Measuring Customer Satisfaction for Strategic Management

For financial success, a restaurant's management must make the connection between service attributes and return patronage. Here's a way to establish that connection

by Laurette Dubé, Leo M. Renaghan, and Jane M. Miller

CUSTOMER SATISFACTION is often used as an indicator of whether customers will return to a restaurant. While there is no guarantee of a satisfied customer's repeat visit, it is nearly certain that a *dis*satisfied customer will not return. An analysis of the elements or attributes of customer satisfaction should provide clues regarding what actions a food-service manager should take to increase the likelihood that customers will come back. Apparently that analysis is not often completed. The impressive rate of failure in the food-service industry suggests that management finds the goal of converting customer satisfaction into financial success an elusive one. We believe that restaurant failures are partly a result of management's lack of strategic orientation in measuring and focusing on customer satisfaction.

Managing for optimal customer satisfaction requires that satisfaction data be used to suggest positioning strategies that will help a business carve a niche. Such data can also help fine-tune

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Consumers perceive service quality in terms of a series of dimensions that can be measured and may be interchanged.

the product or service so that it meets the needs of the target market segment. Satisfaction data should lead to constructive action plans and improved resource-planning decisions, making cost and quality controls more effective. Sustaining a firm's competitive advantage and long-term profitability may well rely on the integration of customer satisfaction into the firm's strategies and operations.

In this article we present a study based on a series of scenarios that are intended to capture the elements of customer satisfaction. Statistical comparison of the customers' reactions to the scenarios is designed to provide strategic information for managers regarding the areas that present the highest potential for improvement of guest satisfaction. Ultimately, a manager would take this information to analyze the areas that, if improved, would have the largest impact on satisfaction, taking into account costs and risks. Our study covers the first portion of this two-part decision—namely, the attributes of customer satisfaction. It will be up to the restaurant manager to determine which aspects could be most economically addressed in her or his individual operation.

"Restaurado"

We conducted the study in a small, independently owned, upscale restaurant where satisfaction levels had not resulted in maintaining sufficient sales to ensure financial success. The restaurant served innovative food, emphasized fresh ingredients, used American-style service, and sported a contemporary decor. Food and wine were competitively priced. An earlier survey in this restaurant, which we will call Restaurado, had revealed a high level of satisfaction (mean rating of 4.3 on a 1-to-5 scale). However, sales and profits had diminished during the two years previous to the study.

Notes on Methodology

The following are some aspects of the research methodology:

- To eliminate the gap between customer satisfaction and repeat purchase, we directly assessed the intention to return on a similar occasion.
- To capture the complexity of customer satisfaction with food service, we pretested a list of attributes selected from industry practice and research to cover the generic dimensions that have been shown to capture the technical, interpersonal, and long-term relationship of quality for many types of services.[1]
- To enable respondents to develop a precise mental image of the dining experience, we developed scenarios of dinners similar to what respondents had just experienced at the restaurant.
- We used conjoint analysis to assess the relative weight of the attributes of the restaurant experience in post-purchase reaction without requiring participants to form isolated importance ratings. We investigated the tradeoffs that customers would allow among those attributes and computed the relative utility assigned to each attribute.
- To get more-precise data, we tested whether that tradeoff process would be sensitive to differences in purchase occasions (i.e., business or pleasure).
- To identify the most highly desired service attributes, those that could help increase repeat purchases the most, we measured the attractiveness levels of service attributes that differed from the current offerings at Restaurado.
- To identify directions for strategic moves, we measured customers' perceptions of Restaurado in terms of the different service attributes and compared them with the preferred level, taking into account their relative importance in the repeat-purchase decision.—*L.D., L.M.R., J.M.M.*

[1]V.A. Zeithaml, L.L. Berry, and A. Parasuraman, "Communication and Control Processes in the Delivery of Service Quality," *Journal of Marketing*, Vol. 52, April 1988, pp. 135–156.

Overview. Participants in the study, who had just dined at Restaurado, were presented with a series of scenarios describing hypothetical dinners they could have at a similar restaurant (see box at left and examples in Exhibit 1). The scenarios described dining experiences similar to those they had just experienced at the restaurant, including service attributes believed to be important to customer satisfaction and repeat purchase. After imagining each experience, respondents were asked how likely they would be to return to the restaurant for a similar occasion. Respondents also rated Restaurado's actual performance on the same service attributes.

Dimensions of quality. Recent studies in service marketing suggest that consumers expect to experience and perceive service quality in terms of a series of empirically observable dimensions. The dimensions of quality were first identified in appliance repair, retail banking, long-distance telephone service, securities brokerage, and credit-card services. That concept of service quality has since been profitably used for a range of services, but it is still absent from the food-service arena.[1]

The dimensions, which seem to apply to virtually all service businesses, include tangibles (physical goods and facilities, equipment, and appearance of personnel), reliability (ability to perform the promised service dependably and accurately), responsiveness (willingness to help customers and provide prompt service), assurance (knowledge and courtesy of employees and their ability to inspire trust and confidence), and empathy (caring and individualized attention the firm provides its customers).

The pretest. A pretest was conducted to select a set of attributes that could capture the tangible and intangible aspects of the restaurant experience and the long-term dimension of service quality, which is intrinsically related to repeat purchase.

From the variables reported in academic and commercial research as good predictors of customer satisfaction, we developed a pretest list of 35 attributes related to customer satisfaction and service quality in restaurants. A pretest sample of 55 respondents (34 of them women) rated the importance of each of the 35 attributes in their decision to patronize an upscale restaurant.

We subjected those ratings to an exploratory factor analysis with varimax rotation to select the set of attributes to use in developing the scenarios. The extracted structure comprised 10 factors with an eigenvalue larger than 1, which accounted for 77 percent of the variance. That structure corresponded to the dimensions of service quality: tangible elements, reliability, responsiveness, assurance, and empathy. As one would expect, the tangible dimension was much more finely differentiated than the remaining four, accounting for the most factors.

Owing to normal cognitive limitations and the data-collection strategy we had chosen (a self-administered questionnaire completed at the respondent's home), we did not want to present more than seven attributes to the respondents. Therefore, within each of the four nontangible factors, we selected the attribute with the highest factor loading. The highest attribute within each of the three tangible factors with the highest eigenvalue completed the series of attributes to be included in the conjoint task.

We carefully selected the sequence of attributes and their wording to reflect actual dining

EXHIBIT 1
Examples of dining scenarios

Scenario A: You are seated at your table *as soon as you arrive.* The dining room atmosphere is *private and quiet.* The menu offers an extensive variety of choices, with *more than 20 entrée items.* You find that the food preparation and presentation are *not consistent* with your last visit. Your server is *very helpful* in answering your questions or offering suggestions about food and wine and is *attentive* throughout the evening and anticipates your needs. The food is *tastier* than in other similar restaurants.

Scenario B: You are seated at your table *as soon as you arrive.* The dining room atmosphere is *noisy and not private.* The menu offers a limited variety of choices, with *fewer than 10 entrée items.* You find that the food preparation and presentation are *not consistent* with your last visit. Your server is *not very helpful* in answering your questions or offering suggestions about food and wine but is *attentive* throughout the evening and anticipates your needs. The food is *not as tasty* as in other similar restaurants.

Scenario C: The evening at the restaurant begins with you *waiting for your table 15 minutes longer than you anticipated.* The dining room atmosphere is *noisy and not private.* The menu offers an extensive variety of choices, with *more than 20 entrée items.* You find that the food preparation and presentation are *not consistent* with your last visit. Your server is *very helpful* in answering your questions or offering suggestions about food and wine, but is *not attentive* during the evening and fails to anticipate your needs adequately. The food is *tastier* than in other similar restaurants.

[1] V.A. Zeithaml, L.L. Berry, and A. Parasuraman, "Communication and Control Processes in the Delivery of Service Quality," *Journal of Marketing,* Vol. 52, April 1988, pp. 135–156.

experiences. In all scenarios the price of the dinner was the same.

The sample. Having conducted the pretest, analyzed its findings, and developed the questionnaire, we recruited respondents as they were leaving the restaurant. Over a period of four evenings (two weeknights and two weekend nights), the dinner checks were presented to patrons along with a card informing them that they would be asked to participate in a survey as they left the restaurant. A total of 127 customers agreed to participate in the survey.

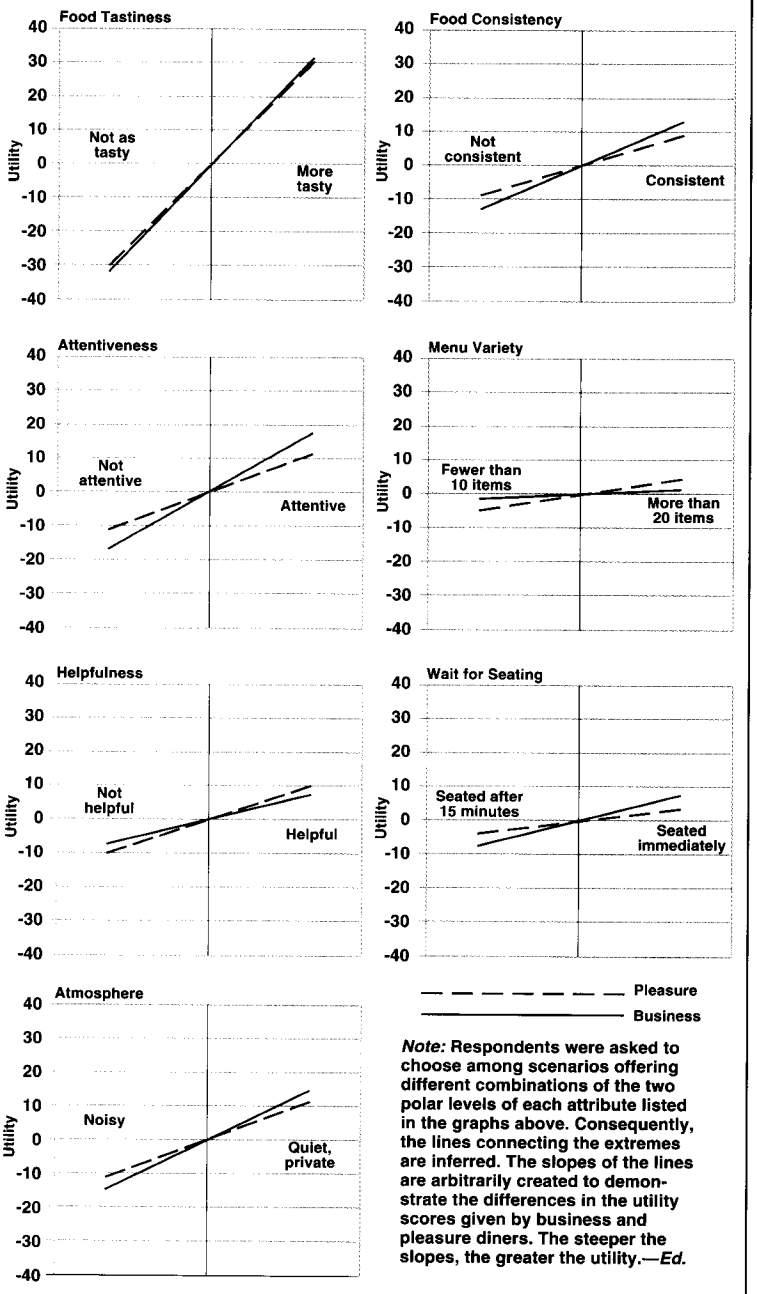
As diners left the restaurant, we gave them questionnaires in preaddressed, stamped envelopes to be returned in 12 days. As an incentive we offered a chance to win a gift certificate for another meal at the restaurant. Fifty-seven of those who took the questionnaires completed them; 30 of the latter group were women.

Respondents were familiar with upscale restaurants (mean of 7.43 on a 1-to-9 scale of familiarity), and on average they had eaten 3.5 dinners in upscale restaurants in the prior three months.

Scenarios of dining experiences. Each scenario combined the same seven attributes, selected on the basis of the results of the pretest. As can be seen in Exhibit 1, within a given scenario each attribute is presented at either of two extremes.

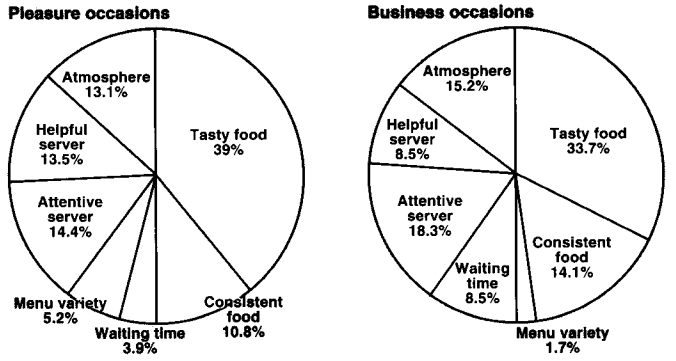
We carefully selected the sequence of attributes and their wording to reflect actual dining experiences. As stated earlier, in all scenarios the price of the dinner was the same (and at the level of the average check at Restaurado). Each respondent saw 16 dinner scenarios, randomly presented in three different orders. In this way, we

EXHIBIT 2
Average utility values of service attributes



Note: **Respondents were asked to choose among scenarios offering different combinations of the two polar levels of each attribute listed in the graphs above. Consequently, the lines connecting the extremes are inferred. The slopes of the lines are arbitrarily created to demonstrate the differences in the utility scores given by business and pleasure diners. The steeper the slopes, the greater the utility.—*Ed.***

EXHIBIT 3
Relative importance of service attributes in repeat-purchase intention



followed the experimental design required to apply conjoint analysis, described in the next section.

Half the respondents were asked to imagine that the whole series of hypothetical dinners were for business, while the other half were asked to imagine that they were for pleasure. The assignment of respondents to one of those two groups was made randomly.

Respondents were asked to express the likelihood of their choosing Restaurado for a similar dining occasion. For each of the 16 scenarios, respondents indicated on a scale of 0 to 100 how likely they were to select the hypothetical restaurant in the future.

Perceptions of Restaurado. After they considered the 16 scenarios, respondents were asked to rate Restaurado's actual performance on the same seven attributes. The two extremes of the attributes were presented as the anchor points on a 1-to-7 scale, and respondents were asked to circle the number that best corresponded to their perceptions of the last dinner they had eaten at Restaurado.

Conjoint Analysis

Customer satisfaction with a meal eaten in a restaurant results from a confluence of several attributes. Knowing that one attribute is more important than another explains little of how purchase and repeat-purchase decisions are made, because the attributes interact. The importance of one attribute may depend on the presence or absence of other attributes that, by themselves, are less important. Conjoint analysis gives the opportunity to "measure relative values of things considered jointly which might be unmeasurable taken one at a time."[2]

Conjoint analysis assesses the relative weights of different attributes simultaneously. Respondents do not have to evaluate the importance of each attribute, one at a time, unrealistically imagining that all the others are kept constant. Conjoint analysis was introduced into marketing research in the early 1970s as a survey-based technique for measuring consumers' tradeoffs among product and service attributes.[3]

Respondents are shown profiles of products or services, each profile made up of a set of attribute levels. The specific combination of attributes is drawn from a balanced experimental design. Each respondent receives a set of profiles and evaluates each profile's worth to him or her.

Conjoint analysis has sometimes been used to design hospitality services.[4] For example, Marriott used conjoint analysis to design its Courtyard concept, illustrating the application of consumer-based marketing information to the design of products and services, even those as complex as a hotel chain aimed at specific target segments.[5]

In this study we developed conjoint profiles by combining different levels of service attributes of a dining experience in an upscale restaurant and presenting them as brief scenarios.

Significant Service

The study revealed several issues that managers should consider in their search for ways to stimulate customers to return. In this section we address the most important of those issues. We attempt to identify the relative contribution of the service attributes to customers' decisions to come back. Then we explore some

[2] Richard M. Johnson, "Trade-off Analysis of Consumer Values," *Journal of Marketing Research*, Vol. 11, May 1974, p. 121.

[3] Paul E. Green and Vithala R. Rao, "Conjoint Measurement for Quantifying Judgmental Data," *Journal of Marketing Research*, Vol. 8, August 1971, pp. 355–363; and Paul E. Green and Yoram Wind, *Multiattribute Decisions in Marketing: A Measurement Approach* (Hinsdale, IL: Dryden, 1973).

[4] Y. Wind, P.E. Green, D. Shifflet, and M. Scarbrough, "Courtyard by Marriott: Designing a Hotel Facility with Consumer-Based Marketing Models," *Interfaces*, Vol. 19, No. 1 (1989), pp. 25–47.

[5] See: Christopher W.L. Hart, "Product Development: How Marriott Created Courtyard," *The Cornell Hotel and Restaurant Administration Quarterly*, Vol. 27, No. 3 (November 1986), pp. 68–69.

EXHIBIT 4
Illustration of the tradeoff process (business occasion)

Scenario	Attribute Levels	Overall utility
D	Wait for table 15 minutes more than anticipated Dining room private and quiet Menu variety extensive Food preparation and presentation not consistent with last visit Server not helpful in answering questions and offering suggestions Server attentive, anticipates needs Food tastier than at other similar restaurants	55.58
E	Seated at table immediately Dining room private and quiet Menu variety extensive Food preparation and presentation consistent with last visit Server helpful in answering questions and offering suggestions Server attentive, anticipates needs Food not as tasty as at other similar restaurants	53.12

of the strategic moves that may influence operations so as to maximize the chances of a customer's return.

Coming back. We analyzed the issues of what makes customers come back and the extent to which each service attribute independently contributes to repeat-purchase intention. Using a series of regression analyses, we estimated the power of the different service attributes in predicting customers' intentions to return to the hypothetical restaurant. For both purchase occasions (business and pleasure), all seven service attributes had a significant impact on repeat-purchase intentions (all $p < .01$).

Knowing that each attribute's effect is significant is the first step. We needed to determine how the guests responded to variations in the *levels* of service attributes that constituted the scenario of a dinner. Using conjoint analysis, we captured the relationship between the 14 attribute levels (two extremes for each of the seven attributes) and the repeat-purchase intention.[6]

[6]Joseph F. Hair, Jr., Rolph E. Anderson, and Ronald L. Tatham, *Multivariate Data Analysis*, 2nd ed. (New York: Macmillan, 1987).

Changes in the levels of six of the seven service attributes induced significant changes in repeat-purchase intention for both business and pleasure diners (all $p < .05$). But the six variables significant to business diners were different from those that affected pleasure diners. Pleasure diners were less sensitive to the time spent waiting for a table but cared about menu variety, while respondents having a business dinner were less concerned about menu variety but cared about time spent waiting.

Both groups reacted significantly to changes in the other five attributes, which were food tastiness, server attentiveness, food consistency, server helpfulness, and atmosphere. However, significant differences appeared between the two groups in the utility attached to attentive service (Exhibit 2). Respondents having dinner for business were more sensitive to the level of service attentiveness ($p \leq 0.05$) than those having dinner for pleasure.

Relative Importance

The relative importance of a service attribute depends on how much the repeat-purchase intention changed when the level of the attribute changed. The variation accounted for by each service attribute corresponds to the range of utility scores for the attribute—or the difference between the utility scores for the two levels. For example, the range of the utility scores for food tastiness in the pleasure situation was 61.16, the difference between –30.58 and +30.58.

The relative importance of an attribute is the percentage of that attribute's range in relation to the total variation. The total variation in the repeat-purchase intention (157.88) is the sum of the score ranges of each attribute. The results are illustrated in Exhibit 3.

Although food quality is far above all other attributes in terms of importance, it still accounts for only 39 percent of the final decision to repeat a purchase in the pleasure situation and 34 percent in the business situation. It also appears that the relative importance of the service attributes in determining repurchase intention is sensitive to the purchase occasion. Although business and pleasure respondents both placed the greatest importance on food taste and the second greatest on attentive service, there the similarities ended.

Tradeoffs. Since each service attribute carries a different weight in the repeat-purchase decision, conjoint analysis can tell us what kind of tradeoffs the customer will accept. That is, will a customer, say, accept a reduction in menu diversity in exchange for more attentive service? The answers to questions like that are of critical importance for managers, since it is almost impossible for a food-service operation consistently to deliver the ideal value of every service attribute.

Potential for Improvement

As part of the consideration of costs and benefits of any service improvement, a manager must determine the potential presented by each service attribute in terms of satisfaction or repeat-purchase improvement. That potential can be estimated on utility-value scales. Let us view the utility score of an attribute as the value to the consumer of getting an improvement from the unfavorable to the favorable level of an attribute. We have seen that the difference in utility between those two extremes determines the importance of an attribute in the decision to return to a restaurant.

To compute the potential for satisfaction improvement of each service attribute for a given target market (and in our case, for a specific purchase occasion, business or pleasure), one first has to estimate the incremental utility associated with the improvement in the attribute. The incremental utility is the additional satisfaction resulting from an improvement in service. The potential for improvement corresponds to the maximum incremental utility, which is the magnitude of the discrepancy between the ideal level and the patron's actual perceptions of a dinner at the restaurant in question.

In calculating that utility, we assume that there is a constant, linear relationship between service improvement and the customer satisfaction that leads to repeat purchase. That is, the higher the level of an attribute, the higher the likelihood of repeat purchase. In fact, the respondents were instructed to assign scores based on their likelihood of repeat purchase. We can assign a utility value to the distance separating the high and low levels on the scale. If that value is divided into intervals, each interval will have an equal share of the utility.

For example, analysis of the respondents' ratings of the high and low levels of service attentiveness during a pleasure meal resulted in marginal utility extremes of +11.40 and –11.40. The difference between the two values is 22.80. To superimpose a seven-point scale on that range, where 1 corresponds to a marginal utility of –11.40, 4 to a utility of 0, and 7 to a marginal utility of +11.40, we divide it into six intervals, each of which has a value of 3.80.

If the average score for a restaurant's service attentiveness is 6, that corresponds to a marginal utility value of 7.60, and the potential for improvement is 3.80 (the ideal utility value minus the actual utility value). If the average score is only 3, that corresponds to a utility value of –3.80 and the potential for improvement is 15.20.—*L.D., L.M.R., J.M.M.*

The overall utility (or value) of two very different dining experiences could be equal.

Conjoint analysis posits that as long as the decrease in utility from one change is offset by an increase in utility from another change, a customer should be as satisfied or as likely to return to a restaurant after the changes as before. In other words, the overall utility of two scenarios, which may be perceived as very different by customers, could be equal. The utility of a given scenario—in this case a dinner—corresponds to the sum of the utility associated with the level of the service attributes. We found the utility values of the 16 scenarios varied from 12.20 to 71.33.

Respondents were, indeed, willing to trade off levels of service attributes as they expressed their repeat-purchase intentions (see Exhibit 4). The overall utility of scenarios D and E are about equal (55 and 53) for business respondents; that is, business diners would have been about equally likely to return after either of those two dining experiences. However, the two options involve important differences in terms of priority of actions, resource allocation, and various other managerial decisions. That finding confirms that a rich diversity of options may be available for managers who want to improve repeat patronage.

That tradeoff process is also sensitive to the purchase occasion. Pleasure diners judged scenarios D and E as having

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EXHIBIT 5
Potential for improvement at Restaurado

Attribute	Actual perception	Ideal utility	Actual utility	Potential for improvement
Food quality	5.4	30.58	14.27	16.31
Menu variety	4.3	4.07	0.41	3.66
Atmosphere	5.3	10.37	4.50	5.87
Food-quality consistency	5.9	8.56	5.42	3.14
Waiting time	6.7	3.08	2.77	0.30
Waitstaff attentiveness	4.3	11.40	1.14	10.26
Waitstaff helpfulness	5.4	10.67	4.98	5.69

three times the difference in utility than that expressed by business diners.

Potential for Improvement

Since resources are almost always limited, managers must establish priorities among the strategic moves that are likely to improve a customer's repeat purchase. Knowing the relative importance of the different service attributes and the tradeoffs that customers are willing to make is an important element in this decision, but it is not sufficient to enable managers to pinpoint actions that could generate the largest increase in satisfaction or repeat-purchase intention.

The key is to compare customers' existing perceptions with those that might result from changes in service attributes. In guiding managers toward the best strategic moves, we need to find a common index to compare the expected satisfaction or repeat-purchase increase for a given amount of change in the different service attributes, taking into account the customers' current perceptions of Restaurado. We call that index the "potential for improvement."

For each service attribute, we can compute the potential for improvement by comparing customers' perceptions of the restaurant's actual service with their preferred level of the attribute, derived from the tradeoff they made in rating the set of hypothetical dinners (see box, preceeding page). The results of the analysis for the market segment of pleasure occasions are presented in Exhibit 5.

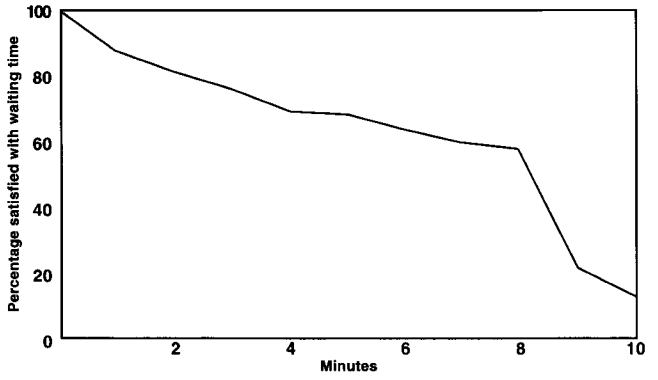
Note that we cannot compute the potential for improvement until we have transformed measures of preferred level and actual perceptions to a common basis (utility value). The higher the potential-for-improvement number for an attribute, the greater effect a change in the attribute should have on repeat purchase.

As shown in Exhibit 5, Restaurado's management could make improvements in each service attribute except for waiting time, which is close to the respondents' ideal. Improvements that could have the greatest impact on repeat purchase are related to food quality and service attentiveness.

Strategic Management

We are now at the point where the study results leave off and the manager takes over. The manager must decide whether the expense of making the necessary investment in improving food quality and service attentiveness will garner a sufficient return on investment from additional repeat purchases at Restaurado. To identify the most-profitable

EXHIBIT 6
Effect of waiting time on customer satisfaction



actions, the manager must place values (in terms of money, time, or trouble) on the investment in each service attribute required to achieve the targeted increase in repeat patronage. In other words, the manager still needs to pinpoint the service attribute with the highest potential for profitable improvement, which is the one with the highest ratio of marginal increase in repeat purchase over marginal-cost increase.

We calculated the potential for improvement in repeat purchases —the numerator of the ratio— using the data from the market study on customer satisfaction. This study does not address the denominator of the ratio— associated with the modifications required in a service attribute to change customers' perceptions. That figure must be determined by managers, as they translate customer satisfaction into operational language, using operational standards or measures of product performance. Customers' perceptions of each service attribute require interpretation.

One potential trap in this process is that managers must be careful not to inject too much of their own beliefs and feelings into the assessment. Research in service marketing shows that a significant gap may exist between customers' expectations and the assessment by managers of those expectations.[7]

For each potential improvement in service design, managers must estimate the marginal change in satisfaction or repeat purchase that would result from a given change in the operational standard. Marketing and operation research should develop innovative techniques to track the relationship between different levels of operational performance and customer satisfaction ratings, so that actions to be taken—and the results thereof—can be easily identified (see Exhibit 6).

Suppose that management wants to address the amount of time customers have to wait before being seated, a factor that is significantly related to business customers' assessment of service quality. To get a sense of the probable boost in satisfaction resulting from a reduction of waiting time, the manager can make a comparison of relative-satisfaction ratings (from comment cards) to the actual waiting time (from quality-control data).

[7] Zeithaml, Berry, and Parasuraman, pp. 135–156.

At this point, systematic and creative thinking is appropriate. If management focuses too early on only a few practical solutions or physical measurements, it may miss creative opportunities. Perhaps additional staff is the answer, but that's an expensive choice for most restaurateurs. Instead, the manager might pare down the menu or offer early-bird or late-lunch specials to bring more guests in before or after the peak hours (or both). Perhaps the real issue involves when guests are seated *somewhere*, not just in the dining room. Perhaps an appetizer (or an entire meal) in the lounge will reduce the customer's perception of a lengthy wait for service and thereby improve guest satisfaction. On the other hand, since atmosphere has a fairly high utility for business diners, perhaps seating them in the lounge would be a mistake. The manager would have to assess the tradeoff.

Once managers have evaluated the operational impact of satisfaction on repeat-purchase improvement, they have the precise information they need to compute the costs of those improvements.

Just as the guest's overall experience involves tradeoffs among different attributes, the manager must determine the tradeoffs among the possible courses of action. If a manager's analysis is accurate, the chosen course will provide the greatest guest satisfaction for each unit of cost, within a reasonable level of risk.

While the numbers may not be firm, a manager still can estimate costs and benefits of a given action and compare those with other potential actions. The result should be a knowledge-based strategy for improving guest satisfaction and increasing the incidence of repeat purchases. **CQ**