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## A PERSPECTIVE ON TOTAL QUALITY MANAGEMENT IN TODAY'S SCENARIO

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### ABSTRACT

In this ever changing socio-economic, cultural, technological environment and mushroom growth of corporates and multinational companies it has become an herculean task to compete with the requirements of the customer which are of global standards and total quality management plays a prominent role to meet the day-to-day requirements of a common man with high standards. To overcome the deficiencies, companies give the goods and services of high quality and this being the reason for total quality management.

**KEYWORDS :** Quality Control, Accountability, Affordability, enhancement, scrap value, COQ, PONC, POC, Customer satisfaction, Defect prevention, Employee participation etc.,

### INTRODUCTION:

Before defining the terms used in quality management. It is best to try to understand what is meant by quality. Asking a class of motivated students for a definition of the terms would provide a number of answers: accountability, availability, price and so on. The choice of the best of most important definition from this group will vary for different people, different situations and different products. Total Quality Management tries to escape this problem by leaving the definition open; 'Customers define quality'. This places a great responsibility, on the service-provider, to look beyond education, experience and international standards and towards the customer in order to find out his or her expectations.



### WHAT IS QUALITY?

The term quality is often used loosely and it conveys different meanings to different people. When referring to a product, it generally signifies the degree of its excellence. However, when examined closely, this meaning of quality is found to be misleading. For instance, a Buick or a Mercedes may be an excellent car in Europe or America, but it obviously is a poor vehicle for use in the jungle tracks of Africa or India. Similarly a good walking shoe makes unsuitable footwear for sports. Thus there can be no absolute quality rating for a product, without relation to its intended use. The quality of a product can therefore be defined as "fitness for the purpose". The more fully it serves its intended purpose, the higher its quality.

**QUALITY CHARACTERISTICS:**

The quality of a product consists of a number of elements, each of which has a definite function that contributes to making the product fit for its intended use. These elements, such as shape, size, or physical, chemical or sensory properties are the building blocks of product quality and are called quality characteristics. Although some of the quality characteristics can be specified in quantitative terms, no single characteristic can be used to measure the quality of a product on an absolute scale. The overall quality of the product depends on the sum total of all the characteristics and attributes which have a bearing on its end use.

The problem is not solved even if the customers' expectations are accurately known; changes in situation or simply the passage of time may lead to different expectations. Although the customers' expectations are subject to a great deal of variation, the service-provider is expected to spend time and money in trying to accurately ascertain them. The following four "As" are usually expected from the service-provider by a customer.

1. Accountability
2. Affordability (Price)
3. Availability
4. Appearance

Total Quality Management (TQM) is an enhancement to the traditional way of doing business. It is proven technique to guarantee survival in world-class competition. Only by changing the actions of management will the culture and actions of an entire organization be transformed. TQM is for the most part common sense. Analyzing the three words, we have

**Total** – Made up of the whole

**Quality** – Degree of excellence a product or service provides

Management – Act, art, or manner of handling, controlling, directing etc.,

Therefore, TQM is the art of managing the whole to achieve excellence. The Golden Rule is a simple but effective way to explain it: do unto others as you would have them do unto you.

TQM is defined as both a philosophy and a set of guiding principles that represent the foundation of a continuously improving organization. It is the application of quantitative methods and human resources to improve all the processes within an organization and exceed customer needs now and in the future. TQM integrates fundamental management techniques, existing improvement efforts, and technical tools under a disciplined approach.

**TQM REQUIRES SIX BASIC CONCEPTS:**

1. A committed and involved management to provide long-term top-to-bottom organizational support.
2. An unwavering focus on the customer, both internally and externally
3. Effective involvement and utilization of the entire work force.
4. Continuous improvement of the business and production process
5. Treating suppliers as partners
6. Establish performance measures for the processes.

**CONCEPTS IN TQM:**

TQM emphasizes a number of concepts and different people have tried to arrange the concepts in different ways. Basically TQM is defined as a "commitment to continuous improvement of quality" not just in industry but also totally in society. This idea can be further divided into three basic concepts, the are:

- Customer satisfaction
- Defect prevention
- Employee participation

### MEASUREMENT TERMS USED IN TQM;

The usual measurement scale used in traditional management is money and the desired outcome is profit. Certainly money is a good measuring scale; it can be easily used for both comparison and calculation. What about quality management? Although money is still used, it is not in the form of profit. A number of indices, such as scrap value, COQ, PONC and POC are used for comparison and calculation. Along side these some other measuring scales are also used. As stated earlier, quality management is about information-orientated administration, and money is not always a useful index for measuring information.

### In order to achieve the above objectives the following steps have to be taken:

- Focusing on customer expectations
- Developing a quality measurement system
- Identifying root causes
- Developing a communication system
- Employee motivation
- Training for quality
- Process improvement

**Commitment to Continuous Improvement of Quality:** It is widely understood and accepted that improvements in the quality of products and services cannot be achieved only by acting for short periods of time or concentrating on a few parts of industry or society. If we need high quality products and services and a good quality environment in which to live, everyone should be prepared to work towards it continuously. Former US President George Bush once said: "The improvement of quality in products and the improvement of quality in services –these are the national priorities as never before". However, years before President Bush asked Americans to work towards quality improvement, Japanese industry and society had started doing just that TQM is not just the latest management fad, it is a new way of thinking that will require fundamental changes in the way we carry out transactions, not only in business but also in society as a whole.

### FOCUSING ON CUSTOMER EXPECTATIONS:

Lee Iacocca once advertised that Chrysler has three rules: "Satisfy the customer, satisfy the customer and satisfy the customer". Certainly for anybody who believes in the quality management philosophy, customer is a golden word. In TQM the word customer is defined differently. Instead of the traditional customer outside the company, every transaction, whether it is inside the company or in society is defined as taking place between a service provider and a customer.

### DEVELOPING A QUALITY MEASUREMENT SYSTEM:

A good measuring scale would be very useful in this regard. In social sciences such as Economics or Politics, however, finding a measurement scale is not easy. Although money can be used as an index, its mismanagement by government or banks can have disastrous consequences. At the micro level of small companies, the money related index that can be used is profit. Even though it is generally found to be a good measurement index, frequent attempts to make profit on a short-sighted basis can lead to

quality disasters. So we try to use indices like Scrap Value and Price of Non Conformance (PONC) to evaluate our productivity.

### **Quality Control:**

The term 'Control' in the context of management is a function whereby performance is measured against the planned objectives, and in case of deficiency, necessary remedial measures are taken to ensure the achievement of the stipulated objectives.

When applied to the quality of a product, then term 'Quality Control' denotes all those activities which are directed to maintaining and improving it. In specific terms it involves:-

- a) Setting of quality targets
- b) Appraisal of conformance
- c) Taking corrective action where any deviation is noticed
- d) Planning for improvements in quality.

### **EVOLUTION OF QUALITY CONTROL:**

The concept of quality control is not new. It can be traced back to the Stone Age man who examined the point of his rough-hewn stone tool to see whether it was sharp enough for his purpose. In present day terminology, he was assessing the quality of the tool which he had manufactured, by comparing it with his mental picture of a good tool. Our Stone Age man had one distinct advantage over the present day quality engineer; since he himself was the manufacturer as well as user, he knew exactly what he wanted and thus made efforts to attain the quality which would meet this purpose. This situation changed with social progress. For better efficiency, jobs were divided and various people specialized in the production of different goods and services. For instance, potters made all the pots and weavers wove the cloth required by every one in the village. Further progress continued along these lines and was characterized by growth in size and specialization to meet the changing requirements of society. Along with the caging production system, quality control practices also evolved to suit the products and methods of production. Important steps in this evolution are briefly described below:

#### **(a) Craftsmanship**

From early civilization to the industrial revolution, quality control was exercised by the craftsman himself, or the master crafts man who guided a group of craftsmen. The reputation for craftsmanship and the incentive of better price for a superior product were the main governing factors of product quality. This situation prevailed until the nineteenth century.

#### **(b) Supervisor's Control:**

With the expansion of manufacture during the industrial revolution, large factories were established to meet the increasing demands of the consumers. This gave rise to the need of supervisors to control the work of a large number of workers. Usually, supervisors were picked up from among the elder workers who had thorough knowledge of the job, and this was able to guide and administer the other workers. Among other function, the checking of the quality of jobs produced in the shop was also the responsibility of the supervisor or the foreman. This was usually by visual check of jobs, for which he mainly relied on his subjective experience.

#### **(c) Inspection:**

With the advent of the manufacture of interchangeable components on a mass scale in the early part of this century it became essential to critically examine each component with the aid of measuring instruments or gauges. Obviously this job could not be performed by the shop supervisor,



who was fully occupied with other problems concerning production. Thus a full-time inspector came on the scene and the quality function was separated from production. With these developments a new discipline, "Engineering Inspection". Came into being and elaborate inspection organization were created in large manufacturing companies.

#### **e) Statistical Quality Control:**

World War II generated a great upsurge in industrial activity. The tremendous requirements of defence stores necessitated mass production on an unprecedented scale. As conventional inspection methods were inadequate for this purpose, statistical methods like sampling tables and control charts were introduced, which reduced the burden on the inspection organization, and enabled it to cope with mass production. Although, statistical quality control did increase the efficiency of the inspection organization and enlarge the area of control to include in-process check, it still remained an extension of inspection, as it tackled the quality problem only at the shop floor level by the physical inspection of a part or whole of the product. It could not view the problem from the overall company perspective as the management saw it.

#### **CHANGING QUALITY CONCEPTS:**

Upto the late forties, product quality was generally considered in terms of functional efficiency and aesthetic appeal. Rapid technological advancement during the post-war has led to the emergence of a new concept of product quality. It has been realized that there is more to any product than streamlined appearance and ability to function well at the time of purchase. There are attributes such as continued fault-free service and maintenance costs which are equally important from the customer's point of view.

Since quality is a measure of the user satisfaction provided by a product, it should include the following characteristics:

- Functional efficiency
- Appearance
- Ease of installation and operation
- Safety
- Reliability
- Maintainability
- Running and maintenance cost

The above mentioned quality features do not just occur in the product. They have to be specially incorporated in the design and a conscious effort is required during manufacture, to achieve them in the actual product. This brings us to the two facets of quality; namely "Quality of Design" and "Quality of Conformance". Quality is initially created by the designer in the form of product specifications and manufacturing instructions. The extent to which the design is inherently capable of providing user satisfaction can be termed as "Quality of Design". On the other hand, Quality of conformance relates to the fidelity with which the product conforms to the design. The control of both these aspects of quality is important if the end-product is to meet customer acceptance.

#### **TRAINING FOR QUALITY:**

Quality management is a newly evolving management philosophy and it is not yet taught in the traditional management schools as a separate discipline. Managers therefore need to be trained in quality management objectives and tools. Employees also need a brief introduction to quality

management and its tools in order to dispel fear and ensure efficient participation by all in the new methods. More importantly, however, employees need to be trained so that they have a good understanding of the work that they do and reasons for doing it in any given way. Many of the things we do, not only in our work but also in our day-to-day life are done without an understanding of the reasons for doing them. As a result we cannot make changes in processes that we may not properly understand even if they are causing quality problems. Only a training program that will give employees a real understanding of the reasons behind the processes of their work can help improve quality.

### **PROCESS IMPROVEMENT:**

Collecting information, making measurements and identifying root causes are all important, but nothing changes unless someone does something. The implementation of such strategies will encounter more than a few challenges. People are often resistant to essential change. When planning for long-term gains, the short-term problems, that may or may not be related to the main problem, cannot be ignored. Balancing all these and doing something is an art. It is what management is all about. There is nothing to be scared about it. A good education, intelligence and some experience will teach this to you.

### **MEASUREMENT TERMS USED IN TQM:**

The usual measurement scale used in traditional management is money and the desired outcome is profit. Certainly money is a good measuring scale; it can be easily used for both comparison and calculation. What about quality management? Although money is still used, it is not in the form of profit. A number of indices, such as scrap value, COQ, PONC and POC are used for comparison and calculation. Alongside these some other measuring scales are also used. As stated earlier, quality management is about information-oriented administration, and money is not always a useful index for measuring information.

### **TOTAL QUALITY MANAGEMENT: A NEW CULTURE:**

It is being increasingly recognized that a high quality of product and service and their associated customer satisfaction are the key to survival for any enterprise. The nature of the current worldwide competition generally demands from any corporation the following four types of ability characteristic:

- 1.To understand what the customer wants and to provide it, immediately on demand, at the lowest cost.
- 2.To provide products and services of high quality and reliability consistently.
- 3.To keep up with the pace of change, technological as well as political and social.
- 4.To be one step ahead of the customer's needs; that is, to predict what the customer will want one year or ten years from now.

**Ofcourse, as Deming says:** "You don't have to do this: survival is not compulsory!" But the fact is that any company which lags behind in terms of any of the above characteristics will inevitably be overtaken by a competitor.

### **SERVICE QUALITY:**

Service Quality: Parasuraman' and associates (1985) defined service quality as the conformance of services to customer specifications. Competitive quality requires designing, implementing and continuously adapting systematic transformations to provide efficient, extraordinary, value-added outcomes that are important to a wide range of organizational



stakeholders. Kessler (1995) defined total quality service as customer satisfaction during moments of truth.

**Dimensions of Service Quality:** The dimensions of service quality comprise: Accessibility, Aesthetics, Appropriateness, Assurance Availability, Conformance, Continuity, Courtesy, Durability, Effectiveness, Efficacy, Efficiency, Empathy, Features, Flexibility, Freshness, Maintainability, Performance, Personal Perspectives, Reliability, Reputation, Responsiveness, Robustness, Safety, Security, Serviceability and Timeliness.

### **QUALITY AND MANAGEMENT EDUCATION:**

The qualitative aspect of any organisation is also as important as its technical aspects; they should not just equip a student with technical skills and expertise, but also develop him the right attitude. For instance Japan is considering a new legislation, where intellectual property can be considered as a security against loan and if we want to emerge as an economic power, we will have to do so thought instilling quality in our management education, it should be our endeavour to produce world-class technical and management personnel who would be sought globally. Total Quality Management should be dusted to make the management education effective. TQM is a style of management that has worked for several decades overseas and is receiving growing attention in the United States. Now some colleges and universities are beginning to recognize that TQM values are more compatible with higher education than many existing management systems.

### **THE HUMAN FACTOR IN QUALITY MANAGEMENT**

The human element is the most important input in any industrial enterprise and it is the one, which is most difficult to control. This factor operates at all levels, from the lowest worker who actually produces the goods by use of manual effort, right to the chief executive who controls the whole complex system. Quality management is essentially a control function with respect to the quality of a product. The responsibility of quality, as we have already seen is not confined to any single individual or group. It is shared very widely by all departments such as Design, Engineering, Production and Sales, which deal with the product. To be successful, the quality manager in addition to efficiently running the quality organization, as also to control such activities of other departments which contribute to the quality of a product. At the same time he must not give the impression that he is interfering in the affairs of other departments, which is likely to cause resentment. Thus quality Control is not only a technical problem, it is also a problem of human relations. A well thought out and meticulously planned quality programme may still fail, if Quality Manager is not able to secure the cooperation of other concerned departments and groups.

### **Attitude of Top Management:**

The managements of most companies in this country have still not realized the true potential of Quality Management. To most of them it is just a fancy name for Inspection, which can be carried out by a handful of inspectors. It is generally felt that there is no need for quality control mere to interfere with production and other departments. It is argued that after all these departments know their job and have been doing it for years. This attitude of the top management is reflected, at all lower levels, and the departmental heads resent intrusion by the quality department, which is often accused of 'minding everybody's business except their own'. Therefore the very first job of the Quality Manager is to convince the top management about the necessity of introducing quality control programmes. For this, he will have to make a concrete plan specially tailored to meet the quality needs of the company. The

plan should emphasize the tangible benefits that may be derived and should also indicate the yardstick by which the success of plan could be evaluated. The saleability of the plan could be enhanced by giving examples of the successful application of similar programmes in another company or plant. The plan should be put across in a simple and direct manner, without unnecessary details and the complicated mathematics involved. Once the plan and the benefits which will accrue from it, are clearly understood it will be very shortsighted management which will not lend it its whole-hearted support. After the quality plan or programme has been accepted by the Management, it is advisable that it should be introduced by the Chief Executive himself by presenting the essentials of the plan to all key personnel. This will tangibly demonstrate that the programme has the genuine support of the management. The fact that the quality programme is fully backed by top management will also condition the attitude of other departmental heads and make the task of the quality manager much easier.

### **Co-operation of other Functional Groups:**

Mere acceptance of quality programme by the top management cannot automatically assure its successful implementation. Other company personnel may pay lip service to the quality programme, but unless their whole-hearted co-operation can be secured, the chances of success of the programme are rather slim. The first factor in this respect to be considered is the normal human reaction to any change. Machiavelli once said "There is nothing more difficult of success nor more dangerous to handle than to initiate a new order of things". Resistance to the introduction of the quality control programme may be aggravated by the fear of loss of one's standing, and authority or suspicion of it causing redundancy, or simple stubbornness. Another factor which acts as an impediment to quality control is the production-oriented organization. With the advent of mass production technology, maximizing production has become the sole aim of the production Engineers and Managers. In the process, quality has suffered. This attitude can be achieved only at the cost of quantity. Production staff have to be educated to remove this misconception, Actually, a well planned quality programme generally results in increased production due to reduced scrap and re-work and longer production runs due to a known rate of process drift.

As the implementation of the quality programme requires the active co-operation of other functional groups, they should be involved at the planning stage itself. All affected groups and departments should be consulted during the formulation of the quality programme and they should be encouraged to put forward their points of view and suggestions, which should be given due weightage while finalizing the programme. This can be achieved by adopting a committee approach for the management of wide spread quality activities. Various committees comprising of executives from all the concerned departments could be formed for the planning and co-ordination of specific quality activities such as,

- New product planning and design review,
- Quality planning and process control
- Defect investigation, and analysis of customer complaints
- Quality motivation.

The aim should be to secure the genuine participation and involvement of other functional groups, so that they feel, it is their own programme and not something which has been forced on them by an outside agency. Under such circumstances, the programme will have a much better chance of success.

**Attitude of Operators:**

If we were asked to name one individual who contributes the maximum to the quality of product, the answer undoubtedly will point to the operator. It is he who actually built quality into the product. His attitude to work is a decisive factor in determining the quality of the product. Unfortunately, the obsession of modern managers for higher production (or productivity) has affected the attitude of the operator to the detriment of quality. In this context, Frank Nixon, the well known quality engineer rightly says "The apostles of F.W.Taylor for instance, lesser men on the whole than the master, have concentrated so much upon output and its increase that they have succeeded in so modifying the operative's outlook and that of many a manager too, that he has come to identify work with quantity.

**CONCLUSION:**

TQM encompasses all aspects of business. Its key concepts are emphasis on management commitment, customer focus, involvement of all continuous improvement, treating suppliers as partners and performance metrics.

The philosophy of TQM has evolved through the contribution of many quality gurus, including Shewhart, Deming, Juran, Feigenbaum, Ishikawa, Crosby and Taguchi. The principles and tools laid down by these experts provide a solid foundation for the TQM framework. The journey to TQM starts when the management realizes the need. The need could be due to some external factors such as loss of market share or some internal factors such as loss of productivity. There are nine different dimensions to quality Marketing should identify the relative importance of these in developing new products and improving current products. These are several obstacles in implementing TQM, the most important being the lack of management commitment.

Sustained implementation of TQM can result in benefits such as improvement in quality, productivity, reliability, market share, revenue, profits and growth. A study has shown that companies winning excellence awards outperformed the S & P index. In spite of this, the proportion of companies implementing TQM is low.

**REFERENCE:**

1. Total Quality Management – A System to Implement by Gana Kiritharan
2. Total Quality Management – Revised Third Edition by Pearson
3. Voice of Managers – International Conference on Innovative Practices in Management
4. Managing for Total Quality by N.Logothesis
5. Management of Product Quality, by Lt.Gen.H.Lal, Director General, Q.A.Ministry of Defence, New Delhi.

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