Fundamentals of Customer Value Analysis

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Background

Customer Value Analysis emerged from work in the areas of economics, business strategy, customer satisfaction, and quality toward the end of the 1980s. Economist Bradley T. Gale, along with Prof. Robert Buzzell, published *The PIMS Principles*, a cross-sectional and longitudinal study of business units in the Profit Impact of Marketing Strategy (PIMS) database. Their key conclusion was that long-term profitability is dependent on market share. In that book, they further suggested that market share is itself dependent on customer satisfaction. They cited the need for a customer satisfaction measure that captures customers' perceptions of the value of the goods and services they obtain from their supplier.

Informally, we can define value as "what the customer gets for what the customer pays." "What the customer gets" is a bundle of non-price characteristics that can be examined on the basis of both real and perceived quality measures. "What the customer pays" can include both initial costs and ongoing costs. Accordingly, the merits of any (so-called) "value proposition" can be analyzed along two dimensions, quality and price.

In the late 1980s, Raymond Kordupleski, at the time an AT&T employee, successfully developed a customer satisfaction measurement system that predicted changes in market share. Within AT&T, the specific measure that conferred predictive power came to be known as Customer Value Added (CVA).
Outside AT&T, this measure has become known as Relative Customer Value (RCV) or the Customer Value Ratio (CVR). It is a *relative* measure; that is, it is a measure of the perceived value of a firm's products or services relative to the perceived value of its competitors' products or services.

Relative measures are generally expressed as ratios. The numerator of the Customer Value Ratio is the firm's customers' average rating of the value of its services. At AT&T, the denominator is the firm's competitors' customers' average rating of the value of their services. Measures of relative perceived quality and relative perceived price can be calculated similarly.

To be predictive, the sample from which both ratings are drawn must be representative of the market, not just a firm's customer base or its "addressable market." The person to be sampled must be the purchase decision-maker. The survey instrument must be one that can be administered to both the firm's customers and its competitors' customers. The survey should also elicit customers' ratings of the quality of the firm's products and services, and ratings of the competitiveness of its prices.

The Central Questions of Customer Value Analysis

Analysis of survey data helps the firm answer the following questions:

- Does the firm offer superior value?
- What actions would be necessary to offer superior value?
- Where is the firm's market share headed?
- Does the firm provide the level of Customer Value needed to achieve its financial goals?

What Do The Ratios Mean?

Parity, Indifference and Equilibrium

Ratios in the area of 1.0 are said to be "at parity." This implies that a firm's prices are generally in equilibrium with the quality of its offers, but it also implies that the firm's "value proposition" is not compelling. That is, customers could easily trade off the firm's combination of quality and price for some other combination. Customers are said to be indifferent towards competing alternatives that are at parity with each other. Firms that are at parity with the competition will drift stochastically to some steady-state level of market share. For firms with a low level of market share, this is good news. For firms with a large proportion of market share, this means trouble.

Tools of The Trade - Value Maps and Value Models

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Value Map
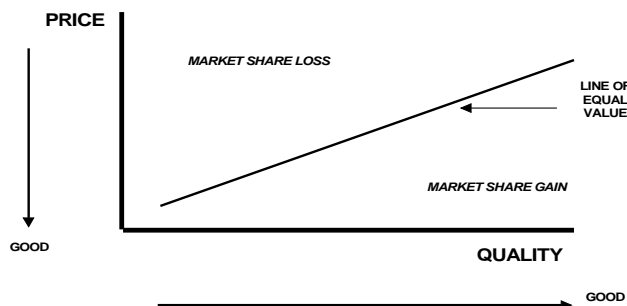
One of most valuable tools of Customer Value Analysis is the Value Map shown on the preceding page. The *line of equal value* or *fair value line* on the Value Map shows how the market trades off quality for price. Most firms tend to line up along this line. Some firms intentionally position themselves in the lower right diagonal, which Dr. Gale calls the "grow-and-prosper" zone. (See Dr. Gale's book, *Managing Customer Value;* New York: The Free Press, 1994.) Other firms find themselves in the upper left diagonal, which Dr. Gale calls the "wither-and-die" zone. Consider two Value Maps, one before and one after the entry of a new competitor.

Typical Market "Before"
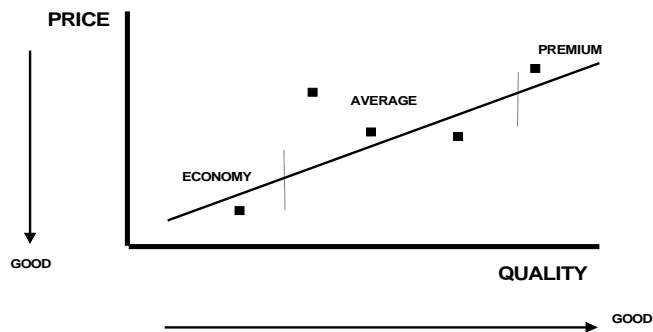
In the "before" case shown above, the market is stable, and the market participants have value positions near the line of equal value. This type of market presents opportunity to those firms who can come to market with some combination of higher quality and/or lower price. Notice the new entrant in the Value Map below.

Typical Market "After"
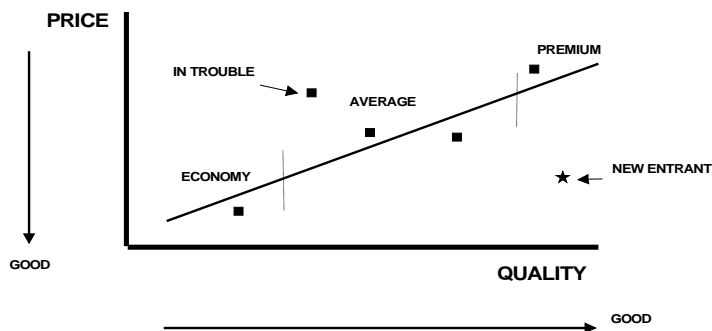
The well-positioned new entrant will attract market share from the other market participants. The competitor denoted as "in trouble" is highly likely to go out of business or be acquired. Consider the following cases:

- In the credit card business, AT&T deliberately launched the Universal Card with a higher quality of service than that which was provided by banks at a lower Annual Percentage Rate and (initially) no annual fees. They became one of the nation's largest credit-card operations, taking market share from their competitors.
- In the luxury car market, Lexus and Infiniti entered in the high-quality-low-relative-price diagonal. They took market share from BMW, Mercedes-Benz and the domestic luxury car suppliers.

How Does a Firm Improve Its Value Position?

Essentially, there are two levers that a firm can pull, the quality lever and the price lever. Pulling the price lever generally involves lowering prices, a measure of last resort. Economically speaking, pulling the quality lever is the healthier way to go. This involves understanding and beginning to control the drivers of the firm's overall quality rating. Market researchers tend to speak of these drivers as "attributes," important areas of customer satisfaction. For example, a sales attribute would capture customers' satisfaction with their interactions with the company's sales force. Typically, each of a company's service processes has an associated attribute.

The Value Model is a tree diagram that represents the customers' value construct. It depicts how the quality attributes drive the overall quality rating, and how the overall quality and price ratings drive the customers' value perceptions.

The Value Model
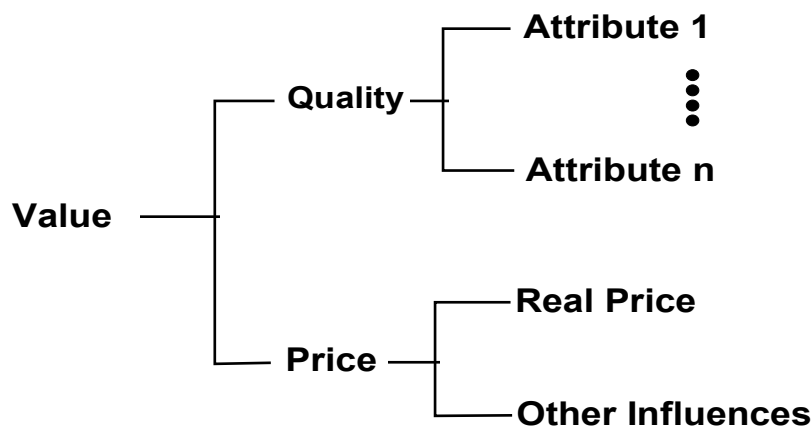
To be useful, each attribute should have two characteristics:

- They are derived from customer needs, and
- They are clearly and unambiguously related to a specific process within the firm that attends to the identified need.
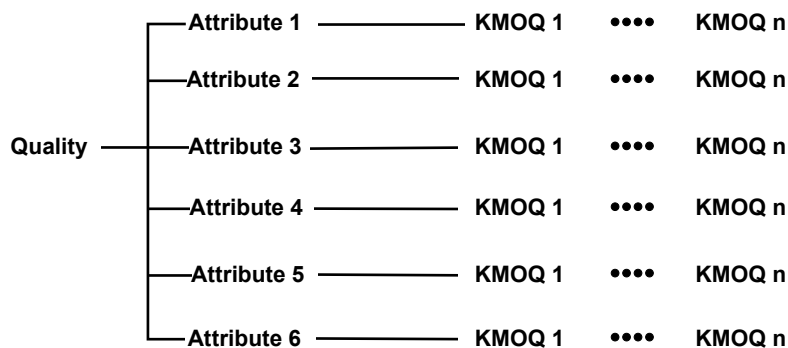
Qualitative market research -- primarily focus group research -- is the primary method for identifying the main attributes of customer satisfaction. Properly conducted, qualitative research allows firms to:

- Identify customer needs
- Derive attributes from related needs (addressed by specific processes), and
- Operationally define measures of performance for these processes.

Good Quality Metrics and Performance-Satisfaction Functions

Levels of process performance drive levels of customer satisfaction. Therefore, to improve Customer Value it is necessary to improve the levels of process performance. In service businesses, improvement of process performance generally involves redesign of the process and/or an allocation of an incremental amount of labor to the process. Before a firm embarks on either of these tactics, however, it will want to identify those specific aspects of process performance that, if improved, would confer competitive and economic advantage. To aid in this matter, it is useful to develop a Process-Attribute model.

The Process-Attribute Model

	Attribute 1 ———— KMOQ 1	••••	KMOQ n
	Attribute 2 ———— KMOQ 1	••••	KMOQ n
Quality —	Attribute 3 ———— KMOQ 1	••••	KMOQ n
	Attribute 4 ———— KMOQ 1	••••	KMOQ n
	Attribute 5 ———— KMOQ 1	••••	KMOQ n
	Attribute 6 ———— KMOQ 1	••••	KMOQ n

KMOQ Denotes Key Measure of Quality

In the Process-Attribute Model, the attribute (i.e., key dimension of customer satisfaction) is on the left, and Key Measures of Quality are on the right. Key Measures of Quality, sometimes called Direct Measures of Quality, are those measures of (product quality or service) process performance that are *derived from customer needs and tend to predict customer satisfaction.* For example, customers might have a *need* for "prompt repair." The extent to which the firm is perceived to be prompt will influence customers' ratings on the firm's maintenance *attribute*. Potential KMOQs for *objectively measuring* the promptness of the firm's *processes* might include the Average Speed of Answer (for taking the customer's trouble call) and Mean Time To Repair, the interval between receipt of the customer's call and restoration of the customer's service.

KMOQs can be operationally *defined* based on customer needs identified through focus group interviews. They can be *validated*, however, only by testing their predictive power. The equations that allow a firm to validate its Key Measures of Quality, and to determine the extent that the performance levels reflected in these measures drive customer satisfaction, are called Performance-Satisfaction functions. These functions have the following form:

$$\text{Attribute Rating} = f(\text{KMOQ}_1 \ldots \text{KMOQ}_n)$$

The Attribute Rating is the firm's average customer satisfaction rating on a particular dimension of customer satisfaction. In econometric models used to estimate equations of the above form, the Attribute Rating is the dependent variable, and KMOQs are the independent variables. A Key Measure of Quality is validated if it has a significant *t-statistic.* A t-statistic is a measure of statistical confidence in the "trueness" of a relationship between an independent variable and a dependent variable. Process means tend to be good KMOQs; that is, they are more likely to have significant t-statistics than some other types of measures.

The level of influence that this aspect of process performance exerts on attribute-level satisfaction, overall perceived quality, value and market share is given by the appropriate elasticity. Elasticities are numbers that quantify the extent of the change in a dependent (endogenous) variable that results from a one-percent change in an independent (exogenous) variable. For example, an elasticity would estimate how much the market share would change with a one-percent change in billing accuracy.

The firm should have some way of translating the change in market share into a change in revenue. This change in revenue can be evaluated relative to the incremental cost of process improvement to determine whether the firm should invest in improving this particular aspect of customer service.

Say Good-bye to Old Approaches

To achieve higher levels of service quality, it will be best to say good-bye to three widespread practices of the traditional style of management:

- Setting "stretch goals" without any idea whether or how they might be achieved,
- Attaching the achievement of these "stretch goals" to performance appraisal and employee-compensation, and
- Cutting costs without any idea of the impact of the cuts on the quality of service.

Some managers have the delusion that levels of customer service can be improved simply by dictating higher targets for process performance. Some managers take the position that dictating by itself is not enough: "Stretch goals" must be attached to compensation in order to get results.

Someone once described insanity as doing what has always been done, but expecting different results. It is possible to get different *numbers* by simply setting stretch goals, but these numbers will not reflect real improvements in the level of customer service. What they will reflect is the ability to creatively manipulate the metrics, especially if the "stretch goals" are attached to compensation.

Processes have inherent levels of capability that are largely governed by the way that they are designed and the level of resources that are committed to them. This capability is fixed in the short run. The late Dr. W. Edwards Deming devised his famous "Red Bead Experiment" to dramatize this point. This experiment also illustrated the insanity of traditional human-resource-management practices that wrongly attribute to people all fluctuations in process performance, including the majority of fluctuations that are intrinsic to the process itself.

In the Red Bead Experiment, the job of each worker is to produce 50 white beads per day, no defectives. White beads represent non-defective products, and red beads represent defectives. The process itself, however, produces an average of 9.4 red beads per worker per day. The number of defectives can range from as low as one to as many as eighteen per employee per day. The variation is completely random, and the process is in a state of statistical control. Therefore, it is impossible for the employees to achieve their production goals.

Toward the aim of achieving the production goals, the foreman in the Red Bead Experiment applies some of the traditional bromides of human resource management. The noise of the random fluctuations is misinterpreted as signal. The inherent variation that is attributable to the process is wrongly attributed to the employees. The foreman's traditional bromides fail. There is no improvement in the results. What needs to be improved is the process itself, not the performance of the people that work in the process.

The improvement of process performance, per se, is beyond the scope of Customer Value Analysis, and it is hard work. The reader will find excellent guidance in Dr. Rohit Ramaswamy's book, Design *and Management of Service Processes - Keeping Customers for Life* (Reading, Massachusetts: Addison -Wesley, 1996). This book picks up where Dr. Gale's book, *Managing Customer Value* leaves off. It provides crystal clear explanations of sophisticated techniques in the order in which they should be used. It is a definitive work in the area of service quality.

Competing on the basis of value is essentially an extension of the concept of competing on the basis of quality. It is economically more desirable to compete on the basis of quality than to achieve a position of superior value by offering what Dr. Gale calls "inferior quality at a desperately low price." Competing on the basis of quality does not imply that firms can ignore price. The Value Map will aid firms in aligning their prices with their quality levels and with their growth aspirations.

Customer Value Analysis will be less than totally effective if a firm attempts to practice it as a bolted-on extension of traditional management practice. The traditional approach's short-term focus on earnings growth places upward pressures on prices and downward pressures on costs in the short run. A traditional, two-pronged strategy of raising prices and cutting costs, however, can cause erosion of Customer Value.

The effect of higher prices is intuitively obvious. The effect of cost cutting, however, tends to operate through a less visible chain reaction. In a service business, cost cutting tends to have the effect of lowering the quality of service provided to customers. Queueing theory provides us with insight as to why this is the case. Queueing models quantify the amount of labor or machine resource that is required to process a given volume of transactions (e.g., telephone calls) at a specified level of service quality. Input to queueing models includes the following:

- The volume of transactions to be handled in some unit of time,
- The average time that it takes to handle a single transaction, and a
- Service criterion of the following form: less than x% of the customers will wait longer than y units of time (e.g., seconds, minutes) for service.

A typical output of the queueing model is the number of people that need to be scheduled at that time. (It should be noted that the output of a queueing model is *not* an employee schedule, per se.)

Suppose that some budget, and not a queueing model, specifies the number of employees that will be scheduled. Suppose further that the labor budget has been cut with the aim of increasing earnings in the short run. What will happen? If both the volume and the transaction time are unchanged (i.e., there are no process improvements), the service criterion must degrade. As the service level degrades, so does the support for any price differential. The market, then, adjusts itself rationally.

Some Words In Conclusion

Customer Value Analysis is a discipline that can allow firms to identify where they need to strengthen their "value propositions." The elasticities associated with the various quality attributes can help them to identify those potential improvements that have the greatest impact on customers' future purchase behavior. While it can be viewed as an extension of what Dr. Gale calls "the strategic navigation system" of a company, Customer Value Analysis can also be viewed as a technical discipline that supports and is practiced within the larger notion of Management for Quality. Below is a flow diagram of the plan that I have used to simultaneously implement the infrastructure for Customer Value analysis and the discipline of Management for Quality.
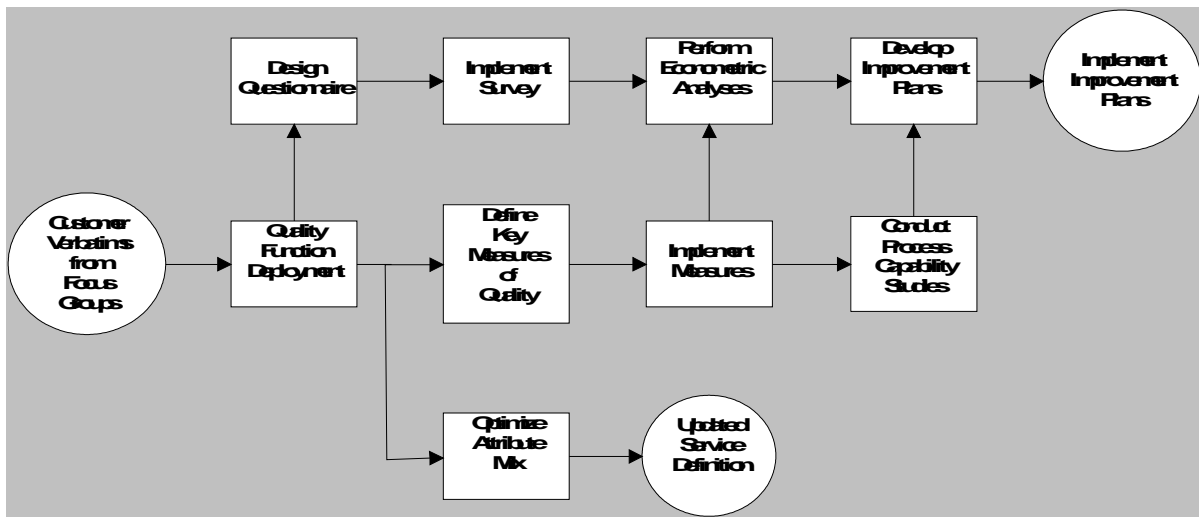
Suggested Resources

In addition to the books by Gale and Ramaswamy cited above, the following resources would enhance the reader's understanding and practice of Customer Value Management.

Customer Value Analysis depends upon well-designed customer satisfaction surveys. Readers whose companies need to develop these surveys should consider taking Dr. Randy Brandt's three-day course, Measuring and Managing Customer Satisfaction and Loyalty. This course is offered periodically through the American Society for Quality. Call 1-800-248-1946 for additional information.

Dr. Donald J. Wheeler's book, *Understanding Variation - The Key To Managing Chaos* (Knoxville, Tennessee: SPC Press, 1993) provides more than an excellent introduction to Statistical Process Control. (A process must be under control before it can be improved.) It will virtually change the way that you think about and interpret data of any kind. This book will enable readers to separate "potential signals from probable noise" in their data. The book also provides an introduction to the concept of inherent process capability.

The concept of inherent process capability was masterfully -- and humorously -- taught by the late Prof. W. Edwards Deming. Fortunately, many of his lectures were preserved on videotape. A tape entitled, "The Red Bead Experiment and Life" is Volume VII of The Deming Library, produced by Films, Inc. Call 1-800-323-4222 for further information. This tape brilliantly demonstrates that the capability of a process is fixed in the short run.

Prof. Deming taught that to improve the quality of anything, managers should be at least somewhat versed in the theories of variation, systems dynamics, psychology and epistemology. He acknowledged that his own classic work on Management for Quality, *Out of the Crisis* (Cambridge, Massachusetts, MIT CAES Press, 1986), might be difficult for some readers. Fortunately, other people have written some less difficult, yet very helpful, books.

Lloyd Dobyns and Clare Crawford-Mason respectively and respectfully narrated and produced The Deming Library and documentaries about Prof. Deming. Through the successfully application of their journalistic gifts, their book, *Thinking About Quality: Progress, Wisdom and the Deming Philosophy* (New York: Times Books, 1994), they have made the Deming Philosophy more understandable by more people.

The Goal (Croton-on-Hudson, NY: North River Press, 1992) by Dr. Eliyahu Goldratt illustrates two aspects of the theoretical foundation of quality improvement, variation and systems dynamics, through use of a story. His terminology, however, is a little different. He calls variation, "statistical fluctuations," and he views processes or systems with special attention to what he calls, "dependent events." Like Deming, Goldratt attacks some poor practices of the traditional style of management.

Readers interested in the human side of quality improvement might enjoy *Everyday Heroes - From Taylor to Deming: The Journey to Higher Productivity* (Los Altos, California: Process Plus, 1990) by the late Dr. Perry Gluckman and journalist Diana Reynolds Roome. Like *The Goal,* the authors use the story to teach. Their book echoes the dangers of trying to change "the order of things," as Machiavelli would put it, but it encourages the reader to champion change anyway!