Total Quality and Small and Medium Sized Enterprises

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01. Introduction

When a company introduces a quality management system, it is looking for a guarantee that its operation is being carried out properly, in the best way possible: in a word, that it is being carried out well.

In small and medium sized businesses, quality control can be perceived as either one of three things: fashionable, obstructive or obligatory. The introduction of a quality management system is sometimes motivated more by the need for a certification of quality, than the actual improvement of the final product. Moreover, quality theories are not usually developed by small businesses with less than 100 employees. However, in this report, we will look at ways to extract ideas and practices from quality theory, in order to improve our product and our competitiveness.

In small to medium sized businesses, a quality control system may actually be easier to implement, and it may also be easier to reap the benefits of the same. Human resource management, generation of a pleasant working environment and staff participation in the business, are all much easier to achieve in small businesses. Installing an efficient information system and information management within smaller organisations is faster and more efficient. Taking care of relationships with external agents (customers and provider businesses) is generally more enjoyable in this type of business.

Small and medium-sized businesses need to choose the elements from quality management systems which are best suited to their characteristics and work methods. In order to achieve a quality product, the provision of a good service is essential, a service which leaves the customer satisfied and which makes them prefer the good service of a small business to the mass production of a large, well-known brand.
Modern quality control began to develop in the period between World Wars, when quality control was one of the elements which resulted from the inspection which was carried out during that time. It could be argued that it all began in 1931, when Walter Shewhart published the book “Economic Control of Quality of Manufactured Products”, in which he proposed the basic principles of quality control based on statistical methods.

The second link in the Quality chain appeared in 1947, when a group of people working for Johns-Manville recorded a video entitled “Modern Quality Control”, with the aim of promoting the basic aspects of quality control of a business. The video was such a success that the theory was put into practice in the company, and subsequently employed by many other organisations in the following decades.

Meanwhile, Japan was dealing with the difficult task of reconstructing the nation after the Second World War. The US was extremely interested in collaborating in its economic and industrial development, and in seeing the possible recuperation of traditional Japanese skills. It was these factors which motivated the arrival in Japan of an eminent team of US experts, with the purpose of training the future managers of Japanese companies. Among the training techniques imported to the nation of the rising sun were the SQC, (Statistical Quality Control), which was particularly in keeping with the theories developed by Walter Shewhart. The staff who were carrying out engineering and scientific research in Japan saw in these theories the main reason for US victory in the war, and this prompted them to develop the discipline further.

Edwards Deming, one of Walter Shewhart’s students, trained Japanese engineers and executives on subjects such as the PDC cycle, causes of variations and control of processes using control graphs. The Japanese realised that over time, these practices could be traced to the initial situation of companies, with low employee motivation and disinterest of the management in the various areas of the business. For this reason, they encouraged Joseph M. Juran - another US expert – to teach them relative theories on the role of Management in the promotion of quality control activities, moving on from the basics of quality explained in Total Quality Management. Concepts such as quality policy and quality planning were introduced, and were reinforced with the publication of the book by Peter Drucker “The Practice of Management”, in which he proposed management by objectives.

Japan, with the purpose of bringing together all the theories, united Strategic Quality Planning and Total Quality Management (TQM) with the creation of the Deming Quality Award for business – one of the most prestigious awards in the world.

In 1972, the Mitsubushi factory in Kobe adopted modern quality concepts, broadening its focus from product design to the consumption or use of the product. They called this Quality Function Deployment - QFD.

Quality theory continued to develop in Japan, and was returned transformed, to the Western world. In 1986, Deming published “Out of the Crisis”, in which he clearly discussed his philosophy on quality, productivity and the competitive position, including his famous 14 Points...
for Management and Quality Assurance. The publication represented a global standardization of quality control policies.
What are the theories on quality?

There are many theories on quality management in businesses. All of them are centred on the idea that the entire business must be involved in the introduction of quality if it is to be achieved successfully; introduction of quality is a never-ending process, because once we manage to resolve problems in the productive process, new matters requiring improvement appear, which we will have to be managed by making changes, initiating a continuous improvement cycle known as the “quality circle” or to use the more up-to-date term, the “virtuous cycle of management”.

The main theories on quality management of service are:

**The Quality Trilogy** based on:

- Planning of quality. Determine the needs of the customer and develop the ideal activities and products to satisfy these needs.

- Quality control. Evaluate the real behaviour of quality, comparing results obtained with proposed objectives, in order to later work on reducing the differences.

- Improvement of quality. Establish an annual plan for continuous improvement, with the aim of achieving a beneficial and permanent change. What is acceptable today, may not be so tomorrow.

**The PDCA cycle or Deming Cycle**, which is based on:

- (P) Plan: producing changes based on current data

- (D) Do: execute

- (C) Check: evaluate the effects and gather the results to make changes.

- (A) Act: study the results, confirm the changes and experiment again.

**The five “S” Theory** from the Kaizen Institute, which, through the use of common sense, is based on:

- Seiri (Methodic Arrangement). Establishes the need to distinguish between the essential and the non-essential. All the documents, tools, equipment, stocks and any other resources which are non-essential for carrying out the work must be eliminated.

- Seiton (Order). Requires that all the resources employed in the process be in their designated place, so that they can be located and used in the fastest and most efficient way possible.

- Seiso (Cleanliness). Consists of maintaining all equipment and tools in an optimal state of preservation, by cleaning and organising work areas.

- Seiketsu (Standardisation). Proposes developing standards and procedures in all the areas and activities related to the process.
- Shitsuke (Discipline). Ensuring that all staff involved in the process understand and implement the established standards and procedures.
What are the ISO 9000 norms?

The family of ISO 9000 norms is made up of two initial norms, ISO 9001 and ISO 9004, which are independent but designed to be used in a compatible way. While both refer to the Quality Management System, the ISO 9001 norm can be used as a unique reference for the certification of quality systems, and includes four requirements:

- Responsibility of management.
- Management of resources.
- Creation of the product or service.
- Measurement, analysis and improvement.

The ISO 9004 norm goes further. With a broader sense of quality, it is not intended to be used as a guide for the implementation of these systems nor for the certification of them. The norm is based on the eight Quality Management Principles.

- **Focus on the customer.** Organisations depend on their customers and, as a consequence, we need to understand their current and future needs, satisfy their demands and make the effort to exceed their expectations.

- **Leadership.** Leaders establish the unity of plans and the direction of the organisation. They are responsible for the creation and maintenance of an internal environment in which staff can be completely involved in achieving the objectives of the organisation.

- **Staff participation.** Employees at all levels are the essence of the organisation, and their total dedication to it makes it possible for their skills to be used to the benefit of the organisation.

- **Focus based on processes.** The desired result is achieved more efficiently when the activities and related resources are managed as a process.

- **Focus on the management system.** Identifying, understanding and managing the processes related to a system contribute to the efficiency of an organisation in the achievement of its objectives.

- **Continuous improvement.** Continuous improvement of the entire organisation must be a permanent objective.

- **Focus based on decision making.** Efficient decisions are based on the analysis of data and information.

- **Mutually beneficial relations with supplier companies.** An organisation and its suppliers depend on each other, and a mutually beneficial relationship increases the capacity of both to create value.
What is the European model of excellence EFQM?

The European Model of Excellence was created in 1992 with the European Quality Prize. It was modified in 1997, due to a recognition that business practices and structures were changing, and that more importance was being placed on aspects such as management of associative relationships, the role of knowledge of the inner workings of the business, the importance of the “plan, do, check, act” cycle, the relationship between what an organisation does and what its strategy can achieve.

Thus, the new Excellence Model places more emphasis on the customer, gives more importance to the chain of evaluation, and reflects the growing importance of knowledge management within the organisation.

The principle of this model is: “Excellent results for performance, customers and society in general, are achieved through leadership of the organisation which is promoted by its business policy and strategy, its employees, resources and processes.”

The 8 fundamental concepts of the model are:

- The orientation of the results: Satisfy needs in all areas.
- Focus on the customer: The customer is the final judge of the quality of the service.
- Leadership and constancy of objectives: Create an overall objective for the organisation.
- Manage through processes and actions: Understand the relationships between all business activities.
- Training and dedication of employees: Take advantage of the entire potential of the members of the organisation.
- Learning, innovation and continuous improvement.
- Development of partner relationships: Mutually beneficial relationships with partners.
- Public responsibility: Focus on ethics.
Practical application of the theory

The company should be understood as a system, a group of elements which operate towards the same goal. This system is made up of a series of related processes. Each element leads to another one, and an error in one of them implicates and damages the other elements of the organisation.

As a consequence, a perfect understanding of every aspect of the business is essential. Good managers are conscious of all the processes being carried out in the organisation. They are aware of the flows which are created between departments, as well as the relationships generated. Understanding the business in this way provides a lot more essence with which to organise, manage and plan tasks, as well as implement a quality plan.

A business system is made up of several elements: employees, equipment or technology, and external agents which influence the inner workings of the business, such as suppliers, customers, etc. Quality planning must be present in every area of the business, with no element left out, since, as mentioned previously, each one has an influence on the others.

We have divided quality management of the business into the following areas, in order to explain their application, step by step.
Quality Management directed at the customer

The aims of the application of quality to customer relationship management, as well as to obtaining increased profits, an aim which will be repeated throughout the entire management of quality process, result in achieving customer satisfaction by means of the product being offered and, in this way, generate customer loyalty.

For this reason, we need to study and understand the needs and expectations of our customers. We have to find out who the consumers of our products are, what are their characteristics and how they can be differentiated, creating customer group types. The entire organisation has to be aware of the customer profile and work with this reference.

We can measure the satisfaction of the customer by acting on the results obtained. Although satisfaction may seem like an abstract concept, it can in fact be measured and studied. We must do this using clear parameters, which will enable us to create a scale of satisfaction.

The way in which we communicate with our customers is important, as is customer feedback. We cannot settle with simply offering a well-manufactured product. We have to make the effort to get a response from our customers, an indication that our efforts to achieve quality are headed in the right direction. Although it may seem over-exaggerated or unimportant, this task will depend on the continuous improvement of our relationship with the customers.

Although they may seem like simply decorative elements, tools such as suggestion boxes, complaint books or quality questionnaires are highly useful tools for studying the impact of our products.

Quality management of human resources

In this section, we will discuss the principles of the ISO 9000 referenced in leadership and staff participation, understanding both the company employees, and its managers. The main aim of staff quality management is to obtain work motivation, a good working environment and development of the creativity and skills of each member. A business in which one works well, is able to get more from its members, which will lead to its success. However, this depends on the participation of the entire staff of the business, at all levels.

It is the responsibility of the leader to clearly establish the business objectives, so that the staff know what the goals of their work are. This management task involves providing the staff with the resources, training and necessary freedom to act with responsibility and authority, as well as encouraging and recognising the contributions of each member of staff.
The employees, for their part, must understand the importance of their contribution and their role in the organisation, and be clear about the limits of their work. It is very important that they feel motivated to increase their authority and training, and they must be willing to share their knowledge with the rest of the team. Good knowledge management is one of the most important areas of the company, in addition to the knowledge which people possess. We should not be afraid to share files and documents with the rest of the team.

**Quality management of relationships with supplier companies**

A key resource for achieving business quality is the creation of loyal relationships and collaborations within our business environments. It must be understood that customers and supplier companies depend on each other, and that supplier companies are also strongly linked to their evaluators. Achieving a solid relationship without problems is the quality mission in sales.

In order to maintain a good relationship with supplier companies, we need to identify and select the key businesses, those which offer the most and work the most effectively, in order to know where to focus our attention. We need to view these businesses as partners, and not possible competitors: this means we have to openly share information, make future plans and establish joint activities of development and improvement.

The new quality theories lay the foundations for the importance of management in improving customer satisfaction, understanding how customers from within or outside the company receive a product or service within a chain of functions of the company. In this way, we are able to view supplier companies as customers, worthy of being treated with the same service that future consumers of our products will receive.

**Quality management of information**

Information is the most single important element for businesses in the new economy, understood not as digital economy, but rather as the whole of business activities which are immersed in the management of new economic processes being developed at global level. Those who are best able to manage and identify quality information, essential information, are consistently found among the top rankings in the business world.

This, therefore, is one of the most relevant areas for the good management of quality. Nowadays, it is impossible to talk about information management without mentioning new information and communication technologies. Businesses must be kept up-to-date, both information and processes need to be updated constantly.

Well managed and properly stored information saves time at work and helps save on expenses. Putting an end to the mountains of paper work, and transforming this information into a useful work resource, is one of the most important missions and priorities of a business. And theories such as knowledge management can help us understand the importance of information in economic relations.
In this chapter, we will focus on Service Quality, the final point of the business quality management theories. According to these theories, quality is the constant generation of value for the customer. Customer satisfaction does not only involve eliminating negative qualities, but also providing positive ones, which means meeting and exceeding customer expectations.

Usually, efforts to improve quality are directed at minimizing or eliminating the negative quality of the product (defects, breakdowns, etc.). However, increasingly, customers are demanding both products and services. The product is the final result of the productive chain of a business, understanding the product materially and immaterially. For example, products from a training company, from the quality viewpoint, are the courses which it offers. Service means everything which the business offers the customers and which covers and complements the final product. For the customer, the quality of the product (what to buy) is just as important as the agreement with the company (how it is bought). Often, it is the quality which is attributed to the company globally that sells the product, as is often the case with large commercial brands (who buys them).

For the management of quality focused on service, the most important aspect is the opinion of the customer. It is fundamental to know how to listen to and measure their satisfaction when evaluating our products and services.

Detection of the needs of the customer by a business is a common practice, but one which is not motivated by competitiveness itself within the organisation. What is truly competitive is identifying the needs which are not perceived by the customer, those which not even they know they have. These needs, if incorporated into the products and services, will give the company a strong advantage over the competition. The method of identifying these needs is to study the habits and new behaviours of consumers, and the way in which they use the products. Successful companies are those which have the ability to identify new needs and desires.

Total Quality is based on the capacity to satisfy the needs of the customers, understanding everyone from the users to the shareholders in the company. To control and work on these quality principles, it is essential to evaluate and work with indicators which measure the levels of customer satisfaction, in order to make continuous improvements. This includes factors which cannot be measured and cannot be improved, which is the reason why so few resources are invested in quality evaluation models. In management of the quality of service, the source of measuring the satisfaction level of the consumers and users, is the end customer.
The quality of service is measured by comparing the Expected Service of the customer with the Perceived Service. This difference is evaluated on the basis of five factors:

- **Reliability**: Ability to provide the promised service in a reliable and careful manner.
- **Capacity to respond**: Availability and desire to help users and provide a fast service.
- **Security**: Knowledge and attention demonstrated by the employee and the capacity of the same to create credibility and trust.
- **Tangible elements**: Appearance of physical facilities, equipment, staff and materials of communication.
- **Empathy**: Individualised attention offered by a business to its customers.

The importance that the customer gives to each of these factors is not the same for each one. As a rule, the first three factors are usually the most highly valued. However, the customer evaluates the product which they have acquired on the basis of these elements, and the difference between what is expected and what is received is what best illustrates the satisfaction or dissatisfaction of our customer and, as a consequence, the quality of the service being offered. The measurement of customer satisfaction needs to made in an active way: by making enquiries and continuously communicating with them.

The quality of service, being a comparison between expectations and perceptions, can be increased by improving the perception, acting on quality service factors, or managing the expectations of the customer by dealing with them properly (keeping them informed, involved in the company, etc.)

In order to understand both the expectations of the customer and the final satisfaction of the same, we need to employ the appropriate measurement tools. We have already stated that the most important resource for measuring service quality is a personalised questionnaire which the customer must complete.

This questionnaire should list certain attributes for each factor of the service quality (reliability, guarantee, etc.). The surveyed user must evaluate their expectations and perceptions of each attribute. In this way, the questionnaire provides us with comprehensive information which enables us to detect where the most important deficiencies are found.

This tool is very valuable for channelling the improvement in the right direction for the customer, and it also facilitates specification of the efforts and resources invested by the company in quality management.
05. Conclusions

In this report, we have examined the main issues and ideas related to total quality, and how these can be of use to business managers of any kind.

One of the most intuitive theories of Total Quality which we analysed is the five “S” theory of the Kaizen Institute. The theory is based on five principles: Seiri (Method); Seiton (Order); Seiso (Cleanliness); Seiketsu (Standardization) and Shitsuke (Discipline)

We learned about the European Excellence Model, which has as its main objective:

“Excellent results for performance, clients and society in general is achieved by means of the leadership of the organisation, which promotes the business, staff, resource and policy and strategy procedure.”

The 8 fundamental concepts of this model are the orientation of results, focusing on the customer, leadership and constancy of objectives, management by means of procedures and actions, staff development and dedication, learning, innovation and continuous improvement, the development of partner relationships and social responsibility.

We discovered some trends which can be directly applied to the business, such as:

- The importance of suggestion boxes, complaint books or satisfaction questionnaires as instruments for finding out the impact of our products on the end user.

- That the main goal of quality management of the staff of the business (managers included) is to promote work motivation, a good working environment and development of the creativity and skills of each member.

- That, in order to maintain a good relationship with supplier companies, we need to identify and choose those which offer us the most and work the most effectively, to know where to focus our attention. We should consider them business partners rather than possible competitors, openly sharing information, making future plans and establishing activities jointly for development and improvement.

- That information is the most important factor for businesses today and we need to be able to organise, store and manage it correctly. In this way, we save time, work and money in management.
Finally, we saw how the quality of the service is determined by comparing the Expected Service by the client (we recall that the staff or the company and provider companies are also clients) with the Perceived Service and this difference is evaluated in five complementary dimensions:

- **Reliability** or the ability to provide the promised service on time and in the correct way.
- **The capacity for response**, or availability and willingness to assist users and to provide a fast service.
- **Trust**, or the knowledge and attention demonstrated by the staff and their capacity to generate credibility and trust.
- **Tangible elements** or the appearance of the physical premises, the equipment, staff and communication materials.
- **Empathy**, or the personalised attention offered by a business to its customers.
06. Further information

  http://www.cidem.com/cidem/binaris/Premis%20Q%202005_tcm48-9414.pdf
- ISO 9000 and ISO 14000 sections of the website of the International Organisation for Standardisation
- Quality section in the Modern Encyclopedia of Administration by Jürgen Schuldt
  http://www.geocities.com/WallStreet/Exchange/9158/indicete.htm#calidad

Written by the Barcelonanetactiva team from the following sources of information:

  http://www.geocities.com/WallStreet/Exchange/9158/hcal.htm#DESPLIEGUE%20DE%20LA%20FUNCION%20DE%20CALIDAD
- Centro Catalán de la Calidad-CIDEM: Q. Revista de Calidad., n.35, October, 1999:
  http://www.cidem.com/cidem/binaris/rq35_tcm48-6113.zip


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