



The text reproduction is authorized with the citation: FAL Bulletin # 152, ECLAC. Issue No.152, April 1999

ISO 9000 STANDARDS: QUALITY AS A MARKET STRATEGY

In a context of increasing globalization it is essential to have a comprehensive system to guarantee the quality of the final products and inputs that are traded around the world. The main goal is to satisfy the expectations and needs of the final customer, wherever s/he may be.

The quality management systems set out in the ISO 9000 standards, used in conjunction with third party certification, have become a factor in market success for all commercial and industrial firms that have achieved this goal.

This article has been written by Francisco Millán Casanova, <rcb@trasnet.cu>, of RCB Sociedad Clasificadora, Havana, Cuba. Its main aim is to show how the way quality in products and services is conceived of can become a strategic weapon for positioning and maintaining oneself in today's competitive markets.

THE CONCEPT OF QUALITY

Developing human quality to create material quality. If there is one thing that the human race is agreed on, it is that man has always desired, aspired to and sought QUALITY; yet it is hard to understand why we do not achieve it more often. Every day, products made the previous day are analysed in thousands of firms throughout the world, and discussion goes on between production and quality control as to whether the product can or cannot be delivered. This debate normally takes place without taking the CUSTOMER into account.

Quality can no longer be defined in the traditional way as "the way someone or something is" or as a "set of functional characteristics"; any definition that fails to include the CUSTOMER as a fundamental term is incomplete, for no one can conceive of a business without a customer. As a general concept, quality is the totality of characteristics of an entity that bear on its ability to satisfy stated or implied needs. In this sense, best quality is that which satisfies the needs specified by customers, at the least cost to them.

The following measures contribute towards satisfying the customers' needs.

- Attain, maintain and continually improve the quality of a product or service.
- Improve the quality of operations and be aware of all the customer's needs.
- Inspire confidence in our own management and workers, that they doing quality work and that it is constantly improving.
- Inspire confidence in customers that quality requirements will be met and maintained, or that they will be fulfilled in products supplied.
- Inspire confidence that all the requirements of the quality system will be satisfied.

Throughout the world work, many firms strive to achieve success in their activities, either in conquering a market or keeping themselves in one. However, good intentions alone are not enough to achieve this goal, as business activity also depends on factors such as the nature of the product, the customers' socio- cultural base, credit facilities, market conditions and geographic location, among others.

Currently, there are people who believe that excellence will only be achieved by studying and applying marketing techniques; however the most important factor is **the quality of the good or service** and how it is perceived by the customer - decisive factors for competitive success in the market. Accordingly, an organization's fundamental goal in achieving success is nothing less than **QUALITY**.

QUALITY CONTROL

Before and after the Industrial Revolution. The types of control carried out on a product, or on production, can be divided into two stages: before and after the Industrial Revolution of the 18th century. In the first of these periods, controlling the quality of manufacture of materials and products was carried out by the craftsman himself; in other words, inspection was simply a form of self-monitoring, and in many cases the customer was present during manufacture. In the second stage, after the Industrial Revolution, the craftsman or worker, now inserted as a number in a productive organization, began to lose interest in both the end-product and the unknown customer. Self-monitoring and the means of knowing whether what was made was what was intended (keeping customer requirements in mind, or otherwise) was abandoned, to give way to **QUALITY CONTROL**, defined as "TECHNIQUES AND ACTIVITIES OF AN OPERATIONAL NATURE USED TO FULFIL QUALITY REQUIREMENTS".

Quality control has to be performed via inspections and testing. The inspector or analyst needs to be aware of the criteria and standards against which verification is to be made, along with other requirements, such as place of inspection, frequency and stages – that is the reception of products, products in process or end products - the methods, the equipment to be used and the records that have to be maintained.

Preventing problems rather than detecting them. After the Second World War, industry experienced rising manufacturing costs, a reduction in profit margins, more competitive markets and the introduction of new technologies. This forced companies to sell quality rather than quantity, and put the emphasis on preventing defects instead of detecting them by quality control. Quality then began to be thought of from another point of view: namely, "Prevention is better (and more economic) than cure", meaning that strategy should be to prevent problems rather than detect them.

Quality has to be manufactured. Carrying out quality control and product inspections is not

enough, as there are many activities inside a firm that have direct or indirect repercussions on quality. Quality has to be manufactured, and it needs a management system applied to all the firm's structures if the aim is to achieve the quality known as TOTAL QUALITY, or Quality Assurance Management, in other words, "ALL CHARACTERISTICS AND FUNCTIONS AIMED AT ACHIEVING QUALITY".

Given that each and every one of the activities of an organization are directly or indirectly related to the quality of the final product or service, we can conclude that QUALITY is no longer confined to a given department or group of people. Instead it becomes something in which each and every procedure, team, manager and operation is implicated; in other words, it extends to the control of all the firm's activities.

The five premises needed to achieve Quality Management. The premises needed to achieve Quality Management include, 1. Commitment from top management, 2. Customer satisfaction, 3. Analysis of quality losses, 4. Participation by all functions, and 5. Continuous improvement.

THE ISO 9000 STANDARDS FAMILY

New emphasis on quality. The term "quality" rapidly emerged as a new emphasis in industry and commerce at the end of the 1970s. At this time ISO Technical Committee 176 (ISO/TC 176) was set up with the task of summarizing the key aspects of successful organizations worldwide, and how to gather national and international standards for the development of quality systems. Despite some shared historical characteristics in the way they have developed, these standards were not sufficiently consistent to be used extensively in international trade. Their terminology and practical application in industry and trade were inconsistent and confused.

Quality as an important factor in international trade. The publication of the ISO 9000 Series in 1987, along with its 1994 revision and the accompanying terminological standards (ISO 8402), established standardization on an international scale and underpinned the increasing impact of quality as an important factor in international trade. The ISO 9000 Series has been quickly adopted by many countries and regional organizations and is rapidly supplanting previous standards relating to specific industries. This growing market success for the ISO 9000 Series is testimony to two important achievements of ISO/TC 176.

Firstly, the ISO 1900 Standards Series includes exhaustive quality management guidelines and concepts, together with a variety of models of the requirements of external quality assurance. Using an integrated systems architecture, the standards are grouped together in a numbering system that is easy to remember. These characteristics are all extremely valuable for the commercial and industrial needs of today's international market. Secondly, the ISO 9000 Standards Series was published just at the right moment to meet the growing need for international quality standardization, and for the widespread adoption of system certification schemes by third parties.

THE ISO 9000 FAMILY

Vocabulary, Terms and Definitions (ISO 8402)

ISO 9000-1	Guidelines for selection and use
ISO 9000-2	Guidelines for application

ISO 9000-3	Guidelines for software
ISO 9000-4	Guidelines for dependability of operation
ISO 9001,2,3	Models for quality assurance
ISO 9004-1	Quality management and quality system elements
ISO 9004-2	Guidelines for services
ISO 9004-3	Guidelines for processed materials
ISO 9004-4	Guidelines for quality improvement
ISO 9004-5	Guidelines for quality plans
ISO 9004-6	Operations for design management
ISO 9004-7	Guidelines for configuration management
ISO 10011-1,2,3	Guidelines for auditing quality systems.
ISO 10012-1,2	Quality assurance requirements for measuring equipment
ISO 10013	Guidelines for developing quality manuals
ISO 10014	Guidelines for managing the economics of quality

The standards in the ISO 9000 family are independent of any specific industry or economic sector, so they can be applied in any organization regardless of size or structure. It is important to mention that countries like the United States and Japan, the homes of well-known quality gurus like Juran, Crosby and Taguchi and so traditional exporters of the ways and means to make quality, have been quick to establish ISO 9000 quality standards; there are also hundreds of industries that have obtained certification of compliance with these standards, which shows that the use of these management systems is a competitive advantage to them at the present time.

DOCUMENTATION OF A QUALITY SYSTEM

The implementation of a quality system requires drawing up a set of documents: quality manual, procedures manual, working documents (instructions, records, plans and others).

The documentation should have the following general characteristics: 1. It should use clear, unambiguous and precise language; 2. It should be located where it is used and be up to date; 3. If data has to be entered into documents, this should be clear, legible and indelible, entered when the corresponding action is carried out and signed; 4. Amendments to data should be dated, signed and justified, making sure that the original data is highlighted; 5. It should be stored for definite periods; 6. It should be ordered sequentially from the bottom up; 7. Access to it should be defined; 8. In certain sectors, documentation should take account of other documents that regulate those sectors, and which are therefore an essential complement (code of good practice, IMO resolutions and others).

In addition, fulfilment of the following should be guaranteed: 1. Identification; 2. Being up to date; 3. Approval for use; 4. Elimination of obsolete documents; 5. Distribution, 6. Storage and Archiving.

THE COSTS OF QUALITY

Quality is free: not a gift, but free. What costs money is non-quality. Any action that prevents doing things well, the first time. The expression "costs of quality" means different things to different people. Some consider "costs of quality" to mean the costs of achieving quality. For others,

the expression means the costs of running a quality department. However, the most correct interpretation, suggested by quality specialists, equates the costs of quality to the costs of poor quality (mainly the costs of discovering and rectifying defective work). Thus, the expression "costs of quality" means **costs of poor quality**.

For example, the deficient organization of quality control in a given firm results in large amount of defective production, and generates losses due to the cost of reprocessing it. Total cost in this case is very high.

As expenditure on better organization of quality control in the company goes up, expenses relating to defective production come down. This is because the costs of preventing faults are always less than the costs of appraisal, so total costs decrease. When, due to better-organized quality control, a relatively low level of defective production is achieved, to reduce this level still further the costs inherent in quality control have to be increased to a greater degree. In this case, total costs rise, but never to a level comparable with the costs incurred in rectifying defective production.

It should be made clear that these total costs are made up of the sum of quality control costs and those of defective production. These total costs are called the costs of quality. They are classified according to the expenses making them up, namely: costs of prevention, costs of evaluation and costs of faults. The day-to-day control of the way costs of quality behave shows how these decrease as the quality management system implemented is improved.

CERTIFICATION

The close link between certification and standardization. The way producer-purchaser relations were initially practised led to producers making statements to the effect that their products satisfy a certain standard. The steady spread of mass production and diversification, together with the technological revolution of recent decades, have given rise to increasingly complex commercial relations and the interaction of numerous factors favouring the development of certification practices.

The demand for certified products or services is rising in the face of growing pressure from users who are increasingly organized in consumer associations, together with the urgings of insurance agencies, and national and regional policies on standardization and quality, very often backed by legislation, that specially focus on compliance with requirements for safety and the protection of people and the environment.

The creation of global patterns of trade and the speed with which globalization is becoming established, require certification processes to adapt quickly to these new circumstances. Certification should develop into an activity characterized by its effectiveness, agility and competence, with a rigour and impartiality that engender the confidence needed for its results to be recognized abroad.

For decades, certification by third parties separate from the supplier or customer, coexisting with and complementing statements about conformity with standards made by suppliers themselves, has been essential for demonstrating the quality of products and services.

The launch and universal acceptance of the ISO 9000 standards series at the end of the 1980-1990 period, the ISO 14000 series on Environmental Management in the present one, and work on product eco-labeling have revolutionized the way certification and the assessment of conformity in general are perceived.

The main signs of this development include the use of a broader and more precise vocabulary, which is currently still being perfected, together with appraisal and recognition via the accreditation of certification agencies, and the broadening of the scope of the activity beyond product certification to extend into Systems of Environmental Quality and Management and the certification of people. Certification as an activity is currently living through a phase of rapid development, driven by the requirements of business and world trade, and as such it is being forced to meet increasing demands. Thus we are witnessing fundamental changes that are still in motion, which may cause major modifications in our concepts and structures.

CONCLUSIONS

The implementation and continuous improvement of quality systems based on the ISO 9000 standards, have given the firms holding them the following benefits:

1. 80% improvement in the organization and planning of activities.
2. 60% improvement in the efficiency and productivity of operations.
3. 50% cut in losses.
4. 70% improvement in customer service.
5. 45% increase in staff motivation and stability.
6. 45% increase in market share.
7. 60% increase in public relations.
8. 30% reduction in customer audits.
9. Increased chances of receiving some national or international quality award.

There are numerous examples of how firms in developing countries can compete with others in any part of the world: as we have seen, best quality is what "**satisfies the needs specified by customers at the lowest cost to them,**" and clearly Quality Management Systems, so frequently used in our time, are one way of providing quality.
