firm be able to predict what services the customer might need in the following quarters? Will the customer need a mortgage, or should the bank approach that person for a credit card purchase? Or is the customer in need of a retirement plan? If the firm is able to predict this, it will be able to customize its message and offer products and services the customer needs, thus increasing its sales. This would aid in ascertaining how much the firm should spend on the various customer segments.

In the case of a multiproduct firm, it may not be easy to speculate what product a particular customer is going to buy next. From the firm's point of view, this is very valuable information because the firm can then decide the message and timing of the customized communication strategy. The answer lies in developing a purchase-sequence model that addresses the following questions:

- What is the sequence in which a customer is likely to buy multiple products or product categories?
- When is the customer expected to buy each product?
- What is the expected revenue from that customer?

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Table 2: Comparison of Probabilities

	Accounting for Product Choice and Purchase Timing Dependence (Our model)				Not Accounting for Product Choice and Purchase Timing Dependence (Traditional model)			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Hardware	0.75	0.10	0.17	0.36	0.50	0.70	0.05	0.20
Software	0.10	0.15	0.66	0.35	0.40	0.10	0.25	0.60
Hardware & Software	0.10	0.70	0.10	0.20	0.05	0.15	0.65	0.20

Traditionally, a firm estimates the purchase sequence by analyzing the past customer purchases and estimating the likelihood of future purchases. This model involves two steps: (1) estimating the probability that a customer will make a purchase at a particular time, and (2) estimating the probability of a customer purchasing a particular product at the predicted purchase time.

The final probability of a customer purchasing a particular product at a predicted time is the multiplied result of the two probabilities—which products the individual will buy and when. Using this information, managers can identify the customers who are most likely to buy each product and the times when the product will be in demand. Despite this, companies get unreliable marketing numbers. Why? Two main reasons are interdependence and sampling error.

The approach of multiplying the probabilities from two independent regression equations ignores the interdependence between the two probabilities. This results in a poor prediction of when a customer will make a purchase and what product will be bought at that time. Further, because the two probability equations are based on data from a single sample, it may give rise to sampling error. These problems have made companies rely on relatively small samples to work from, which has led them away from meaningful relationships between the various drivers of purchasing behavior.

The answer for countering these problems is in Bayesian estimation. Through an iterative chain, this technique allows managers to determine the most probable weightings for the variables involved. This mode of calculation has more predictive capacity because it replicates the actual behavior of a sample rather than estimating a set of weights from one sample and making it valid for the whole population. Using a likelihood function and customer-level data such as age, sex, average time between purchases, etc., the estimation iteratively applies different weights to each variable until the function approaches the range of coefficients most likely to reproduce the behaviors observed at the beginning.

The effectiveness of this new approach of accounting for product choice and purchase timing together over the traditional method that accounts for them independently was tested in our study involving a B2B high-tech company. We used a sample of 20,000 customers to test this new methodology. The results obtained were far superior to the results obtained by using the traditional method. Table 2 compares the results between the two methods.

The results showed that accounting for product choice and purchase timing together (our model) was better than accounting for product choice and purchase timing independently (traditional model). Using our model, we found that 85% of the customers predicted to make a purchase actually made a purchase, compared to 55% in the traditional model. Of the customers predicted not to buy a product, 87% did not make a purchase (compared to 59% in the traditional model). Therefore, while the traditional model will predict with

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some accuracy the products that customers will buy, the major flaw is that it performs poorly in predicting the purchase timing.

In order to test our model's effect on profits and revenues, we conducted a field test. The sample of 20,000 customers was split into test and control groups. The communication strategy for the customers in the test group was determined by the variable relationships and the probability predictions generated by the new model. The contact strategy for the control group was decided by the company's traditional approach, which was based on information such as revenue per customer, cost of sales and communication, number of contacts before a purchase, profit, and ROI.

When the results were compared, the new methodology improved the B2B firm's profits by an average of $1,600 per customer, representing an increase in ROI of 160%. The improvement when computed for the sample of 20,000 customers resulted in an increase in profits to about $32 million for the sample group alone. When we extended this to their entire customer base of 200,000, the potential profit improvement would total $320 million. Therefore, understanding the purchase sequence using the new model saves valuable marketing resources from being spent on unreceptive customers and provides a way of helping companies recover sales that the traditional marketing strategies currently may be losing.

The three important questions answered in the preceding sections help managers to manage customers effectively and thereby improve profitability. In a recent study involving IBM, a high-tech B2B service provider, we tested the answers to these questions. Specifically, the study intended to determine the following:

◆ Which customers to select for targeting,

◆ A way to determine the level of resources to be allocated to the selected customers, and

◆ How to nurture the selected customers to increase future profitability.

IBM used CLV as an indicator of customer profitability and to reallocate marketing resources. When implemented for a sample of about 35,000 customers, the CLV-based approach led to reallocation of resources for about 14% of the customers compared to the allocation rules used previously (which were based on past spending history). Further, such a resource reallocation led to an increase in revenue of about $20 million (a 10-fold increase) without any significant changes in the level of marketing investment, thereby increasing the return on investment.

Now, if the implementation of CLV-based strategies discussed in the preceding sections results in increased profits, does it create shareholder value? If so, how?

Linking CLV to Shareholder Value

Once CLV has been used to create strategies to better manage customers, the next step is to see if CLV can link the outcome of marketing initiatives to the firm's market capitalization as measured by the firm's stock price. In a recent study, we made an attempt to link CLV with shareholder value to get better strategic insights. For measuring the firm's shareholder value, we used the market capitalization to calculate the firm's shareholder value. This is consistent with earlier marketing studies that have employed similar measures to compute the firm's shareholder value. The framework was tested with two *Fortune* 1,000 firms in B2B and B2C contexts. Our findings show the following:

◆ The market capitalization (MC) of a firm can be predicted reliably by customer equity (CE)-based framework,

◆ Marketing strategies directed at increasing the customer equity are able to increase the firm's stock price and outperform market expectations.

The study establishes that a firm's MC as determined by its stock price is closely tied to the firm's CE, which is driven by customer-specific drivers and the firm's marketing interventions.

After establishing the link between CE and MC, we applied the CE-MC relationship to calculate the corresponding change in MC. Our results indicate that a 1% increase in acquisition rate of customers resulted in a 1.4% and 1.9% increase in MC for the B2B and B2C firms, respectively. Similarly, an increase of cross-buying by one product across all retained customers resulted in a 7.2% and 8.3% increase in MC for the B2B and B2C firms, respectively. We also identified that the MC of the firm drops if it acquires the wrong customers (i.e., customers who subsequently end up with negative

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CLV). By implementing these CRM strategies, we found that the lift in CE for all customer segments was 19.4% and 23.3% for the B2B and B2C firms, respectively.

Knowing this, can a firm launch marketing initiatives to increase its stock price? Yes. This would integrate the marketing strategies and tactics with the financial measures of the firm. In other words, marketers can quantify the impact of the marketing organization toward the boardroom's primary agenda of increasing the market capitalization value of the firm.

Having identified CLV as a key metric for measuring future profitability of customers and linking it to shareholder value as a means to improve marketing accountability, how can corporations implement CLV-based strategies as a framework in their business operations?

Implementing CLV-based Strategies

One major challenge in implementing CLV lies in transforming a firm's focus from product-centric to customer-centric marketing. While the basic philosophy of the product-centric approach is to sell products to whomever is willing to buy, the customer-centric approach advocates serving specific customers, thereby providing customized services to customers. The shift in focus is from products to customers. For a firm to be customer-centric in its approach, interactions between firm and customer, between customers, and between firms are essential. The net aggregate of all such interactions, known as *interaction orientation*, helps firms develop organizational resources for successful management of customers.

Our recent research study provides a road map for understanding and overcoming the key managerial challenges to achieving customer centricity. The study identifies four impediments that lie in the path of changing from a product-centric firm to a customer-centric firm. They are organizational culture, organizational structure, processes, and financial metrics. To be successful in the transition to a customer-centric firm, an organization must start with leadership commitment and be synchronized with organization realignment, systems and process support, and revised financial metrics. When these initiatives are followed by learning and continuous improvement, firms are able to achieve a competitive advantage and be successful in the marketplace. In short, CLV-based strategies will be omnipresent and omnipotent across all businesses worldwide. ■

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Endnote

1 For additional information, see Werner J. Reinartz and V. Kumar, "The Mismanagement of Customer Loyalty," *Harvard Business Review*, July 2002.

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