Burke

WHITE PAPER SERIES

VOLUME 5 • 2004 ISSUE 3

LINKING MEASURES OF CUSTOMER SATISFACTION, VALUE AND LOYALTY TO FINANCIAL PERFORMANCE

Conventional managerial wisdom holds that attending to customer satisfaction, value, and loyalty makes good business sense for at least two reasons:

1. Satisfied customers are likely to continue to buy from and/or continue to do business with a company, while dissatisfied customers are likely to take their business elsewhere.
2. Satisfied customers tell others about their positive experiences, while dissatisfied customers tell even more people about their negative experiences.

In fact, faith in the preceding alleged benefits has set into motion more than a few customer focus and satisfaction initiatives in companies throughout the United States and around the world.

Still, in business as in spiritual matters, faith will be put to the test. At some point, no matter what their stated beliefs or commitments, senior managers, employees, and shareholders will demand evidence of the bottom-line impact of customer satisfaction, value, and loyalty. They will demand evidence that investments made in managing relationships with customers, as well as those made in relevant process and quality improvements, actually contribute to growth in revenues, profitability, and other financial and market performance indicators.

This paper describes and illustrates three basic methods of linking measures of customer satisfaction, value, and loyalty to financial and market performance results. The advantages and limitations of each method also are discussed. Next, we discuss several factors related to (a) data structure, completeness, and availability, and (b) contextual sources of influence, that may impact the appropriateness and/or viability of each of the three methods in any given organization or industry. Finally, the paper concludes with guidelines and recommendations for using the three methods, individually and in combination, to establish the "bottom-line benefits" of customer satisfaction, value, and loyalty.

COMMON APPROACHES TO LINKING CUSTOMER SATISFACTION, VALUE AND LOYALTY TO FINANCIAL AND MARKET PERFORMANCE

Basically, there are three methods of linking measures of customer satisfaction, value, and loyalty to market and financial performance:

1. Projection
2. Direct linkage
3. A hybrid approach that combines projection and direct linkage

Each of these approaches, along with its strengths and limitations, is described below.

The Method of Projection

Many of the models developed for the purpose of demonstrating the financial or market impact of customer satisfaction, value, and loyalty rely on projection (e.g., TARP, 1986; Hart, Heskett, and Sasser, 1990; Rose, 1990; Cannie, 1991; Rust, Zahorik, and Keiningham, 1994; Reichheld, 1996; Anton, 1997; Vavra, 1997).

In the method of projection, estimates or assumptions are made regarding the financial/market worth of a customer. These estimates usually are derived from such sources as historical data on customer accounts, financial records, and/or market studies. The method works basically by combining the above estimates with data on customer satisfaction, dissatisfaction, and market behavior intentions in order to project the financial/market impact of success or failure in addressing customer needs and requirements, and/or building customer loyalty and commitment.

The following example, based on work done in the insurance industry, illustrates the use of projection to quantify the potential costs of customer dissatisfaction.

Assume that a company that insures physicians against malpractice currently has 6,000 policyholders, and that the current average annual value of each policy is $15,000. Assume also that, based upon a recent survey of the company's policyholders:

1. 40 percent of the policyholders experienced some service problem or failure during the past 12 months (an estimated 2,400 of the 6,000 total customer base).
2. 80 percent of these policyholders reported the problem to the company, and 20 percent did not (1,920 and 480 of the 2,400 having experienced a problem, respectively).
3. 40 percent of those who contacted the company were very satisfied with the company's response (768 of the 1,920).
4. 35 percent of those who contacted the company were only partially satisfied with the company's response (672 of the 1,920).
5. 25 percent of those who contacted the company were dissatisfied with the company's response (480 of the 1,920).
6. All of the very satisfied policyholders intend to renew their policies during the coming year.
7. 5 percent of the partially satisfied policyholders say they will not renew as a result of their problem experience (34 of the 672 partially satisfied customers).
8. 40 percent of the dissatisfied policyholders say they will not renew as a result of their problem experience (192 of the 480 dissatisfied customers).
9. 10 percent of the policyholders who experienced a problem, but did not report the problem to the company, will not renew as a result of their problem experience (48 of the 480 who did not report the problem).

Based on the above data, which are summarized in Figure 1, it is projected that a total of 274 customers will not renew their policies (34 partially satisfied customers + 192 dissatisfied customers + 48 customers not reporting the problem). At an average annual value of $15,000, the projected cost of customer dissatisfaction is $4,110,000 — not counting additional revenues that may be lost due to negative word-of-mouth communications from the disgruntled former policyholders who do not renew their policies.

As with any analytical approach, the method of projection has its strengths and limitations. Key advantages of this method are: (1) It does not require a tremendous amount of data, and the data required are relatively easy to obtain; (2) Projection is relatively straightforward — it need not employ sophisticated or complex statistical or other computational techniques (although these may be utilized); and (3) Projection has high heuristic appeal because it provides a relatively simple means of enabling managers to visualize the ramifications of improving customer satisfaction and/or reducing dissatisfaction.

Unfortunately, the method of projection also suffers from several shortcomings: (1) Projection is highly dependent on assumptions regarding the financial or market worth of a customer, and to the extent that these assumptions are erroneous, so will be the financial/market impact projections; (2) This approach also relies heavily on measures of behavioral intent, and it is well known that what buyers say they are going to do in the future is not always confirmed by their actual purchases or consumption behavior; and (3) Unless an organization makes an effort to track actual market behaviors or financial results, it is impossible to confirm or refute projective analyses, and thus, the goodness of the projection becomes nearly impossible to evaluate.

Given the limitations discussed above, some managers are skeptical of and/or hesitant to use the method of projection. Instead, these managers seek to establish a direct link between measures of customer satisfaction, value, and loyalty and actual financial or other key business results.

The Method of Direct Linkage

An alternative approach to demonstrating the bottom line benefits of customer satisfaction is to establish direct linkage between customer satisfaction, value, and/or loyalty indicators, and measures of actual market or financial performance (Tornow and Wiley, 1991; Wiley, 1996; Vavra, 1997; Rucci, Kirn, and Quinn, 1998; Charles, 1999, Allen and Wilburn, 2002).

The following example provides an illustration of the method of direct linkage.

In 1993, the authors conducted a national survey among business decision makers who were responsible for selecting computer hardware and software vendors for their respective companies. Each decision maker

Figure 1: Projecting the Financial Impact of Customer Problem Experiences

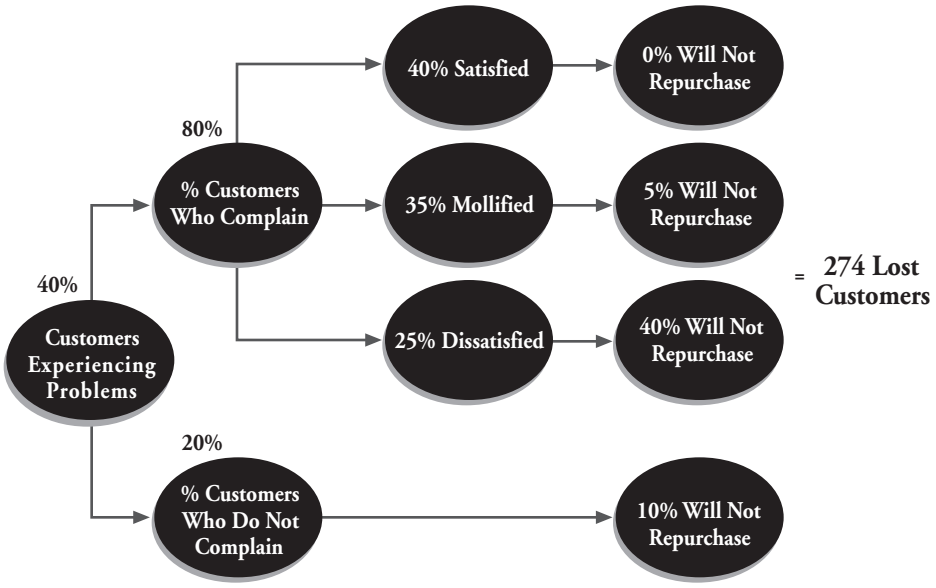


Figure 2: Stated Customer Satisfaction/Loyalty and Actual Customer Retention

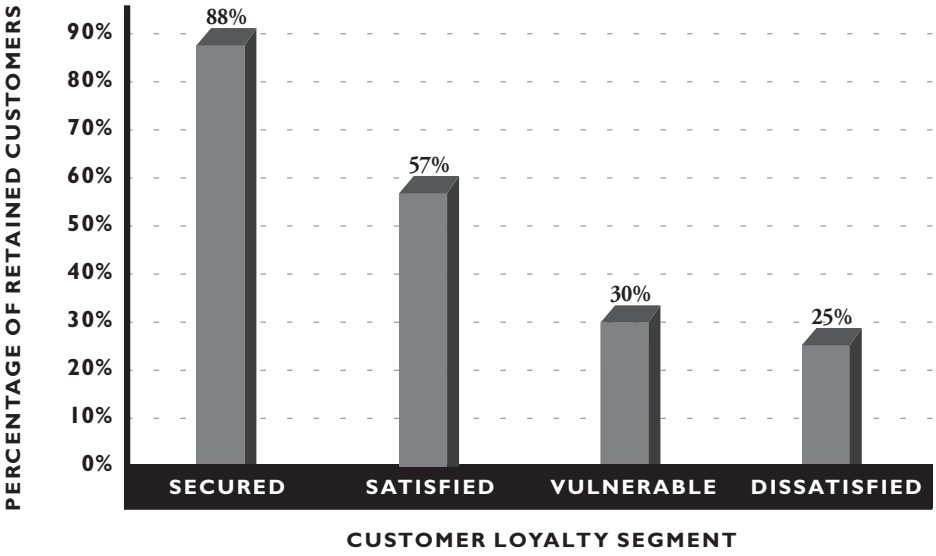
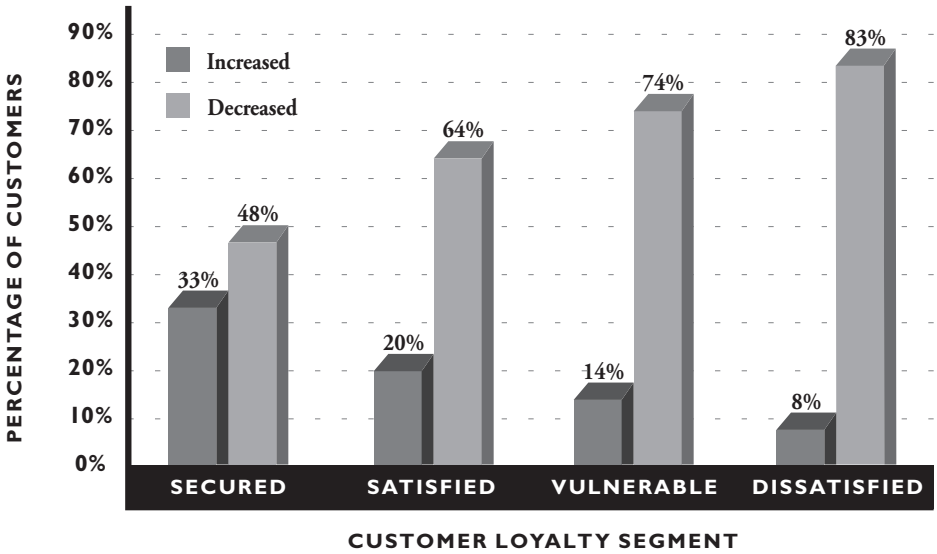


Figure 3: Stated Customer Satisfaction/Loyalty and Change in Share of Business



was asked to evaluate his/her satisfaction with and commitment to a specific vendor with whom his/her company currently was doing business. Based on responses to questions regarding overall satisfaction, likelihood to recommend the vendor, and desire to continue doing business with that vendor in the future, each decision maker was placed into one of four customer loyalty segments:

1. **Secured** - decision makers who said they were very satisfied with, definitely would recommend, and definitely would continue doing business with this vendor
2. **Satisfied** - decision makers who said they were basically satisfied with, probably would recommend, and probably would continue doing business with this vendor
3. **Vulnerable** - decision makers who said they were marginally satisfied with, might or might not recommend, or might or might not continue doing business with this vendor
4. **Dissatisfied** - decision makers who said they were dissatisfied with, probably/definitely would not recommend, or probably/definitely would not continue doing business with this vendor

In 1994 the same decision makers were again surveyed to determine if they were still doing business with the same vendors, and if so, whether they were doing more, less, or about the same ***volume of business*** as in 1993.

Results, illustrated in Figure 2, indicate a clear and positive relationship between customer satisfaction and loyalty (as measured in 1993) and actual customer retention (as measured in 1994). Similarly, results presented in Figure 3 show that decision makers in the secured segment were (a) less likely to have reduced, and (b) more likely to have increased a vendor's share of business volume during 1994, than decision makers who reported lower levels of customer satisfaction with and commitment to their respective vendors one year earlier. In short, the greater the level of customer satisfaction and commitment reported by a customer, the more likely a vendor was to retain and gain share of that customer's business in the future.

Of course, the preceding example does not represent all of the possible ways to establish direct linkages among customer and financial/market metrics, but it illustrates the essence of this method, and highlights its main distinction from the method of projection: Direct linkage focuses on ***actual***, as opposed to ***possible*** and/or ***probable*** financial/market results.

As with the method of projection, direct linkage has its strengths and limitations. The key advantages of the method of direct linkage are: (a) It focuses on actual market behaviors and outcomes, and as a result, frequently has stronger "face validity" with senior managers and other stakeholders who are seeking evidence of the financial/market impact of customer satisfaction, value, and loyalty; and (b) Because it focuses on actual market behaviors and outcomes, direct linkage provides a means of developing predictive models and conducting simulations.

Direct linkage also has some limitations. One limitation is that data requirements are more complex than in the case of projective techniques. The effort required to locate and integrate both customer and financial/market data is considerably greater than is the case with projection (more on this later). An additional challenge centers on direct linkages that are based on longitudinal data. Longitudinal analysis requires willingness to invest in a customer satisfaction/market performance database. This demands significant commitment from and patience on the part of organizational management that the method of projection typically does not.

A Hybrid of Projection and Direct Linkage: Simulation

It is one thing to be able to determine or project the degree to which measures of customer satisfaction, value, and loyalty are linked to and/or will impact financial and market performance results. However, what managers and decision makers also seek is an answer to the question, "in which areas of the marketing mix will investments in change/improvement efforts most likely be profitable (i.e., where will I get the biggest bang for the buck)?"

Increasingly, managers and decision makers are attempting to address this question via a hybrid approach that combines projection and direct linkage for the purpose of performing simulations (Allen and Wilburn, 2002; Johnson and Gustaffson, 2000). The method of simulation seeks to: (1) quantify the presence or absence of linkages between quality and service elements and financial outcomes, (2) determine the strength and leveragability of such relationships, and (3) rank alternative quality and service improvement strategies for managerial action based on expected (i.e., projected) financial return to the enterprise through a cost/benefit analysis. A key benefit of the simulation approach is the ability to make a linkage analysis "come alive" and appeal directly to the desires of CEOs and CFOs for relevancy. A well built simulator pushes the sometimes distracting technicalities of data mining and statistical analysis into the background while at the same time providing easy and appealing access to the numbers cast in a language that management understands — numbers and figures related to financial and market performance.

Two primary activities are involved in building an ROI-driven simulator: (1) Estimating the payback potential of improvement activities and (2) Estimating the investment requirements of improvement activities. These two estimates are combined in the simulator in order to calculate the ROI potential of alternative product, service, or process improvement strategies.

Estimating Payback. A common tool for estimating payback in the context of a simulator is a multivariate statistical model of the relationship between customer perceptions of performance and an outcome (criterion) variable such as observed customer retention, customer longevity, or customer value in dollars. It is imperative that the model builder work closely with the intended end users (typically managers or other decision makers) to specify a conceptual model prior to actual data analysis. Such a cooperative effort allows the model builder to understand how management believes underlying business processes impact customer perceptions, and it allows management to gain a realistic set of expectations regarding what a decision support simulator can and cannot realistically provide.

Acquiring and integrating data can be a very challenging part of the process because it often requires the model builder to cut across "functional silos" within an organization. Often, owners of "voice of the customer" and "voice of the process" data use different forms of software or differing file formats. Further complications arise when silo members do not speak the same corporate language, and in many organizations, do not typically know each other very well. These potential barriers speak to the need for support from high in the organization for simulator building activities. A champion in upper management is often required to enable the creation of a multidisciplinary design team or task force consisting of representatives from voice of the customer, voice of the process, and IT areas with a common purpose and the authority to pull the pieces together in a timely manner.

Decision support simulators are intended to be *prescriptive* management tools, that is, tools that imply specific action. They do not replace management decision-making, but enhance it by focusing attention on the most critical variables

in an action-oriented context. If a researcher is interested only in the predictive ability of a model in a non-simulator context, then the fact that specific predictor coefficients behave erratically because of interdependence (i.e., multicollinearity) may not be of great concern, as long as there is a high degree of confidence in the predictions of the model. To be truly prescriptive, a decision support simulator must meet a higher level of clarity — it must provide an accurate prediction of market outcome and enable the decision maker to identify which performance variables drive the outcome. This is necessary for decision makers to (a) identify what types of corrective actions might be needed and (b) frame how to estimate the cost of improvement for ROI calculations.

Because of the prescriptive requirement of simulators, great care must be taken in selecting the appropriate type of statistical model to power the payback function. Issues to consider in selecting the most appropriate type of model include the nature and scaling of both predictor and criteria variables, assumptions about the linear or non-linear nature of the data, and identification of the level of interdependence among predictor variables. A complete understanding of the availability, completeness, and structure of relevant data and potential contextual sources of influence on the model are critical as well, and will be discussed in more depth later in this paper.

Estimating Investment Requirements. While much previous discussion has focused on the criterion variable for purposes of modeling payback, an outcome variable of particular interest to many decision makers is return on investment (ROI). For example, a financial services firm could improve the average rating of "Customer service reps always being available when I need them" by 1 point on a 10 point scale, yielding an estimated 3% increase in customer retention and $15,000,000 in incremental annual revenue. Such a finding may be misleading without knowing what level of investment will be required to accomplish the 1 point increase. This improvement could be accomplished in a number of ways, each with differing investment requirements to the firm.

Since a simulator is only as good as the quality of its inputs, it is critical to estimate as closely as possible the investments associated with candidate improvement strategies. One approach for determining the internal cost implications of an improvement initiative is the creation of an action team by the firm that is charged with identifying high potential customer hot buttons, mapping internal processes to those hot buttons, and specifying ownership within the firm of the appropriate processes and responsibility for creating action plans. This type of action planning process is often facilitated by consultants and involves creating a cross-functional internal task force of mid-level and senior managers. The ultimate deliverables from this group are recommendations to senior management for each critical customer issue in terms of possible action paths, who should take action, timelines for action, investment requirements for each proposed action, and expected ROI.

A key tool typically used by action teams is the type of ROI-based simulator described in this paper. The needs of the team and the ROI simulator are intermeshed. The simulator helps the team hone in on issues that deserve closer inspection, and the action team ultimately feeds investment requirements back to the simulator. Action teams use the payback function of the simulator to help develop a short list of customer issues based initially only on potential payback (i.e., raw estimates of increased customer value in the absence of cost or investment information). Ultimately, the action team revisits its initial short list of proposed strategies and refines the priorities for action based on refined ROI estimates made possible by the team's process analysis activities.

The following example provides an illustration of the method of simulation.

In 2000, the authors conducted a customer satisfaction/loyalty survey for a large North American financial institution. The client firm provided customer level information indicating types and number of products or services purchased, duration of relationship, and annual levels of revenue and profitability represented by each customer. These data were merged into a master database representing both attitudinal and behavioral measures. Based on responses to questions regarding overall satisfaction, likelihood to recommend, and desire to continue doing business with the firm in the future, each customer was placed into one of four customer loyalty segments previously defined (Secured, Satisfied, Vulnerable, Dissatisfied). Preliminary analysis indicated that the dollar value of a customer increased with the level of customer loyalty. This suggested that if a larger proportion of the customer base could be moved from "satisfied" to "secured," then the total cumulative value of the firm's customer base would increase (i.e., the method of projection). A multivariate model was fitted to predict loyalty segment membership as a function of customer perceptions and was validated with an extensive holdout sample. This formed the payback engine portion of a decision support simulator from which the dollar payback potential could be calculated for alternative hypothetical improvements in selected customer perceptions. Internal client action teams were then able to estimate investment requirements in order to enable ROI calculations. Ultimately, evaluation of the results of several alternative ROI calculations enabled managers of this financial institution to choose specific improvement strategies based on the relative superiority of their projected cost-benefit outcomes.

As with the methods of projection and direct linkage, simulation has its strengths and limitations. Since it is a hybrid of both projection and direct linkage, it carries with it all of the strengths and weaknesses already discussed for those methods. Additionally, its greatest strength lies in its ability to speak directly to the financial performance concerns of the most senior levels of management, and to be prescriptive and action oriented. The greatest weakness of the simulation approach is that simulators can be misunderstood and/or abused by senior managers and their staffs who might be tempted to use them too heavily as decision making tools rather than decision *support* tools.

To summarize, projection and direct linkage, as well as a hybrid approach that combines these two methods, all have certain strengths as well as limitations. Each method may be potentially useful in building a case for the bottom-line benefit of customer satisfaction. The key is knowing when and how to use each method most effectively.

FACTORS INFLUENCING THE APPROPRIATENESS AND VIABILITY OF THE THREE METHODS IN ALTERNATIVE INDUSTRIAL AND MARKET CONTEXTS

How can an organization determine whether to use the method of projection, the method of direct linkage, or a hybrid of the two?

A number of factors can influence how the linkage between measures of customer satisfaction, value, and/or loyalty, and financial and marketplace performance indicators, may be established or demonstrated. Among these are:

1. Availability, completeness, and structure of relevant data
2. Contextual sources of influence

Each of these factors is described below in greater detail.

Availability, Completeness, and Structure of Relevant Data

Whether an organization can or should apply the method of projection, the method of direct linkage, and/or a hybrid of the two, is dictated in part by the availability, completeness, and structure of relevant customer and financial/market performance data.

Where and **with whom** relevant data reside plays a major role in determining the best approach to linkage analysis (and, for that matter, whether linkage analysis is possible at all). Within an organization, who owns the different types of data? How are these owners accustomed to analyzing, reviewing, and/or using these data? What, if any, sources of resistance may create obstacles to acquiring and assembling all of the data required to perform linkage analyses? Even if relevant customer and financial data exist, there is no guarantee that these data can easily be obtained and used to populate a template for linkage analysis. As Schiemann (1996) has observed:

"Organizations face some significant problems when they must integrate information from (different data sources) in order to achieve alignment...Data from these different sources historically have been guarded by different functions, such as finance, human resources and marketing. These guardians have been reluctant to share information that is part of their turf. After all, information has given them power and has been their unique way of adding value to the organization. Sharing information opens them to a variety of risks — loss of ownership, control, and power — that they often would prefer to avoid."

The completeness or absence of relevant data also plays a key role in determining what/how linkage analysis is performed. Complete data means that the value of each sample unit is observed or known. For example, if the entire purchase history of a customer is known and recorded, then such a string of observations might constitute complete behavioral data for the customer. In practice, however, such data are almost never available, and the analyst instead must work with censored data, of which three types have been discussed in some detail (Wheat and Morrison, 1990):

1. Right-censored data
2. Interval-censored data
3. Left-censored data

The most common case of censoring is what is referred to as **right-censored** data. For example, if some customers did not have a chance or occasion to repeat-purchase the product of interest since their current or recent satisfaction/loyalty measures were gathered, it would not be possible (at least in the near-term) to establish the attitudinal-behavioral linkage of interest. The term right censored implies that the event of interest is "to the right" of our currently available data point. If we continue to monitor those customers' behaviors, eventually, a relevant repeat-purchase occasion may occur. However, if the purchase cycle is a relatively long one (for example, the purchase of a home), the wait may be considerable.[1]

Data **structure** (i.e., form and format) also plays an important role in determining what/how linkage analyses may be performed. For example, do all relevant data reside on the same or different platforms? How are they organized?

Generally speaking, data can be characterized and distinguished as being:

1. Cross-sectional or longitudinal
2. At the individual or aggregate level of analysis

Some analyses attempt to establish a link between customer satisfaction, value, and loyalty, and business results, based on data collected at a **single** point-in-time (or timeframe). Such data are characterized as **cross-sectional**. By way of contrast, **longitudinal** data consist of observations or measures collected over **multiple** points-in-time. This distinction has several important implications for linkage analysis. For example, the statistical tools that are appropriate for cross-sectional data (e.g., OLS regression) may be inappropriate for longitudinal data, for which other techniques may be better suited (e.g., repeated-measures ANOVA, ARIMA time-series modeling).

When the individual customer is treated as the unit of analysis, the focus is on linking that individual's satisfaction, loyalty, etc. to his/her past, recent, and/or future buying behavior. Each individual has a numerically coded value for both the customer satisfaction/ loyalty measure and the business results indicator. In contrast, aggregate models utilize group-level measures (e.g., customer segments, business units, branches and outlets, **aggregate** scores at multiple points-in-time, etc.) as the units of analysis for both satisfaction/loyalty and business results.

The level or unit of analysis, in part, dictates what analytical techniques may or may not be appropriate, and ultimately, what/how linkage analyses are performed. Also, whether individual or aggregate level data are analyzed directly impacts interpretation of and inferences made from results. For example, if aggregate level data are utilized, great care must be taken when attempting to use the results to make inferences about individual customers in order to avoid the so-called "ecological fallacy" (Robinson, 1950).

Contextual Sources of Influence

In addition to the availability, completeness, and form of relevant data, a number of contextual factors can influence an organization's ability to link measures of customer satisfaction, value, and/or loyalty, and financial and marketplace performance indicators. Among these are:

1. Competition and availability of buyer options
2. Degree of market differentiation
3. Business or market cycles
4. Consumption cycles
5. Formality of the buyer-seller relationship
6. Progressive effect of customer expectations and experiences

Each of these factors is described below in greater detail.

Competition and Availability of Buyer Options

Jones and Sasser (1995) suggest that the relationship between customer satisfaction and repeat business may vary according to the competitive environment and availability of buyer options in a given industry. These authors identify and distinguish four types of customers based on such variations:

1. **Loyalists and Apostles** - These are customers who continue to do a relatively high volume of business with a company because they are satisfied with that company, its products, and its services. Within the loyalist camp are individuals who are so satisfied, whose experiences so far exceed their expectations, that they share their strong feelings with others. They are apostles.
2. **Defectors and Terrorists** - These are customers who, because of their dissatisfaction, choose not to do repeat business with a company. The most dangerous defectors are terrorists. These are customers who have had a bad experience, and who can't wait to get back at the company by telling others about their anger and frustration.
3. **Mercenaries** - These are customers who are satisfied with a company, but who demonstrate little or no loyalty in the form of repeat business. These customers often are expensive to acquire and quick to depart. They generally do not remain in the business relationship long enough to return a profit.
4. **Hostages** - These are customers who continue to do a relatively high volume of repeat business with a company, despite their dissatisfaction with that company, because they have no alternatives and are basically stuck. However, hostages can make a company's life miserable through constant complaining and negative word-of-mouth.

Of the four types of customers, mercenaries and hostages clearly are the most challenging

(and often, troublesome) when it comes to demonstrating a direct link between customer satisfaction and market behavior or financial results. In situations in which one provider has a monopoly, such behaviors as brand switching, shifting share of purchases, etc. usually are not possible. Alternatively, the behavioral response of a hostage to dissatisfactory service may not follow a logical or consistent pattern.

Consider results from a recent study of customer satisfaction with cable television service, presented in Figure 4, in which an attempt to establish a direct link between customer satisfaction and buying behavior was made. Compare the behavioral responses of Dissatisfied cable customers to those of Satisfied ones. During the six-month period after they were surveyed, significantly more dissatisfied customers either discontinued or downgraded their use of cable service than did satisfied customers, which one would expect if customer satisfaction and buying behavior are positively related. However, note that a slightly higher percentage of dissatisfied customers actually upgraded their service than did satisfied ones. In the absence of an alternative, these disgruntled customers may have decided to bite the bullet and spend more with the cable company despite their dissatisfaction.

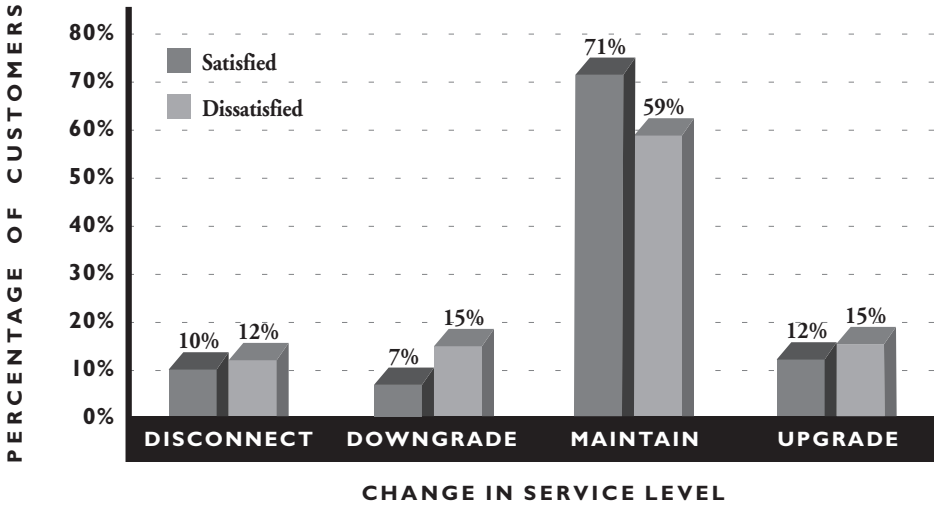
The point is that in such monopolistic market settings, it often is difficult to establish a direct, positive, and/or clear relationship between customer satisfaction and buying behavior, making the method of projection the only viable approach to linkage analysis.

Degree of Market Differentiation

To the extent that buyers perceive little or no difference in the quality of products or services provided by competitors in a marketplace, such products and services are essentially viewed as commodities, and price becomes the dominant basis of competition. In fact, lack of perceived differences among product/service alternatives is one of the main reasons that otherwise satisfied customers become "mercenaries." Under such circumstances, an organization may have considerable difficulty in linking measures of customer satisfaction or customer-perceived quality to financial or market results.

Gale (1994) describes how Ray Kordupleski and his colleagues at AT&T struggled during the 1980's to establish a link between changes in the company's index of customer satisfaction, and changes in customer retention, defection, and market share. Although AT&T consistently observed

Figure 4: Customer Satisfaction and Changes in Level of Service



customer satisfaction levels of 90 percent or higher, the company was losing customers during the same time period. Only after it was discovered that many buyers perceived they could get satisfactory or even equivalent service quality from AT&T's competitors —at comparable or even lower prices — did the company shift its focus from an index of customer satisfaction to a measure of customer value. Specifically, when AT&T turned its attention to the customer's perception of whether products/services received were "worth what you paid for them," the company was able to create a value index. Soon after Kordupleski and his colleagues began tracking this value index, they discovered that, with a few months' lag, it was strongly correlated with changes in market share.

Levitt (1983) asserts that "there is no such thing as a commodity. All goods and services can be differentiated and usually are." Nevertheless, when buyers perceive little difference in the quality of goods and services offered by alternative brands or firms, there is a good chance that these buyers will shift their basis of differentiation to price. Under such circumstances, measures of customer satisfaction and/or customer-perceived quality may have little or no direct correlation with buyer behavior, while alternative measures, such as customer-perceived value, may be more clearly linked to such behavior.

The point of the preceding illustration is that management must carefully examine the degree to which buyers differentiate among alternative brands or firms — as well as the basis for such differentiation — in order to select the most appropriate customer and/or market performance metrics for linkage analysis.

Business or Market Cycles

In some industries, buyer demand periodically outstrips the available supply of a given product and/or the ability of the producers to provide it. Under such sold-out market conditions, it may be difficult to establish a direct link between customer loyalty or preference, and actual buying behavior. For example, buyers of industrial chemicals may well have a preferred supplier for such products. However, if the preferred supplier is not able to provide this product in the quantities required by the customer (or at all), these customers probably will attempt to buy the product from an alternative supplier. In this case, the dynamics of product demand and availability take over, and the positive effects of customer satisfaction, preference, and loyalty become nearly impossible to detect — even though they might be quite evident under ordinary market conditions.

Thus, when attempting to link measures of customer satisfaction, value, and loyalty to business results, organizations must be acutely aware of the presence of such market conditions at any given time in their industry. Failure to do so could lead to the erroneous conclusion that there is no connection between customer satisfaction/preference and buying behavior. Such a conclusion, in turn, might discourage management from making necessary investments in building customer satisfaction and loyalty. An unfortunate (and ironic) consequence of such a managerial decision would be the eventual decline in business results.

Consumption Cycles

We alluded to the potential problems created by purchase and consumption cycles in connection with the earlier discussion of censored data. However, the potential impact of such cycles is worth a further look.

For products and services that are purchased and consumed on a regular and relatively frequent basis, it is not difficult to adopt an approach in which measures of the customer's satisfaction, perceived value, likelihood to buy again, etc. are linked to his/her subsequent purchases. In fact, in some industries, it may take relatively little time to establish a direct link between customer satisfaction and business results using such an approach.

In contrast, for products and services that have a relatively infrequent or long-term purchase and consumption cycle, such an approach may not be viable. If a real estate company wishes to determine the extent to which seller satisfaction leads to repeat business, that company must confront an interesting challenge: Given that ten or more years may pass before the seller once again has need of the company's services, adopting an approach in which each seller's behavior is traced to his/her satisfaction with the previous sale is neither practical nor efficient. Instead, the real estate company might opt to examine the relationship between seller satisfaction and sales volume across different geographical areas or markets (if the company's organizational structure makes this possible). Alternatively, the company could begin monitoring and correlating trends in seller satisfaction with changes in some measure of business performance — such as the incidence of repeat customers, or the percentage of clients having selected the company on the basis of seller referrals.

Formality of the Buyer-Seller Relationship

Customers who are bound by contractual obligations to buy from or to continue doing business with a firm may or may not be satisfied with that firm. Under such circumstances, the customer basically is a hostage, at least until the contract expires. Thus, during the period in which customers are contractually bound, the firm may find it difficult to establish a consistent, direct link between measures of customer satisfaction and business results, for the same reasons discussed earlier regarding market competition and the availability of buyer options.

If the formality of the buyer-seller relationship is a relevant factor, a firm may opt to: (a) employ the method of projection, focusing on the potential financial or market impact of customer intentions to new their contract (as in the insurance illustration presented earlier in the paper); or (b) begin monitoring customer satisfaction, monthly or quarterly, and correlate the results with fluctuations in revenues retained/lost from customers whose contracts are up for renewal during the same points in time.

Progressive Effect of Customer Expectations and Experiences

United Airlines recently conducted an exhaustive study of air traveler expectations and satisfaction. The study took nearly nine months to complete and included both qualitative and quantitative research conducted in eight countries.

Among the study's key findings was an inverse relationship between frequency of air travel and satisfaction with airline service.

Specifically, the study found that:

1. The top 9 percent of the industry's customers are the least satisfied with airline service.
2. This same top 9 percent generates 47 percent of the industry's revenues.

In other words, the customers who bring the industry the lion's share of its revenues are also the least satisfied. In this industry, the relationship between customer satisfaction and frequency of usage may actually be negative.

The study goes on to suggest at least two possible explanations for these findings:

1. Heightened expectations on the part of frequent travelers
2. Increased opportunity for service failures as a function of these customers' volume of air travel

Basically, both of the preceding explanations imply a sort of progressive effect of customer expectations and service consumption experiences:

1. To the extent that frequent flyers increasingly recognize their value to an airline, they may develop heightened expectations regarding the quality of service to which they are entitled. In effect, by raising the bar, these customers make it progressively more challenging for an airline to satisfy their needs and requirements.
2. The more a person flies, the greater the chance she/he will encounter some service failure (delays, cancellations, etc.). The hypothesized cumulative effect of multiple service failures would be increased customer dissatisfaction.

The preceding explanations regarding the progressive effect of customer expectations and/or consumption experiences certainly seem plausible. Of course, other factors, such as the structure and competitive dynamics of the airline industry (e.g., hub domination by a single carrier, barriers to switching such as frequent flyer programs, etc.), also may have a hand in explaining the findings. Regardless, the results of the United Airlines study illustrate how frequency of consumption, alone or in combination with other market characteristics, may impact the link between customer satisfaction and business results.

Guidelines and Recommendations

Clearly, there is no one-size-fits-all approach to linking measures of customer satisfaction, value, and loyalty to market and financial performance. As we have attempted to show, a variety of factors must be considered in order to determine whether the method of projection, the method of direct linkage, or some combination thereof is most appropriate for a given organization, market, or industry.

Mindful of the need to account for the factors discussed above, the following guidelines and recommendations are offered:

1. The organization's strategic business objectives should guide the selection of financial and market performance metrics. If a company's strategy centers on growth and expansion, then it should focus on growth rate and/or market share metrics. Alternatively, if the strategy centers on leveraging the profit potential of the existing customer base, then such indicators as average customer net present value or customer retention/longevity may be most appropriate.
2. Valuable learning can be obtained from all three of the linkage approaches discussed in this paper. The decision to use the method of projection, the method of direct linkage, or some combination of both, should be directed by an evaluation of the relevance and presence of the influential factors discussed above.
3. There is no substitute for a solid database in which measures of customer dis/satisfaction, value, and loyalty can be integrated with indicators of financial and marketplace performance. Availability, location, and ownership of customer and market/financial information may pose a significant challenge to building such a database, but this challenge must be addressed if the organization expects to go very far with linkage analysis.
4. In the short-term, both projective and cross-sectional direct linkage techniques can be used to help senior executives and other key stakeholders visualize the financial/marketplace impact of customer satisfaction, value, and loyalty.
5. In the long-term: (a) simulating the costs and benefits of alternative intervention, improvement, and/or change strategies; and (b) linking trends in customer metrics to trends in key business indicators, probably create the most favorable odds of sustaining the interest of and commitment to customer satisfaction and loyalty on the part of senior executives and other key stakeholders.

SUMMARY AND CONCLUSION

The capacity to link measures of customer satisfaction, value, and loyalty to financial and market performance indicators should be part of the architecture of any organization's performance measurement and management process. Demand continues to grow for evidence of the bottom-line impact of customer satisfaction and loyalty initiatives. Guidance and assurances are sought that investments made in managing relationships with customers, as well as those made in relevant process and quality improvements, can contribute to growth in revenues and profitability. Only by demonstrating such linkage can a strong business case for investing in customer satisfaction and loyalty be established.

Both the method of projection and the method of direct linkage offer organizations potentially useful techniques for assessing the financial or market impact of customer satisfaction, value, and loyalty. Increasingly, managers and decision makers are attempting to fuse marketing and financial metrics via a hybrid approach that combines projection and direct linkage for the purpose of performing simulation. A well-constructed simulator allows decision makers to simultaneously assess the payback potential and investment implications of alternative product, service or process improvement strategies. Such simulators can satisfy the needs of management for profitable prescriptive guidance by integrating "voice of the customer," "voice of the process," and "voice of management" information into an ROI-focused decision support tool.

The keys to using these techniques effectively are: (1) selection and integration of metrics that reflect the organization's critical success factors and business objectives; and (2) the ability to recognize and account for the relevance of (a) data availability, completeness, and structure, and (b) market competition, market differentiation, consumption and market cycles, buyer-seller relationship, and the progressive impact of customer expectations and experiences on business results.

REFERENCES AND FOOTNOTE

Allen, D. R. and Wilburn, M. (2002). *Linking Customer and Employee Satisfaction to the Bottom Line.* Milwaukee: American Society for Quality.

Andrews, Frank M., Klem, Laura, O'Malley, Patrick M., Rodgers, Willard L., Welch, Kathleen B., Davidson, Terrence N. (1998). *Selecting Statistical Techniques for Social Science Data: A Guide for SAS® Users.* Cary, NC: SAS Institute Inc.

Anton, J. 1997. *Call Center Management by the Numbers.* West Lafayette: Purdue University Press.

Brandt, D. R. (1998) "An 'Outside-In' Approach to Defining Performance Targets for Measures of Customer Service and Satisfaction." in J.A. Edosomwan, (ed.), *Customer Satisfaction Management Frontiers II*, Fairfax, Virginia: Quality University Press; pp. 7.1-7.11.

Box, G. E. P., and Cox, D. R. (1964). "An Analysis of Transformations." *Journal of the Royal Statistical Society* B 26: 211-43.

Gale, B. T. (1994). *Managing Customer Value.* New York: Free Press.

Grapentine, Terry. "Managing Multicollinearity." *Marketing Research* (Fall 1997), 11-21.

Hair, Joseph F. Jr., Anderson, Rolph E., Tatham, Ronald L., and Black, William C. (1998). *Multivariate Data Analysis.* Upper Saddle River, NJ: Prentice-Hall, Inc.

Cannie, J.K. 1991. *Keeping Customers for Life.* New York: American Management Association.

Charles, B. 1999. Linking research and revenue. *Quirk's Marketing Research Review* 13 (October): 14, 70-72.

Hart, C.W.L., Heskett, J.L., and Sasser, Jr., W.E. 1990. The Profitable Art of Service Recovery. *Harvard Business Review* 68 (July-August): 148-156.

Heskett, J., Jones, T., Loveman, G., Sasser, E., Schlesinger, L. (1994). Putting the Service-Profit Chain to Work. *Harvard Business Review* (March/April): 164-171.

Heskett, J. L., Sasser, Jr., W. E., and Schlesinger, L. A. (1997). *The Service Profit Chain: How Leading Companies Link Profit and Growth to Loyalty, Satisfaction, and Value.* New York: Free Press.

Jones, T. and Sasser, G. 1995. Why Satisfied Customers Defect. *Harvard Business Review* (November/December): 88-99.

Johnson, M. D. and Gustafsson, A. (2000). *Improving Customer Satisfaction, Loyalty, and Profit: An Integrated Measurement and Management System.* San Francisco: Jossey-Bass.

Kaplan, R. S. and Norton, D. P. (1996). *The Balanced Scorecard.* Cambridge, Massachusetts: Harvard Business Press.

Levitt, T. 1983. *The Marketing Imagination.* New York: The Free Press.

Maruyama, Geoffrey M. (1998). *Basics of Structural Equation Modeling.* Thousand Oaks, CA: SAGE Publications, Inc.

Mosteller, F., and Tukey, J.W. (1977). *Data Analysis and Regression.* Reading, MA: Addison-Wesley.

Ramaswamy, R. (1996). *Design and Management of Service Processes.* Reading, MA: Addison-Wesley.

Robinson, W. S. (1950). "Ecological Correlations and the Behavior of Individuals." *American Sociological Review* (June): 351-357.

Rucci, A., Kirn, S., and Quinn, R. (1998). "The Employee-Customer-Profit Chain at Sears." *Harvard Business Review* (January/February): 83-97.

Rust, R. T., Zahorik, A. J., and Keiningham, T. L. (1994). Return on Quality: *Measuring the Financial Impact of Your Company's Quest for Quality.* Chicago: Probus.

Rust, Roland T., Zeithaml, Valarie A., and Lemon, Katherine N. (2000). *Driving Customer Equity.* New York: Free Press.

Reichheld, F.F. 1996. *The Loyalty Effect.* Boston: Harvard Business School Press.

Rose, S. 1990. The Coming Revolution in Credit Cards. *Journal of Retail Banking* 12 (Summer): 17-19.

Schiemann, W. (1996). "Driving Change Through Surveys:Aligning Employees, Customers, and Other Stakeholders," in A. Kraut (ed.), *Organizational Surveys*, San Francisco: Jossey-Bass.

Technical Assistance Research Programs (TARP). 1986. *Consumer Complaint Handing in America: An Updated Study.* Washington, D.C.: The Office of the Special Advisor to the President for Consumer Affairs.

Tornow, W.W. and Wiley, J.W. 1991. Service quality and management practices: A look at employee attitudes, customer satisfaction, and bottom-line consequences. *Human Resource Planning,* 14: 117-128.

United Airlines. 1997. United Airlines Uses Findings to Develop New Customer-Driven Initiative. United Airlines Press Release. May 15, 1997.

Vavra, T.G. 1997. *Improving Your Measurement of Customer Satisfaction* Milwaukee: ASQC Quality Press.

Wheat, Rita D. and Donald G. Morrison (1990), "Assessing Purchase Timing Models: Whether or Not is Preferable to When," *Marketing Science,* 9 (2): 162-170.

Wiley, J.W. 1996. "Linking Employee Survey Results to Customer Satisfaction and Business Performance," *In Organizational Surveys,* edited by A. Kraut. San Francisco: Jossey-Bass.

[1] Interval-censored data reflects uncertainty as to the exact times the event took place within an interval. This type of data frequently comes from tests or situations where the object of interest is not constantly monitored. Current customer satisfaction data levels with the bank for instance could be function of the most recent, or the two most recent transactions. If customer satisfaction data are not observed after every transaction, then the data might be interval censored. Finally, left-censored data means that the data to the left of the point in time are missing. For example, we may have information only on the two most recent purchase transactions of the customers, with no record of previous transactions. Such data are left-censored. Overall, censored data are more often than not observed in customer satisfaction research because of resource constraints, and other issues such as the inability to survey respondents frequently.