

## ISO 9000 News 2/99

### How to profit from quality

by John Marsh

#### In brief

*“Quality sounds fine – but does it really contribute to profitability ?” For some answers, read on...*

*In 1990, the United Kingdom delegation to ISO/TC 176, the ISO technical committee responsible for ISO 9000, raised a new work item for a guideline on quality costing and economics. The Working Group ISO/TC 176/SC 3/WG 3 was formed to write this document which has been published as ISO Technical Report ISO/TR 10014, Guidelines for managing the economic effects of quality, and is available from ISO national member institutes and ISO Central Secretariat.*

*The following article on ISO/TR 10014 was written specially for ISO 9000 + ISO 14000 News by John Marsh, convenor of the Working Group which developed the document.*

*Mr. Marsh told The News : “This guideline sets out a methodology for investigating the economic effects of quality on any organization, particularly small and medium-sized enterprises (SME’s) 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.”*

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

Many vanguard organizations have long since passed the point of questioning the return on quality. However, many small to medium-sized enterprises (SME’s) and “not for profit” organizations are struggling with the justification for the investment that quality requires. 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 Group 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. Implementation of the principles contained within the guideline is to be encouraged, not mandated. The guideline also had to be flexible enough to allow any organization to use the contents.

### **More for less**

Right from the start, Working Group 3 (WG 3) wanted to take a broad perspective to the subject of quality economics. All members agreed that the subject is relevant to all organizations, particularly SME's, and to 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. American quality guru 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 in order 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.*

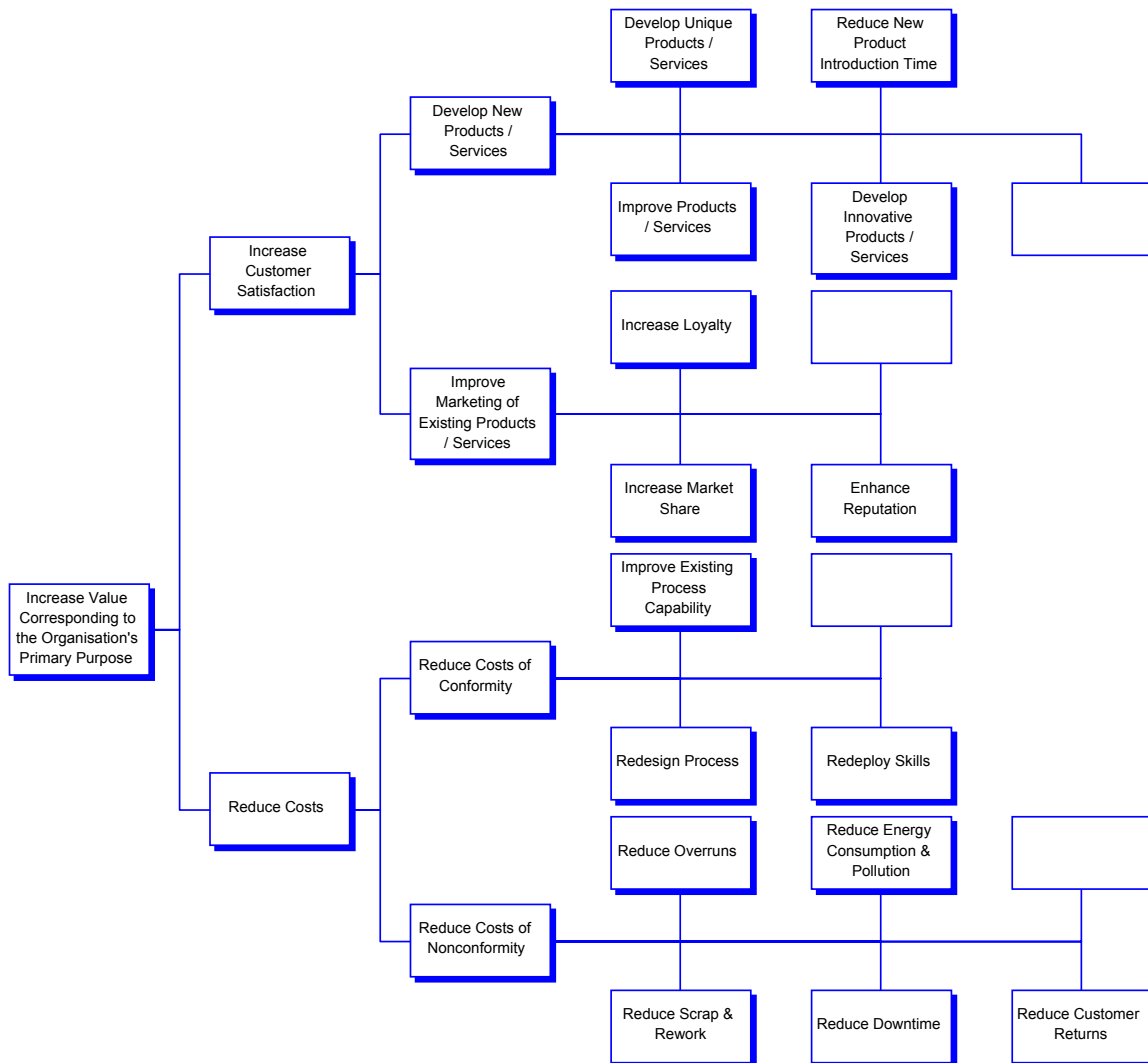
In approaching the subject, the Working Group wanted to focus on both "the above" and "below the line" benefits. In the "for profit" situation, customer loyalty – due to quality – ultimately translates into increased revenue and, hopefully, profit. In the "not for profit" situation, the increase in "value" is less tangible and may not equate to financial terms. The benefits accrue to the direct customers and the wider community. Japanese quality guru Taguchi considered minimizing the "loss to society". WG 3

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.

**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**

ISO/TR 10014 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 continual improvement.

The guideline contains a detailed step-by-step explanation of the methodology. In line with the revised ISO 9000 standards for the Year 2000, the methodology is completely process-driven and customer-focused. 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 nonconformity (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 resulting 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 final draft International Standard (FDIS).

The acid test has to be with the real and final customers : those people who buy and implement the standards. Prior to the release of the Technical Report, members of the Working Group agreed to test the contents with actual customers. The reviews from SME's and public sector organizations have been particularly favourable.

## **[Box]**

### **The development story**

- In 1990, the United Kingdom delegation to ISO/TC 176, *Quality management and quality assurance*, raised the New Work Item for a standard on quality costing and economics.
- The Working Group first met in Madrid in 1991.
- The Working Group was the third within Subcommittee 3, *Supporting technologies*, of ISO/TC 176.
- The standard was given the development number 10014.
- The Working Group had a final draft International Standard (FDIS) by 1996, but the release become embroiled in the Year 2000 revisions of ISO 9000.
- In Rio, in 1997, SC 3 voted to convert the FDIS to a Technical Report (ISO/TR 10014). This was on condition that the key content be absorbed in the new ISO 9000 series.
- ISO/TR 10014, *Guidelines for managing the economic effects of quality*, has now been published and is available from ISO's national members (a complete list is posted on ISO's WWW site at the following address : <http://www.iso.ch/adresse/address.html>) and from ISO Central Secretariat.

## **[ends box]**

## **[Captions]**

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*stakeholders in process improvement. He is author of The Continuous Improvement Toolkit and A Stake in Tomorrow both published by BT Batsford.*

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*The international experts of ISO/TC 176/SC 3/WG 3, the Working Group which developed ISO's guidelines on the economics of quality.*

### **[Citations]**

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Customer loyalty – due to quality – ultimately translates into increased revenue and, hopefully, profit

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