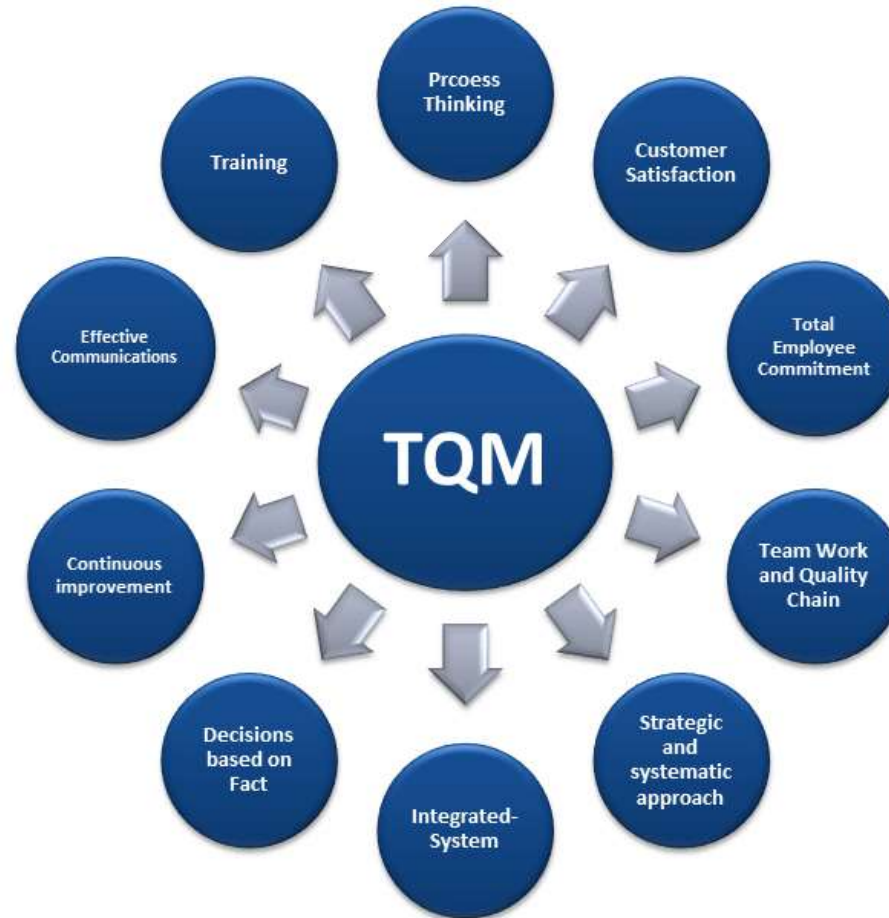


Total Quality Management (TQM)



Sheetal Wagh

- A core definition of total quality management (TQM) describes a management approach to long-term success through customer satisfaction. In a TQM effort, all members of an organization participate in improving processes, products, services, and the culture in which they work.
- Total Quality Management TQM, also known as total productive maintenance, describes a management approach to long-term success through customer satisfaction. In a TQM effort, all members of an organization participate in improving processes, products, services, and the culture in which they work.
- Total quality management (TQM) consists of organization-wide efforts to install and make permanent a climate in which an organization continuously improves its ability to deliver high-quality products and services to customers. While there is no widely agreed-upon approach, TQM efforts typically draw heavily on the previously developed tools and techniques of quality control. TQM enjoyed widespread attention during the late 1980s and early 1990s before being overshadowed by ISO 9000, Lean manufacturing, and Six Sigma.

❑ Principles of TQM:

❖ **Management Commitment**

1. Plan (drive, direct)
2. Do (deploy, support, participate)
3. Check (review)
4. Act (recognize, communicate, revise)

❖ **Employee Empowerment**

1. Training
2. Suggestion scheme
3. Measurement and recognition
4. Excellence teams

❖ **Fact Based Decision Making**

1. SPC (statistical process control)
2. DOE, FMEA
3. The 7 statistical tools
4. TOPS (Ford 8D – team-oriented problem solving)

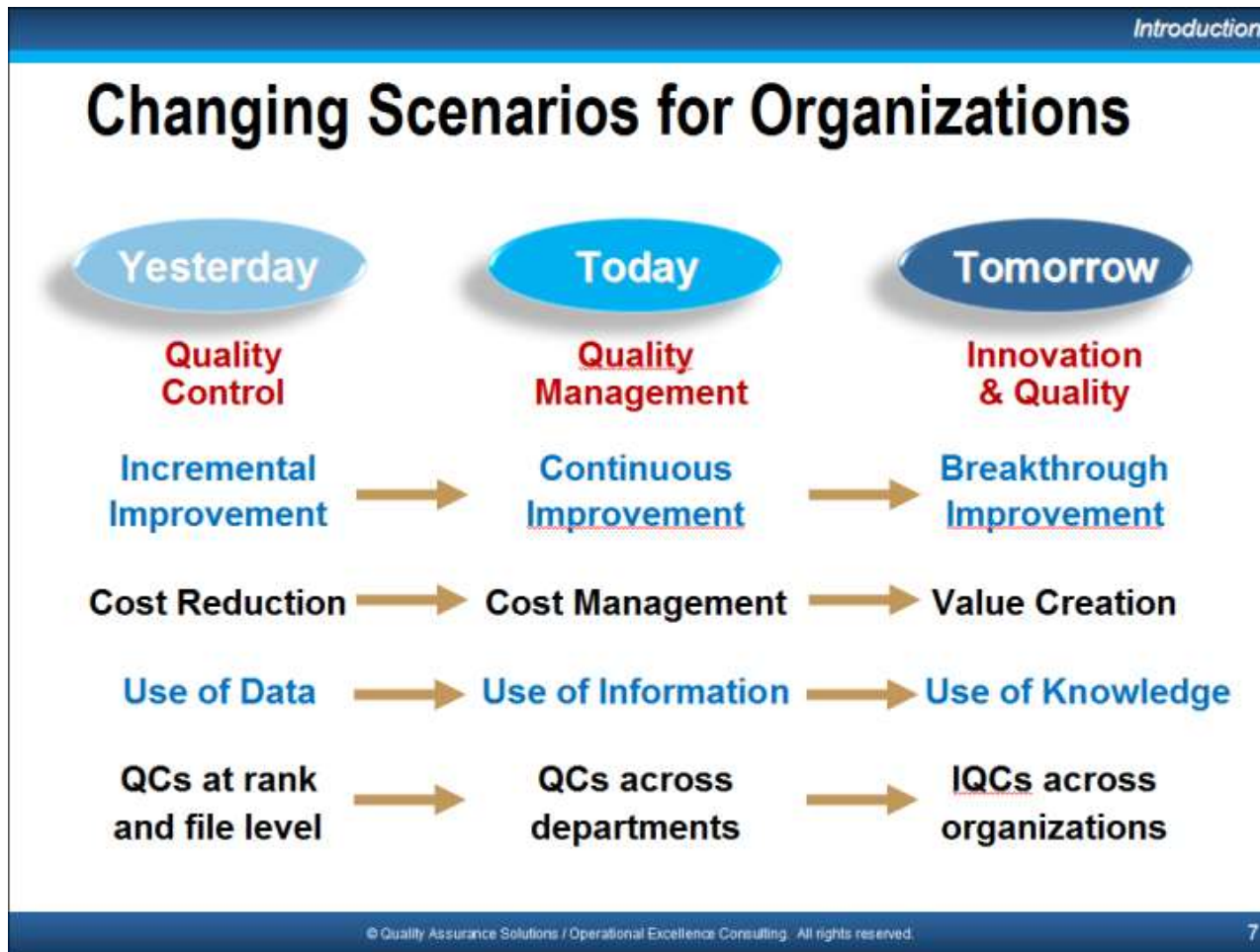
❖ **Continuous Improvement**

1. Systematic measurement and focus on CONQ
2. Excellence teams
3. Cross-functional process management
4. Attain, maintain, improve standards



❖ Customer Focus

1. Supplier partnership
2. Service relationship with internal customers
3. Never compromise quality
4. Customer driven standards



❖ Total Quality Management Principles:

The 8 Primary Elements of TQM are as follows –

Total quality management can be summarized as a management system for a customer-focused organization that involves all employees in continual improvement. It uses strategy, data, and effective communications to integrate the quality discipline into the culture and activities of the organization. Many of these concepts are present in modern Quality Management Systems, the successor to TQM.

❑ Here are the 8 principles of total quality management:

1. Customer-focused

The customer ultimately determines the level of quality. No matter what an organization does to foster quality improvement—training employees, integrating quality into the design process, upgrading computers or software, or buying new measuring tools—the customer determines whether the efforts were worthwhile.

2. Total employee involvement

All employees participate in working toward common goals. Total employee commitment can only be obtained after fear has been driven from the workplace, when empowerment has occurred, and management has provided the proper environment. High-performance work systems integrate continuous improvement efforts with normal business operations. Self-managed work teams are one form of empowerment.

3. Process-centered

A fundamental part of TQM is a focus on process thinking. A process is a series of steps that take inputs from suppliers (internal or external) and transforms them into outputs that are delivered to customers (again, either internal or external). The steps required to carry out the process are defined, and performance measures are continuously monitored in order to detect unexpected variation.

4. Integrated system

Although an organization may consist of many different functional specialties often organized into vertically structured departments, it is the horizontal processes interconnecting these functions that are the focus of TQM.

Micro-processes add up to larger processes, and all processes aggregate into the business processes required for defining and implementing strategy. Everyone must understand the vision, mission, and guiding principles as well as the quality policies, objectives, and critical processes of the organization. Business performance must be monitored and communicated continuously.

An integrated business system may be modelled after the Baldrige National Quality Program criteria and/or incorporate the ISO 9000 standards. Every organization has a unique work culture, and it is virtually impossible to achieve excellence in its products and services unless a good quality culture has been fostered. Thus, an integrated system connects business improvement elements in an attempt to continually improve and exceed the expectations of customers, employees, and other stakeholders.

5. Strategic and systematic approach

A critical part of the management of quality is the strategic and systematic approach to achieving an organization's vision, mission, and goals. This process, called strategic planning or strategic management, includes the formulation of a strategic plan that integrates quality as a core component.

6. Continual improvement

A major thrust of TQM is continual process improvement. Continual improvement drives an organization to be both analytical and creative in finding ways to become more competitive and more effective at meeting stakeholder expectations.

7. Fact-based decision making

In order to know how well an organization is performing, data on performance measures are necessary. TQM requires that an organization continually collect and analyze data in order to improve decision making accuracy, achieve consensus, and allow prediction based on past history.

8. Communications

During times of organizational change, as well as part of day-to-day operation, effective communications plays a large part in maintaining morale and in motivating employees at all levels. Communications involve strategies, method, and timeliness.



❖ Features of TQM:

- 1) **Customer-oriented** - TQM focuses on customer satisfaction through creation of better quality products and services at lower costs.
- 2) **Employee involvement and empowerment** - Teams focus on quality improvement projects and employees are empowered to serve customers well.
- 3) **Organization-wide** - TQM involves every department or division.
- 4) **Continuous improvement** - Quality improvement is a never-ending journey.
- 5) **Strategic focus** - Quality is viewed as a strategic, competitive weapon.
- 6) **Process management** - TQM adopts the concept of prevention through process management.
- 7) **Change in corporate culture** - TQM involves the creation of a work culture that is conducive to quality improvement.

❖ Benefits of TQM:

TQM has numerous benefits. It enables organizations to:

- a) attain higher profitability and increased market share
- b) improve customer satisfaction
- c) improve organizational productivity
- d) improve employee morale and job satisfaction
- e) create a positive work culture
- f) undertake systematic problem solving and decision making through project teams
- g) improve teamwork
- h) create a climate conducive to continuous improvement

BENEFITS OF TQM

1. Advantages unique to TQM:

- It makes the company a leader.
- Fastens the team work.
- Makes the company more sensitive to customer needs.
- Makes the company adapt more readily to changes.

2. Benefits to company

- Quality improves.
- Increased productivity.
- Staffs are more motivated.
- Cost reduced.



□ The Concept of Continuous Improvement by TQM:

TQM is mainly concerned with continuous improvement in all work, from high level strategic planning and decision-making, to detailed execution of work elements on the shop floor. It stems from the belief that mistakes can be avoided and defects can be prevented. It leads to continuously improving results, in all aspects of work, as a result of continuously improving capabilities, people, processes, technology and machine capabilities.

Continuous improvement must deal not only with improving results, but more importantly with improving capabilities to produce better results in the future. The five major areas of focus for capability improvement are demand generation, supply generation, technology, operations and people capability.

A central principle of TQM is that mistakes may be made by people, but most of them are caused, or at least permitted, by faulty systems and processes. This means that the root cause of such mistakes can be identified and eliminated, and repetition can be prevented by changing the process.

There are three major mechanisms of prevention:

1. Preventing mistakes (defects) from occurring (mistake-proofing or poka-yoke).
2. Where mistakes can't be absolutely prevented, detecting them early to prevent them being passed down the value-added chain (inspection at source or by the next operation).
3. Where mistakes recur, stopping production until the process can be corrected, to prevent the production of more defects. (stop in time).

How to Implement Total Quality Management?

1. **C**ommitment from Employees

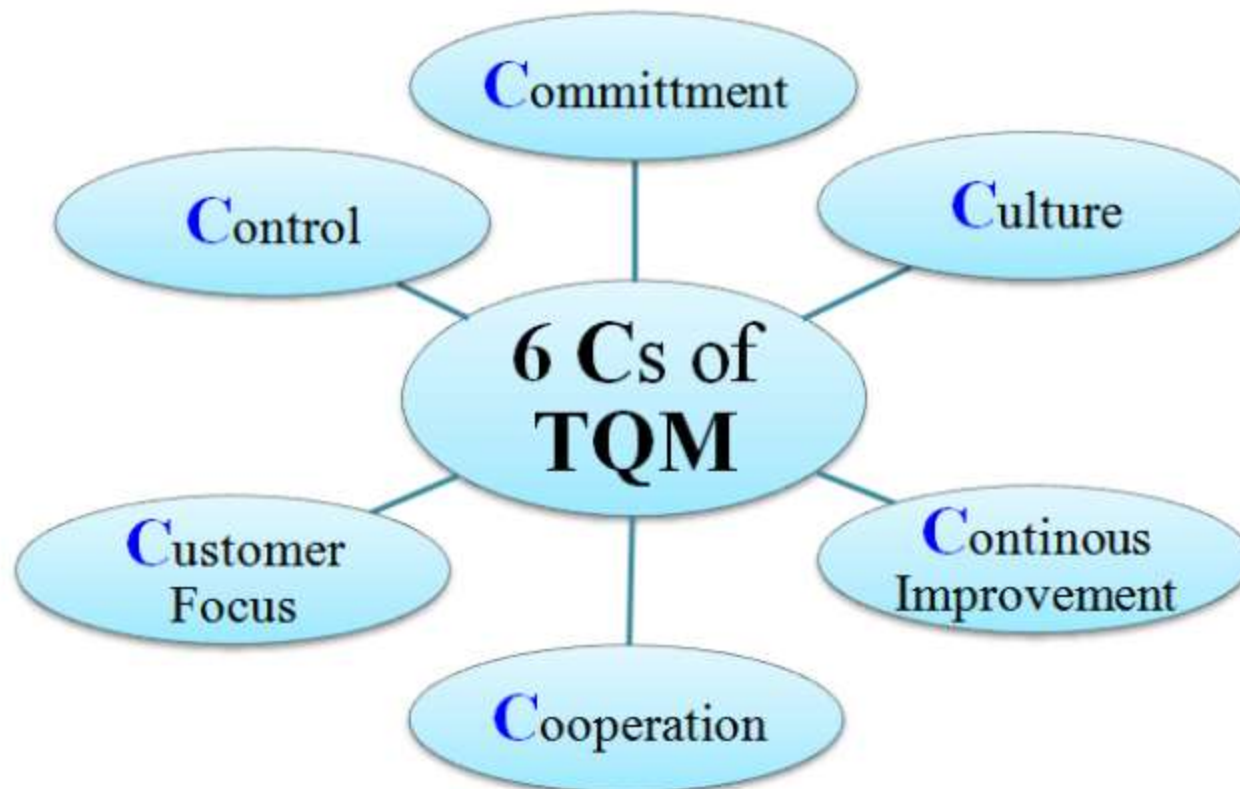
2. Quality Improvement **C**ulture

3. **C**ontinuous Improvement in Process

4. **C**o-operation from Employees

5. Focus on **C**ustomer Requirements

6. Effective **C**ontrol shall be laid down



❖ Implementation Principles and Processes:

- A preliminary step in TQM implementation is to assess the organization's current reality.
- Relevant preconditions have to do with the organization's history, its current needs, precipitating events leading to TQM, and the existing employee quality of working life.
- If the current reality does not include important preconditions, TQM implementation should be delayed until the organization is in a state in which TQM is likely to succeed.
- If an organization has a track record of effective responsiveness to the environment, and if it has been able to successfully change the way it operates when needed, TQM will be easier to implement.
- If an organization has been historically reactive and has no skill at improving its operating systems, there will be both employee scepticism and a lack of skilled change agents. If this condition prevails, a comprehensive program of management and leadership development may be instituted.
- A management audit is a good assessment tool to identify current levels of organizational functioning and areas in need of change.
- An organization should be basically healthy before beginning TQM.
- If it has significant problems such as a very unstable funding base, weak administrative systems, lack of managerial skill, or poor employee morale, TQM would not be appropriate.

- However, a certain level of stress is probably desirable to initiate TQM. People need to feel a need for a change.
- Kanter (1983) addresses this phenomenon by describing building blocks which are present in effective organizational change.
- These forces include departures from tradition, a crisis or galvanizing event, strategic decisions, individual “prime movers,” and action vehicles.
- Departures from tradition are activities, usually at lower levels of the organization, which occur when entrepreneurs move outside the normal ways of operating to solve a problem.
- A crisis, if it is not too disabling, can also help create a sense of urgency which can mobilize people to act.
- In the case of TQM, this may be a funding cut or threat, or demands from consumers or other stakeholders for improved quality of service. After a crisis, a leader may intervene strategically by articulating a new vision of the future to help the organization deal with it. A plan to implement TQM may be such a strategic decision.
- Such a leader may then become a prime mover, who takes charge in championing the new idea and showing others how it will help them get where they want to go. Finally, action vehicles are needed and mechanisms or structures to enable the change to occur and become institutionalized.

❑ Implementation of Quality:

The implementation of total quality is similar to that of other decentralized control methods. In developing TQM, companies need to understand how consumers define quality in both goods and services offered. If a company pays more attention to quality in its production processes, fewer problems are bound to occur when the product is in the customers' hands. Management should make a commitment to measure the performance of a product relative to its quality through customer surveys, which can help managers to identify design, manufacturing or any other process that has a bearing on the quality of a product or service, and therefore provide an opportunity for continuous improvement.

An obstacle is an object, a thing, an action or a situation that causes an obstruction. Obstacles can be physical, social, economic, technological or political. There are a number of barriers that face the process of TQM implementation.

Discussed below are some of the barriers or obstacles that total quality management face during implementation. Most scholars who have researched on the subject choice to focus on the specific industries like the construction, Agriculture etc. and specific economies. What we came up with are general barriers that are likely to cut across the economic board.

1. Competitive markets

- A competitive market is a driving force behind many of the other obstacles to quality.
- One of the effects of a competitive market is to lower quality standards to a minimally acceptable level.
- This barrier to quality is mainly a mental barrier caused by a misunderstanding of the definition of quality.
- Unfortunately, too many companies equate quality with high cost. Their definition leads to the assumption that a company can't afford quality.
- A broader definition needs to be used to look at quality, not only in the company's product, but in every function of the company.
- All company functions have an element of quality.
- If the quality of tasks performed is poor, unnecessary cost is incurred by the company and, ultimately, passed to the customer.
- TQM should work by inspiring employees at every level to continuously improve what they do, thus rooting out unnecessary costs.
- Done correctly, a company involved with TQM can dramatically reduce operating costs.
- The competitive advantage results from concentrating resources (the employees' brainpower) on controlling costs and improving customer service.

2. Bad attitudes/abdication of responsibility/management infallibility

- The competitive environment, poor management practice, and a general lack of higher expectations have contributed to unproductive and unhealthy attitudes.
- These attitudes often are expressed in popular sayings, such as “It’s not my job” and “If I am not broke, don’t fix it.”
- Such attitude sayings stem from the popular notion that management is always right and therefore employees are “only supposed to implement management decisions without questioning.”
- Lethargy is further propagated through management’s failure to train employees on TQM fundamentals that build better attitudes by involving them in teams that identify and solve problems.
- Such training can transform employees from being part of the problem to part of the solution.
- This will foster motivation and creativity and build productive and healthy attitudes that focus employees on basic fundamentals, such as: keep customer needs in mind, constantly look for improvements, and accept personal responsibility for your work.

3. Lack of leadership for quality

- Excess layers of management quite often lead to duplication of duty and responsibility.
- This has made the lower employees of an organization to leave the quality implementation to be a management's job.
- In addition, quality has not been taken as a joint responsibility by the management and the employees.
- Coupled with the notion that management is infallible and therefore it is always right in its decisions, employees have been forced to take up peripheral role in quality improvement. As a result employees who are directly involved in the production of goods or delivery of services are not motivated enough to incorporate quality issues that have been raised by the customers they serve since they do not feel as part of the continuous process of quality improvement.
- Moreover, top management is not visibly and explicitly committed to quality in many organizations.

4. Deficiency of cultural dynamism

- Every organization has its own unique way of doing things.
- This is defined in terms of culture of the organization.
- The processes, the philosophy, the procedures and the traditions define how the employees and management contribute to the achievement of goals and meeting of organizational objectives.
- Indeed, sticking to organizational culture is integral in delivery of the mission of the organization.
- However, culture has to be reviewed and for that matter re-adjustments have to be done in tune with the prevailing economic, political, social and technological realities so as to improve on efficiency.
- Inadequate cultural dynamism has made total quality implementation difficult because most of the top level management of many organizations are rigid in their ways of doing things.

5. Inadequate resources for total quality management

- Since most companies do not involve quality in their strategic plan, little attention is paid to TQM in terms of human and financial resources.
- Much of the attention is drawn to increasing profit margins of the organization with little regard as to whether their offers/ supply to customers is of expected quality.
- There is paltry budgetary allocation made towards employee training and development which is critical for total quality management implementation.
- Employee training is often viewed as unnecessary cost which belittles the profits margins which is the primary objective for the existence of businesses and as a result TQM has been neglected as its implementation “may not necessarily bring gains to the organization in the short term”.

6. Lack of customer focus

- Most strategic plans of organizations are not customer driven.
- They tend to concentrate much on profit-oriented objectives within a given time frame. Little (if any) market research is done to ascertain the product or service performance in the market relative to its quality.
- Such surveys are regarded by most organizations as costly and thus little concern is shown to quality improvement for consumer satisfaction.

7. Lack of effective measurement of quality improvement

- TQM is centered on monitoring employees and processes, and establishing objectives that anticipate the customer's needs so that he is surprised and delighted.
- This has posed a considerable challenge to many companies.
- Measurement problems are caused by goals based on past substandard performance, poor planning, and lack of resources and competitor-based standard.
- Worse still, the statistical measurement procedures applied to production are not applicable to human system processes.

8. Poor Planning

- The absence of a sound strategy has often contributed to ineffective quality improvement.
- Duran noted that deficiencies in the original planning cause a process to run at a high level of chronic waste. Using data collected at then recent seminars, Duran (1987) reported that although some managers were not pleased with their progress on their quality implementation agenda, they gave quality planning low priority. As Oakland (1989) said, the pre-planning stage of developing the right attitude and level of awareness is crucial to achieving success in a quality improvement program.
- Newell and Dale (1990) in their study observed that a large number of companies are either unable or unwilling to plan effectively for quality improvement.
- Although many performed careful and detailed planning prior to implementation, not one of the firms studied or identified beforehand the stages that their process must endure.
- Perhaps the root cause of poor plans and specifications is that many owners do not understand the impact that poor drawings have on a project's quality, cost, and time. Regardless of the cause, poor plans and specifications lead to a project that costs more, takes longer to complete, and causes more frustration than it should.
- Companies using TQM should always strive towards impressing upon owners the need to spend money and time on planning.
- If management took reasonable time to plan projects thoroughly and invest in partnering to develop an effective project team, a lot could be achieved in terms of product performance as these investments in prevention- oriented management can significantly improve the quality of the goods or services offered by an organization

9. Lack of management commitment

- A quality implementation program will succeed only if top management is fully committed beyond public announcements. Success requires devotion and highly visible and articulate champions.
- Newell and Dale (1990) found that even marginal wavering by corporate managers was sufficient to divert attention from continuous improvement.
- Additionally, Schein (1991) reported that the U.S. Quality Council is most troubled by the lack of top management commitment in many companies.
- Lack of commitment in quality management may stem from various reasons.
- Major obstacles include the preoccupation with short-term profits and the limited experience and training of many executives.
- Duran, for example, observed that many managers have extensive experience in business and finance but not in quality improvement.
- Similarly, Bothe (1988) pointed out that although the CEO does not have to be a quality expert, programs fail when the CEO does not recognize the contribution these techniques make toward profitability and customer satisfaction.
- Top management should, therefore, embrace quality improvement programs no matter how far reaching the programs may appear the monetary implications therein. Competition alone should not be considered as the single factor that drives managers into implementing quality initiatives.

10. Resistance of the workforce

- A workforce is often unwilling to embrace TQM for a variety of reasons.
- Oakland (1989) explained that a lack of long-term objectives and targets will cause a quality implementation program to lose credibility.
- Keys (1991) warned that an adversarial relationship between management and non-management should not exist, and he emphasized that a cooperative relationship is necessary for success.
- A TQM project must be supported by employee trust, acceptance and understanding of management's objectives .
- Employees ,therefore, should be recognized by the management as vital players in the decision making processes regarding to quality improvement as involving them would have motivating effect on implementation of quality programs.

11. Lack of proper training/Inadequate Human Resource Development

- There is evidence that lack of understanding and proper training exists at all levels of any organization, and that it is a large contributor to worker resistance.
- Schein (1990), for example, mentioned that business school failure to teach relevant process skills contributed to manager ineffectiveness.
- TQM requires a well-educated workforce with a solid understanding of basic math, reading, writing and communication. Although companies invest heavily in quality awareness, statistical process control, and quality circles, often the training is too narrowly focused.
- Frequently, Duran's warning against training for specific organizational levels or product lines is unheeded.
- This has also been underscored by Newell and Dale who argue that poor education and training present a major obstacle in the development and implementation of a quality program. .
- For a company to produce a quality product, employees need to know how to do their jobs. For TQM to be successful, organizations must commit to training employees at all levels.
- TQM should provide comprehensive training, including technical expertise, communication skills, small-team management, problem-solving tools, and customer relations.

❖ Conclusion and recommendation:

The advantages of TQM have been widely discussed, but the challenges of implementation have received little attention.

- A quality philosophy is required for the successful implementation of a quality project. This philosophy must facilitate a long-term lifestyle change for a company.
- Commitment of top management is essential.
- Substantial inflow of resources, adequate training, workforce participation and effective measurement techniques are some of the key success factors.
- A successful TQM program is unique, and it should motivate middle management to focus on long-term strategies rather than short-term goals.
- Teamwork is the key to involvement and participation.
- Groups should be encouraged to work closely and effectively, and should focus on quality improvement and customer satisfaction.

All organizations should focus on the following for successful TQM implementation:

1. Create consistency of purpose toward improvement of the product and service so as to become competitive, stay in business and provide jobs.
2. Cease dependence on mass inspection; require, instead, statistical evidence that quality is built on.
3. Adopt the new philosophy. We are in a new economic age. We no longer need live with commonly accepted levels of delay, mistake, defective material and defective workmanship.
4. Improve the quality of incoming materials. End the practice awarding business on the basis of price alone. Instead, depend on meaningful measures of quality, along with price.
5. Find the problems; constantly improve the system of production and service. There should be continual rise in productivity and a decrease in costs.

THANK YOU