Perspectives

TQM as a management system consisting of values, techniques and tools

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Keywords

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Abstract

The interest in total quality management (TQM) has increased rapidly in recent years. Some people see TQM as something necessary to reach competitiveness but others claim TQM to be merely a management fad. We believe that there are several reasons for the different opinions about TQM. One is that the gurus, who often are seen as fathers of TQM, do not like the concept. Another one is that there are several similar names for roughly the same idea. A third one, which, maybe, is the most severe, is that there are many vague descriptions and few definitions of what TQM really is. In this paper we will discuss some of the problems with TQM and describe and discuss our own view of TQM as a management system consisting of the three interdependent components: values, techniques and tools. We strongly believe that this definition will help to understand and implement TQM.

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Background

Total quality management (TQM) has gained much attention in recent years. Many articles and books, both in academic press and popular press, have been written on the subject. Some people see TQM as something necessary to reach competitiveness and emphasize the relation between TQM and success (e.g. US GAO, 1991; Becker, 1993; Ghobadian and Gallear, 1996). Others claim TQM to be merely a management fad and point out that many companies have failed to implement TQM (e.g. Binney, 1992; Harari, 1993; Hackman and Wageman, 1995).

We believe that there are several reasons for the different opinions about TQM. One is that the gurus, who often are seen as fathers of TQM, do not like the concept. Another one is that there are several similar names for roughly the same idea. A third one, which, maybe, is the most severe, is that there are many vague descriptions and few definitions of what TQM really is. These reasons are of course partly related to each other.

In this paper we will discuss some of the problems with TQM and describe and discuss our own view of TQM as a management system consisting of values, techniques and tools.

TQM gurus do not like the term TQM

Many of the famous quality gurus have not actually used the term TQM although much of their work has been recognized as being relevant and sometimes quoted as referring to TQM. For instance, Deming never did use the term TQM. He said "the trouble with total quality management, the failure of TQM, you can call it, is that there is no such thing. It is a buzzword. I have never used the term, as it carries no meaning" (Deming, 1994a, p. 22). In a conversation with William Latzko in 1992 Deming said that "the term TQM implies that quality is a method when in reality it is the outcome of a method" (Latzko, 1998). Also Juran is critical of the concept "It is astounding how the term TQM is tossed about without defining what it means. To me, TQM consists of those actions needed to get to world-class quality. Right

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now, the most comprehensive list of those actions is contained in the Baldrige Award criteria ...” (Juran, 1994, p. 32). This resistance to the term TQM from some gurus might have got people confused and doubtful.

The existence of many similar concepts give confusion

There is little agreement on what TQM really means. One reason for the confusion might be that there are many different terms used in literature when discussing this topic, such as for instance total quality control (Feigenbaum, 1956, 1991), total quality improvement (Lascelles and Dale, 1991), company wide quality control (Ishikawa, 1985), and strategic quality management (Garvin, 1988). The difference, if any, between these and other concepts is often unclear and creates confusion. There are, however, also descriptions of the term TQM available in literature.

Vague descriptions of TQM

Several attempts have been made to define TQM. Most of these definitions are, in our opinion, rather vague. We can often see formulations such as “a way to...”, “a philosophy for...”, “a culture of...”, “an approach for...”, “a business strategy that...” and so on. Examples of definitions, or maybe sometimes more descriptions, can be found in e.g. Tenner and DeToro (1992); Oakland (1993); Dahlgaard *et al.* (1994); and Kanji (1995). Also the definition in ISO 8402 (Quality management and quality assurance – terminology) is in our opinion quite vague. There TQM is said to be a “management approach of an organization, centred on quality, based on the participation of all its members and aiming at long-run success through customer satisfaction, and benefits to all members of the organization and to society”. The absence of a clear definition of TQM is probably the most important negative factor among those discussed in this paper.

One reason for these confusions and also for the use of different terms in the definitions of TQM might be the development and interpretation of TQM as a term over time, from something like a philosophy to something more like culture. The philosophy is the foundation for the concept, the culture is the desired state, which will be reached when the philosophy is realized, and the strategy is the way to realize the philosophy, see Lundquist (1995). Another explanation might be that much of the literature is written by consultants and the question of what TQM “really is” has not interested the academia to a larger extent.

Total quality management as a management system

The concept of TQM is generally understood, and often also described, as some form of “management philosophy” based on a number of core values, such as customer focus, continuous improvement, process orientation, everybody’s commitment, fast response, result orientation and learn from others (see e.g. Table I). What here are called core values are also in literature named principles, dimensions, elements or cornerstones, which indicates that the terminology is unclear and inconsistent. We prefer the term core values since it is a way to emphasize that these statements should work together to constitute the culture of the organization, and that they accordingly are basic concepts. A discussion about core values related to organizational cultures and TQM can be found in e.g. Hellsten (1997) and Cameron and Sine (1999).

One problem is that the suggested core values differ more or less between different authors, and also the number of core values in TQM differs; for a discussion see Cameron and Sine (1999).

Often TQM is illustrated by the model of a quality award, such as the Malcolm Baldrige National Quality Award in the USA (NIST, 1999) or the European Quality Award (EFQM, 1999) established by the European Foundation for Quality Management (EFQM). However, the relation between the award models and TQM is often quite diffuse. The number of core values also differs between the award models and accordingly also the core values themselves. This is probably even more confusing since these award models and their award criteria certainly have had more influence on the practical implementation of TQM than the articles written by academia.

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Table I Core values of awards

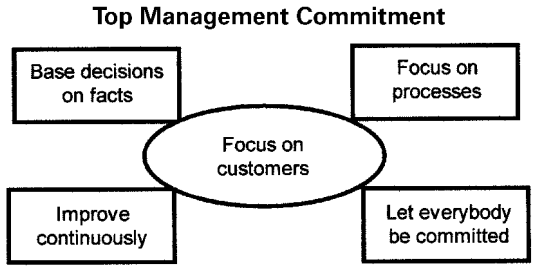
Malcolm Baldrige National Quality Award	European Quality Award	The Swedish Quality Award
Customer-driven quality	Results orientation	Customer orientation
Leadership	Customer focus	Committed leadership
Continuous improvement and learning	Leadership and consistency of purpose	Participation by everyone
Valuing employees	Management by processes and facts	Competence development
Fast response	People development and involvement	Long-range perspective
Design quality and prevention	Partnership development	Public responsibility
Long-range view of the future	Public responsibility	Process orientation
Management by fact		Prevention
Partnership development		Continuous improvement
Public responsibility and citizenship		Learning from others
Results focus		Faster response
		Management by facts
		Partnership

Note: The core values which are said to be the basis for the Malcolm Baldrige National Quality Award, the European Quality Award and the Swedish Quality Award. (The Swedish Quality Award, SQA, was established in 1992 by The Swedish Institute for Quality and was at that time strongly based on the Malcolm Baldrige Award. Since then the SQA has been developed to be more adapted to the Swedish society.)

A literature study (Hellsten, 1997) shows that a number of core values seems to be common in most descriptions of TQM, namely: "focus on customers", "management commitment", "everybody's commitment", "focus on processes", "continuous improvements", and "fact-based decisions". These values are close to the core values presented by Bergman and Klefsjö (1994) and there called "the cornerstones of TQM" (see Figure 1).

The evolution of quality management has reached a point where quality is being viewed as a basis for competition. This perspective suggests that quality has moved from a narrow, manufacturing-based discipline to a corporate emphasis applied to all business functions and employees with broader implications for management. Due to this shift TQM is more focused towards overall strategic planning and has therefore more and more changed to be a management theory to be used by management as a basis for how to act in order to fulfil the organization's goals. The interest in TQM can partly be explained as a result of an increasing interest in management theories (see e.g. Huczynski, 1993). The relation between TQM and some other theories is illustrated in Figure 2. Further discussion on TQM related to other management theories can be found in e.g. Boaden (1997), Dean and Bowen (1994), Grant *et al.* (1994) and Spencer (1994).

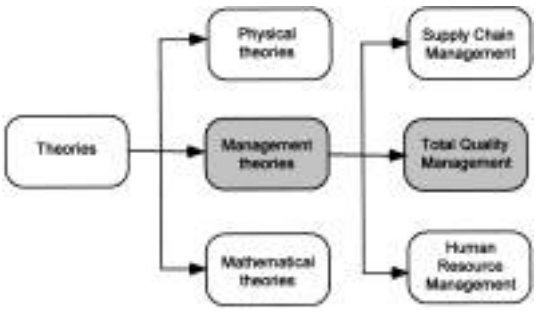
Figure 1 The cornerstones of total quality management as presented by Bergman and Klefsjö (1994)



TQM and its components

To us, this development means that TQM is much more than core values. It is a management system, a system in the sense of Deming, i.e. as "a network of interdependent components that work together to try to accomplish the aim of the system" (Deming, 1994b, p. 50).

Figure 2 TQM as a management theory among others, from Hellsten (1997)



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One of the components consists, in our opinion, of the core values. The core values are the basis for the culture of the organization. Another component is techniques, i.e. ways to work within the organization to reach the values. A technique consists of a number of activities performed in a certain order. The third component consists of tools, i.e. rather concrete and well-defined tools which sometimes have a statistical basis, to support decision making or facilitate analysis of data. These three components are interdependent on each other and support each other, see Figure 3.

We believe that it is important to classify different terms related to TQM according to any of the three components. For instance, QFD (quality function deployment) has often been looked on as a tool, probably depending on the confusion between QFD and the Quality House. However, QFD is defined as "a system for translating consumer requirements into appropriate company requirements at each stage from research and product development to engineering and manufacturing to marketing/sales and distribution" (Slabey, 1990), and is therefore, in our opinion, a technique. The Quality House, on the other hand, is a tool to be used within that technique. In a similar way design of experiments (DOE) is a technique, but, for instance, a factorial design is a tool to be used within DOE. As still another example, the control chart is a tool to be used within process management or process control, which are both techniques. The booklet with criteria related to a quality award, such as Malcolm Baldrige National Quality Award or the European Quality Award, is a tool. That tool can be used within self-assessment which is a technique supporting many different core values. In particular self-assessment will support "let everybody be committed" if many people in the organization are involved in the the self-assessment process. By consistently using a terminology based on core values, techniques and tools, the "concepts" used within TQM will be clarified, which certainly simplifies for organizations working with TQM since it gives a picture and structure of what TQM is about.

Any system should have an aim. "Without an aim there is no system", according to Deming (1994b). The aim of the TQM system is in our opinion to increase external and internal customer satisfaction with a reduced amount of resources. Accordingly, the system has a focus on external customers, but also an internal focus on employee satisfaction and effectiveness. However, it should be pointed out that the objectives of TQM seem to vary between different authors, from Feigenbaum's "cost effectiveness" to Deming's and Juran's "survival through profitability" (see a discussion in Hellsten, 1997).

However, the TQM system is also continuously evolved. Over time, some core values might change, and in particular the interpretation of some of them might be developed. As an example we can consider the change in the interpretation of the concept of "customer" from "buyer" to include several categories of external customers and also internal customers.

But new techniques will also appear or be transferred from other management theories. One example of this might be policy deployment. New tools will also be developed or taken from other disciplines. A recent example is the seven product development tools, see Konda (1995). However, the name of the three components and the aim of the system will stay over time.

One of the things that is important to notice is that TQM really should be looked on as a system. The values are supported by techniques and tools to form a whole. For example, the core value of "Let everybody be committed" cannot be implemented without

Figure 3 Three components of TQM

Note: Total Quality Management (TQM) seen as a continuously evolved management system consisting of values, tools and techniques, the aim of which is to increase external and internal customer satisfaction with a reduced amount of resources. It is important to note, that the techniques and tools in the figure are just examples and not a complete list. In the same way the values may also vary a little between different organizations and over time. (From Hellsten & Klefsjö, 1998.)

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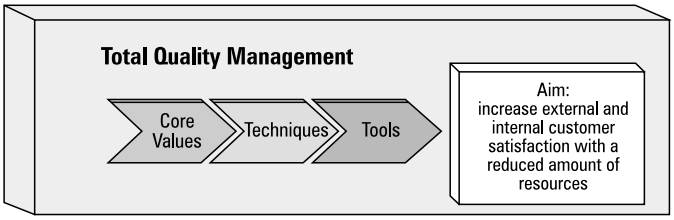
suitable techniques. Some of these might be "improvements groups" or "quality circles". However, these techniques and their groups will not work efficiently without use of specific tools. Examples of such tools might be "Ishikawa diagram", "Pareto diagram" and "histograms". Another core value is "focus on processes". One technique to establish process orientation is process management (see e.g. Harrington, 1991). Some tools which are useful when working with process management are process maps and control charts. As another example we can mention the value of "focus on customers". Here quality function deployment might be a useful technique and the Quality House is then a tool for a systematic transformation. Another technique might be customer surveys and a tool here is the questionnaire.

There are several benefits with the system view of TQM. One is that it emphasizes the role of top management. Many of the organizations that have failed with TQM have not had sufficient top management commitment (see e.g. Dahlgaard *et al.*, 1994; Oakland, 1993; Tenner and de Toro, 1992). Another one is that it focuses on the totality and hopefully decreases the risk that an organization picks up just parts of the system. We know that one reason why several companies have failed with implementing TQM is that they just use small parts from the system. They pick up one or a few tools or techniques (see e.g. Deleryd, 1997; Hoerl, 1995) and believe that these will solve their problems. They do not see TQM as a whole system. Illustrations of this are the use, or maybe we should call it the abuse, of control charts and quality circles some decades ago.

We have to start with the core values and ask: Which core values should characterize our organization? When that is decided we have to identify techniques that are suitable to our organization to use and which support our values. Finally, from that decision the suitable tools have to be identified and used in an efficient way to support the techniques (see Figure 4). As an example, benchmarking should not be used without seeing the reason for using that technique and you should not use just control charts without seeing the core value behind the choice and a systematic implementation of the techniques and tools. It is, of course, important to note that a particular technique can support different core values and the same tool can be useful within many techniques. If we can use such techniques and tools we support several values which of course is of benefit to the culture.

Figure 4 Role of core values, techniques and tools



Note: The aim is to establish a culture based on core values. Therefore we must start with the choice of core values, then choose techniques which support the values and finally tools that are suitable for that particular technique.

It is also important to note that the quality culture is a subset of the company culture (see Cameron and Sine, 1999). On the other hand, a similar system approach as the one we have suggested for TQM might be used for all the organizational culture.

Some other system proponents

The idea of using a system approach to TQM is not quite new. Examples of definitions, which have inspired us, are for instance those created at the Proctor & Gamble-sponsored conference (1992) and also the definition by Shiba *et al.* (1993) who says that "TQM is an evolving system of practices, tools and training methods for managing companies to provide customer satisfaction in a rapidly changing world".

In an article by Dean and Bowen (1994) a trial is made to focus on what they call "principles", "practices" and "techniques". They also indicate a similar approach as the one in this paper in the sense that "TQM develops over time particularly with increasing adoption and experience, the relative importance of these principles will change".

A discussion about principles and practices and the confusion between these within TQM can also be found in Boaden (1997). She claims that the distinction between principles (i.e. beliefs or tenets) and practices (things that organizations do that display and embody their beliefs) is a key issue and that there seems to be little evidence to support this distinction in literature. "Most authors appear

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to list a mixture of beliefs and activities as 'principles', but this may cause confusion, since not all principles can be implemented without the use of practices."

However, none of these papers have, in our opinion, a clear definition based on a management system perspective. Furthermore, they do not include our components: values, techniques and tools, and, most of all, they do not emphasize the chain to work from values, via techniques to tools.

Conclusions

TQM should, as we see it, be viewed as a management system consisting of the three interdependent components: values, techniques and tools. Techniques and tools support the values and together they form a whole. We strongly believe that this definition will facilitate for organizations to understand and implement TQM. The work of implementation should begin with the identification of core values that should characterize the organization. The next step is to distinguish techniques that are suitable to for the organization use and which support the chosen values. Ultimately, from that decision suitable tools have to be identified and used in an efficient way in order to support the techniques.

The system view of TQM will reduce the risk that an organization only picks up parts of the system without considering how the values are supported and whether it is of benefit to the culture. As implied, the implementation of TQM is more likely to succeed and hopefully the approach will decrease the risk of "jumping from one tuft to another". Not the least to small organizations, which have even more problems than large organizations to implement TQM (Hellsten and Klefsjö, 1998), this system view gives a more complete picture, which we believe will simplify and give a better structure to the work of implementation.

Further research in this area is to study the evolution of the TQM system, especially how the core values change over time and how the interpretation of them develops.

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Commentary

An interesting perspective on the nature of TQM and the role of quality values, techniques and tools.