Making customer satisfaction measures work

Customer Satisfaction Index - the emperor with no clothes

By Chuck Chakrapani

CSM: Does it really help?
Almost every large corporation these days seems to be doing customer satisfaction studies. But do these studies really help the organization to move forward in creating satisfied customers? Do customer satisfaction measurements really work? Do customer satisfaction measurements really tell us anything? Is CSI a meaningful measure that can be used to compensate employees?

Such questions have been asked not only by puzzled and unhappy customers but by people who have looked closely into these aspects of measurement (for instance, see *Quality on Trial* by Howe, Gaeddert and Howe or *Keeping Score* by Brown). And for a good reason. As Reichheld points out in his book *The Loyalty Effect* "One of the least reliable, and most common [measures in use today] is customer satisfaction ...It is not that customer satisfaction does not matter; it matters a great deal. It is the manner, context and priority of satisfaction measurement that has become a problem."

It is debatable whether we should completely give up on customer satisfaction measurements and rely on hard measures such as repurchase behaviour. In this series of articles, I will not attempt to examine the pros and cons of customer satisfaction vs. loyalty or some other measure. Rather - since customer satisfaction is being measured by many organizations anyway - we will examine why customer satisfaction measurements, as practised today, appear ineffective even in achieving the limited objective: of warning us about existing or developing customer dissatisfaction.

The quest for the holy grail
Most large companies I know that carry out customer satisfaction studies have customer satisfaction indices (CSI). Usually, the index is a single number which management believes will tell them how the company is doing as far as customer satisfaction is concerned. The naive faith in this magical number is so great that many companies use it to compensate employees. Considering the importance that many companies attach to this number, it is time that we took a closer look at this measure.

Understanding CSI
What exactly is a Customer Satisfaction Index? It is simply an average of all attributes that are believed to contribute to customer satisfaction. Since different attributes can contribute differently to the overall customer satisfaction, the individual attributes are weighted to reflect this reality. This is the essence of a customer satisfaction index. Everything else is detail.

A 'sophisticated' way of creating a CSI

Creators of CSIs go through several steps in creating the index. For instance, they may do a correlation analysis or factor analysis of all attributes believed to be related to customer satisfaction. The purpose is to eliminate duplicate variables or near-duplicate variables, make the attribute list compact and reduce the problems of multi-collinearity. Then they may use coefficients of determination or simple or multiple regression analysis to identify the contribution of each variable to overall satisfaction. Or they may do a principal components analysis to identify the best combination of variables that would account for most variability. Following this, they could create an initial model which attaches weights to different attributes commensurate with their contribution to satisfaction. Then they may carry out a sensitivity analysis to test the effect of eliminating or adding different variables. Finally model creators may test this on a hold-out sample or on a new survey.

CSI does not have to be based solely on survey data. It an take into account factors such as repeat buying, volume of purchase, complaints recorded and market share. No matter what it includes, the basic idea is the same: CSI is a weighted combination of different attributes.

Usually customer satisfaction is reduced to one single number. The movement of this number is watched eagerly (and with trepidation if it is linked to compensation) by those who are charged with the task of keeping customers happy. (CSI does not have to be a single number. For instance, AT&T has four indices. But the basic idea is the same - summarize large quantities of data into very few - typically one - number.)

So what's wrong?

CSIs are appealing. The logic of creating CSIs appears flawless: we choose only those variables that contribute to customer satisfaction, we take into account the importance of each attribute by weighting it appropriately, we avoid the problem of multicollinearity and we validate it on a new sample. So what is the problem? Why can't we use CSI to gauge our performance and to compensate our employees?

CSI is insensitive

The greatest weakness of CSIs is that most of them are insensitive. This weakness is inherent in the process of creating the index itself, irrespective of the competence and sophistication of the index creator. Let me illustrate this point using a fictitious customer satisfaction index. (In this illustration, I use only customer survey data. But even if the CSI is based on other variables, such as repeat purchase the implications are the same).

Customer satisfaction index=

.52 x Satisfaction with On-time delivery
+.31 x Satisfaction with After sales service
+.18 x Satisfaction with Product quality
+.09 x Satisfaction with Responsiveness

If the average rating on the four attributes are 7.8, 8.1, 8.5 and 7.9 respectively, then using the above formula we will arrive at a CSI score of .8.8 (.52x7.8+.31x8.1+.18x8.5+.09x7.9). The index shows that On-time delivery is the most highly weighted in determining the overall customer satisfaction and hence the CSI. Suppose that there is a serious problem with on-time delivery and 10% of the customers

are seriously affected. Suppose further that those that are affected lower their rating by 2 full points. For the sake of clarity, let us also assume that all other ratings remain exactly the same. This will bring down the average rating of on-time delivery to 7.6 from 7.8 (7.8x90%+5.8x10%). The CSI will now be 8.7.

So here we have a situation where 10% of customers suddenly lowered their ratings by an unmistakable margin of two full points on the most important attribute and yet the CSI shows hardly any movement, a barely noticeable shift from 8.8 to 8.7. Any institution that uses CSI as a major measure to track customer satisfaction or to spot problems before they become disasters can hardly hope to achieve their goals this way.

Many CSI reports also contain the averages of component variables, usually in the form of bar charts. Without proper analysis, such bar charts may not alert us to the serious problems that might be affecting customer satisfaction. In the above example, while CSI shows hardly any movement, the critical variable - On-time delivery - hardly shows any alarming movement either (7.8 to 7.6).

Am I exaggerating the dangers of using CSI to track customer satisfaction? I don't believe so. If anything, this illustration understates the danger. Most CSIs use a considerably larger number of variables. An important variable that may be going out of control with a portion of our customers will be completely swamped by other variables which show no change.

It is also possible that CSI can actually go up in the above example, even though 10% of our customers are seriously upset about not receiving the product on time. This can happen if the averages of some of the non-affected variables go up through random fluctuations.

Using CSI as a sole - or even as a major - measure of customer satisfaction can mislead us by hiding the problem until it becomes so big that it cannot be hidden. By then it may be too late. Using the CSI this way is akin to driving using only the rear-view mirror. It can work when the road is straight and there are no dangers ahead. But you cannot drive safely this way under varying road conditions.

CSI is subject to model estimate errors

Earlier we showed you how CSI can remain invariant and hide potential problems. It can also do the reverse - show movements when everything is static. Such movements can occur either upwards or downwards. When CSIs are used to compensate an employee, department or branch office, the resulting index and thus the allocation of compensation not relate at all to customer satisfaction. How so? Consider how CSIs are created in the first place. They are simply weighted combinations of component variables. The weights are *estimates* of the influence of the constituent variables. (The parameter values of the weights are, of course, unknown.) If the estimated weight for a given variable is, say .32, the parameter value could be different. Depending on how far out estimates are from our parameter values and in which direction, the actual weights could be higher or lower. Thus Branch A whose CSI is higher than that of Branch B could indeed be no better. Yet most CSIs do not report the error band but seem to assume that the coefficients used are error-free.

CSI is subject to measurement errors

When we measure customer satisfaction using customer attitudes, we all know that the measurement is subject to sampling errors A nominal scale measurement based on 100 customers could have a margin of error of + or - 10%, or an error band that is 20 percentage points wide. Thus if 50% of customers report that they are highly satisfied with your company, this 'true' figure could be anywhere between 40% and 60%. If so, how can we be confident that a department which received an endorsement of 55% of customers is superior to a department which was endorsed by only 50% of the customers? That is difficult enough.

But when we weight this by another estimate which is subject to its own error and combine it with other variables which are also subject to similar errors, should we not be wary of putting too much emphasis on the final product, which is the CSI? Here I have not even considered sources of bias which can further distort the index.

In spite of the above discussion, errors should not deter us from using measures that can be potentially useful. If bias is minimized, if the researcher is careful in creating an index and has done pretesting, replication and rigorous statistical analysis, chances are that the many random errors (but not the biases) would cancel out each other and we would get an approximate answer. But the keyword here is 'approximate'. We cannot assume that all errors are cancelled out and the final index is precise, no matter how many tests we have carried out. It follows from elementary sampling theory that all estimates and all sampling results have error bands attached to them. So when a company decides to reward the top 10%, some employees who contributed significantly to customer satisfaction will not make the list and some who did not will make the list. "Many employees will be rewarded arbitrarily and at random. Many will be punished (i.e. will not receive the reward) arbitrarily and at random. Random rewards and punishments are not conducive to generating the desired result. Therefore, a compensation system based on CSI can be potentially destructive.

CSI,the false god

Is CSI completely useless? Probably not. It can be useful under limited conditions. For instance, it can identify major trends. It may be able to identify customers dissatisfaction if that dissatisfaction is strong *and* widespread. CSI can chart our progress over the years.

Yet the problems associated with CSI are both serious and real. In my experience, CSI is very frequently used for the following purposes:

1. To assess if customers are happy with us.
2. To be forewarned about problems.
3. To compensate employees, departments and branch offices.

As we noted, CSI does not necessarily detect customer dissatisfaction, does not necessarily identify potential problems or discontent and is an ineffective (probably demoralizing) way to compensate individuals or groups.

One of the reasons why customer satisfaction measurement does not work is because it focuses on a false god: CSI. To accord more than cursory attention to CSI is to ignore the real effort involved in

understanding the customer. We cannot ensure customer satisfaction when we use a measure that is riddled with problems, which is what CSI is.

The desire for simplicity is universal. A single number (or even a minimal group of numbers) like CSI has an intrinsic appeal. The problem is that it oversimplifies the task and misleads the user. I am reminded of Albert Einstein's dictum "Things should be made as simple as possible, but no simpler". In the next few articles, we will discuss other problems associated with customer satisfaction measurements and what we can do to avoid as many of them as possible.

Dr. Chuck Chakrapani of Standard Research Systems is a Toronto-based consultant, author and seminar leader. He works internationally. He is currently completing a book: How to Measure Service Quality and Customer Satisfaction *which will be published by the American Marketing Association later this year.*