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A Note on Willingness to Spend and Customer Lifetime Value for Firms with Limited Capacity

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Abstract

The paper draws a distinction between customer lifetime value (CLV) and willingness to spend (WTS). By WTS we mean the maximum amount the firm should be willing to spend to acquire (retain) the customer relationship. In order to avoid the double counting of cash flows when summing the CLVs of customers, we suggest including only *direct* cash flows in the formulation of CLV. This convention means that CLV will equal WTS if (and, for the most part, only if) the firm's relationships with customers are independent. By independent we mean that the acquisition (retention) of Jane Doe has no effect on the cash flows of any other current or future customers. In contrast to well-understood demand-side dependencies among customer relationships (such as referrals), this paper highlights a particular kind of supply-side dependency—that created when the firm is limited in the number of customers it can serve. Using an extended version of the model of Blattberg and Deighton ("Manage Marketing by the Customer Equity Test," Harvard Business Review, July–August 1996, 136–144) of customer equity, we demonstrate that, for a firm at capacity (in this model), CLV is no longer relevant to marketing spending decisions and the firm can prefer a lower-CLV customer.

Keywords: Customer lifetime value; Marketing spending; Customer relationship management

Introduction

To the best of our knowledge, it was Bursk (1966) who introduced the concept now commonly referred to as customer lifetime value (CLV) with his suggestion that firms use the "investment value" of a customer to guide marketing spending decisions. Attention directed toward CLV helps shift focus from transactions (finding more buyers for the firm's products) to relationships (finding more ways to serve the firm's customers). Using CLV to guide marketing decisions also encourages firms to recognize differences among customers and begin to create value though differential treatment.

For these and other reasons, the concept of CLV receives much attention from marketing practitioners and academics (e.g., Rust, Zeithaml, and Lemon 2000; Blattberg, Getz, and Thomas 2001; Gupta et al. 2006; Blattberg, Malthouse, and Neslin 2009). For our purposes, CLV is defined as the present value of the future cash flows attributed to the customer relationship (Pfeifer, Haskins, and Conroy 2005). By design, this definition is flexible; it can be applied at any point in the firm's relationship with a customer. Thus, it makes sense to talk about the (remaining) lifetime value (or CLV) of an existing customer (and attempts by the firm to maximize that value) as well as the value of a newly acquired customer. Although the definition of CLV means it applies to both new and existing customers, to keep things simple and avoid confusion, we adopt the default assumption that (unless otherwise noted) CLV refers to the present value of customer cash flows *if and when* acquired.

Notice also that the definition is silent with respect to what cash flows should be attributed to the customer relationship. There appears to be agreement, however, that the sum of the CLVs of the firm's current and future customers (net of acquisition costs) is a measure of the value of the firm (see, for example, Bayon, Gutsche, and Bauer 2002; Berger et al. 2006; Gupta et al. 2006; Rust, Zeithaml, and Lemon 2000). In order for CLVs to sum to something meaningful, there

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should be no double counting of cash flows. One simple way to avoid double counting is to attribute only *direct* cash flows in the formulation of CLV. We will adopt that convention throughout this paper. So, for example, if Jane Doe encourages her friends to spend more, the value of that extra spending should be included in the CLVs of the friends and not in the CLV of Jane Doe. Under this convention, the decision to try to acquire Jane Doe requires that the firm recognize that acquiring (retaining) Jane Doe will increase the CLVs of her friends. This is consistent with the approach taken by Kumar, Petersen, and Leone (2007) who treat "referral value" as distinct from CLV. It is also consistent with the Kumar et al. (2010) treatment of CLV as but one of four components of the overall value (referred to as "Customer Engagement Value") of the customer to the firm.

CLV and Willingness to Spend

The purpose of this paper is to explore how firm capacity affects the interpretation of and usefulness of CLV. The Jane Doe example is important because it illustrates that one cannot always rely on CLV to be the firm's maximum willingness to spend (WTS) to acquire (retain) the customer relationship. Jane Doe is more valuable to the firm than her CLV, and the firm should be willing to spend more than her CLV (if necessary) to acquire (retain) her given that her presence increases the CLVs of her friends. The key point is that CLV is not defined to be the firm's WTS to acquire (retain) the customer. Under certain assumptions, WTS will be equal to CLV. But under other assumptions, it will not.

The distinction between CLV and WTS is one that is not commonly made. After defining CLV as the present value of future cash flows, most authors then declare that CLV is the limit on acquisition spending. For example: "(CLV) provides a ceiling on spending to acquire new accounts" (Dwyer 1989). Although we make no distinction among "ceiling on spending," or "limit on acquisition spending," or WTS, we see a big conceptual difference between CLV and WTS.

Our thinking on this issue is consistent with that of Kumar et al. (2010) who use "customer engagement value" to refer to the sum of CLV (the present value of future cash flows from transactions) and three other components of value (referral, influence, and knowledge) accruing to the firm from the customer relationship. Our "WTS" is more general than "customer engagement value," however, in that it represents the net economic benefit (from all sources and for all reasons) to the firm of the customer relationship.

Sufficient Condition for WTS to Equal CLV

Given that CLV and WTS are different concepts, we are now in a position to specify the conditions under which WTS will equal CLV. If the firm's relationship with Jane Doe is independent of its relationships with other customers, then WTS will be equal to CLV. By independent, we mean that the acquisition (retention) of Jane Doe will not affect the cash flows of other current or future customers.

Pfeifer (1999), Hogan, Lemon, and Libai (2003), and Kumar et al. (2010) provide several examples of demand-side dependencies that invalidate the use of CLV as the limit on acquisition spending. Many of the examples can be thought of as customer network effects—where the value of the firm's service to Jane Doe depends on the number and/or kinds of other customers served by the firm. Demand-side dependencies can be both positive (as when Jane Doe spends more time on Facebook because many of her friends are also members) and negative (as when a fashion brand loses its appeal for Jane Doe when it becomes too popular). A final example of a demand side dependency (see, Malthouse 2003) is when cash flows (revenues) from a magazine's advertising customers depend (by contract) on the number of subscription customers it serves (circulation).

In contrast to demand-side dependencies are supply-side dependencies—where the cost to the firm of serving Jane Doe (or the quality of service the firm delivers to Jane Doe) depends on the number and/or kinds of other customers served by the firm. For example, if the firm's unit variable costs decrease with volume according to an experience curve (see, for example, Day and Montgomery 1983), this would create a supply-side dependency among its customer relationships. In the presence of an experience curve, the CLV of Jane Doe will be challenging to predict (because it will depend on how many other customers the firm serves in the future) and will not equal the firm's WTS to acquire her. The latter is true because the acquisition of Jane Doe will lower the firm's cost to serve all its other customers.

Another example of a beneficial supply-side dependency happens when expertise the firm acquires from serving customers is used to lower the cost to acquire (retain) customers in the future. On the negative side, the quality of service the firm delivers to customers often degrades with the number of customers served (see, for example, Keaveney 1995), and limited inventories can lead to shortages/back-orders which damage customer relationships if the firm attempts to sell to too many customers too quickly (see, for example, Malthouse 2003).

Limited Capacity as a Supply-side Dependency

The purpose of this paper is to highlight and begin to examine another form of supply-side dependency. We will examine firms limited in their capacity to serve customers. A capacity limit creates a dependency among customer relationships in that customers compete for a scarce firm resource. For a firm facing a capacity limit, acquiring Jane Doe means the firm runs the risk of not being able to serve some other customer in the future.

For this initial look at how a capacity limit affects the role CLV plays in determining marketing spending, we will restrict our attention to firms with a "hard" constraint on the number of customers served. The source of that constraint may be physical—such as sports and entertainment firms selling season tickets to venues with a finite number of seats. Property management firms that operate apartment buildings (which contain a finite number of