

**Customer Value Assessment in Business
Markets: A State-of-Practice Study**

James C. Anderson
Dipak C. Jain
Northwestern University

Pradeep K. Chintagunta
Cornell University

ISBM REPORT 10-1993

Institute for the Study of Business Markets
The Pennsylvania State University
113 Business Administration Building II
University Park, PA 16802-3009
(814) 863-2782 or (814) 863-0413 Fax

Customer Value Assessment in Business Markets: A State-of-Practice Study

James C. Anderson
Dipak C. Jain
Pradeep K. Chintagunta

ABSTRACT. The state-of-practice with respect to customer value assessment in business markets was studied. Familiarity with and usage of nine methods were investigated for a sample of 80 informants from the largest U.S. industrial firms and 20 informants from the largest U.S. market research firms that conduct studies in business markets. Focus group value assessments and importance ratings are the most widely-used methods, while conjoint analysis, though used less frequently, has the highest percentage of judged successful applications. Implications of the results for marketing practice are discussed and some worthwhile areas where academic research might advance the present state-of-practice are suggested.

In business markets, the value of a product offering in a given application can be thought of as the cornerstone of marketing strategy. Viewed in

James C. Anderson is the William L. Ford Distinguished Professor of Marketing and Wholesale Distribution and Professor of Behavioral Science in Management, and Dipak C. Jain is Associate Professor of Marketing, J. L. Kellogg Graduate School of Management, Northwestern University. Pradeep K. Chintagunta is Assistant Professor of Marketing, S. C. Johnson Graduate School of Management, Cornell University. The authors gratefully acknowledge the financial support of Penn State's Institute for the Study of Business Markets (ISBM) in sponsoring the research, and the many helpful comments and suggestions of a number of managers from ISBM member firms. The authors also gratefully acknowledge the able assistance of Jenny Lewelling and Steve Christiansen in the research.

Send correspondence to: James C. Anderson, Department of Marketing, Northwestern University, Evanston, IL 60208.

this way, value is the underlying consideration that drives decisions about product development and modification, pricing, distribution alternatives and marketing communications. Given the fundamental nature of value in business markets, it is critical for managers to gain estimates of the value of their products in particular customer applications, and to learn how it can be enhanced (Wind 1990).

A number of methods for customer value assessment exist, but apart from knowledge about the commercial applications of conjoint analysis in business markets (Cattin and Wittink 1982; Wittink and Cattin 1989), little is known about the usage of these methods in practice. Specifically, greater knowledge and understanding of what the present awareness and usage of these methods by practitioners is, which of the methods practitioners consider appropriate for particular applications, and what the circumstances are under which practitioners would recommend, or not recommend, that each method be employed would be of considerable interest to both marketing academics and practitioners. A state-of-practice study would provide guidance on which methods are preferred for various business problems where knowledge of value is considered critical, and it also would provide direction on needed advancements in present methods.

In this paper, we examine the state-of-practice of customer value assessment in business markets, drawing upon a field research study of the present practices of the largest U.S. industrial firms. Our objective is to identify the set of methods used in assessing customer value and to determine the extent of their usage by industrial firms. Our interest is in gaining an understanding of present practice, not in developing theoretical aspects of value assessment or in deriving normative implications. Thus, the contribution of our study is that we examine a broad set of value assessment methods, focusing solely upon their usage in business markets, as contrasted with Wittink and Cattin (1989; Cattin and Wittink 1982), who focused solely on conjoint analysis, but more broadly considered its commercial applications in both consumer and business markets. In addition, we delineate the various business decisions that firms address with value assessment methods, and investigate the extent to which these firms judge the particular methods used to be successful. Finally, because our intent is to capture the "best" state-of-practice, rather than to be representative of all present practice, the research employs a purposive rather than a random sample.

An overview of the paper is as follows. First, we discuss the concept of value in business markets. Then, based upon exploratory field research, we briefly discuss the business decision areas for which knowledge of

value is considered critical, followed by the methods that have been used to assess customer value. We next present our field study and its results, and discuss the implications of these results for marketing practice. We then suggest some worthwhile areas where academic research in marketing might advance the state-of-practice.

THE CONCEPT OF VALUE IN BUSINESS MARKETS

A number of aspects need to be considered in defining the concept of value in business markets. Christopher (1982) considers value in terms of the price a customer is willing to pay for a product offering, and points out that willingness to pay needs to be understood in terms of the set of perceived benefits that the product offering provides to a customer firm. He relates this aspect of value to the notion of a customer surplus, which he expresses as the amount by which the monetary equivalent of the set of perceived benefits exceeds the price paid for it. Reuter (1986) introduces the notion of "usage value" which represents the value associated with the performance of the product in a given customer application. As Reuter (1986, p. 79) writes, "Especially in industrial products, the value analyst is primarily concerned with *use value* — the performance and reliability of the product — rather than its *existing* value (based on prestige or aesthetics, cost value, or exchange value)." Usage value appears to be closely related to the concept of a product offering's value-in-use (Wind 1990). Forbis and Mehta (1981) emphasize the aspect of competition in considering value. They introduce the concept of "economic value to the customer (EVC)," which refers to the maximum amount a customer firm would be willing to pay, given comprehensive knowledge of a focal product offering *and* the other, available competitive product offerings. This suggests that customer firms consider the value of a product offering relative to alternative offerings.

In sum, the concept of value in business markets: is perceptual in nature and should be expressed in monetary terms; needs to be viewed with respect to the set of benefits that the customer receives from usage of the product offering; and is inherently framed against a competitive backdrop. Thus, we define *value in business markets* as the perceived worth in monetary units of the set of economic, technical, service and social benefits received by a customer firm in exchange for the price paid for a product offering, taking into consideration the available alternative suppliers' offerings and prices.¹

How does this definition of value in business markets relate to past

work on value in consumer marketing? It appears to be consistent with the latter two alternate definitions of consumer perceived value reported by Zeithaml (1988, p. 13): "(3) value is the quality I get for the price I pay, and (4) value is what I get for what I give." In contrast, Monroe and Krishnan (1985) conceptualize a consumer's perceived value as the *difference* between the utility inferred from the perception of quality and utility (sacrifice) associated with the price to be paid, where perceived quality is "the perceived ability of a product to provide satisfaction 'relative' to the available alternatives" (p. 212). So, in their view, value captures the notion of the difference, or tradeoff (Dodds and Monroe 1985), between perceived worth and price paid. In the context of our definition, we might refer to this difference as "value surplus" or "incentive to purchase."²

Business Decision Areas Where Knowledge of Value Is Critical

We conducted in-depth field interviews with managers responsible for marketing research in nine large industrial firms, and with managers at three market research firms that conduct studies in business markets to gain an understanding of the business decisions that require an assessment of the value of a product offering to a customer firm and the methods that are used in these assessments. Each interview, lasting about an hour, started with the same set of questions, and depending on the interviewee's responses, we probed with follow-up questions. From these interviews, we identified a number of business decisions areas where knowledge of value is critical for supplier firms. We group these business decisions into three primary areas for expositional purposes, although some overlap exists among them.

The first area is *product development* which encompasses new product design and modification of existing product offerings. Decisions on modifications may involve either adding or deleting elements of a firm's offering. A second area can be termed *value audits*, where a supplier firm attempts to gain an estimate of the value of its present offering, or an estimate of the value of present augmenting services that "wrap" the core product. A final area is *competitive strategy*, where knowledge is sought on the value relationship of a firm's product offering to those of its competitors, with the results used to allocate resources to the various marketing mix variables.

Methods of Customer Value Assessment

Based on a review of the marketing literature and our exploratory field research, we identified nine methods that have been used to assess customer value, developed *operational definitions* for them for use in the research questionnaire, and elicited questions in the area of value assessment that were of particular interest to practitioners.

We elicited three methods surfaced during our field research that draw upon industrial engineering to provide estimates of customer value. The first method is *internal engineering assessment*, which requires little or no direct customer firm input. The operational definition of this method is:

Internal engineering assessment. An estimate of the value for a product offering is obtained by laboratory tests conducted by scientists/engineers within the supplier's own firm.

Application of this method depends upon detailed knowledge of the usage of the supplier firm's product in the customer firm's product as well as the customer's production process. Assumptions are typically made about the way in which results from lab tests will generalize to the customer's actual usage of the product.

Field value-in-use assessments, by contrast, require considerable customer firm cooperation and active input to arrive at an estimate of customer value. The operational definition of this method is:

Field value-in-use assessment. Interviews are conducted at customer firm(s) to determine a comprehensive listing of cost elements associated with the usage of a product offering compared with the incumbent product offering (e.g., life cycle cost). Making explicit assumptions, values are assigned to these cost elements to estimate the overall value-in-use of the product offering in that application. This value-in-use is typically expressed in cents per pound or dollars per unit.

In conducting a value-in-use analysis, all relevant costs associated with the product offering and its usage (e.g., life-cycle cost, Forbis and Mehta 1981) need to be considered, as well as any differential value due to the product offering that accrues downstream in the production-consumption value chain (Porter 1985). Customer firm reactions are typically sought to refine assumptions made about, or the initial values assigned to, particular cost elements.

The usage of *indirect survey questions* is the final industrial engineering based method, and it is intermediate to the previous two methods in the extent of customer firm cooperation or active input that is required to provide an estimate of value. The operational definition of this method is:

Indirect survey questions. In a field research study, respondents are asked what the effects of one or more changes in the present product offering would be on certain aspects of their firm's operations. From these answers, typically combined in some way with other known information, estimates of the value or worth of each product offering change can be obtained.

Hence, this method can be used to fill in critical gaps in the supplier firm's knowledge of the customer firms' usage of its product offering, or to test whether assumptions made about this usage are reasonable.

Two methods provide overall estimates of customer value. The first, *focus group value assessment*, employs focus groups as a qualitative, phenomenological approach to gain a better understanding of the perceptions and reactions of participants to actual or potential product offerings (Calder 1977). In doing so, the researcher attempts to generate estimates of value. The operational definition of this method is:

Focus group value assessment. Within a focus group setting, participants are exposed to potential product offerings or product concepts, and are then asked what the value or worth of them would be to their firms. As an example, this kind of value assessment might be made by asking them questions such as "What would your boss be willing to pay for this?"

The participants are typically knowledgeable individuals within customer firms that are targets for the product offering, although the perceptions and reactions of industry consultants or pundits may also be studied.

The second method that generates an overall estimate of value is *direct survey questions*. This method, suggested by the managers we interviewed, was operationally defined as:

Direct survey questions. In a field research survey, respondents are given a description of a potential product offering or product concept, and are then asked what the value or worth of it would be to their firms. As an example, this kind of value assessment might be made by asking them questions such as "What would your firm be willing to pay for this?"

To obtain a dependable estimate of value, the respondents must be both willing and have the requisite knowledge to answer a direct question on the perceived worth of the product offering. To the extent that either of these conditions is not met, the validity of the obtained estimate will be problematic. A series of follow-up questions would be needed in either the focus group or direct survey question value assessment methods to gain an understanding of how the component parts of an offering contribute to its overall estimated value.

Two methods of customer value assessment can be grouped together as being decompositional in nature; that is, they enable a researcher to break down a respondent's overall perception of the value of a product offering into the elemental values contributed by its component parts. The first, *conjoint analysis*, has received the most research by marketing academics of any value assessment method (cf. Green and Srinivasan 1990; 1978). Its operational definition is:³

Conjoint or Tradeoff analysis. In a field research survey, respondents are asked to evaluate a set of potential product offerings in terms of their firm's purchase preference for each of the offerings. Each offering consists of an array of attributes or features, and the levels of these attributes are systematically varied within the set of offerings. Respondents provide a purchase preference rating (or ranking) for the offerings. Statistical analysis is then used to "decompose" these ratings into the value ("part-worth") that the respondent places on each level of each attribute. The range of these values for the levels of each attribute determines the relative value of attributes themselves.

Wittink and Cattin (1989) have found that for the periods 1971-80 and 1981-85, industrial goods represented only 20% and 18% of the reported applications, respectively; in comparison, consumer goods respectively accounted for 61% and 59% of the reported applications for the same periods.⁴ A potential explanation for this differential usage, drawing on our field interviews, is the greater perceived cost and complexity of conjoint analysis relative to other methods.⁵

Benchmarks, used by one of the firms we interviewed, represent a second decompositional method of customer value assessment. An operational definition of this method is:

Benchmarks. In a field research survey, respondents are given a description of a product offering, typically representing the present

industry standard, that serves as a "benchmark" offering. They are then asked how much more their firm would be willing to pay for selected additions in product attributes or features to this "benchmark" offering. Likewise, they might be asked how much less their firm would expect to pay for selected reductions in attributes or features from the "benchmark" offering.

Thus, this method trades off some of the methodological rigor and breadth of value estimates provided by conjoint analysis in favor of lower cost and ease-of-use.

An opposite tack is taken with the *compositional approach*, also referred to as the self-explicated approach (Green and Srinivasan 1990). With this approach, an overall value estimate for an offering is built up from separate value estimates given by respondents for each of its elements. The operational definition of this method is:

Compositional approach. In a field research survey, respondents are asked to directly give the value of selected levels of a set of attributes or features to their firm. For example, respondents might be asked to give the value in cents per pound or dollars per unit for each of three alternate levels of a given attribute, where all other attributes of the product offering were the same (held constant). The values given for the attribute levels can then be added to give estimates of the overall value of various product offerings to the respondent's firm.

Although the compositional approach has the strength of being relatively easy to use, particularly when the number of attributes studied is large, it does have some potential shortcomings, such as respondent unwillingness to reveal the true values for attribute levels (cf. Green and Srinivasan 1990).

Lastly, a method for assessing customer value that was given by a number of practitioners is *importance ratings* (Churchill 1987). An understanding of the value of a product offering, and where it can be strengthened, typically is gained by using the results from the importance ratings for a set of offering attributes in conjunction with the results for a corresponding set of performance ratings of the supplier on the offering attributes (e.g., Wilson, Corey and Ghingold 1990; Martilla and James 1977). The operational definition of this method is:

Importance ratings. In a field research survey, respondents are given a set of attributes or features of a product offering and are then asked to rate (or rank) them on importance to their firm. For the attributes or features that were rated, respondents are also asked to rate (or rank) the supplier firms with respect to their performance on them, thereby providing a competitor analysis of the value provided by each supplier's product offering.

A shortcoming of importance ratings as a method of customer value assessment is that they do not provide an estimate of the perceived worth in monetary units of the product offering or its elements. Related to this, importance ratings also do not provide an indication of a customer firm's relative value for a change in the level of performance on one attribute versus another (Montgomery 1986).

METHOD

Sampling Frame

The objective of the study was to gain an understanding of the state-of-practice with respect to the usage of customer value assessment methods. Further, in constructing our sampling frame, we purposively attempted to capture the "best" or most progressive state-of-practice. Our exploratory research indicated that only the largest industrial firms tend to have managers with market research responsibility, and that firms that do have in-house market research staffs are having a greater proportion of their market research studies being conducted by outside market research firms. These findings are consistent with the recent findings of Kinnear and Root (1989). Therefore, we limited our sampling frame to the 125 largest U.S. industrial firms (*Fortune* 1988) and supplemented it with the top 40 U.S. market research firms (*Advertising Age* 1988).

Seventy-seven of the *Fortune* 125 corporations serve business markets, while the remainder serve consumer product markets. We made this determination by referring to the *Business Week* 1000 Industry Classification (*Business Week* 1988).⁶ To augment this list, we also consulted the Institute for the Study of Business Markets (ISBM) Contact Directory to include some firms in our study that are not included in the *Fortune* 125 list but are of comparable size and serve business markets. From this source, we added 3 member firms to our sampling frame: Dun & Bradstreet, GTE and United Telecom. Of the top 40 U.S. market research firms, only 24 conducted industrial marketing research studies. Thus, using a *purposive*

or *judgment sampling* approach (Churchill 1987), our final sampling frame consisted of 80 of the largest industrial firms and 24 of the largest market research firms.

Fifty-eight of the 80 industrial firms and 16 of the 24 market research firms were able and willing to participate in the survey. The remaining 22 industrial firms either did not do any customer value assessment research (8 firms), were unable to participate because they were too busy (7 firms), were not interested in participating (5 firms), or could not get approval for senior management to participate in the survey (2 firms). The remaining eight market research firms either declined to participate (4 firms), participated in the pretest for market research firms (3 firms), or had headquarters located in England (1 firm: Research International Ltd.). Because of the large size of the firms studied and the diversity of experience that can occur within each firm, industrial firms were allowed to name up to three informants that were from different businesses and market research firms were allowed to name up to two informants that were from different offices.

We obtained the names of 122 participants from the industrial firms and 22 participants from the market research firms. Participants from the industrial firms had titles such as Manager of Marketing Research, Manager of Business Planning, and Manager of Marketing Planning and Development, while participants from the market research firms had titles such as Vice President, Senior Vice President, and Executive Vice President. We used this list of 144 potential participants as the target informants on the present state-of-practice for customer value assessment methods. Within the time frame of the study, interviews with 100 informants were able to be completed: 80 from industrial firms and 20 from market research firms. The busy schedules and frequent travel inherent to these informants' positions prohibited completing interviews with the remaining 44 informants (i.e., none of the informants refused to participate). A brief description of the informant sample appears in the Appendix.

Procedure

Survey Questionnaire Design. Based on our exploratory field research, we began the questionnaire with a brief overview of the study and as part of this provided some examples of research that we referred to as "*customer value studies*" (e.g., determining the value of potential changes in present product offerings). For each of the value assessment methods studied, its operational definition was first provided and then the same sequence of questions was asked. Briefly, the informants from industrial firms were asked:

“Are you familiar with this method?”

“Have you used this method in the past two years?”

“If you have used this method in the past, but no longer use it, what are the reasons for this?”

Informants who had used the method within the past two years were asked the remaining questions in the set:

“What business decision, or decisions, were addressed in the most recent application of this method?”

“In your judgment, how successful was this tool in answering the questions that you sought to answer with it?” [Not successful, Partly successful, Successful]

“Based upon your experience with it, under what circumstances would you recommend/not recommend usage of this method to assess customer value?”

The version of the questionnaire for market research firm informants was different in two respects. First, the internal engineering assessment method was not included as this method is applicable only to the industrial firms. Second, given that market research firms likely perform a greater number of value-assessment studies relative to industrial firms, we decided to shorten the time frame for the usage question and asked: “Have you used this method in the past twelve months?”

After the set of value assessment methods was covered, informants were asked about additional methods (up to two methods) that they had found most useful in assessing customer value. For each, they provided a brief description and answered the latter set of above questions. Finally, informants were asked:

“What, if any, problems in assessing customer value do you have that are not adequately addressed with the present methods?”

Each version of the questionnaire was pretested, and needed changes were made.

Data Collection Procedure. The data were collected from informants using a combination mail and telephone interview approach. The interviews were conducted by a market research firm, under the direction of the researchers. After our initial contact call to set up a time for the telephone interview, a copy of the questionnaire was mailed to each participant. Each participant then interviewed over the phone. This mail and telephone combined approach obviated having participants fill-out and re-

turn the questionnaire by mail, and enabled us to collect the data within the time frame set for the study.

Content analysis. To obtain a set of the kinds of business decisions that are addressed with value assessment methods, we content-coded the responses given by informants across the methods. A set of nine business decisions was defined from these responses, and then three judges assigned each business decision mentioned to one of the nine categories. As these categories were to be used in further analysis, we calculated the reliability index (I_r) recently developed by Perreault and Leigh (1989) to assess interjudge agreement. The I_r values (and 95% confidence intervals) for the three pairs of judges were .91 (\pm .03), .88 (\pm .03) and .86 (\pm .04), indicating significant and substantial reliability in the assignment judgments. The disagreements among judges in their initial assignments were resolved by discussion and then majority rule.

RESULTS AND DISCUSSION

Familiarity and Usage

The results for the informants' familiarity with and usage of the value assessment methods appear in Table 1. Although the pattern of results for informants from industrial firms and market research firms are similar, there are some significant differences. A greater percentage of industrial firm informants are familiar with field value-in-use assessments and report using it in the recent past. An explanation for this is that value-in-use assessments would either be performed by industrial firms themselves, or, when outside assistance is sought, they would typically go to engineering consulting firms rather than to market research firms.

A smaller percentage of industrial firm informants are familiar with conjoint analysis. Perhaps because of its greater complexity, a considerably smaller percentage of these informants have used conjoint analysis in the recent past, compared with market research firm informants. A general finding is that firms in business markets rely upon methods that have less complexity (or cost) associated with them. As support for this, note that focus group value assessments and importance ratings are the only methods that have 90% or greater familiarity and 60% or greater usage. Finally, informants report having the least familiarity with and usage of the compositional approach.⁷

TABLE 1

Familiarity With and Usage of Value Assessment Methods (X)

<u>Method</u>	Industrial Firms		Market Research Firms	
	<u>Familiar With</u> ^a	<u>Usage</u> ^b	<u>Familiar With</u>	<u>Usage</u> ^c
Internal engineering assessment	61.3	42.5	.. ^d	..
Field value-in-use assessment	63.8	36.3	25.0	5.0
Focus group value assessment	92.5	60.0	90.0	60.0
Direct survey questions	91.3	48.8	85.0	55.0
Importance ratings	91.3	62.5	90.0	65.0
Benchmarks	83.8	27.5	80.0	25.0
Conjoint analysis	75.0	28.8	90.0	60.0
Compositional approach	45.0	10.0	40.0	5.0
Indirect survey questions	71.3	26.2	60.0	20.0
	(n = 80)		(n = 20)	

^aAfter an operational definition was given for each method, informants from both industrial firms and market research firms were asked: "Are you familiar with this method?". The percentage of informants answering "yes" is presented.

^bInformants from industrial firms were asked, "Have you used this method in the past two years?".

^cInformants from market research firms were asked, "Have you used this method in the past twelve months?".

^dNot asked for market research firm informants.

Business Decisions Addressed

The business decisions that are addressed with value assessment methods appear in Table 2. Of the nine business decisions, new product design or development and existing product modification or redesign represent slightly more than one-third of the business decisions mentioned. Obtaining an estimate of the value of the present offering and pricing decisions represent slightly less than another one-third of the business decisions.

TABLE 2

Business Decisions Addressed With Value Assessment Methods

<u>Business Decision</u>	Frequency of Mention		<u>Number of Methods Used</u>
	<u>n</u>	<u>(%)</u>	
New product design or development	67	20.2	8
Product modification or redesign	45	13.6	8
Value of present offering	50	15.1	9
Value of present or potential augmenting services	12	3.6	8
Design of marketing communications and sales tools	26	7.9	7
Determine pricing	52	15.7	9
Product positioning and competitive analysis	52	15.7	9
Demand analysis and forecasting	13	3.9	5
New investment or business entry	14	4.2	6
	<hr/>	<hr/>	
	331	99.9%	

It is interesting that only 15.1% of the mentioned applications were for assessment of the value of the present offering. Much discussion is taking place within industrial firms on becoming "customer-oriented" or "market-driven" (Gross and Kijewski 1988). It would seem that periodic assessments of the value provided by a firm's product offering in a given customer application would be an essential part of the firm truly becoming, and staying, "market-driven." Similarly, although there has been a recent emphasis on value-added services as a source of competitive advantage in business markets, assessment of the value of present or potential augmenting services receives just 3.6% of the mentions. It may be that for each of these situations, managers rely on other, more informal ways of obtaining value estimates from customers (and salespeople).

We observe from Table 2 that nearly all of the value assessment methods studied have been used to address each business decision. Although each method may have been mentioned at least once as being used to address a given business decision, some methods may be more widely used than others for given decision applications. To explore this possibility, a further analysis was conducted to determine the smallest subset of methods that would collectively account for 80% of the mentioned applications for each business decision. The results for this analysis appear in Table 3.

An interesting pattern of results emerges from Table 3. With the exceptions of obtaining the value of present or potential augmenting services and to determine pricing, a subset of five or fewer methods captures at least 80% of the reported value assessment applications for each business decision. Focus group value assessment is the only method that appears in each subset, with other methods being in the most-widely-used subset for only one or a few kinds of business decisions. As an instance of this, indirect survey questions appear in the subset for only one business decision — product modification or redesign, yet it is the most frequently mentioned method for addressing this decision. Similarly, while benchmarks appears in the most-widely-used subset for just three business decisions, it is the most frequently mentioned method for determining pricing, along with focus group value assessments.

Although importance ratings appear in the subset for only four business decisions, this method is the most widely used for three of them: obtaining the value of the present offering, designing marketing communications and sales tools, and product positioning. For this last decision, it accounted for 40.4% of the reported method applications, representing the largest "share" of reported method usage across any business decision.

TABLE 3

Value Assessment Methods Most Widely Used
For Each Business Decision Application^a

Method	Business Decision Application ^b				
	<u>New Product Design</u>	<u>Product Redesign</u>	<u>Value of Present Offering</u>	<u>Value of Augmenting Services</u>	<u>Design of Marketing Communications</u>
Internal engineering assessment	20.9% ^c	15.6%			
Field value-in-use assessment	9.0	15.6	8.0%	<u>33.3%</u>	11.5%
Focus group value assessment	<u>26.9^d</u>	17.8	16.0	16.7	26.9
Direct survey questions	19.4		14.0		11.5
Importance ratings		11.1	<u>28.0</u>		<u>34.6</u>
Benchmarks	7.5		16.0		
Conjoint analysis					
Compositional approach					
Indirect survey questions		<u>20.0</u>			
	<u>83.7%</u>	<u>80.1%</u>	<u>82.0%</u>	<u>50.0%^e</u>	<u>84.5%</u>
	(n = 67)	(n = 45)	(n = 50)	(n = 12)	(n = 26)

Method	Business Decision Application			
	<u>Determine Pricing</u>	<u>Product Positioning</u>	<u>Demand Forecasting</u>	<u>New Investment</u>
Internal engineering assessment	7.7%			14.3%
Field value-in-use assessment	7.7	7.7%		<u>28.6</u>
Focus group value assessment	<u>21.2</u>	17.3	23.1%	21.6
Direct survey questions	13.5	9.6	<u>38.5</u>	14.3
Importance ratings		<u>40.4</u>		
Benchmarks	<u>21.2</u>			

<u>Method</u>	Business Decision Application			
	<u>Determine Pricing</u>	<u>Product Positioning</u>	<u>Demand Forecasting</u>	<u>New Investment</u>
Conjoint analysis	15.4	7.7	23.1	14.3
Compositional approach				
Indirect survey questions				
	—————	—————	—————	—————
	86.7%	82.7%	84.7%	92.9%
	(m = 52)	(m = 52)	(m = 13)	(m = 14)

*For clarity, percentages are only given for the smallest subset of methods that collectively account for 80% of the mentioned applications (m) for each business decision.

^bTo conserve space, shortened headings for the business decisions given in Table 2 are employed.

^cTo be read as: "Internal engineering assessment was used for 20.9% of the 67 mentioned applications of value assessment methods for the new product design business decision".

^dUnderscored percentage indicates the most widely mentioned method used to address the given business decision.

^eAs each of the methods whose percentage is not listed for this application was mentioned only a single time (8.3%), only 50% of the mentioned applications are accounted for rather than 80%.

Further, consistent with the earlier results on familiarity and usage, the compositional approach did not appear in the most-widely-used subset for any business decision, the only method to not do so. We also note that the absence of conjoint analysis from the subset for new product design and product redesign reflects its lower usage *relative* to methods such as focus group value assessments and internal engineering assessments.

Judged Success

The judged success of the value assessment methods across business decisions addressed is presented in Table 4, and the judged success of value assessment methods in addressing each business decision appear in Table 5. It appears from these tables that even allowing for the subjective nature of judging success and the potential bias of the informants, applications of these methods are almost never "not successful." Out of 331 judgments, only three applications (.9%) were considered to be not successful. Further, by a considerable margin, applications of these methods

TABLE 4

Judged Success of Value Assessment Method (%)

<u>Method</u>	<u>Partly Successful^a</u>	<u>Successful</u>
Internal engineering assessment (u = 34) ^b	44.1	55.9
Field value-in-use assessment (u = 32)	28.1	71.9
Focus group value assessment (u = 60)	30.0	70.0
Direct survey questions (u = 48)	33.3	66.7
Importance ratings (u = 62)	24.2	75.8
Benchmarks (u = 28)	32.1	67.9
Conjoint analysis (u = 34)	14.7	85.3
Compositional approach (u = 8)	25.0	75.0
Indirect survey questions (u = 25)	32.0	68.0

^aIncludes sparse informant reports of "not successful" (3 reports, .9%)

^bThe number of reported usages, u, is given in parens for each method.

are judged to be successful, rather than partly successful. Nonetheless, a substantial number of applications are judged to be only "partly successful," which also may represent a socially acceptable response for applications that have not worked out as planned (i.e., "not successful").

Considering specific results, conjoint analysis has the highest percentage of judged successful applications (85.3%). So, *when* informants use conjoint analysis, it successfully provides the answers to the value-related

TABLE 5

**Judged Success of Value Assessment Methods
in Addressing Each Business Decisions (%)**

<u>Decision</u>	<u>Partly Successful^a</u>	<u>Successful</u>
New product design or development (n = 67) ^b	33.3	66.7
Product modification or redesign (n = 45)	38.0	62.0
Value of present offering (n = 50)	32.0	68.0
Value of present or potential augmenting services (n = 12)	25.0	75.0
Design of marketing communications and sales tools (n = 26)	26.9	73.1
Determine pricing (n = 52)	25.0	75.0
Product positioning and competitive analysis (n = 52)	19.2	80.8
Demand analysis and forecasting (n = 13)	38.5	61.5
New investment or business entry (n = 14)	28.6	71.4

^aIncludes sparse informant reports of "not successful" (3 reports, .9%)

^bThe number of mentioned applications of value assessment methods, n, is given in parens for each business decision.

questions that they sought to address. Informant responses to the question on circumstances under which they would *not* recommend usage of conjoint analysis provide some insight on why it is not used more often in business markets. First, they do not recommend its usage for complicated or abstract product concepts, which tend to occur more frequently in busi-

ness markets than consumer markets. Second, they do not recommend its usage "when the cost of the research is particularly an issue," which is consistent with our field depth interviews.⁸

Obversely, internal engineering assessment has the lowest percentage (55.9%) of judged success, perhaps because of the difficulties of internally having sufficient knowledge of the customer firm's actual usage of the product offering. Nonetheless, this method is used by 42.5% of the industrial firms in our sample. Further, the relatively greater usage of internal engineering assessment for new product development and product modification may explain the relatively lower percentages of judged success observed for these business decisions.

The most-widely-used methods, importance ratings, focus group value assessments and direct survey questions, are judged to be successful in 75.8%, 70.0% and 66.7% of their applications, respectively. However, the circumstances under which informants recommend and do *not* recommend usage of these methods suggest that these methods should not be used as "stand-alone" methods. To elaborate on this, focus group value assessments are perceived to be most useful as a preliminary value assessment method, particularly at the concept stage of product development, rather than as a method that can be used to conclusively determine value. Importance ratings can be used to identify key attributes of a product offering, but additional ratings of the relative performance of suppliers on the attributes of the product offering would be needed to obtain a ranking of the value provided by the alternate suppliers' offerings. Finally, informants recommend usage of direct survey questions when quick, quantitative information is needed and for familiar, simple, non-technical products, but recommend that in other settings it be used in conjunction with other methods.

With respect to business decisions, we see from Table 5 that product positioning and competitive analysis received the highest percentage of reported success for value assessment methods (80.8%). On the other hand, demand analysis and forecasting, and product modification or redesign received the lowest percentages of reported successes (61.5% and 62.0%, respectively).

Additional Methods Used to Assess Value

Three additional methods were mentioned by more than one informant: field-depth interviews, field tests, and opportunity analysis. Five informants have found field-depth interviews, conducted at either the customer firm, trade shows or industry meetings, to be useful. These informants recommend usage of field-depth interviews when the supplier firm has

less information and expertise, for very technical products, and when the respondents are knowledgeable.

Five informants assess value with field tests of sample or prototype product offerings at selected customer firms. They recommend usage of field testing for customers with whom the firm has a good working relationship, for making go/no go decisions, and for assessing whether a higher performance product that improves upon the industry standard also meets customer requirements. Three informants use opportunity analysis, sometimes referred to as gap analysis, to identify specific ways to enhance the value of the firm's product offering, relative to either competitive offerings or presently unmet customer requirements, and recommend its usage for assessing the value of services or complicated industrial products.⁹

Problems Not Adequately Addressed by Present Methods

We limit our consideration of the problems not adequately addressed by present methods to those mentioned by more than one informant. Most-widely-mentioned was a concern about the validity of results obtained from present methods in that respondents may be unwilling or unable to reveal the "true" values. Next-most-mentioned problems were having the "right" individuals in the customer firms (i.e., ultimate decision-makers, end-users) as respondents, and that present methods are too costly. A final problem was that present methods work better with physical products than with services or "soft" attributes.

Implications for Research and Practice

Drawing upon the findings of our study, some areas for advancing the state-of-practice can be suggested. Our results indicate that practitioners presently rely upon simpler methods of customer value assessment, such as focus group assessments or importance ratings. A challenge for marketing academics is to identify the circumstances under which the risks of making incorrect inferences based on usage of a simpler method are acceptable. One useful research tack would be to conduct comparative studies where estimates of value are obtained using several methods of varying

complexity and cost. This would enable triangulation of the methods under varying circumstances, to determine when the estimates from the simpler methods converge to those from more complex methods. Further, informants recommend that some of the simpler methods not be used as stand-alone methods. Thus, another potential result of this proposed research might be prescriptive guidance on the usage of particular methods in concert such that their potential liabilities would be off-setting.

The problem with customer value assessment methods most-widely-mentioned by informants in our study was concerns about the validity of results obtained. That is, do value estimates obtained via these methods actually predict customer firms' marketplace behavior? Concerns about the external or predictive validity of conjoint analysis have been expressed elsewhere (Green and Srinivasan 1990; Wittink and Cattin 1989), but our finding suggests that validity assessments need to be broadened to include the other value assessment methods as well.¹⁰ Again, comparative validity studies are suggested, with marketing academics seeking the cooperative participation of industrial firms. After a suitable period of time, or sufficiently disguised, the relevant validity data (the value estimates and actual purchases) can be published.

Two related problems that have a direct bearing on validity of results from value assessment methods are having the "right" individual, or individuals, from a customer firm act as participants in the value assessment research, and the ability of present methods to effectively handle "soft" attributes. A critical issue in having the right individual participant is that for many product offerings in business markets, multiple individuals within a customer firm participate in the purchase decision process (Bonoma 1982; Montgomery 1986). Understanding which individual is the key decision-maker can be a difficult task. Although multiple participants from each customer firm can be asked to provide assessments of the value of the product offering, further research is needed to better understand how these multiple estimates can be meaningfully aggregated into a firm-level estimate (e.g., Wilson, Lilien and Wilson 1989).

Our exploratory research and the informant reports suggest that present methods have difficulty when the attributes being studied are "soft," such as services and less tangible performance attributes (e.g., perceived image quality for x-ray film). Further research is needed to suggest ways to effectively characterize or capture these kinds of attributes, such as alternative forms of stimulus presentation (Anderson 1987; Green and Srinivasan 1990). Research is also needed to devise methods for developing operational definitions that "tangibilize" these less tangible elements (e.g.,

attitude of customer service personnel) of the product offering (Levitt 1981).

SUMMARY

Everything is worth what its purchaser will pay for it.

— Publilius Syrus, First Century, B.C.

Although this maxim has existed for two millennia, gaining an understanding of what customers would be willing to pay for existing or potential product offerings remains a challenging task for business marketers. We have studied the state-of-practice with respect to the usage of value assessment methods by firms in business markets to gain estimates of the worth of their product offerings. We found that nine different kinds of business decisions are addressed with value assessment methods, and that researchers typically have preferences for a particular subset of the nine methods in addressing each business decision.

Focus group value assessments and importance ratings are presently the most-widely-used methods in business markets. Conjoint analysis, which is not as widely-used, has the highest judged success of the nine methods in addressing the questions that the informants sought to answer. Although most applications of these methods were judged to have been successful, nonetheless, a substantial percentage of applications were judged to be only partly successful. Thus, there remains considerable opportunity to advance the state-of-practice through research that focuses on conducting comparisons among methods and substantiating the validity of results obtained from these value assessment methods.

NOTES

1. Note that in this definition, we purposely have not specified the focal perspective from which the worth of the offering is perceived. Customer value assessment, by contrast, refers to the customer firm as the focal perspective on perceived worth. Further, in this definition, we regard benefits as “net” benefits that subsume costs other than acquisition price (e.g., life-cycle costs) and use “received” to reflect performance in a given usage application.

2. The concept of value, as we have discussed it, is quite different from the fundamental psychological concept of values, such as the terminal values and instrumental values discussed by Rokeach (1973). A method has been developed to study the linkages between the values that consumers hold and attributes possessed by product offerings (cf. Reynolds and Jamieson 1985). Although it would

be interesting to generalize this psychological concept of values to the organizational setting and consider how an individual's understanding of an organization's values affects his or her judgments of value for specific product offerings, this is beyond the scope of the present paper.

3. For clarity of understanding to the respondents and meaningful interpretation of the results, the operational definition focused on conjoint analysis as it is most often employed, the full-profile stimulus construction with a rating scale or rank order response (cf. Wittink and Cattin 1989). Provision was made for respondents to describe and evaluate other forms of conjoint analysis, such as hybrid models (Green 1984), as additional methods that they used to assess customer value.

4. Some proportion of the 18% (1981-1985) and 13% (1971-1980) applications reported by Wittink and Cattin (1989) as financial and other services could be considered business marketing applications, however.

5. Support for this explanation is provided by the recent finding of Kinnear and Root (1989) that industrial firms typically have much smaller marketing research budgets than consumer firms of equivalent size. Montgomery (1986) also discusses the relatively greater cost of conjoint analysis in business markets.

6. The classification of firms into those that serve business markets versus those that serve consumer markets is a difficult, if not an impossible, task. Ultimately, it becomes a matter of judgment. For example, although a number of firms in the *Business Week* Food Processing classification (e.g., Heinz, Kraft) have institutional sales, we considered these firms as primarily serving consumer markets. Our intent was to construct a sampling frame that was comprised of firms whose customers of *primary* interest were other firms or institutions, not consumers.

7. Relatively few informants report no longer using one or more of the value assessment methods that they have used in the past. Seven informants report no longer using benchmarks, four informants each no longer use focus groups and direct survey questions, and three informants each no longer use importance ratings, conjoint analysis and the compositional approach.

8. Two recent developments in conjoint analysis are the commercial availability of software packages and the usage of telephone-mail-telephone data collection approaches (Green and Srinivasan 1990; Wittink and Cattin 1989). The high judged success for conjoint analysis taken together with these developments suggest greater future usage of this method in business markets.

9. Of the remaining additional methods mentioned, the only noteworthy one was the usage of an experimental design method by one informant. Samples of the target audience were divided into two groups, with each shown the product at different prices, and then the purchase intent was assessed.

10. See Montgomery (1986) for a discussion of the empirical support for the external or predictive validity of conjoint analysis in business settings.

REFERENCES

- Advertising Age* (1988), "Top 50 U.S. Research Organizations," May 23, S-4.
- Anderson, James C. (1987), "The Effect of Type of Representation on Judgments of New Product Acceptance," *Industrial Marketing and Purchasing*, 2(2), 29-46.
- Bonoma, Thomas V. (1982), "Major sales: Who Really Does the Buying?," *Harvard Business Review*, 82 (May-June), 111-19.
- Business Week* (1988), "The Top 1000 U.S. Companies," April 15 special issue.
- Calder, Bobby J. (1977), "Focus Groups and the Nature of Qualitative Marketing Research," *Journal of Marketing Research*, 14 (August), 353-364.
- Cattin, Philippe and Dick R. Wittink (1982), "Commercial Use of Conjoint Analysis: A Survey," *Journal of Marketing*, 46 (Summer), 44-53.
- Christopher, Martin (1982), "Value-In-Use Pricing," *European Journal of Marketing*, 16(5), 35-46.
- Churchill, Gilbert A. (1987), *Marketing Research*, fourth edition. Chicago: The Dryden Press.
- Dodds, William B. and Kent B. Monroe (1985), "The Effect of Brand and Price Information on Subjective Product Evaluations," in *Advances in Consumer Research*, vol. 12, Elizabeth Hirschman and Morris B. Holbrook, eds. Provo, UT: Association for Consumer Research, 85-90.
- Forbis, John L. and Nitin T. Mehta (1981), "Value-Based Strategies for Industrial Products," *Business Horizons*, 24 (May-June), 32-42.
- Fortune* (1988), "The Fortune 500 Largest U.S. Industrial Corporations," April 25, D1-D54.
- Green, Paul E. (1984), "Hybrid Models for Conjoint Analysis: An Expository Review," *Journal of Marketing Research*, 21 (May), 155-69.
- Green, Paul E. and V. Srinivasan (1990), "Conjoint Analysis in Marketing Research: New Developments and Directions," *Journal of Marketing*, 54 (October), 3-19.
- Green, Paul E. and V. Srinivasan (1978), "Conjoint Analysis in Consumer Research: Issues and Outlook," *Journal of Consumer Research*, 5 (June), 103-123.
- Gross, Irwin and Valerie Kijewski (1988), "Is Your Company 'Market Driven'?", *Marketplace: The ISBM Review*, Spring, 1-2.
- Kinnear, Thomas C. and Ann R. Root, Eds. (1989), *1988 Survey of Marketing Research*. Chicago: American Marketing Association.
- Levitt, Theodore (1981), "Marketing Intangible Products and Product Intangibles," *Harvard Business Review*, 81 (May-June), 94-102.
- Martilla, John A. and John C. James (1977), "Importance-Performance Analysis," *Journal of Marketing*, 41 (January), 77-79.
- Monroe, Kent B. and R. Krishnan (1985), "The Effect of Price on Subjective Product Evaluations," in *Perceived Quality*, Jacob Jacoby and Jerry C. Olson, eds. Lexington, MA: Lexington Books, 209-232.
- Montgomery, David B. (1986), "Conjoint Calibration of the Customer/Competi-

- tor Interface in Industrial Markets," in *Industrial Marketing: A German-American Perspective*, Klaus Backhaus and David Wilson, eds. Berlin: Springer-Verlag, Inc., 297-319.
- Perreault, William D., Jr. and Laurence E. Leigh (1989), "Reliability of Nominal Data Based on Qualitative Judgments," *Journal of Marketing Research*, 26 (May), 135-48.
- Porter, Michael E. (1985), *Competitive Advantage*, New York: Free Press.
- Thomas J. Reynolds and Linda F. Jamieson (1985), "Image Representations: An Analytic Framework," in *Perceived Quality*, Jacob Jacoby and Jerry C. Olson, eds. Lexington, MA: Lexington Books, 115-138.
- Reuter, Vincent G. (1986), "What Good Are Value Analysis Programs," *Business Horizons*, 29 (March-April), 73-79.
- Rokeach, Milton (1973), *The Nature of Human Values*, New York: Free Press.
- Wilson, David T., Robert J. Corey, and Morry Ghingold (1990), "Beyond Cost-Plus: A Checklist for Pricing Under Pressure," *Journal of Pricing Management*, 1 (Winter), 41-49.
- Wilson, Elizabeth J., Gary L. Lilien, and David T. Wilson (1989), "Situational Factors and Formal Models of Group Choice in Organizational Buying: A Contingency Paradigm," ISBM Working Paper # 5-1989, Pennsylvania State University.
- Wind, Yoram (1990), "Getting a Read on Market-Defined 'Value'," *Journal of Pricing Management*, 1 (Winter), 5-14.
- Wittink, Dick R. and Philippe Cattin (1989), "Commercial Use of Conjoint Analysis: An Update," *Journal of Marketing*, 53 (July), 91-96.
- Zeithaml, Valarie A. (1988), "Consumer Perceptions of Price, Quality, and Value: A Means-End Model and Synthesis of Evidence," *Journal of Marketing*, 52 (July), 2-22.

Appendix

Informant Sample

Industrial Firms:

<u>Industry</u>	<u>Number of Informants</u>
Fuels	7
Office equipment	9
Conglomerate	13
Aerospace	3
Steel	3
Chemicals	6
Leisure	2
Machinery	3
Aluminum	4
Paper	9
Electrical products	6
Semi-conductors	1
Drug & research	6
Auto parts	5
Lumber	1
Service industry (business publishing)	1
Telecommunications	1
Total	<hr/> 80

Market Research Firms:

20 Informants representing 16 firms that do research on business markets. All firms were ranked in the top 40 market research firms in the U.S.