

Assumptive Optimizations: Maximizing Customer Equity

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Abstract

Prior research has shown that intangible assets contribute to the market value of firms. Quantifying the intangible is a challenge, as will be discussed in the case of one such intangible—customer equity.

Mittal and colleagues (2005) describe the importance of maximizing customer satisfaction while minimizing costs (describe by Reinartz and colleagues [2005] as acquisition and retention costs). This optimized structure defines one of the many intangible marketing assets possessed by a firm. As Srivastava and colleagues (1998) discuss, such intangibles are essential to determining the market value of the firm.

Srivastava and colleagues identify two key market-based assets are identified (1998 page 5, emphasis added): relational assets as “outcomes of the *relationship between a firm and key external stakeholders*, including distributors, retailers, end customers, other strategic partners, community groups, and even governmental agencies” and intellectual assets as “*types of knowledge a firm possesses* about the environment, such as the emerging and potential state of market conditions and the entities in it, including competitors, customers, channels, suppliers, and social and political interest groups.” Customer equity, defined by Rust and colleagues (2004, page 110): “as the total of the discounted lifetime values summed over all of the firm’s current and potential customers,” represents a market-based asset based on both relational and intellectual components. Kumar and George describe the importance of customer equity with the caveat that it is (page 157) “rather difficult to establish a precise value for this asset”

In principle, the calculation of customer equity as measured by the Customer Lifetime Value (CLV) is a simple task (Carpenter 1995); however, the assumptions to make prior to doing the calculations are far from simple (Berger and Nasr 1998). As demonstrated from the readings, assumptions (n) in the calculations abound (Rust et al. 2004 [n=37]; Venkatesan and Kumar 2004 [n=11]; Mittal et al. 2004 [n=1]; Reinartz et al. 2004 [n=10]; Kumar and George 2007 [n=18]). Due to the staggering number of assumptions, a “decision calculus” needs to be defined

for practical implementations (Berger and Nasr Bechwati 2001) before optimization techniques can be employed, constrained by the data available (Nasr Bechwati and Eshghi 2005; Kumar and George 2007).

All assumptions in the optimization are based on the three key elements of customer equity: the customers, the costs to acquire new customers, and the costs to retain current customers. The first domain of assumptions refers to the customer life cycle (Jain and Singh 2002). Frequency of purchase, time between purchases and other elements of account behavior all need to be parameterized. In the industrial context, Barbara Jackson (1985) describes two models of viewing customer behavior: *always-a-share* and *lost-for-good*, representing optimistic and pessimistic (respectively) bounds for customer value. With high switching costs, a firm may assume a *lost-for-good* lens. The calculated CLVs will dramatically change based on the other life cycle assumptions: If using *lost-for-good* assumptions, and the customer is assumed to have been lost (frequency of purchase was outside of parameterized time frame), the next purchase by that same customer will be recognized as a new customer. The costs associated with this purchase will be categorized as acquisition costs; in reality, the costs associated are retention costs. Further, the CLV for that customer is understated, and if a loyal customer, extremely understated (based on time dependency of NPV calculations). It is thus not surprising that Rust and colleagues (2004) and Venkatesan and Kumar (2004) both use the *always-a-share* approach. Frequency of purchases and time between purchases are other parameters that need to be carefully considered. Most academic calculations make very different time-frequency assumptions: Ho and colleagues (2006) use exponential distributed interpurchase time unique to every customer; the VK approach assumes intervals of future purchases are “inversely

proportional to the predicted frequency”; the RLZ approach assumes intervals of future purchases are “inversely proportional to the average number of purchases” (Kumar and George 2007, Figure 1). Collectively, these customer-based assumptions are complex; however, the complexity increases as assumptions about costs are analyzed.

The probabilities related to a customer are all conditioned upon actions performed by the firm, its competitors, and the market environment. Specifically related to costs minimization as an optimization of customer equity, how do promotional dollars effect customer retention or customer acquisition? Berger and Nasr Bechwati (2001) optimize promotional budget; Rust and colleagues (2004) optimize return on marketing; Venkatesan and Kumar (2004) optimize marketing communications resource allocations; Reinartz and colleagues (2005) optimize the balance between the two types of costs (see also Berger and Nasr 1998); and Ho and colleagues (2006) optimize customer satisfaction and revenues.

Each model has merit in its methods and based on its assumptions; however, what exactly is the message for a practitioner? Kumar and George (2007) attempt to create a decision tree to help practitioners choose an optimization path (see Figure 5). As identified by Kumar and George, the data constraints begin the decision process. Customer-level data is becoming more available as information technology is embedding in firms; as such, discriminate information about granular segments may be incorporated in CLV models. This “disaggregate” data needs to be used prudently; as described by Reinartz and colleagues (2004), Type I and Type II errors could be costly for a firm, so it appears most firms are not discriminating based on the data.

Logically, once the data constraints are understood, the resource allocation between the two costs should be considered—“Clearly, not every company wants to balance acquisition and

retention at the same point” (Blattberg and Deighton 1996, page 137). This optimal balance cannot occur without a clear definition of probabilities associated with the customer life cycle: purchase frequency, interpurchase time, and customer life. Due to the complex nature of optimizing multiple parameters, stochastic processes (Bayesian, Genetic, or Monte Carlo simulations) will be required to perform the calculations as demonstrated in various models (Reinarz et al. 2005; Venkatesan and Kumar 2004).

In conclusion, it is quite clear that calculating the intangible customer equity is an assumptive and arduous task. These assumptions are anchored around the concept of the customer life cycle and associated acquisition and retention costs. A manager, to prevent being overwhelmed with the mathematical implications associated with each assumption, should provide the strategy to an econometrician based on the data available, and work toward maximizing customer equity by optimizing the customer-centric parameters. As described by Morgan and Hunt (1994), the concept of relational marketing is simple, yet implementing a decision calculus can be complex.

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