Total Quality Management: An Overview

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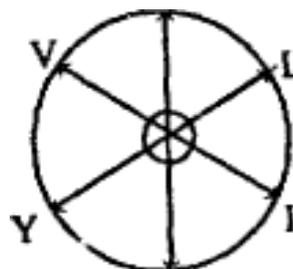
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Abstract

Customer orientation is central to quality definition. Quality is different from view points of customer, labourer, production personnel, marketing personnel and service organization. The customers 7 quality indicators – quality service, volume, customer friendly administration, location, interrelationship with staff, timeliness and yield from service may be described as 'Q-VALITY' TQM has 3 dimensions – human, logical and technological. Quality costing is the first step. 90% of quality cost is related to appraisal and failure type activities. Some Dos and Don'ts are prescribed. Total quality oriented planning takes into account 3 dimensions of TQM – customer, shareholders and employees and above all, environmental issues. TQM succeeds if top management has will to implement and ability and willingness to take strategic decisions. The pitfalls to avoid are: cosmeticism, copycateism, tokenism, firefighting, sectionalism, sloganism, inadequatism and training cure-all solution.

Quality is 'degree of excellence' as described by ISO 8402. Customer orientation is central to the quality definition. For customer, quality is maximisation of their satisfaction. For the top management, quality is satisfaction of shareholders of the industry/service organisation. For labourer, quality is conformance to requirements. For production personnel, quality is conformance to specifications. For marketing man, quality is what makes it sell well. For finance personnel, quality is profitability. For purchasing personnel, quality is purchasing excellent product at low price. For service organisation, the best service is 'Do it right the first time, *i.e.* quality conforms to requirements. The system of quality is prevention. The performance standard is zero defects. For Government, quality is one that conforms to public safety and security. Thus total quality goes beyond simple products/service quality.

The customers seven quality indicators—volume, administration, anon, interrelations, image, time and yield may be described as QVALITY, as represented in the diagram.

Diagram 1—Total Quality Indicators

Volume	: Required quantity
Administration	: Systems and Procedures to get information, credit and so on.
Location	: Product/service availability, easy delivery, transportation facilities, after. sale-service, physical layout.
Interrelationship	: Communication between producer and customer.

Image	: Physical and social environment enticing customer.
Time	: Timeliness with deadlines from customer's point of view.
Yield	: Long term economies of a specific purchase.

The customer-driven total quality is represented industry/organisation ownership wise as under:

Diagram 2—TQM Ownershipwise
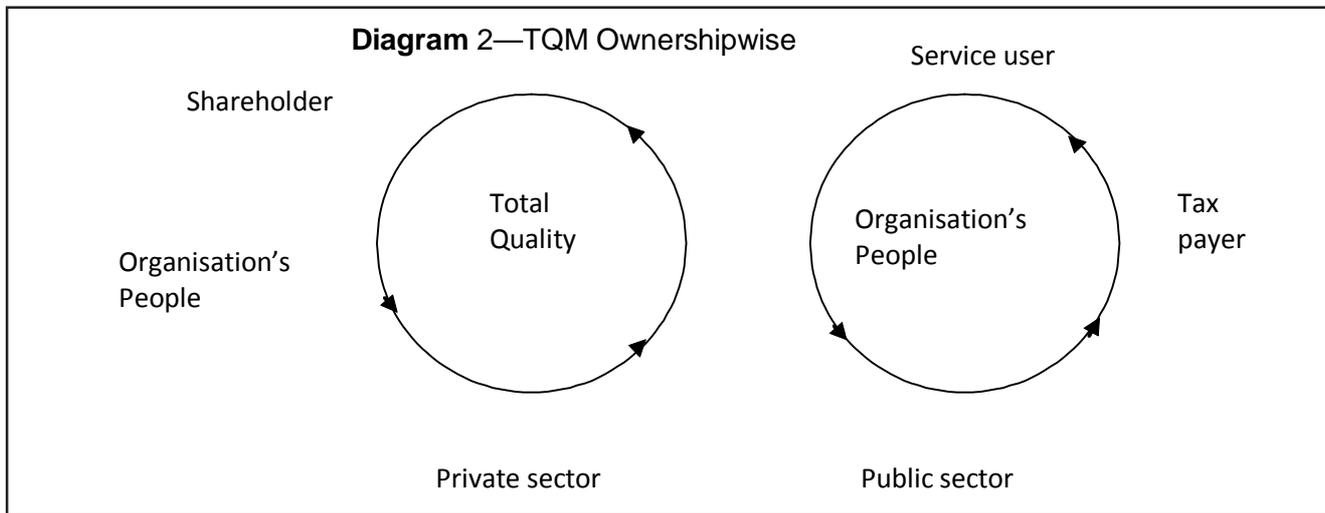
The seven components of QVALITY may be used constan go beyond customer satisfaction to customer delight.

Three Dimensions

TQM philosophy is:

- Profit oriented
- Customer driven
- People centred

It has three dimensions:

- Human dimension
- Logical dimension
- Technological dimension

Human

Most important is, obviously, the human dimension. Everyone from top to bottom must have the will to go TQM way. The steps are:

- Do people believe in TQM?
- Do they walk the talk?

- Practice what they preach?
- Do you do it alone or with a team?
- Do you reinforce it by reward and recognition?

Logical

If human beings are willing, the logic will work. The steps in the process are:

- Identifying customer
- Specify the role
- Use rational procedure
- Facilitate teamwork
- Re-engineer the business process
- Decide
- Review

Adopt procedure for Problem Identification, Solution and Prevention (PISP).

**Diagram 3— The Total Quality Chain Manufacturing Sector**
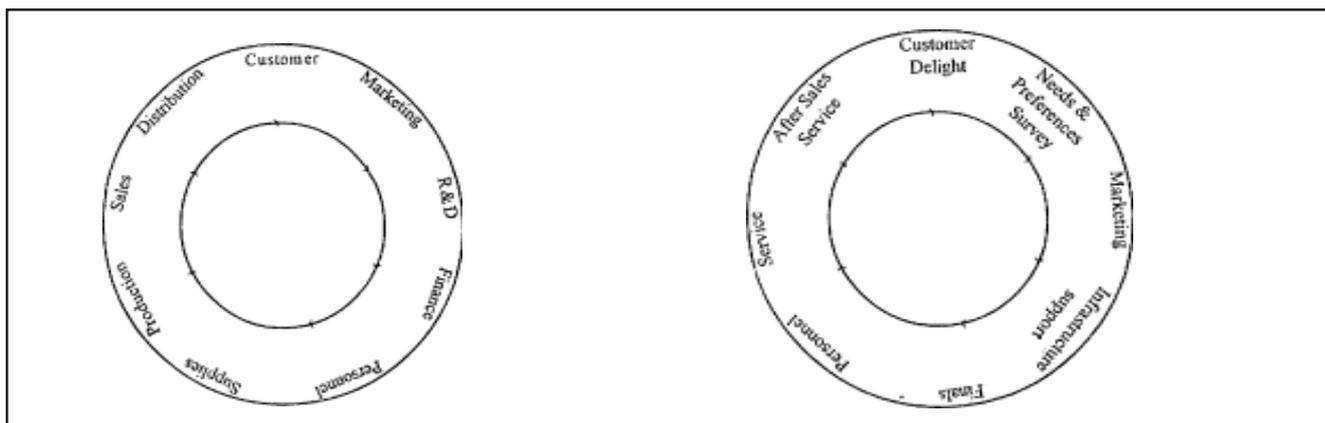
Each step is as important as the next. All links constitute what is known as Total Quality Chain Technological:

- Business Process Re-engineering
- Kaizen (continuous improvement)

- Seven quality control tools, seven quality management tool problem-solving techniques
- ISO 9000, Quality Assurance Systems

The three dimensions are represented in Diagram 4.

Diagram 4—Three Dimensions of TQM

TQM in Services
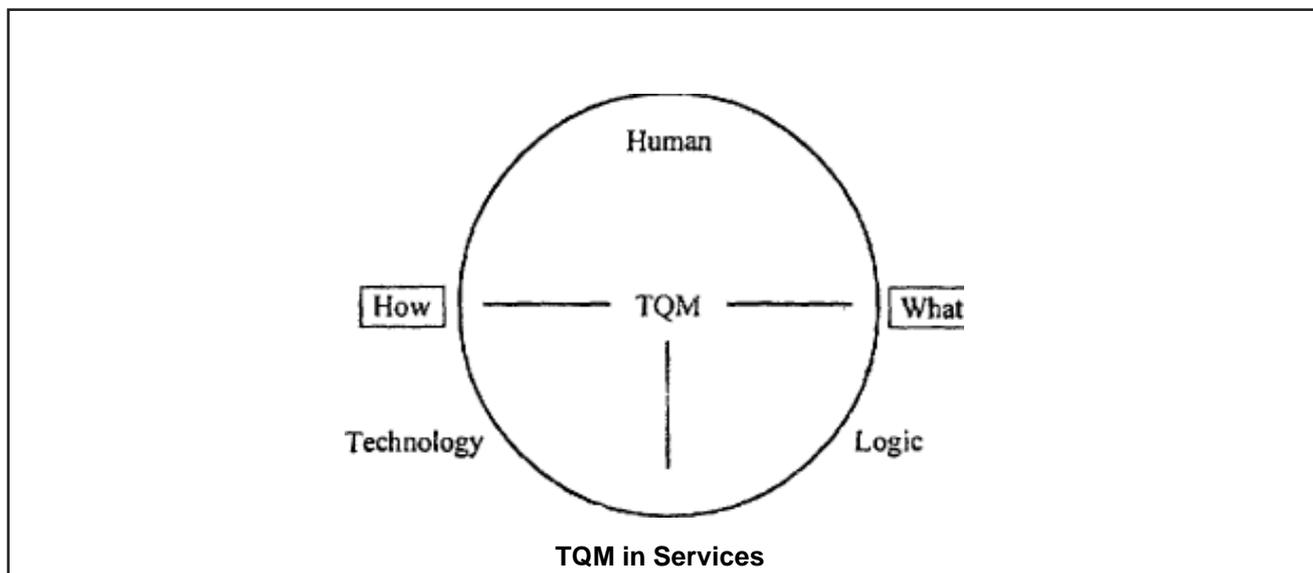
Service sector *is* different from manufacturing sector for the following reasons:

(i) Manufacturing industry produces tangible product; service industry intangible ones. While product can be stored, service cannot be stored. In exceptional cases, service industry (e.g. hotel) produces tangible products (e.g. Food stuff), but there is another point of view to this issue. It is held that people never buy goods, but only service in the ultimate sense. The difference may be in the nature of goods and services. Products are mass produced and uniform in quality and quantity; service is personalised; there is subtle difference in give and take. The mechanisation and computerisation drives service towards uniformity. Even then, smile cannot be made uniform. Service with a smile remains a distinct quality with highest technological development hand to hand.

(ii) The relationship with the customer is direct. In manufacturing sector, the connection is remote which means that the company has no direct contact whatsoever with customers. Again even on this score, the common denominator is customer loyalty. Customer-orientation and customer delight are central to both sectors.

It may be argued that the physical presence of a customer is not a 'must' in respect of all services (e.g. repairs and maintenance functions). Oftener now, the giver and the taker are integrated into self-service (e.g. do yourself marketing in super-market, do yourself banking with ATMs). An important difference lies in pretesting of goods which is not the case with the services. Some of the services like counselling are first-to-last

transactions where delivery and personalised service matter. Goods can be repaired/replaced while inequality in services is irreversible and occasionally, deadly for the business. In case of doctor's services, this may be a borderline between life and death. Thus, in spite of striking resemblances between the products and services, there are noticeable differences.

Nevertheless, the quality concept is also applicable in services. The customer requires:

- Quality service (Q)
- Volume (V)
- Customer-friendly administrative procedures (A)
- Location (L)
- Interrelationship with the staff (1)
- Timeliness (T)
- Yield from service (Y)

Quality Costing

Quality costing is the first step towards TQM. It is not just the cost of quality assurance, inspection, monitoring products and services which do not conform to requirements. The cost ranges from 10 to 25% of an organisation's annual sales turn over. Ninety percent of quality costs are related to appraisal and failure-type activities. Eliminating causes of non-conformance reduces failure cost and appraisal cost. Studies indicate that quality related costs may be reduced substantially within three years by commitment to a process of continuous and comprehensive quality improvement. Dale and Cooper prescribe some Do's and Don'ts in quality cost collection exercise.

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Do

- Take standard data only
- Start with failure costs
- Target appraisal costs
- Take on costs that can change with quality improvement process
- Relate quality cost to profit
- Avoid multiple quality costing reports
- Concentrate on main elements of failure
- Treat warranty and guarantee payments as a separate quality cost category

Don't

- Take quality cost as accounting problem
- Ignore the difficulties with definition of quality costs
- Make comparisons unless comparability is ensured
- Ignore difficulties in costing transactions with customers
- Forget that prevention is the most difficult category to cost
- Forget that design and engineering changes are sources of quality related costs
- Ignore category of prevention-appraisal-failure categories of quality costs other than the traditional ones.

Difficulties

The measurement of cost makes possible quality-related activities measured in monetary terms. Quality costing pinpoints the importance of product and service quality to business profitability. This helps in monitoring performance and setting cost reduction targets. It facilitates organisations to decide why, how, when and where to invest in preventive activities.

The difficulties are numerous. Often, quality-related costs are included as part of overhead. For easier analysis these should be the subject of a memorandum account. The border line is thin between operations activity and quality activity, *e.g.* testing activities, design codes, handling and storage practices etc. These should be identified by discussion with major departments like finance, marketing and production. Secondly, a check list of quality costs as included in part 2 of BS 6143 relating to the prevention cost and part of BS 6143 relating to the process cost of non-manufacturing aspects may be provided.

Pluming

Total quality-oriented planning takes into account the three dimensions of TQM-customer, shareholder and employees and above all, environmental issues and over riding national interest. The step- by-step process is as given in Diagram 5.

Diagram 5

Diagnosis

The parameters of diagnosis are:

- Customer delight (measured by number of customers, market share, index of satisfaction)
- Conformance to owners requirements (in terms of profitability)
- Employee motivation (measured in productivity, *per capita* business, work relations, environment morale)
- Conformance to government regulations and national interest (measured in contribution to gross national product consistent with environmental issues such as air, water and noise pollution, green spaces, preservation of species etc.)
- Quality of relationship with suppliers of goods and services (raw materials, equipments, financial and marketing services)
- Effectiveness of organisation's systems, procedures, internal working/housekeeping (in the service sector)

  The leading questions are:
- Who are the actual customers?

Who are the potential ones?

- What are their exact requirements?
- How do you know their requirements (by market survey/ research)?
- Does the product/service design meet customer's requirements?
- Is service/product tested/ evaluated before introduction?
- Are plan specifications checked?
- Are relevant standards adhered to?
- What is profit per employee?
- What is the rate of profitability?
- How transparent are the accounting standards?
- What *is* the market share of the company/ organisation? Has a study been made of direct competitors (similar products and services) and indirect competitors (substitute products and services)?
- Is the workforce in position to meet the challenge? In number? In quality? In work motivation? In innovation?

- Does the workforce follow error-free and arrear free work culture? Where do they stand, in 1 to 5 scale? What improvements are possible, *ceteris paribus,* in the given situation? Are there quality standards for the workforce?
- What are the objectives of government?
- How are they fulfilled?
- How do they conform to environmental standards?
- How supplies been evaluated? Are their services reliable and delivered to specifications within definite time limit?
- What is the standard of product/services? Is work process inspected? Are nor-conforming products well identified? Are errors and defects promptly corrected? What steps are taken for arrear free and error free service?
- Is sales process efficient and speedy?
- Does it satisfy customers?
- What after-sales-service is provided? Is it free of defect? Is it zero defect service?
- Are storage and transportation facilities problem free?
- Does the quality of product/service satisfy the user? Is the level of quality sufficient and satisfactory without being too expensive?
- Do customers get efficient and speedy service? What are the standards met? Are they complied with in strict conformance?
- What are the costs of unqualified and over quality? Are continuous efforts made to reduce unqualified?
- How customer need for information/complaint of service is dealt with?
- Is it reactive process or proactive process of understanding customer's requirements and meeting their needs?

   The specific questions need to be answered not in yes/no alternatives but in detail with the specifics of who, why, when, where and when.

Objectives

The objective is establishing standards of excellence *i.e.* bench- marking. Benchmarking is measuring performance against that of best-in-class organisations. It is a question of comparative excellence, compared particularly to those who are known to the best. For customers, total quality is in the QVALITY acronym. The objectives are yardsticks to measure performance.

Strategy

Strategy *is* the means to achieve the selected objectives. It may mean
- Introducing new technology *e.g.* computerisation, mechanisation.
- Introducing new process by Re-engineering the design process, production, packaging or sales process
- Training people—Production people

Sales people

After-sales service people for conformance to requirements.

Action Plan

Action plan consists of:
- Who does what and when
- System and procedure followed
- Time limit and PERT Chart for specific objectives.

Organising

   Quality Dept. *is* necessary, not as a policing body instilling fear and mistrust. Quality is everyone's business. But it does not imply that none in particular is made actually responsible for quality. The activities need to be coordinated by the Quality Dept.

   In traditional societies, organisations are pyramidical. Fayol's unity of command theory precludes horizontal contacts or communication. Integrative mechanism such as committee approach, meetings and cross-functional task forces do facilitate getting around the constraint. While enunciating fourteen general principles of management, Fayol hinted at spirit de corps, emphasising the need for team work and the importance of communication in obtaining it. In the course of evolution, the hierarchical organisation was invested with customer at the top giving rise to the concept or horizontal corporation. Simplification of work, hierarchy flattened by combining related tasks, elimination of non-value adding activities and sustaining microenterprise units of employees having beginning to end responsibility are some of the salient features of the horizontal corporation. The emphasis is on team rather individual. There are four types of quality teams: vertical (natural) teams, horizontal (cross functional) teams, *ad hoc* (specific problem-resolving) teams and common interest teams (bringing together people working in the same area not in the same unit) solving common problems by Re- engineering the work process.

Approaches in Team building

 T-Group promotes openness trust, honesty and speciality by recognising people's feelings as they develop and deal with them in some ways. The unpredictable nature of T-Groups, lack of supportive behaviour in formal organisational culture and voluntary participation (or withdraw!) of group members are some of the T-Group problems.

Role negotiation technique at the other end of the spectrum makes team members to ask if they would

Do more of it or do better the following…..

Do less of or stop doing the following….

Keep on doing the following……

Negotiations continue till both parties are happy. Threats and pressures, defensive behaviour and trainer influencing team members in these respects are some of the likely problems of this approach.

There are other team development packages—Blake and Moutan managerial grid examining leaders 'task orientation' and Adair's leadership model with three

basic needs—individual people orientation needs, group needs and task needs fulfilling all those needs in a fully effective team?

Interaction process analysis approach analyses the individual contribution to the group and the implication for group effectiveness. Either the members undertake to analyze members' contribution or the consultant does it.

Thus, team building approach depends on the type of team, the objectives, the situation, the problems to be tackled and the process of change.

Implementation

TQM succeeds if these essential conditions are met.

1. *Top Management must have*

- Will to implement TQM
- Ability and willingness to take strategic decisions.
- Ultimate responsibility for product and service quality and cannot delegate the responsibility.

2. *Top Management and Senior Managers must understand that*

- TQM is a long term strategy. The organization should have concrete and measurable long term vision of total quality.
- There is no shortfall.
- Everybody should receive appropriate training and be well versed in technology relating to TQM.
- There should be open and frank communication on the layers of management so that information *is* disseminated widely on all management areas.
- Upstream and downstream partners must be satisfied about the necessity and effectiveness of TQM.

3. *Top Management and Senior Managers must*

- Make TQM the number one business priority.
- Commit resources to TQM and establish an improvement infrastructure.
- Ensure listening at all levels to the views and problems of customers.
- Identify key performance measures, use statistical method in decision-making and all quality management tools and technique as no single method may be a cure-all.
- Promote cross-functional management to break through the barriers of sectionalism.
- Educate shareholders and customers about the necessity and utility of TQM in mutual interest.

   The Chief executive is the key person who sets the tone and standard for the organization.

Pitfalls to Avoid

- Cosmeticism: TQM introduced as super-structure without its spirit.
- Copycatism: Everybody has it. So *we* have it.
- Tokenism: 'Do as I say not as I do! 'I need not practice TQM but I can instruct others to practice'.
- Firefighting: There is crisis. Hence quality prescription.
- Sectionalism: We will have TQM in parts. In reality TQM should be introduced in the organisation as a whole or not at all.
- Sloganism: Raise slogan 'Zero Defects: 'Do it right the first time: Slogans do not give results. Intentions don't; Practice yields.
- Inadequatism: Slowly and steadily, we will have TQM. No, you have it as a whole or you don't have it at all. Slow and steady do not win the race in all occasions.
- Training Cure-all: Training in TQM is taken as cure-all. Fine if the training is just in time. If TQM and training run parallel, you don't get value for money for investment in training.

   Traditionalism: TQM is not traditional way of management. There is free flow information; there is no managerial secret in TQM. It is not a paperwork requirement to satisfy management fad or demands of customers. Every employee involves himself, works out quality prescription to capture the spirit of quality

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