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Introduction to TQM

- ❑ Total Quality Management (TQM) is a management approach that originated in the 1950s and has steadily become more popular since the early 1980s. Total Quality Management means that the organization's culture is defined by and supports the constant attainment of customer satisfaction through an integrated system of tools, techniques, and training. This involves the continuous improvement of organizational processes, resulting in high quality products and services.

TQM



- **Total** - made up of the whole
- **Quality** - degree of excellence a product or service provides
- **Management** - act, art or manner of planning, controlling, directing

Therefore, TQM is the art of managing the whole to achieve excellence.

Approaches to define Quality

□ Transcendent Approach

- Quality is absolute and universally recognisable.
- It is common notion used by laymen.
- There is no subjective judgement and is estimated by looking at the product.

□ Product Based Approach

- Attributes of a particular product in a specific category.
- These attributes are accepted as bench of quality by the industry.
- Others in the same industry try to produce close to this quality.

Approaches to define Quality

- User Based Approach
 - ▣ Defined as “Fitness for use”.
 - ▣ Viewed from user’s perspective and is dependent on how well does the product meet needs of the consumer.
 - ▣ Also known as Customer Oriented Approach.

- Production Based Approach
 - ▣ An outcome of engineering or operational excellence and is measured in terms of quality of conformance.
 - ▣ The producer has specifications and produces the product as per the specifications.

Approaches to define Quality

- Value Based Approach
 - ▣ Quality is viewed in context of price
 - ▣ Quality is satisfactory, if it provides desired performance at an acceptable price
 - ▣ Customer looks at the total value proposition and not the price alone

$$\text{Value} = \frac{\text{Benefits}}{\text{Price}}$$

The three aspects of TQM



Counting

Tools, techniques, and training in their use for analyzing, understanding, and solving quality problems.

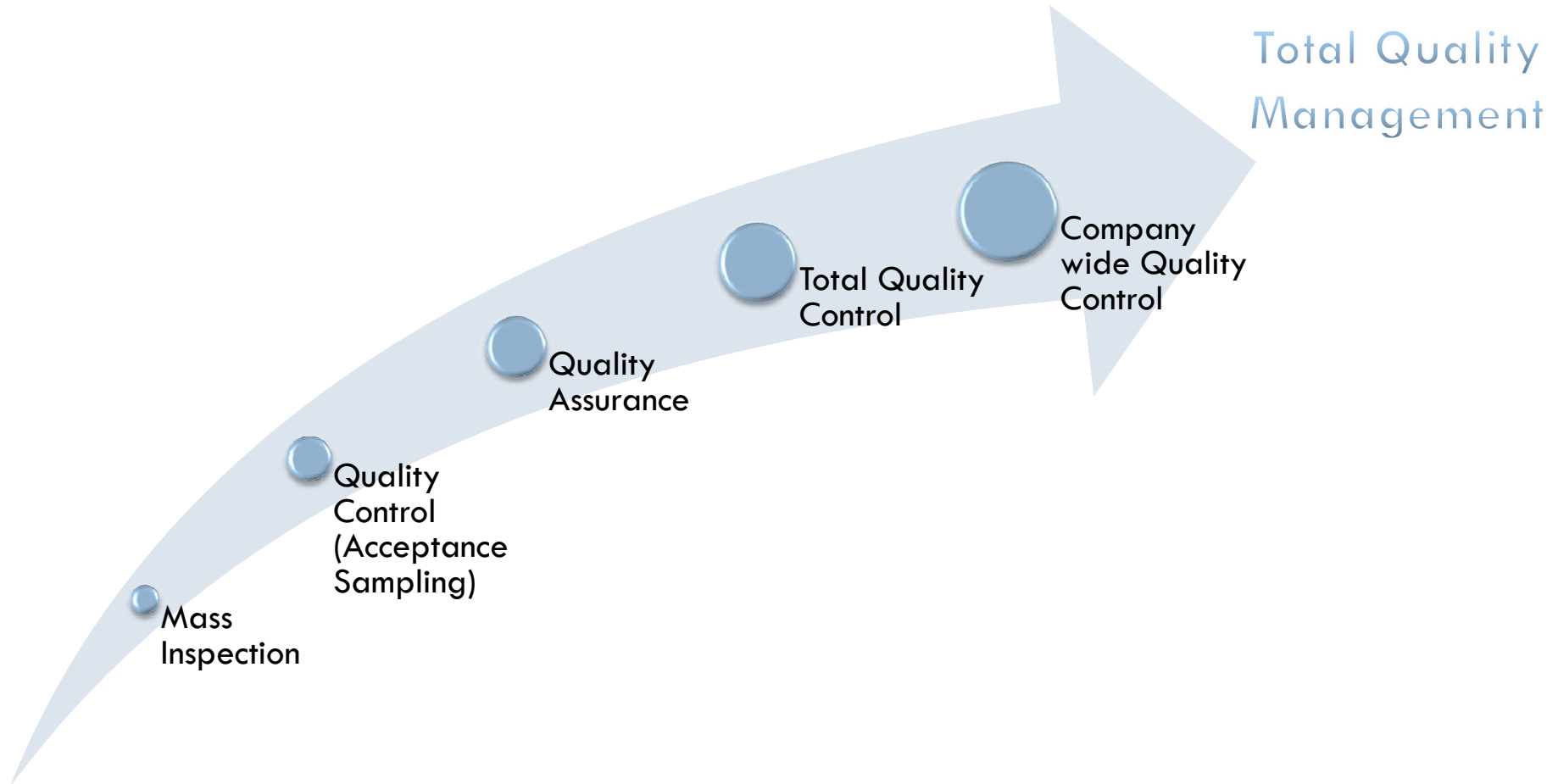
Customers

Quality for the customer as a driving force and central concern.

Culture

Shared values and beliefs, expressed, by leaders, that define and support quality.

Stages of Total Quality Management



Evolution of Total Quality Management

□ Mass Inspection:

- Inspecting
- Salvaging
- Sorting
- Grading
- Rectifying
- Rejecting

□ Quality Control:

- Quality manuals
- Product testing using SQC
- Basic quality planning

□ Quality Assurance:

- Emphasis on prevention
- Proactive approach using SPC
- Advance quality planning.

□ Total Quality Control:

- All aspects of quality of inputs
- Testing equipments
- Control on processes

Evolution of Total Quality Management

- Company wide Quality Control:
 - ▣ Measured in all functions connected with production such as
 - R&D
 - Design
 - Engineering
 - Purchasing
 - Operations

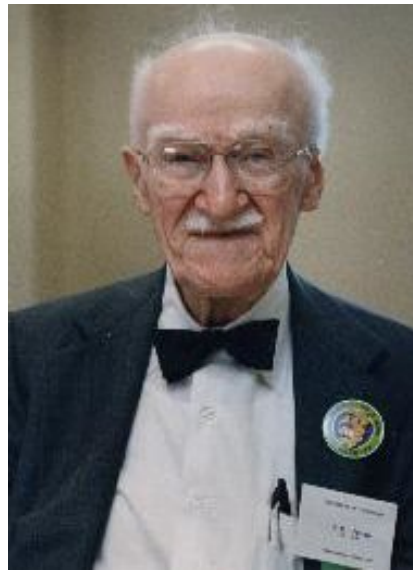
- Key Elements:
 - ▣ Measured in all aspects of business
 - ▣ Top management commitment
 - ▣ Continuous improvement
 - ▣ Involvement & participation of employees



Gurus of TQM



Dr. W E Deming



Dr. JM Juran



Dr. Philip Crosby

WE Deming



- Reduction in process variability by extensive use of statistics will lead to improvement in quality and increase in productivity
- Talked about New Climate (organisational culture)
 - Joy in work
 - Innovation
 - Co-operation
- Win-Win approach
- He proposed a 14 point TQM programme

W E Deming 14 Points

Rule	Explanation
1. Create constancy of purpose	Attention must be paid to problems not only of today, but also of tomorrow. Therefore invest in research, innovation and people
2. Do not live with delays and mistakes	Do not tolerate error – “get it right first time”
3. Cease mass inspection	Spend time on improving the process
4. Stop accepting solely the lowest bid	Accept tenders on prospective quality, not the price-tag
5. Constantly look for systems’ problems	Know how the system works and keep records on it. Constantly maintain and improve the system
6. Institute modern on-the-job training	Invest in people
7. Institute modern supervision techniques	A supervisor should be a coach, not judge nor policeman
8. Drive out fear	Fear holds back innovation and quality improvement. Management must respect and encourage staff
9. Break down barriers	Departments which do not work together suboptimize performance. Co-ordinate activities to maximize synergy
10. Eliminate meaningless imperatives and slogans	Do not prescribe to staff. Give them the proper “tools” to do their job better
11. Eliminate numerical quotas	Numbers are <i>less</i> important than quality. Smart employees will never exceed the quota. They know that, if they do, the quota will be raised
12. Remove barriers to pride of workmanship	Staff cannot improve their work if the problem is outside their control. Therefore management should remove the problem
13. Educate and train	Staff need to be continuously trained in how to do their job. Change is an integral part of today’s business environment and staff have to be properly equipped to cope with it
14. Continuously pursue the above 13 points	Create a management structure which will actively promote the above 13 points every day

Deming 14 Points



1. Create constancy of purpose for improving products and services.
2. Adopt the new philosophy.
3. Cease dependence on inspection to achieve quality.

Deming 14 Points (Contd.)

4. End the practice of awarding business on price alone, instead minimize total cost by working with a single supplier.
5. Improve constantly and forever every process for planning, production and service.
6. Institute training on the job.

Deming 14 Points (Contd.)



7. Adopt and institute leadership.
8. Drive out fear.
9. Break down barriers between staff areas.
10. Institute a vigorous program of education and self-improvement for everyone.

Deming 14 Points (Contd.)

11. Eliminate slogans, exhortations and targets for the workforce.

12. Eliminate numerical quotas for the workforce and numerical goals for management.

13. Remove barriers that rob people of pride of workmanship, and eliminate the annual rating or merit system.

14. Put everybody in the company to work accomplishing the transformation.

W E Deming – PDCA Cycle

PLAN for changes to bring about improvement
Customer/supplier mapping
Flowcharting
Pareto analysis
Brainstorming
Nominal group technique
Solution/fault tree
Evaluation matrix
Cause & Effect diagrams

DO changes on a small scale first to trial them

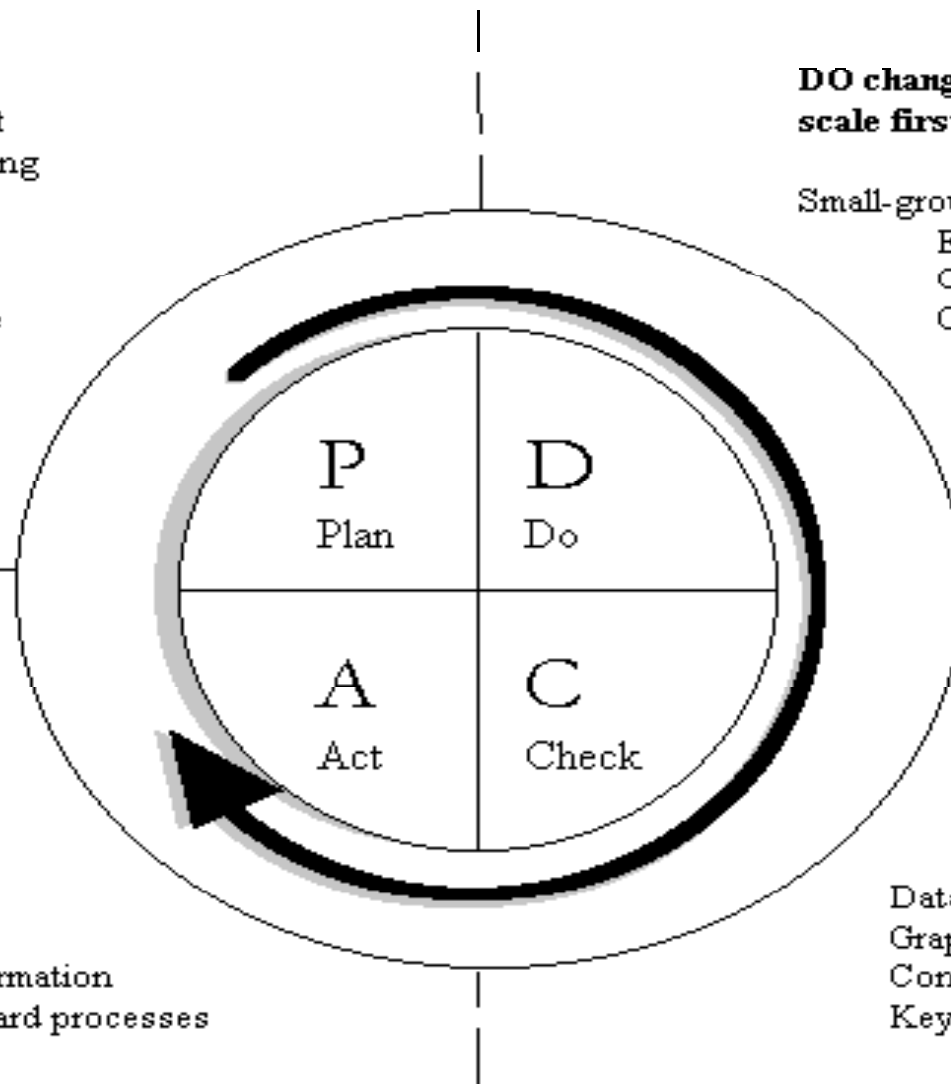
Small-group leadership skills
Experiment design
Conflict resolution
On-Job training

ACT to get the greatest benefit from changes

Process mapping
Process standardisation
Controlled reference information
Formal training for standard processes

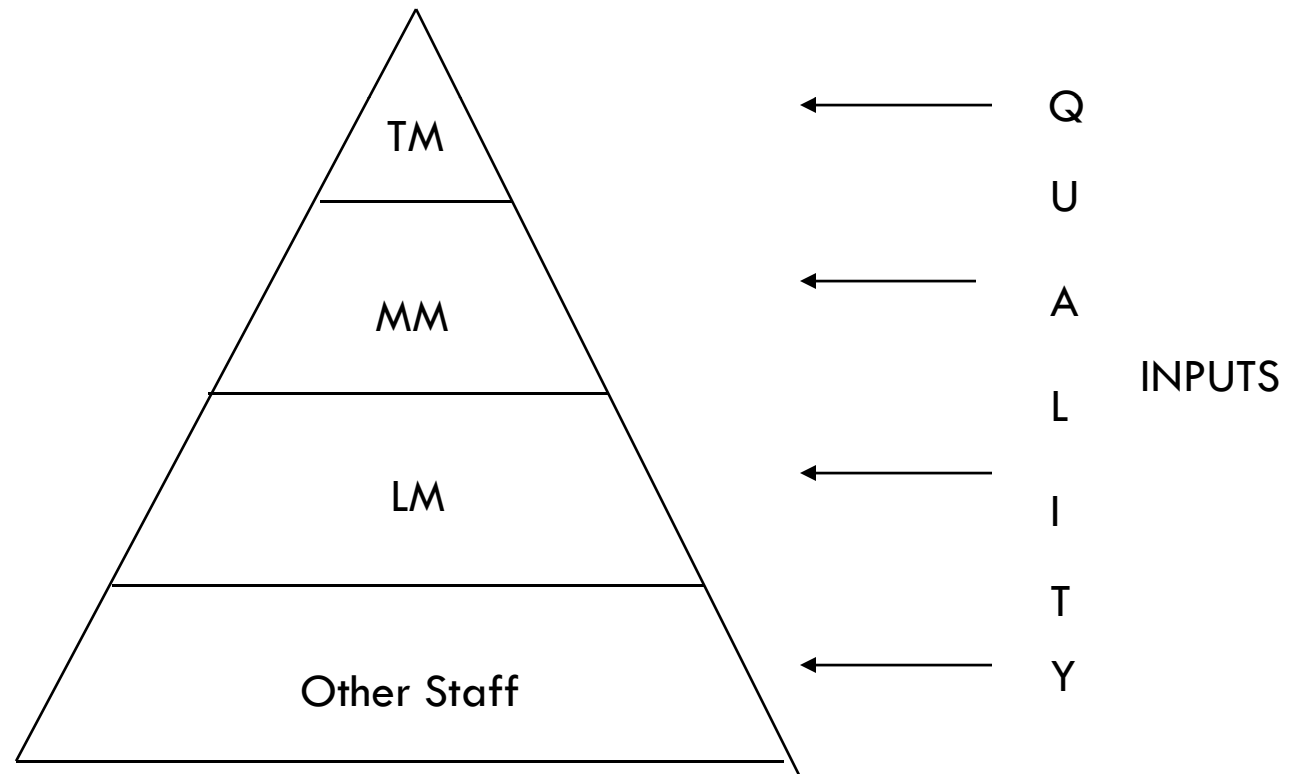
CHECK to see if changes are working and to investigate selected processes

Data checksheets
Graphical analysis
Control charts
Key performance indicators



The TQM Organization

- Quality infused Personnel and Processes.



Role of TQM leaders

- All are responsible for quality improvement especially the senior management & CEO's.
- Senior management must practice MBWA.
- Ensure that the team's decision is in harmony with the quality statements of the organization.
- Senior TQM leaders must read TQM literature and attend conferences to be aware of TQM tools and methods.
- Senior managers must take part in award and recognition ceremonies for celebrating the quality successes of the organization.
- Coaching others and teaching in TQM seminars.
- Senior managers must liaise with internal, external and suppliers through visits, focus groups, surveys.
- They must live and communicate TQM.

TQM implementation



- Begins with Sr. Managers and CEO's
- Timing of the implementation process
- Formation of Quality council
- Union leaders must be involved with TQM plans implementation
- Everyone in the organization needs to be trained in quality awareness and problem solving
- Quality council decides QIP projects

TQM six basic Concepts

- Management commitment to TQM principles and methods & long term Quality plans for the Organization.
- Focus on customers – internal & external.
- Quality at all levels of the work force.
- Continuous improvement of the production/business process.
- Treating suppliers as partners.
- Establish performance measures for the processes.

Quality Statements

- **Vision statement** – a short declaration of what the organization hopes to be tomorrow.
- **Mission statement** – a statement of purpose –who we are , who are our customers , what we do , and how we do it.
- **Quality policy** – is a guide for everyone in the organization ,how they should provide products and services to the customers.



Effects of poor Quality

- ❑ Low customer satisfaction
- ❑ Low productivity, sales & profit
- ❑ Low morale of workforce
- ❑ More re-work, material & labour costs
- ❑ High inspection costs
- ❑ Delay in shipping
- ❑ High repair costs
- ❑ Higher inventory costs
- ❑ Greater waste of material



Benefits of TQM

- Higher customer satisfaction
- Reliable products/services
- Better efficiency of operations
- More productivity & profit
- Better morale of work force
- Less wastage costs
- Less Inspection costs
- Improved process
- More market share
- Spread of happiness & prosperity
- Better quality of life for all



THANK
YOU

