
Analyzing exchanges through the use of value equations

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Abstract

Firms enter into exchanges so that they can create value for themselves as well as their customers. Day's concept of customer value equations is reviewed and the concept of supplier value equations is introduced. Then the manner in which these two types of value equation can be used to identify opportunities for enhancing supplier and customer value is demonstrated.

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An executive summary for managers and executive readers can be found at the end of this article

Introduction

In recent years there has been an increased emphasis within marketing on the concepts of "value" and "exchange". Of the two the emphasis on "value" is arguably more recent but throughout the 1990s increasing attention has been given to the concept though many different definitions and points of view have been adopted (see Woodruff (1997) for a helpful overview). For example, some commentators have discussed value creation from the point of view of it being an objective to be pursued by the supplier (e.g. Anderson, 1995; Wilson, 1995) while others have emphasized a relationship's synergistic value to both parties (e.g. Anderson *et al.*, 1994; Ravald and Gronroos, 1996; Walter *et al.*, 1999). As far as the concept of exchange is concerned, it is perhaps the impact of relationship marketing that has been the major influence in a "re-visiting" of a concept that has been recognized to be at the core of marketing for several decades.

This paper will demonstrate that, the concepts of value creation and exchange can be integrated through the use of value equations to provide a supplier with valuable insights into its relationships with its customers. It will first consider the concept of "value" in this specific context and then "customer value equations" will be considered. The idea of a "supplier value equation" will be introduced and then a number of examples will show how the combination of the customer and the supplier value equations can be used by a supplier to analyze its market position and the opportunities open to it.

What is "value"?

The emphasis on "value" and "value creation" has increased noticeably in recent years. In spite of this, a major and unresolved issue is agreement on how "value" should be defined and the comment that: "value has been conceptualized in various ways" (Deasarbo *et al.*, 2001) indicates that little has changed in this regard since Zeithaml (1988) commented on the "diversity of meanings of value" or Woodruff observed that:

Delving deeper into customer value concept discussions reveals substantive meaning differences. They typically rely on other terms, such as *utility*, *worth*, *benefits* and *quality* that too often are themselves not well defined (Woodruff, 1997, original emphasis).



Indeed, even after he made this criticism, the definition of value that Woodruff put forward and which he claimed would “advance the practice of managing organizations towards customer value” (Woodruff, 1997) only illustrated the complexity of the definitional problem, and led to questions as to whether Woodruff’s definition “readily translates into an effective *operational* definition to facilitate the construction of a general scale for measuring customer value” (Parasuraman, 1997, original emphasis).

What is essential is that suppliers constantly remember that it is the customer’s interpretation of “value” that is important and not what the supplier might think it ought to be. As long as the supplier understands how the customer interprets “value” it does not matter what that interpretation is but this understanding is critical if the supplier is to comprehend how the customer will perceive their product or service as contributing to the creation of value. The problem is that it is all too easy for suppliers to assume that they understand a customer’s interpretation of “value creation”. In fact a vital item of information that a supplier must know about its customers is not just the core need that a customer expects the offered product or service to fulfill but, in addition, how that customer perceives the purchase will contribute to the generation of value for it. A supplier must guard against developing a product offering on the presumption that what *it* thinks value means is a view shared by the customer.

At the operational level there is considerable agreement (e.g. De Chernatory *et al.*, 2000; Flint *et al.*, 1998; Ravald and Gronroos, 1996) that, to a customer, the value of a purchase is the difference between the benefits that the purchase provides less the costs incurred in obtaining the good or service. Day (1999) introduced the value equation as a mechanism for understanding the value (V_c) that a customer perceives it will gain by making a purchase from a particular supplier. V_c being represented as the difference between the perceived benefits (B_c) and the perceived life time costs (C_c) arising from making the purchase. That is: $B_c - C_c = V_c$. The specific items that might appear under each of the two components of the equation will vary between customers. This because customers’ specific circumstances are likely to cause them to evaluate the components of the offering in different ways from each other even in cases where the product or service which the supplier is offering them is identical. Figure 1 shows the components that Day used to illustrate the customer value equation.

Implicit in this formulation is the view that “the product” is a bundle of attributes made up of the total package of benefits which “includes the

Figure 1 The customers’ value “equation”

<i>Perceived benefits (additions to gross profit)</i>	-	<i>Perceived life cycle cost of product or service</i>	=
a/ improved performance		a/ ordering costs	
b/ reduced operating costs		b/ purchase price	
c/ reduced working capital		c/ set-up costs	
		d/ operating and maintenance costs	
		e/ financing costs	

functional utility of the goods, the product service that the manufacturer provides, the technical service he may give his customers, and the assurance that the product will be delivered when and where it is needed and in the desired quantities” (Corey, 1975).

In Day’s example the elements are relatively easy to evaluate in financial terms. Yet both “costs” and “benefits” may include intangible elements that may be very difficult to evaluate in monetary terms. In spite of this difficulty such elements are nevertheless important to the customer. So, as the word “cost” is associated with monetary measures, in the rest of this paper the term “sacrifice” will be used (and Sa substituted for C in the equation) to encompass both measurable and non-measurable costs. There are many illustrations of the importance of the intangible elements of the value equation. For example, up until 1999 Marks & Spencer (a large British retailer) would go far beyond the retail industry’s norms in assisting suppliers that were confronting both technical and commercial difficulties[1]. To evaluate this type of activity in monetary terms with any precision is very difficult because, while it might be possible to place cost figures on the amount of management time spent in assisting suppliers in this way, there are other less easily evaluated sacrifices. Amongst these would be the opportunity costs of continuing the relationship with an existing supplier when other “better” suppliers were available. Also set against these sacrifices must be placed the value of the benefits of the anticipated greater loyalty to M&S of those suppliers involved – again an element on which it is difficult to place a monetary evaluation. Furthermore M&S gained great freedom in arranging and altering delivery schedules from the fact that its suppliers trusted it to even out and take account over time of any discrepancies in delivery requirements as compared with orders placed. This freedom was a

considerable, but difficult to evaluate, benefit for M&S.

As indicated above it is essential that underlying the supplier's assessment of the value of its product offering to customers is "a thorough and comprehensive identification and analysis of *what it is that they (i.e. customers) actually value*" (Deasarbo *et al.*, 2001, original emphasis). Indeed the supplier must recognize that, although from the supply side a product may appear to be a commodity, in most markets buyer heterogeneity exists with regard to the customers' reasons for purchasing. It follows that a value equation may be needed for each a significant customer.

Exchanges

"Exchange" is another central marketing concept. The concept emphasizes the fact that there are at least two parties to a transaction and that all parties have to believe that, over time, they are benefiting from the exchange. There are two important points; first, all parties considering entering into an exchange will have a "wants list". These lists will be different for each party and reflect the fact that exchanges are, "multiplex" (Aldrich and Whetton, 1981) because "organizational actors, at a given point in time, transact for a variety of reasons and exchange different contents" (Sydow, 1998). Clearly an organization enters into an exchange only if it anticipates that, by so doing, its wants will be satisfied. This anticipation of satisfaction is a necessary condition for an exchange to occur. Second, what each party offers the other is a mixture made up of a number of attributes.

In much of the marketing literature the dominant concern is the supplier's offering. Yet the exchange concept stresses that the customer's "offering" is also critically important and thus all parties to an exchange are "consumers". For example, customers do not just offer to pay for an item – they can offer to do so in different ways each of which has different degrees of attraction to the seller. Thus a customer may offer to pay: in full within 30 days of delivery; a deposit when placing the order and the remainder in series of installments over a period of months; etc. and such alternatives are not all equally attractive to either the customer or the seller. Individual customers may also offer a potential supplier a range of different benefits. Thus, as well as alternative ways of paying, a customer might offer the supplier: status; technical insights; etc. The fact that the selection of customers (which in the case of marketing to organizations can mean the selection of individual customers) is a central marketing concept gives emphasis to this viewpoint.

All this would suggest that, in addition to estimating the customer's value equation to understand how the customer will evaluate the supplier's offering, it would be beneficial for the supplier to consider its own value equation so that it fully appreciates what it is being offered by a customer. That is, in addition to constructing a value equation for each of its significant customers, a supplier will benefit by constructing a value equation for itself with regard to its relationship with each of these customers. There are two reasons for this. First, by considering its own value equation in association with that of its evaluation of the customer's value equation, it will obtain insights into how it might create increased value for its customers and at least not lose value. Second, as in B2B markets the customer is as likely as the supplier to initiate an exchange, it will also be beneficial for a supplier to attempt to understand how customers perceive its value equation.

Fundamentally a supplier's value equation has the same structure as the customer's and it proposes that the value (V_s) of being a supplier to a specific customer is the difference between the perceived benefits B_s obtained and the perceived life cycle sacrifices S_{a_s} incurred. That is:
 $B_s - S_{a_s} = V_s$.

As was the case with the customer value equation this simple formulation can be developed to show the components of the variables involved (see Figure 2). In this equation, as is the case with the customer value equation, both "sacrifices" and "benefits" include elements that may be difficult to evaluate in monetary terms but are nevertheless relevant. For example, a "benefit" of dealing with a particular customer might be that it has a reputation for establishing long-term relationships with its suppliers. Where this is the case a supplier might expect that dealing with such a supplier

Figure 2 The supplier's value "equation"

<i>Perceived benefits of supplying a specific customer</i>	-	<i>Perceived life cycle sacrifices of supplying the product or service</i>
a/ purchase price		a/ costs of "production" and delivery
b/ reputational effects of association with the customer		b/ service and servicing costs
c/ access to market		c/ financing costs
		d/ disposal costs
		e/ preclusion from selling to this customer's competitor

would provide it with the opportunity of improved profitability (Kalwani and Narakesari, 1995). A “sacrifice” might be acceptance of the fact that a particular customer does not expect its suppliers simultaneously to supply its competitors. As with the customer value equation, the specific components which make up a supplier’s value equation are dependent on the particular buyer/seller circumstances but Figure 2 provides an illustration of possible components.

Using value equations

This section will suggest some ways in which the exercise of understanding a customer’s value equation [2] and its own value equations may provide a supplier with important insights into ways in which it can reformulate its product offering to individual customers.

Reducing customer’s sacrifices and raising their benefits. At the simplest level examination of a customer’s value equation points to two possible strategies by which a supplier can raise the value that a customer perceives in making a purchase from it. The first strategy is to lower the perceived life cycle sacrifices that the customer associates with the purchase. For example, a supplier might simplify its procedures so that the administrative costs of purchasing from it are reduced. The second strategy is to increase the customer’s perception of the value of the benefits it will receive. For example, by giving greater emphasis to certain product attributes a salesperson may increase the customer’s perception of the benefits of a purchase. Such an action might not be achievable without the supplier incurring additional costs but might merely require the supplier to be more explicit about the totality of their offering (Wittreich, 1966).

The strategies of raising the customer’s perceived benefits and lowering their perceived sacrifices are clearly not mutually exclusive. However, when evaluating the decision as to whether or not to seek to increase a customer’s value in either way, the supplier must evaluate its impact on its own value equation. It must therefore be clear that it will accrue benefits to compensate for any extra costs that this strategy incurs. Such costs could arise from a need to re-arrange its own procedures or because it decides to share with the customer some of the short-term costs that the customer incurs as it implements simplifications to its purchasing procedures.

As Figure 3 shows, if the supplier’s strategy of lowering the customer’s costs only raises its own costs this will lead to a reduction in the value of the exchange. However, the benefit of absorbing a part

of the customer’s costs might be that it “locks-in” (Jackson, 1995) the customer and this could raise the value of the exchange for the supplier.

In exceptional circumstances, such as a highly competitive supply situation, the value gained by the supplier through increasing the customer’s perception of the value of the exchange may be the safeguarding of the existing relationship with the customer rather than increased profits (see Figure 4). However, any action, which increases the customer’s perceived value, must not decrease the supplier’s perceived value or the action is not worth pursuing from the supplier’s point of view.

Win/win exchanges of sacrifices and benefits. Sometimes items appear in the same category for both supplier and customer and this may indicate the possibility of mutually beneficial transfers of sacrifices or benefits between them. For example, an oil supplier might note that its customers need to dispose of waste oil. It may be that, given its own experience with oil and/or its scale of operations, the supplier could dispose of the customer’s waste for lower cost than the customer.

Figure 3 Supplier absorbs customer’s costs

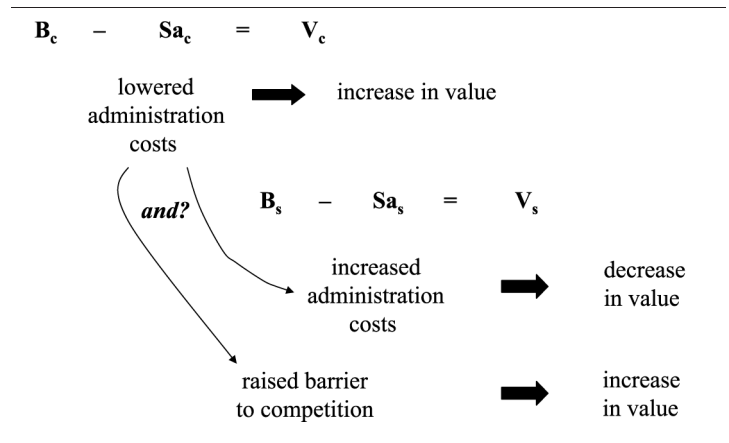
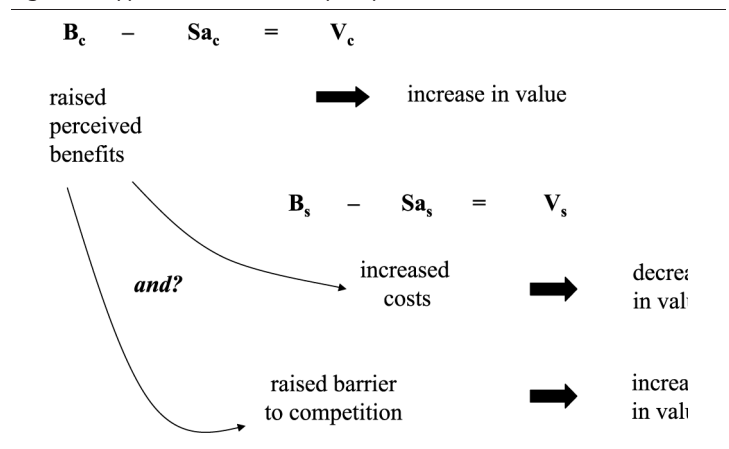


Figure 4 Supplier raises customer’s perception of benefits



Of course the supplier will now incur some extra costs and it must therefore perceive that it at least does not lose value by this action. Figure 5 illustrates two possibilities. One is that the supplier can increase the price at which it sells oil plus the guarantee of removal of any waste. Such an action, as long as the increase is less than the disposal costs that the customer confronts, will still leave the customer gaining in value. Alternatively the supplier could maintain its price and gain value through the benefit of increased customer dependence on it once the customer gives up its disposal activity.

A supplier, even after examining its own and its customer's value equation, may however be unable to see ways to provide added value to a customer and simultaneously to itself. For example, it might be that the oil supplier, because of the added costs that it would incur by assisting the customer, could even face a reduction in value. Yet where this is the case the oil supplier could look for situations where an activity, which for it is a cost, can be converted into a benefit for another firm. Thus the oil supplier may find that, if it can accumulate the waste oil from a number of customers, it can then sell it to an electricity generator[3]. As long as the price that it can obtain for the oil in bulk exceeds the costs of collecting the waste oil and holding stocks of it until a sufficient quantity has been accumulated to be of interest to an electricity generator then it achieves a gain in value.

Even if the oil supplier and user cannot while operating on their own both gain value through disposing of the waste oil, as Figure 6 shows, by involving a third party all three parties to the exchange might gain value. The oil supplier's customer has reduced its costs; the oil supplier has increased its income sufficiently to at least cover the additional costs and may also have strengthened its relationship with the customer; and, the electricity generator has obtained supplies of waste oil at an economic price. In comparison if the oil supplier only considered the exchange as

Figure 5 Win/win exchanges of benefits and costs

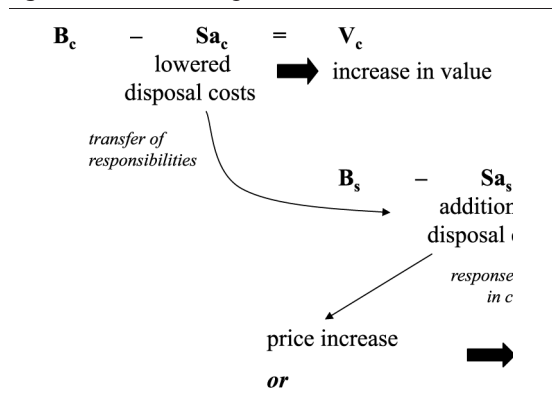
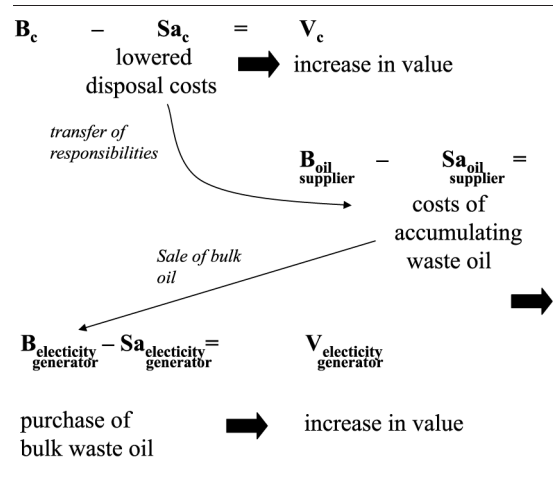


Figure 6 Value equations in complex exchanges



merely a set of bilateral exchanges then the opportunity for each of the parties to gain value are less clear and indeed the exchange might not be seen as worthwhile. The advantage of the oil supplier examining the situation in terms of its partners' value equations is that it can see how to creatively remove costs from a customer to its own benefit.

Understanding the customer's viewpoint of the supplier's value equation. It can be valuable for a supplier to try to construct its value equation as it believes a customer perceives it, for if there is a discrepancy between the customer's perception and the supplier's own view then this can be important from a number of points of view. It might be, for example, that the customer's negotiating position may be based on a misapprehension of how the supplier views its value equation. The supplier that recognizes this can either correct the customer or make use of its recognition of the supplier's misjudgment when preparing its own negotiating position.

For example, a college providing management education courses was approached by a division of a major and high profile consultancy and asked to quote for the design and running of a residential course to be held in August. It was only, during face-to-face negotiations, that it became apparent to the college that the consultancy had totally misunderstood important elements of the college's value equation. Thus the consultancy thought that the college would regard working for such a high profile client as a benefit. On the other hand the consultancy was concerned that the college would find running the course in August unattractive because its teaching staff were all university academics and thus presumed to be on vacation in August. In fact the college's position was that it was already running several courses for other divisions of this consultancy and did not find

suppliers are as likely to be selected by customers as vice versa. Furthermore that both parties are seeking to enhance the value of their operations. If a supplier constructs value equations for its customers and seeks to perceive its own value equation from a customer's point of view then it will gain insights into the way in which its product offering should be developed and presented to customers.

Notes

- 1 In 1999 Marks & Spencer radically changed its attitudes to its suppliers (Blois, 2003).
- 2 Methods of assessing customer's perceptions of value are described in: Anderson and Narus (1999) and Shapiro and Jackson (1978).
- 3 In the UK, electricity generators find it useful, for a variety of reasons, to be able to show they burn some waste oil.

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Executive summary and implications for managers and executives

This summary has been provided to allow managers and executives a rapid appreciation of the content of the article. Those with a particular interest in the topic covered may then read the article in toto to take advantage of the more comprehensive description of the research undertaken and its results to get the full benefit of the material present

Managerial implications

An extremely effective way of opening a discussion about a company's marketing policies is to ask its managers each to identify a significant customer and explain why they are one of its suppliers. This fundamental question: "Why do you do business with this customer?" often results in a less than clear answer. Yet the only relevant answer is that by supplying that customer we are creating value for ourselves.

The complication in B2B markets is of course that a competent customer is at the same time asking itself: "Why do we do business with this supplier?" and for them the only relevant answer is that by purchasing from that supplier we are creating value for ourselves. It follows that a transaction that is satisfactory to both the supplier

and the customer is one where both parties believe that, by entering into the transaction, they gain value.

One mechanism for helping managers to think through this issue is for them to construct value equations for each of their significant customers and also to construct the value equations that their customers might use when looking at them as suppliers. This can be a challenging process but is an invaluable exercise especially if done before an audience that does not know the customer and which has been mandated to challenge the evaluation of the elements. Furthermore this exercise should be repeated on regular basis to ensure that the customer's views have not changed. Understanding these two sets of value equations can open up constructive discussions as to how to create value for both parties.

There are two major errors that can occur when using value equations to evaluate this value creating process. First, it too easy for a supplier to

assume that they appreciate how the customer perceives "value" and "value creation". In particular it is very easy to make the assumption that the customer shares the supplier's thinking about this issue. Second, it is critically important for the supplier to have a thorough understanding of its cost structure and in particular how these costs interact in different circumstances. Only an in-depth appreciation of this will safeguard a supplier against committing itself to new policies that look initially to be value enhancing but in fact are the reverse. Also such an in-depth comprehension may show how reducing customer's sacrifices and/or offering them more benefits can ultimately create enhanced value for the supplier.

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