

**CUSTOMER SATISFACTION – HOW CAN I MEASURE IT?**

**Yoshio Kondo**

Professor Emeritus

Kyoto University, Kyoto, Japan

**Abstract**

Customer satisfaction is the final target of TQM, and many attempts have been made on its measurement. At the same time, we should note that there are always plural kinds of customers viewing quality from different perspectives and that the expression of “no customer dissatisfaction” is not necessarily equal to “customer satisfaction.” Of the two kinds of quality, must-be quality and attractive quality, the latter is usually more important to satisfy customers. Hypothesis-testing approach is effective in the market survey of attractive quality. Attractive quality is of subjective character, and it easily tends to become surplus. However, it is important to note that the quality that tends to appear excessive to the manufacturer but is strongly demanded by the customer can be the key to superior new technology and excellent quality products. So, they should be regarded not as surplus quality but as attractive quality. Employee satisfaction of intrinsic and spiritual character is the source of excellent quality and customer satisfaction. Leaders and managers should positively respond and encourage the employees’ opinions.

**Introduction**

Seventy years ago, the famous book, “Economic Control of Quality of Manufactured Product” was published. In this book, Shewhart (1931) pointed out that there are two common aspects of quality, objective reality and subjective side of quality. The former is independent of the existence of man and is constant and measurable. On the other hand, the latter has to do with what we think, feel, or sense as a result of the objective reality. For example, we are dealing with the subjective concept of quality when we attempt to measure the goodness of a thing; it is impossible to think of a thing as having goodness independent of some human want.

The importance of subjective aspect of quality has been more emphasized along with the progress of free market economies after the end of the Cold War in 1989, and the expression of quality in terms of customer satisfaction is being widely used. The expression of quality of this kind is further escalated by some people to customer delight, beyond customer expectation, and so on.

Among many attempts of quantitative measurement of customer satisfaction, American Customer Satisfaction Index (Andersen, 1998) is well-known. It is of great help not only to comprehensively measure product quality but also to relate measures of quality to customer behavior. It is the author’s opinion on customer satisfaction that the definitions of customer as well as satisfaction, or the reply to the questions of who are the customer and what is the satisfaction, are the most important starting point of discussion. All of us know that there always are plural kinds of customers viewing quality from different perspectives

## Keynote speeches

---

and that the expression “no customer dissatisfaction” is not necessarily equal to “customer satisfaction.” “Must-be quality” and “attractive quality” are also indispensable discussion topics.

### **Who are the customers**

It is well-known that there are always two kinds of customers, internal customer in the downstream processes within the corporation and external customers on the markets. The satisfaction of the latter customers is of more importance. It is thought that the satisfaction of internal customers is one of the indispensable conditions to satisfy the external final customers on the market.

It is also known that there are always plural kinds of external customers on the market. For example, both company president and truck drivers in the long-distance transport company are very important customers of the truck manufacturing company. The company president has keen interest in the price, fuel consumption, duration of use, etc. of the trucks, and the drivers' interest is safety, comfort, fatigue, etc. during their driving. In the medical hospitals, on the other hand, the demands of the hospital director and medical doctors on the hospital building are often different from those of nurses and patients. Furthermore, the quality demands from the company president, hospital director and medical doctors are often obvious, while those from the latter customers such as truck drivers, nurses and patients are usually hidden and difficult to be fed back to the manufacturing and construction companies and usually become latent and unseen.

Although we often say that quality is a common concern between manufacturer and customer, it often happens that both parties view quality from different perspectives. Exactly the same problem is seen in the above two examples. It is therefore desirable for us to survey the customers on the market by the hypothesis-testing approach. In this survey we first formulate hypothesis about what we think customers probably want and then use surveys to identify whether or not these hypotheses are correct. When carrying out such surveys, it is important not to be constricted by the hypotheses that have been built up.

Sometimes we do not adequately investigate what kind of quality the customers really want, but merely use guesswork to list quality and measure customers' preference for the quality on this list. We should note however that such a superficial survey can easily end up as a “product-out” type of satisfaction survey, not a survey of true customer satisfaction of “market-in type.”

### **What is satisfaction**

Customers complain when they are dissatisfied with a product they have bought or a service they have received. This means that the absolute number and/or percentage of complaints can be the indicators of customer dissatisfaction. Companies must do everything they can to eliminate this dissatisfaction. A company's ultimate goal is to reduce the number of customer complaints to zero (Kondo, 1995).

If we did succeed in reducing customer complaints to zero, it would show that customer dissatisfaction had been eliminated. However, it is important to recognize that eliminating

dissatisfaction is not always the same as achieving satisfaction. To achieve customer satisfaction, something more is needed.

When we go out for shopping in downtown, for example, it is easy to find shops where there are very few customers although the quality of displayed goods is superior and with no complaints from the customers at all, whereas we also find a relatively few shops with plenty of customers come in and buy goods even though the number of their complaints is relatively higher. Perhaps the product quality in the former shops is better, but they are less attractive to the customers. On the contrary, even though the number of complaints of the goods is higher in the latter shops, they are much more attractive to the customers. From this kind of experiences, we often learn that something more is needed in order to attain true customer satisfaction.

In connection with this, the story about three masons is very instructive and interesting. This story is prevalent in the European countries. On being asked what they are doing, the first mason answered, "I am a mason," while the second mason said, "I work for \$15 a hour." The third mason gave the following answer: "I am building a cathedral which is to stand here for many years from now and which is to serve as a spiritual place of rest." In order to satisfy their needs, it may be necessary to receive the first mason as an ordinary mason. An appropriate monetary compensation is important for the second mason. It is known from the answer of the third mason that his satisfaction is closely linked with quality, which can be further deployed into detailed items.

Another example in which the importance of quality was emphasized is the motto of Newport News Shipbuilding cited by Homer Sarasohn (Zeleny, 1990). It is

"We shall build good ships here, at a profit if we can, at a loss if we must, but always good ships."

We need money in order to live, but is our work really nothing more than a way of earning money? We know that there are other more powerful rewards apart from money that make us want to do good and worthwhile work in order to attain the goal. Investigating them more deeply and specifically is undoubtedly the key to unlocking the secrets of motivation in the affluent 21st Century. We can say that quality is one of these important rewards.

### **Must-be quality and attractive quality**

It was already talked that the elimination of customer complaints is the important necessary condition to attain customer satisfaction but that it is not the sufficient condition. In order to attain the goal something more is needed.

Ishikawa (1990) recognized the importance of customer satisfaction and divided quality into two categories of backward-looking quality and forward-looking quality. The former refers to non-conformance, defects, flaws, deficiencies and rework of which absence is absolutely requested, and their existence results in customer dissatisfaction. On the other hand, the latter refers to the positive features, selling points and characteristics of a product such as ease of use and excellent design that make it superior to the other companies' offerings. The fulfillment of these quality elements will provide positive customer satisfaction, although the quality which does not fulfill these elements is also acceptable.

## Keynote speeches

---

Kano and his colleagues (1996) noticed the analogy between the correlation of backward-looking quality versus forward-looking quality and human dissatisfiers versus human satisfiers proposed by Herzberg (1960), and utilized the Herzberg's theory of motivation to disclose the structure of customer satisfaction. They have published a detailed consideration on this bi-directional way of perceiving quality, calling the former type "must-be quality" and the latter "attractive quality."

Must-be quality and attractive quality thus have a dualistic relationship with each other. As written before, some products and services sell well even though they are the subjects of considerable amount of complaints because they are highly attractive to customers, while others that receive few complaints do not sell at all because they lack appeal to the potential customers.

Must-be quality and attractive quality can also work in tandem. For example, the safety of a transportation system is a fundamental quality that must be a top priority during design, construction and operation. Thus it is an indispensable must-be quality. However, an excellent safety record in service can also be an attractive quality for customers. Japan's Shinkansen bullet train, for example, has been operating for more than thirty-six years since its inception in 1964 and has never had an accident resulting in fatality. This is a great attraction to potential passengers. Thus to achieve true customer satisfaction, we must not only achieve must-be quality by eliminating defects and improving upstream processes but we must also provide our products and services with excellent attractive qualities.

Another difference between the two types of quality is that, while must-be quality is often obvious, attractive quality is usually hidden and unseen. Every manufacturer knows that, while customers may express dissatisfaction with a product or service, they rarely take the initiative to say what they actually want. It is therefore desirable for the manufacturer to survey the market employing the hypothesis-testing approach, which was explained before.

It is well-known that costs can be reduced by improving must-be quality (Kondo, 1995). Giving a product more attractive qualities, on the other hand, it is often possible to create new market and expand the share in the existing market, thus increasing the profitability of the company. Seeking out attractive quality, verifying their effectiveness and taking positive steps to incorporate them into the new products and services are indispensable.. In some cases, it is also possible to boost sales of similar products through the synergistic effect.

### **Surplus quality**

As already described, attractive quality is of subjective character, and its target is customer satisfaction. From such recognition, attractive quality easily tends to become surplus. Then it is important to make a few more remarks about surplus quality.

Among various kinds of surplus quality, the following two are picked up.

- (1) Quality that clearly appears excessive to both the manufacturer and customer
- (2) Quality that tends to appear excessive to the manufacturer but that is strongly demanded by the customer.

As far as the first of these is concerned, it is important for the manufacturer and customer to work closely together in establishing boundary samples and controlling these rigor-

ously, as well as carefully monitoring how many rejectable items are found among those that have passed inspection and how many acceptable items are found among those that have failed inspection. Both of these items should be in the controlled state.

Acceptable items may be found among those that have failed inspection when there are stringent requirements from the customer concerning the quality of the products. This kind of requirement is often made in order to elevate and maintain the productivity in the customer's automated production line. Another example is like this. When large number of electronic components is used for television set, the defect rate of the components must be kept at extremely low level (a few ppm or less) in order to maintain the defect rate of the completed television set at an acceptably low level. Although it is also important in such cases to try to reduce the number of components used (for example, by combining them) and to make attempts to automate the inspection process, the most important thing is to minimize the defect rate of the components and, if possible, reduce it to zero.

Particularly today and future, when the lifetime of products is decreasing due to the increasingly rapid appearance of new products on the market, it is becoming more and more important to cope with the competition in quality by achieving zero defects right from the start of new production runs.

On the other hand, the achievement of extremely low or zero defect rates, which may appear at first sight to represent surplus quality, demonstrates the success of manufacturer in developing superior technology and excellent quality products. Since they have gone to the trouble of developing these new technologies and products, it surely is extremely important for the companies to make effective use of them by actively developing new fields of application for them. In my opinion, manufacturer should not be too eager to categorize the type of quality in group (2) above as surplus. Instead, most of them can be categorized as of attractive quality.

#### **Employee satisfaction – An indispensable factor**

It is well known that Maslow (1953) proposed the hierarchy of human needs as the element of motivation. It is explained that human beings always have plural needs and that the prior human needs elevate according to the following hierarchy.

1. Physiological needs
2. Safety needs
3. Social needs
4. Ego or esteem needs
5. Self-fulfillment needs

It is also known that the character of these needs changes from extrinsic and material ones at lower levels (1 and 2) to intrinsic and mental or spiritual ones at higher levels (3 and above) (SuMi Dahlgaard and Y. Kondo (2000)). Monetary compensation is only effective for satisfying human need of lower levels. The expressions of "customer delight" and "beyond customer expectation" may possess more intrinsic and spiritual character, which is higher than simple, extrinsic and material customer satisfaction. Employee satisfaction and customer satisfaction are seen in the cause-and-effect relationship. However, it is not so simple. The story about three masons told before teaches us that it may be enough for

## Keynote speeches

---

the first and second masons to be satisfied with extrinsic and material ways. Monetary compensation is a typical example. However, we also know that the motives of the third mason are of more intrinsic and spiritual character to which we should positively respond. Without these efforts of leaders and managers, it is almost impossible to provide essential and true customer satisfaction.

When we visit famous ancient cathedrals, temples, palaces, castles and their ruins, we often feel deep spiritual impressions and excitement. This may be caused by the intrinsic and spiritual efforts of many craftsmen and their leaders who were engaged in these constructions and buildings.

### Conclusion

In addition to our efforts for the measurement of customer satisfaction, it is equally important to disclose the questions of who are the customers and what is satisfaction. We should note that there are always plural kinds of customers having different views on quality and that “no customer dissatisfaction” is not necessarily equal to “customer satisfaction.” Of the two kinds of quality, must-be quality and attractive quality, the latter is usually more important. Attractive quality easily tends to become surplus. However, the quality that is strongly demanded by the customer can be the key to superior new technology and excellent quality product.

Employee satisfaction of intrinsic and spiritual character is the source of excellent quality and customer satisfaction. We should positively respond and encourage these employees' opinions.

### References

- Andersen, A. (1998), American Customer Satisfaction Index – Methodological Report, ASQ, Milwaukee.
- Dahlgaard, SuMi P. and Kondo, Y. (2000), “The Reconceptualization of Human Needs and Motivation for Quality,” *The Best on Quality*, vol. 11, Chapter 4, p. 40.
- Herzberg, F. (1969), *The Motivation to Work*, John Wiley, New York.
- Ishikawa, K. (1990), *Introduction to Quality Control*, p. 16, 3A Corporation Ltd., Tokyo.
- Kano, N., Seraku, N., Takahashi, F. and Tsuji, S. (1996), “Attractive Quality and Must-Be Quality,” *The Best on Quality*, vol. 7, Chapter 10, p. 165.
- Kondo, Y. (1995), *Companywide Quality Control*, p. 3, 3A Corporation, Tokyo.
- Maslow, A. H. (1953), “A Theory of Human Motivation,” *Psychological Review*, vol. 5, p. 370.
- Shewhart, W. A. (1931), *Economic Control of Quality of Manufactured Product*, p. 53, D. Van Nostrand Co., New York.
- Zeleny, M. (1990), “Management Wisdom of the West,” *Human Systems Management*, vol. 9, no. 2, p. 119.