

Profit from Quality

An introduction to TR10014

Guideline for Managing the Economic Effects of Quality

Summary

In 1990 the UK raised a New Work Item for a guideline on quality costing and economics. TC176/SC3/WG3 was formed to write this guideline. With the revisions to ISO9000 the guideline became Technical Report 10014 now available from ISO.

This guideline sets out a methodology for investigating the economic effects of quality on any organization, particularly SMEs and ‘not for profit’ organizations. The methodology addresses internal factors, such as cost reduction, as well as external issues, such as the impact of customer satisfaction on profit and achievement of purpose. Included is a list of commonly used quality costing models.

The initial response from real users in organizations has been favorable.

Raison d'être

Why write a guideline on the economic effects of quality? At various points during the writing ‘experts’ have told the Working Party that the content is obvious and not the subject of standards. But what can be more important than the economic return from applying quality management techniques and principles?

Many vanguard organizations have long since past the point of questioning the return on quality. However, many small to medium-sized enterprises (SMEs) and ‘not for profit’ organizations are struggling with justifying the necessary investment in quality. Leaders in these organizations need to be convinced and need to be able to convince their stakeholders. It was for these people that the guideline was written.

The guideline was also written to redress the imbalance towards the quantitative in quality economics. Simplistic theories of quality costing have created inward looking, accountancy driven approaches. The economic effects of quality are greater than just cost reduction. The guideline brings in some of the more qualitative effects such as those on customer satisfaction, which can lead to major benefits.

Finally the guideline was to be just that, a guideline. It was not written to mandate any single approach to quality costing. Working Party members had had experience of working in organizations where these approaches had been mandated. Often this led to greater bureaucracy and more protectionism. If the approaches do not drive continual improvement then they too are a cost of failure. Adoption of the principles, contained within the guideline, is to be encouraged not mandated. The guideline had to be flexible enough to allow any organization to use the contents.

History

- The UK raised the New Work Item for the standard on quality costing and economics.
- The Working Group first met in Madrid in 1991.
- The Working Group was the third within Sub Committee 3 of Technical Committee 176.
- The standard was given the development number 10014.
- The Working Group had a FDIS by 1996 but the release become embroiled in the Year 2000 revisions of ISO 9000.
- In Rio, in 1997, SC3 voted to convert the FDIS to a Technical Report (TR10014). This was on the condition that key content be absorbed in the new 9000 series.
- TR10014 has now been published and is available from ISO.

More for Less

Right from the start Working Group 3 (WG3) wanted to take a broad perspective to the subject of quality economics. All members agreed that the subject is relevant to all organizations, particularly SMEs, public and voluntary sector organizations.

Quality economics is more than quality costing. Implementing quality management can result in savings in both the ‘cost of doing things wrong’ and ‘the cost of doing things right’. The impact externally can be even more dramatic. Dr Deming referred to profit being created ‘when delighted customers boast about your products and services, and bring their friends with them’. This economic effect is critical but can be ‘unknown or unknowable’. Just because it is difficult, if not impossible, to quantify the effect of loyalty through referrals and repeat business, this is no reason for excluding the effect.

Private sector enterprises understand the continual drive to get more from less to remain competitive. Now all public sector bodies are being subjected to these commercial pressures. Privatization, Compulsory Competitive Tendering and Re-inventing Government are initiatives designed to force the public sector to deliver more to their ‘customers’ on ever reducing budgets.

The following example highlights some of the challenges faced in applying the concepts to ‘not for profit’ organizations.

A school implementing quality improvement actions will improve its reputation. As a result more and more parents will wish to send their children. If the school’s funding is calculated per child then its budget will increase as a result of the improvements. This assumes spare capacity within the school. If the funds are calculated by a different formula there may be no immediate financial benefit to the school even though the real benefit to society could be very large but impossible to quantify.

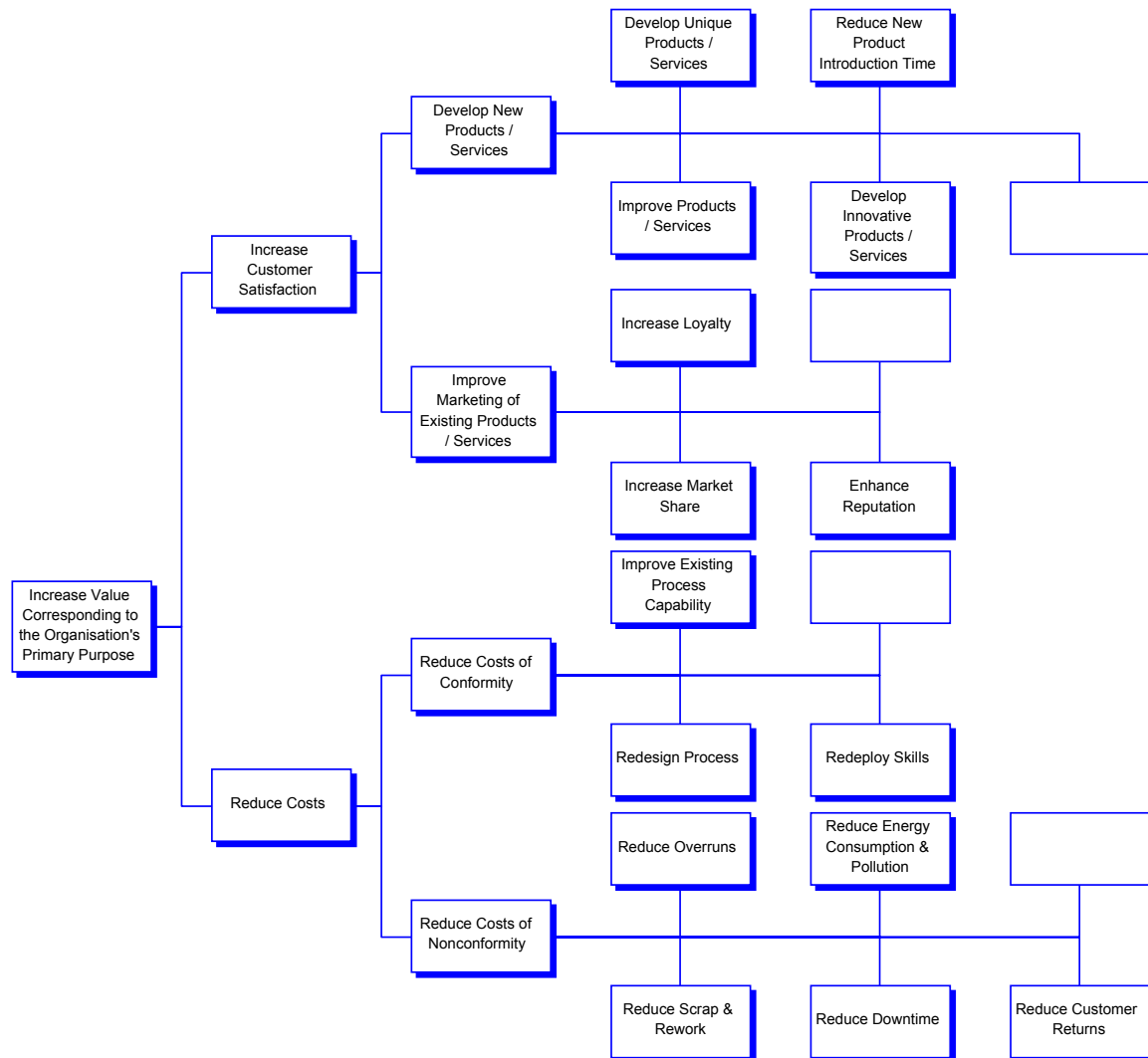
In approaching the subject, the Working Group wanted to focus on both ‘the above’ and ‘below the line’ benefits. In the ‘for profit’ situation customer loyalty, because of quality, ultimately translates into increased revenue, and hopefully profit. In the ‘not for profit’ situation the increase in ‘value’ is less tangible and may not equate to financial terms.

The benefits accrue to the direct customers and the wider community. Taguchi considered minimizing the ‘loss to society’. WG3 considered maximizing the gain to society, whether or not it can be measured in purely financial terms.

As the work progressed the Working Group explored several ratios including value (quality over cost) and the gain cost ratio. In the end a compromise was to consider the organization’s view and the customers’ view.

Throughout the writing process, the Working Group used the quality tools and techniques such as mind mapping, tree diagramming and flowcharting. To show the ‘ratio’ a comprehensive tree diagram was developed which is shown in simplified format below.

Figure 1: Tree Diagram of How to Improve the Economics of Quality



The Customer's View concentrates on the economic impact to the organization of the degree of customer satisfaction. This is monitored on a scale from complete dissatisfaction to delight. The guideline gives advice on how to monitor satisfaction and the ways in which customers behave.

The Organization's View concentrates on quality costing. The guideline covers how to identify and reduce quality costs. Cost of conformity is defined as the cost to fulfil all of the stated and implied needs of the customers in the absence of failure of the existing process. The cost of nonconformity is defined as the cost incurred due to failure of the existing process. In the long-term both costs can be reduced by sustained quality improvement.

Methodology

TR10014 contains a methodology for the managing of the economics of quality. This is presented as a flowchart and becomes the structure for the text.

The methodology starts with the identification or the review of the organization's processes. This enables the activities and associated costs to be identified, monitored and reported. It also assists the organization to identify, monitor and report the level of customer satisfaction. These two reports are then used in the management review to identify opportunities to improve processes and customer satisfaction. Next cost benefit analysis is used to determine if action is justified, taking into account the short and long-term benefits. If the action is approved, the organization plans and implements the improvement and monitors the results to give feedback to the process. The organization should repeat this methodology for continuous improvement.

The guideline contains a detailed step by step explanation of the methodology. In line with the new ISO9000, the methodology is completely process-driven and customer focussed. Other stakeholders need to be involved to ensure that the methodology is applied successfully.

The methodology does not mandate a quality costing approach but several of the more commonly used ones are listed as follows:

- a model where costs are grouped under the headings "Prevention, Appraisal and Failure" (known as the PAF model),
- a model where the costs are grouped under the headings of costs of conformity and costs of non-conformity (known as the process model),
- a model where the costs are grouped under the different phases of the life cycle of the product (known as the Life-Cycle Model),
- a model that focuses on identifying and measuring added value defaults in the trading account resolving from badly designed or performed activities.

Response

The response to the Technical Report has been mixed. Some experts have been frustrated that it does not prescribe detailed methods and deals with subjects, such as customer

satisfaction, which are 'too vague' for standards. Despite these concerns the guideline passed all the voting stages to FDIS.

The acid test has to be with the real and final customers, those people who buy and apply the standards. Prior to the release of the Technical Report members of the Working Group agreed to test the contents with real customers. The reviews from SMEs and public sector organizations have been particularly favorable.

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