

FORWARD TO THE BASICS DON'T SECOND-GUESS THE CUSTOMER (Third of a series)

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In Value Analysis (VA) consulting since 1973, he has served nearly 100 clients and has trained over 7,000 people in the VA process.

He has practiced customer-directed VA since being introduced to the process in 1969 by Thomas J. Snodgrass.

ABSTRACT

The first two papers in this series discussed the growing tendency to ignore the fundamental VA technique, "Create-by-Function", and the unfortunate but increasingly common tendency to Second-Guess the Designer.

This paper discusses another degradation of the VA process: The developing tendency to Second-Guess the Customer. It details the process of objectively defining customer needs and desires.

THE ORIGIN OF VALUE ANALYSIS

The VA process originated in the late 1940s in a relatively unsophisticated marketing environment. Its creators gave strong lip-service to the importance of fulfilling user/customer needs and wishes, but they developed no procedures for defining those needs or for assuring that the products or processes under study fulfill those needs.

The process of modern customer-driven VA emerged in the late 1950s. It shifted VA from a preoccupation with cost-reduction to a focus on

fulfilling customer needs. A procedure was developed to objectively define the customer attitude toward each element of a product or process.

THE CUSTOMER FOCUS

In his seminal book on VA, *Techniques of VA and Engineering*¹, L. D. Miles said, ". . . an acceptable product must serve the customer's needs and wishes to the degree that he expects."

SELLING THE PROCESS

Unfortunately, when Miles traveled the country, proselytizing top executives of the 104 departments of the General Electric Company, this inspired message was muted. This shift made the process more salable. Indeed, the case studies used to sell VA seldom involved customer/user desires. The classic illustration of the VA process made use of a cigarette lighter. A typical exchange is detailed below. It almost seems calculated to convince the audience that VA does not consider user/customer attitudes:

Value Man: What does this do? (Holding up the lighter.)

Responses: "Light Cigarette", "Ignite Material", et cetera.

Value Man: No, its Basic Function is to "Generate Heat." VA concerns itself with Basic Functions. If we concentrate on that single, two-word function, we can optimize the product."

This demonstration, repeated many thousands of times in the early 1950s, set firmly in the minds of GE management the concept that VA regarded everything except the Basic Function to be unimportant. This was reinforced when they saw that all of the functions except the Basic Function were referred to as *Second Degree* functions, implying their relative unimportance.

In distinct contrast with the repeated use of Basic Function oriented examples such as that above, Miles¹ emphasized in 1961, the concepts of Use, Esteem, Cost, and Exchange Value as proposed by Corea Walsh in 1927. He further stated that "Performance-oriented work is basically centered on using resources to accomplish new functions which are desired or needed by man." [Emphasis added.]

Nevertheless, as VA became codified, the emphasis was universally on Basic Function. Esteem Value or the satisfaction of User/Customer desires was given very short shrift.

TOP MANAGEMENT REACTS

Let us return to the hypothetical cigarette lighter session. This time, the discussion below refers to the common reactions of two very important persons in the audience: The Top Executive and his Marketing Manager:

Marketer: "These VA people just don't understand the process of developing, producing, and selling a product."

Top Man: "I agree. If we forget about anything except Basic Function, we will produce a washing machine consisting of a tub with a washboard."

Marketer: "What we must deliver to the customer is convenience, dependability, enhanced features, and attractiveness."

Top Man: "Well, at least this VA system will emphasize our concern for cost. Sounds as if it belongs in Manufacturing or Finance."

VALUE ANALYSIS REACTS

This problem was clearly seen by Lawrence D. Miles. This realization triggered his development of Value Control. The objective of this new system was to prevent excess cost from being incorporated in a product during the concept and design phases. The Value Control system was intended to function at the level of the management staff. In contrast with VA, this new system was not revealed outside the General Electric Company.

Another person who saw the problem clearly was Thomas J. Snodgrass, an Engineering Manager at the Hotpoint Division of GE. He felt that the customer viewpoint was being shortchanged by this total focus on Basic Function.

Miles sent Robert L. Bartlett to Hotpoint to work with Snodgrass, and together they created a high level product definition and development system. The heart of this system was the requirement that the product fit the objectively measured needs and desires of the user/customer.

Snodgrass left GE and established Value Standards, Inc. to complete the development of the system which he called "VITAL," and to apply it to the product development systems of a number of clients. His new approach to sensing customer needs had its genesis at AT&T. It was developed into its present form by Snodgrass, me and others at Xerox Corporation, at Thomas Cook Ass, and at Fowler & Whitestone.

SENSING THE CUSTOMER

An early discovery by Snodgrass was that the data developed by most market research activities was not, in fact, objective, but contained elements of the opinions of the persons who constructed the questions. He developed two principles which controlled all of his subsequent data collection:

(1) Collect only open-ended data. Avoid structuring the questionnaire beyond defining the subjects of the inquiry.

(2) Have the questionnaire results allocated to a set of hierarchical functions* by a VA Team.

He discovered that this method of questioning was difficult in that it required the training of interviewers and the careful post-evaluation of data. He felt that it was nevertheless essential to avoid the unfortunately common preconditioning of the minds of the respondents.

* The process of systematic allocation of user/customer attitudes required the development of a purely hierarchical form of Function Analysis. The new format has become known as the "User-Oriented FAST Diagram."

PRECONDITIONING

I have for years illustrated this preconditioning error by describing what I have named the *Mall Encounter*: A data collector approaches a respondent in the mall and asks, "If you were buying a Rolls Royce, would you prefer a black one or a grey one?" The respondent will invariably respond with either black or grey. The validity of this response, however, is impossible to assess, since the respondent is not actually participating in a buying decision. It is an artificially created situation, and the validity of the response is impossible to determine.

Recent data by Harris² described a controlled research study wherein one group was asked, "How *tall* was the basketball player?", while the other group was asked, "How *short* was the basketball player?" The first group estimated the height at about 79 inches, while the second group estimated the height at about 69 inches.

Another example from the work of Elizabeth Loftus³ involved asking a group two questions about their headaches: "In terms of the total number of products, how many other products have you tried? One? Two? Three?" A second group was asked, "In terms of the total number of products, how many other products have you tried? One? Five? Ten?" The answers from group one averaged 3.3 different products. The answers from group two averaged 5.2 different products. A second question asked of the same groups was asked in two forms: (1) "Do you get headaches frequently, and, if so, how often?" and (2) "Do you get headaches occasionally, and, if so, how often?" The "frequently" group reported an average of 2.2 headaches per week, while the "occasionally" group averaged 0.7 headaches per week.

Most market research data today is collected in the manner described above. Most of it is, therefore, summarily invalid.

USER DATA CONSTRAINTS

In several years of working with his new methods, Snodgrass perfected a system with only four rules:

- Valid respondents must have made a recent buying decision and must have actually used the product or process.
- First, ask what they LIKE about the product.
- Then, ask what they DISLIKE about the product.

These simple constraints have been applied to several thousand inquiries over the past thirty years. Much of the data collected fails to match data collected by the "classical" market research methods. Most of the data has been proven to be a far more valid and objective measure of user/customer attitude than the data collected by these "classical" methods.

EXAMPLE

Product Under Study: Earth Mover

Area Identified: There was a strong market desire for a hydraulic system with absolutely no leaks over a substantial period. No US-made earth mover had such a feature, nor was anyone in this country attempting to develop one.

Discussion: The Japanese, for several years, had sold top-of-the-line machines which were guaranteed not to leak for 5 years. This fact was having no impression on US engineers since both they and the marketing people felt that users out in the field were conditioned to the constant need to "wipe down" the struts and hoses to prevent dust and muck buildup. Their other expressed reason for denying the market need was expressed in the following terms: "The oil just drips on the ground, and who cares?" Marketing research, misled by their preconceptions of user attitude, never asked the open-ended questions which would have surfaced this significant users' concern.

When an Open-Ended questionnaire revealed the customers' unfulfilled desire, the engineers were refocused and rather easily developed a non-leaking system.

EXAMPLE

Product Under Study: Class 8 Truck Tractor with integral 6 1/2 foot headroom sleeper.

Area Identified: A major question was raised on the commercial viability of a combined tractor/sleeper.

Discussion: Few Class 8 truck manufacturers were supplying a combined unit. Most sleepers are separate units which are attached to the rear of the cab. This manufacturer felt that a sleek-looking integral unit would sell well. The respondents included several executives of trucking companies and two executives of a used truck operation.

A question was raised on resale value and a very strong conclusion was reached that when a truck is resold, the added investment for an integral sleeper would be difficult to recover since most resold trucks would be used for local, rather than long-range trips, and would thus not require a sleeper. The panel strongly suggested that the producer design an equally sleek-looking removable sleeper.

This appears to be a case where zealous marketing and engineering groups fell in love with their own development.

EXAMPLE

Product Under Study: School Bus

Area Identified: The "largest windows in the industry" were a major marketing point. They were purported to improve the driver's view of children in the vicinity of the bus. They added \$800 to the cost of the bus.

Discussion: Respondents included several School Superintendents from two states. The marketing staff of the producer was shocked when it was found that the users regarded their safety claims as a marketing ploy since all school buses meet a rigid set of federal, state, and local safety requirements

The users also rejected the need for large windows, because of their resultant tendencies to rattle, jam, or break.

Another case of a marketing fixation gone awry.

THE QUESTIONNAIRE

The User Attitude Questionnaire may be administered by mail, phone, or, ideally, in person. The questions are posed and answers recorded by a market researcher who has been specifically trained in the use of open-ended questionnaire techniques. The key to successful questioning is the skillful use of "probing" questions and the total absence of "leading" questions. The duration of the questioning of each respondent should typically not exceed 30 to 45 minutes.

THE TARGET OPPORTUNITY PANEL

In packaging VA to fit the standard, 56-hour, 8-week format for clients, Thomas F. Cook used a 16-person User-Oriented Focus Panel, meeting for only 6 hours. Operating under the user data constraints detailed above, this panel typically developed forty to eighty valid data points for allocation to a User-Oriented FAST Diagram. Several hundred of these panels have been held, with generally impressive results.

A key to the success of the Target Opportunity Panel is the inclusion of equal numbers of key decision makers from the producing organization in addition to the group of carefully selected "forward users." This adds a measure of believability and authority to the results of the panel inquiry.

SUMMARY

The VA movement has shown the way. It has developed and proven a new method of User/Customer attitude sensing which has an objectivity and a validity which has never been approached by classical market research. It has become the standard system of defining user/customer attitude in a VA study⁴.

There is even a growing movement toward this new system in the broader field of market research. Small success is building upon small success, and we look forward to a time when market researchers will no longer, intentionally or unintentionally, ask their questions in a way which tends to verify their preconceived opinions.

In Modern VA, the collection and function-allocation of this new form of user data causes a dramatic shift in team viewpoint. No longer are value targets based on the opinions of team members. With User-Driven VA, the prime focus becomes the fulfillment of the needs and desires of the user.

REFERENCES

1 *Techniques of VA and Engineering*, Lawrence D. Miles, McGraw-Hill, NYC, 1961

2 *Journal of Experimental Psychology*, 88:216-222, R. J. Harris, 1973

3 *Cognitive Psychology*, No. 7:560-572, Elizabeth F. Loftus, 1975

4 *VA in Design*, Theodore C. Fowler, Van Nostrand Reinhold, NYC, 1990