Quality-Sustainable Way to Business Excellence

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Abstract

Quality is distinguished from the other important management indicators, cost and profitability, by the features of its far longer history and of common concern to both manufacturer and customer. We may say from this that quality has a far more human aspect than either cost or profitability. We stress the importance of establishing "quality culture." But we do not commonly use the terms of "cost culture" or "productivity culture." In addition, we know from our experiences that improving quality by creative methods can lead to lower cost and higher productivity, although the converse is not necessarily true. In the Maslow's hierarchy of human needs, it is known that the character of human needs changes from extrinsic and material ones at lower levels to intrinsic and mental or spiritual ones at higher levels. We know from our experience that employee satisfaction is closely linked with quality, which is of more human nature and can further be deployed into the detailed elements of quality. The leaders and managers should positively display leadership and respond to the efforts of the subordinates. Without these managerial leadership and efforts, it is almost impossible to provide essential and true customer satisfaction. They are the indispensable elements for business excellence.

Key words: Business excellence, Customer satisfaction, Employee satisfaction, Process improvement, Quality culture

1. Introduction

The EFQM (European Foundation for Quality Management) was launched in 1988 with the following two objectives (Dale, 2001):

1. To stimulate, and where necessary, to assist management in adapting and applying the principles of total quality management; and
2. To improve the competitiveness of European industry.

The reasons are unclear, but there was the drive since then to change the terminological theme of quality and TQM to business excellence. It is thought that this change

originated from EFQM itself and management consultants. Senior executives appear to prefer the term excellence rather than TQM and the measures which it brings.

It is interesting to note that at the same time as the EFQM and national quality organizations in European countries are distancing themselves from TQM as a term, the Japanese are apparently giving it increased emphasis, as a development from their total quality control (TQC) or company-wide quality control (CWQC) approach. There is an unshakable conviction in Japanese industries that TQM pays off, and there is good understanding for what quality can do for the individuals, the organizations, and the nations (Hayashi, 2000).

There has been earlier survey evidence that the quality of Japanese and American products was superior to those of the Europeans. This was one of the factors that provided the initial motivation to the establishment of the EFQM with the two objectives mentioned before. It is clear from the sustained efforts by the EFQM that the awareness and understanding of quality and TQM in European countries has improved significantly (Nabitz et al., 1999) and there are many publicized successes in terms of benefits and improved competitiveness across most of the European countries.

In the view of JUSE (the Union of Japanese Scientists and Engineers), TQM is a management approach that strives for the following in any business environment (Godfrey, 1999):

1. Under strong top-management leadership, establish clear mid- and long-term vision and strategies.
2. Properly utilize the concepts, values and scientific methods of TQM.
3. Regard human resources and information as vital organizational infrastructures.
4. Under an appropriate management system, effectively operate a quality assurance system and other cross-functional management systems such as cost. delivery, environment, and safety.
5. Supported by fundamental organizational powers, such as core technology, speed and vitality, ensure sound relationship with customers, employees, society, suppliers, and stockholders.
6. Continuously realize corporate objectives in the form of achieving an organization's mission, building an organization with a respectable presence, and continuously securing profits.

Simple and basic question for us is why we emphasize quality among the popular management indicators of quality, cost and productivity. What are the special features of quality that are different from cost and productivity? The final goal of TQM is said to attain customer satisfaction. Then who are the customers and what does satisfaction

mean? These questions should be carefully pursued and clarified in order to find out the sustainable way of TQM leading to business excellence.

2. Customer satisfaction

It is known that Shewhart (1931) pointed out that there are two common aspects of quality, objective reality and subjective side of quality. The importance of subjective aspect of quality has been more and more emphasized along with the progress of competitive 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 forth.

It is the author's opinion concerning customer satisfaction that the definitions of customer as well as satisfaction, in other words, the reply to the questions of who are the customers and what is the satisfaction, are the most important starting point of discussion.

Who are the customers – It is often said that quality is the common concern of manufacturer and customer. At the same time, we know that there are always plural kinds of customer viewing quality from different perspectives, and we classify them into internal customers in the downstream processes and external customers on the market. The satisfaction of the latter customers is of more importance from the quality assurance standpoint, and the satisfaction of internal customer is one of the indispensable conditions to satisfy the external customer 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 transportation company are important customers of the truck manufacturing company. The company president has keen interest in price, fuel consumption, duration of use, etc. of the trucks, and the drivers' prior interest is safety, comfort, fatigue, etc. during and after their driving. Furthermore, the quality information from the company president is often obvious, while those from the truck drivers are often hidden and difficult to be fed back to the manufacturing company. They easily become latent and unseen.

Thus it often happens that both parties view quality from different perspectives. It is therefore desirable for manufacturer to survey the customers on the market by the hypothesis-testing survey. In this survey, people first formulate hypothesis about what they 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 too much by the hypotheses that have been built up.

Sometimes people do not adequately investigate what kind of quality the customers really want, but they merely use guesswork to list quality and measure customers' preference for the quality on this list. It should be noted however that such a superficial survey easily ends up as a satisfaction survey of "product-out" type, not a survey of "market-in" type.

What is satisfaction – Customers complain when they are dissatisfied with the quality of product they have bought and used or the service they have received. This means that the number and/or percentage of complaints can be the indicator of customer dissatisfaction. Companies must do everything they can to eliminate this dissatisfaction. Company's ultimate goal is to reduce the number of customer complaints to zero (Kondo, 1995).

If we 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 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 customers at all, whereas we also find a relatively few shops with plenty of customers coming in and buying 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 these experiences, we can often learn that something more is needed in order to attain true customer satisfaction.

3. Quality first philosophy

We know, first of all, that quality is distinguished from the other important management indicators, cost and productivity, by the following features (Kondo, 1988).

1. Its history (in other words, its relationship with human beings) is far longer.
2. It is the only one of the three indicators to be of common concern to both manufacturer and customer.

Because of these unique attributes, quality possesses a far more human aspect than either cost or productivity. This property of quality arises from the fact that we feel a deeper connection with it than either cost or productivity. While we may stress the importance of establishing "quality culture"

(Hildebrandt et al., 1991), we do not commonly use the terms of "cost culture" or "productivity culture." An appeal of managers to reduce non-conformance and improve quality is more easily sympathized and accepted by the subordinates and harder to refuse than a call too cut cost or to increase productivity. It may probably derive from this special nature of quality. Improving quality differs from reducing cost or raising productivity in that it pleases the internal and external customers as well as the people actually engaged in doing it.

Furthermore, we know from our own experiences that improving quality by creative methods can lead to lower cost and higher productivity, although the converse is not necessarily true. When cost is reduced or productivity is increased by creative methods, does quality necessarily improve? The examples of this kind may exist, but they must be extremely rare.

4. Must-be quality and attractive quality

It was already mentioned that eliminating customer complaints is an 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 categories of backward-looking quality and forward-looking quality. The former refers to non-conformance, defects, flaws, deficiencies and reworks 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 that does not fulfill these elements is also acceptable and salable.

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 (1969), and utilized the Herzberg's theory of motivation in order to disclose the structure of customer satisfaction. They have published detailed considerations on this bi-directional way of perceiving quality, calling the former type "must-be quality" and the latter type "attractive quality."

Must-be quality and attractive quality thus have a dualistic relationship with each other. As written before, some products 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 service. Thus it is an indispensable must-be quality. However, an excellent safety record can also be an attractive quality for customers. Japan's Shinkansen bullet train, for example, has been operating for thirty-eight years since its inception in 1964 and has never had an accident resulting in fatality. This is a great attractiveness to potential passengers. Thus to achieve true customer satisfaction, we must not only achieve must-be quality by eliminating defects and preventing recurrence by 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 was also explained that cost can be reduced by improving must-be quality by creative methods (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.

5. Attractive quality and 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. It is important then to make a few remarks about surplus quality. Surplus quality can be grouped into

1. Quality that clearly appears excessive to both the manufacturer and the 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 to establish appropriate boundary samples and control these rigorously, as well as carefully monitor how many non-acceptable 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.

An example of surplus quality of the second group is as follows. When large number of electronic components is used for television set, the defect rate of the components must be kept at extremely low level, such as at a few ppm or less in order to maintain the defect rate of the assembled 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, to 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 quality competition 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 the first sight to represent surplus quality, demonstrates the success of the 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 group the type of quality in the category 2 above as surplus. Instead, most of them can be grouped as attractive quality.

6. 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 of 1 to 5.

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 needs at higher levels (3 and above) (Sumi Dahlgaard and Kondo, 2000). It is well known in Herzberg's theory of motivation, on the other hand, that both eliminating human dissatisfiers and positively providing human satisfiers are necessary for motivation of people. The former action is effective at lower levels and the latter is necessary and effective at higher levels. Thus the monetary compensation, for example, is only effective for satisfying human needs of lower levels.

It often happens in the present affluent society that the excessive amount of monetary compensation may stimulate the higher rate of absenteeism of employees. The expressions of "customer delight" and "beyond customer expectation" may possess more intrinsic and spiritual character, which is higher than simple, extrinsic and material human needs.

Employee satisfaction and customer satisfaction are seen to be in the cause-and-effect relationship. However, they are not so simple. The story about three masons that is prevalent in the European countries is instructive and interesting in connection with the employee satisfaction. On being asked what they are doing, the first mason replied, "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 and treat the first mason as an ordinary mason. An appropriate amount of 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 the detailed items of quality. In other words, it may be enough for the first and second masons to be satisfied in extrinsic and material ways. 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.

7. Process improvement - way to business excellence

It is emphasized in our improvement activities to take a form of PDCA (plan-do-check-act) cycle. In the "act" phase of this cycle the following two types of corrective action should be carried out.

temporary countermeasures:
adjustment, repair, rework of the result
permanent countermeasures:
cause removal and prevention of recurrence, standardization of the process

In contrast to the former corrective actions that can be taken without identifying the causes, the latter corrective actions are taken on the causes. It is the process improvement itself.

The reason why companies introduce and promote TQM is from the desire to improve their health. This no longer means merely improving the profitability or market share. It has expanded to cover enhancing corporate image and appeal as well as wide range of areas under the heading of corporate citizen-ship, such as the company's contribution to the society and the environment. They are

nothing but the business excellence being talked in the present article.

In order for this to happen, it is not good enough for the company simply to produce acceptable outputs; the internal processes giving rise to these outputs must also pass muster. Many of the permanent corrective actions we undertake every day in our workplaces may be individually insignificant, but together these small improvements can result in major improvements to the health of the entire company. In light of this, permanent corrective action is obviously far more important than temporary corrective action.

QC activities often tend to stress identifying the deficiencies in the processes. It advocates quantifying deficiencies relating to quality, quantity and cost, and expressing them in the form of hard data since this is the first step for improving the process. This is correct and should be strongly emphasized. At the same time, I would like to underline the fact that, as long as the processes possess deficiencies, they are also bound to have their opposite, that is, strengths. While it is of course important to identifying deficiencies and preventing them from recurring by eliminating their causes, it is equally important to identifying strength and ensuring their recurrence by standardizing their causes in the process.

Among various factors influencing the output from the process, some of them may not be susceptible to permanent corrective action through standardization. Then we must keep the quality of the output under control by adjusting other factors that we can control. However, we must think carefully about whether it really is impossible to apply permanent corrective measures to such problematic "uncontrollable factors." In some cases, this may depend on how much authority the people in charge of the process have been assigned, and the process will become far easier to control if the effective permanent actions are taken. This is closely related to the range of authority and leadership of the senior managers.

There is an additional type of corrective action. It is known as the "lateral deployment" of the permanent corrective action. Imagine that an abnormality has occurred in a certain process and effective permanent corrective action has been taken against it. If we take a careful look around, we may often find that the process we are working on is not only one of its kind, but that there are several similar processes in the vicinity. The same kind of abnormality that occurred in the first process may also be occurring in these similar processes. Even if it has not yet occurred, there may be a strong likelihood of it occurring in the near future. This being so, although we may be increasing the probability of committing an error of the first kind, it may be advantageous to apply to these processes the same or similar corrective actions as were

taken on the original process. This is what is meant by lateral deployment.

Good luck does not always repeat itself, and this kind of preventive action may sometimes be a waste of time and effort. However, if it does turn out to be effective, it greatly speeds up the process of improving a company's health and constitution.

One interesting example is as follows. In their conversation, Masaaki Imai, the author of "Kaizen" and "Gemba Kaizen," replied to Brad Stratton (1997), the editor of ASQ Quality Progress, that it is premature to declare companies that are prospering today as the long-term winners. "American companies have undertaken cost cutting and restructuring. They have fired people, downsized, and closed down the plants that were not too profitable." Imai continued, "As the result, they have become lean, mean, and more profitable. But that hasn't changed the way business is conducted within the company. If you go to manufacturing 'gemba,' you'll find nothing much has changed except that there are fewer people and plants. So, according to Wall Street and the bottom line, things have improved as a result of those drastic measures." "But with no change to the corporate culture that governs how people do their jobs, improve quality, reduce costs, and meet customer requirements," Imai said, "such companies will not do as well in the long term."

8. Conclusion

Business excellence is indispensable for improving competitiveness of the company. Attaining excellent quality is always the vital prerequisite. Customer satisfaction, quality-first philosophy, must-be quality versus attractive quality, employee satisfaction and motivation, process improvement, etc. are closely related each other on the way leading to business excellence.

It is thought that the relation diagram approach is helpful for understanding this interrelationship. Figure 1 is an example of this trial.

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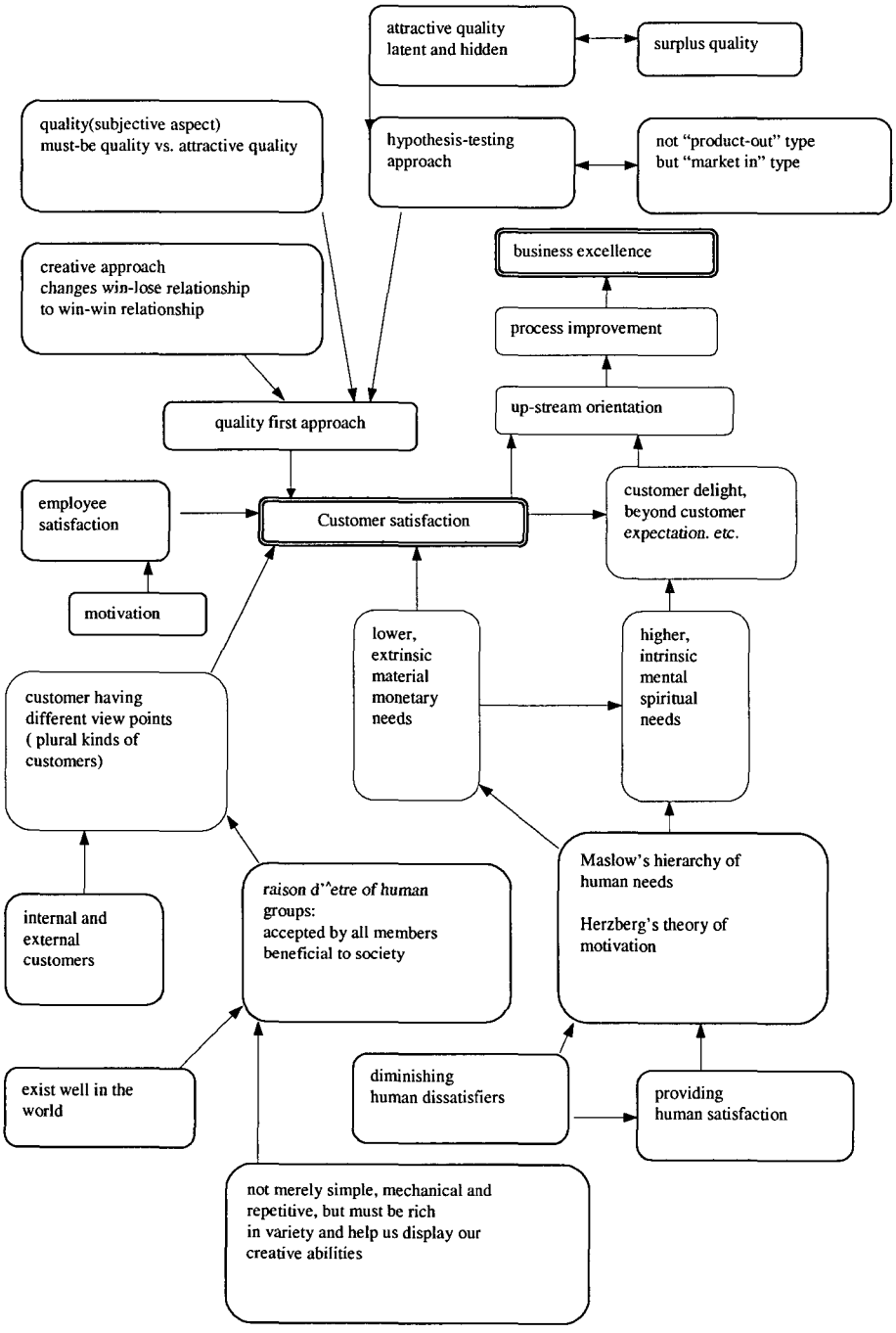

Figure 1. Customer Satisfaction- Way to Business Excellence

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