

Concepts of Quality Management System (QMS)



Today's new concept of quality is total quality management or TQM (proactive, designed to build quality into product and process).



Definitions

- 1. Quality:** Quality of something can be determined by comparing set of inherent characteristics with set of requirements. If those inherent characteristics meet all requirements, high/excellent quality is achieved whereas; do not meet all requirements, low/poor level of quality is achieved.
- 2. Quality characteristic:** It is tied to requirement and is an inherent feature/property of product, process, or system.
- 3. Quality assurance (QA):** Set of activities intended to establish confidence that quality requirements will be met. A part of quality management.
- 4. Quality control (QC):** Set of activities intended to ensure that quality requirements are actually being met. A part of quality management.
- 5. Quality improvement:** Refers to anything that enhances an organization's ability to meet quality requirements. A part of quality management.

- 6. Quality management:** All activities that organizations use to direct, control, and coordinate quality. Activities include formulating quality policy and setting quality objectives. Include QP, QC, QA and quality improvement.
- 7. Quality management system (QMS):** Set of coordinated activities to direct and control an organization in order to continually improve effectiveness and efficiency of its performance. Comprises of collective policies, plans, practices and supporting infrastructure by which an organization aims to reduce and eventually eliminate non-conformance to specifications, standards and customer expectations in cost effective and efficient manner.

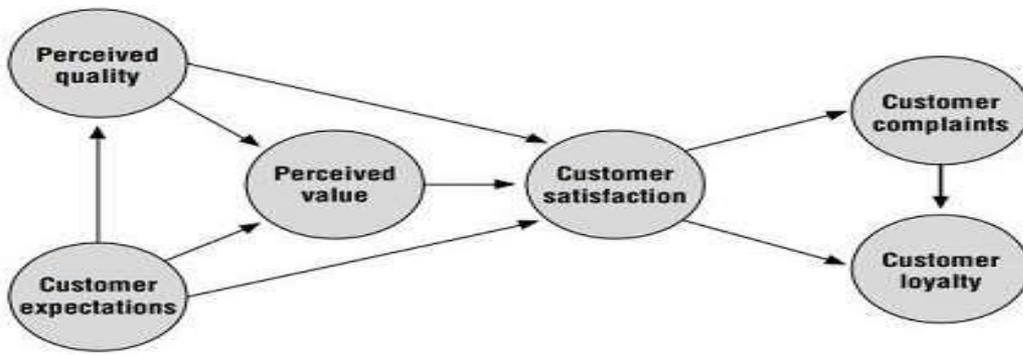


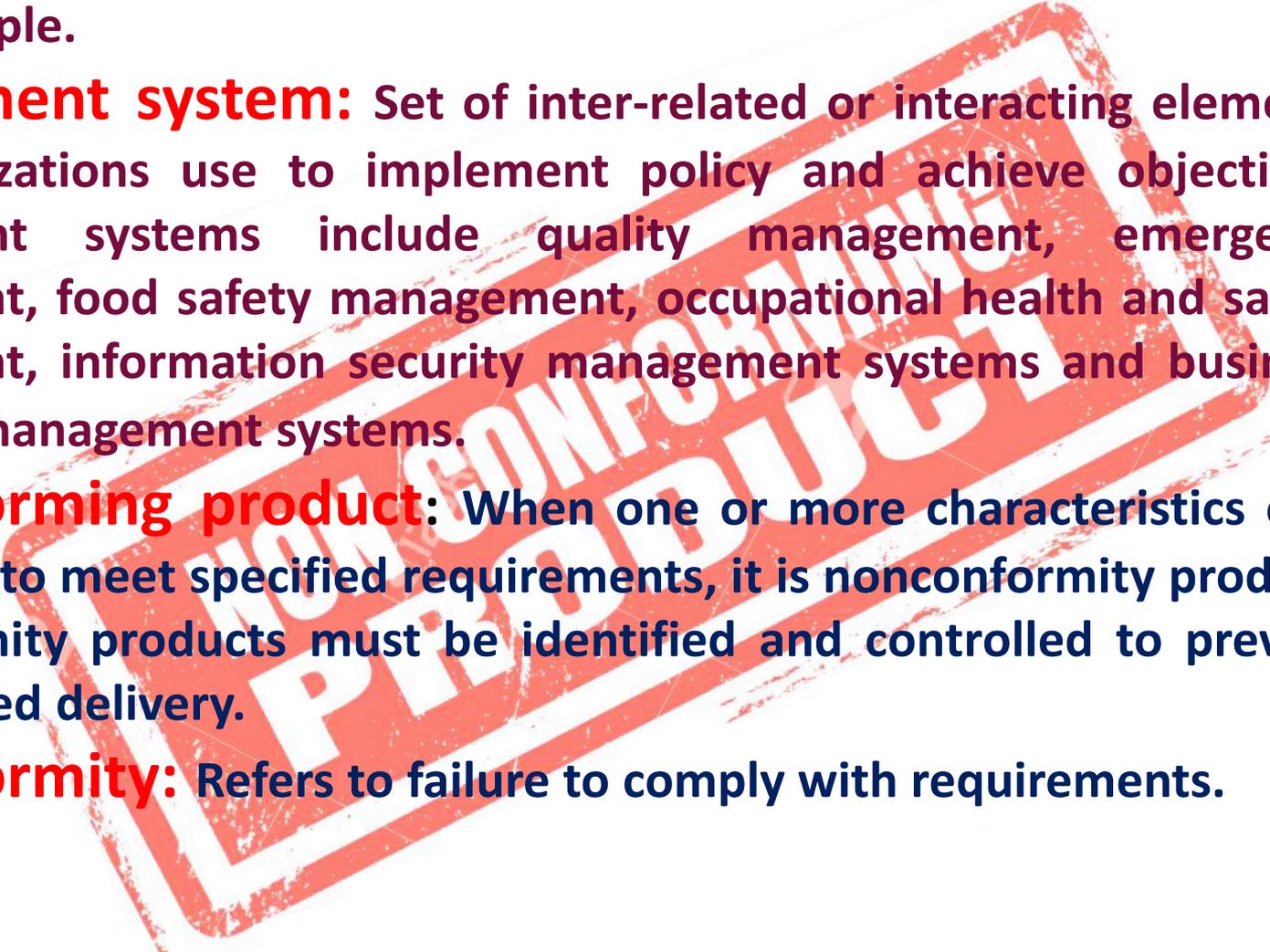
- 8. Quality planning:** Involves setting quality objectives and then specifying operational processes and resources that will be needed to achieve those objectives. A part of quality management.
- 9. Quality plan:** A document that is used to specify procedures and resources that will be needed to carry out project, perform process, realize a product, or manage a contract. Specify who will do what and when.
- 10. Quality policy:** Defines top management's commitment to quality. Describe an organization's general quality orientation and clarify its basic intentions. Quality policies should be used to generate quality objectives and should serve as general framework for action. Based on ISO 9000 Quality Management Principles and should be consistent with organization's other policies.
- 11. Quality objectives:** It is a quality oriented goal. Aims for/tries to achieve. Generally based on/derived from organization's quality policy and must be consistent with it. Formulated at all relevant levels within organization and for relevant functions.

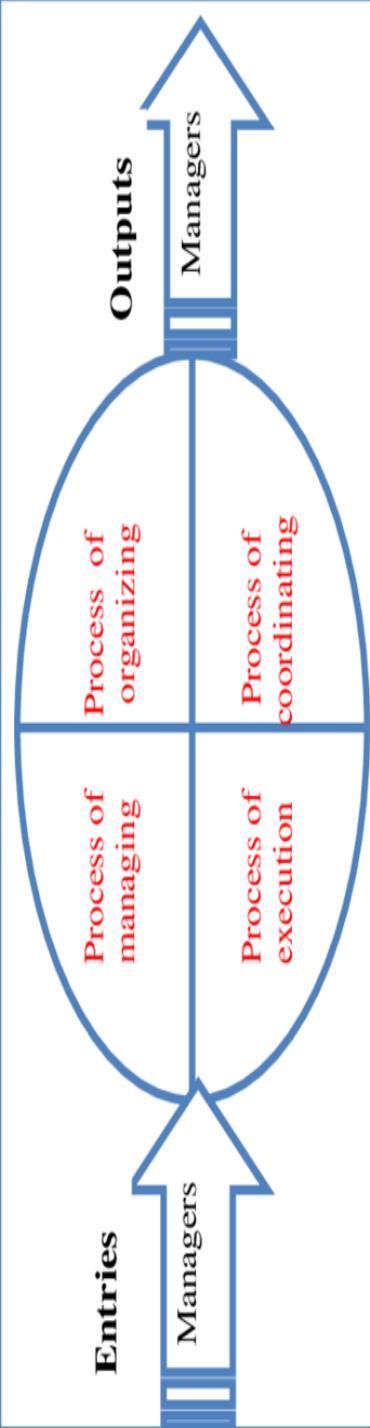
12. Continual improvement: A set of activities that an organization periodically carries out in order to enhance its ability to meet requirements. Achieved by carrying out audits, performing management reviews, analyzing data, setting objectives and implementing corrective and preventive actions.

13. Customer: Anyone who receives products/services from supplier organization. Customer can be people/organization and can be either external/internal to supplier organization. Eg., a factory may supply products/services to another factory (customers, end-users, purchasers, retailers and beneficiaries) within same organization.

14. Customer satisfaction: Perception and question of degree. Can vary from high to low satisfaction. If customers believe that their requirements have been met, they experience high satisfaction and requirements have not been met, they experience low satisfaction.



- 15. Management:** Refers to all activities that are used to coordinate, direct and control an organization. Term management does not refer to people but refers to activities. ISO 9000 uses term 'Top Management' to refer to people.
- 16. Management system:** Set of inter-related or interacting elements that organizations use to implement policy and achieve objectives. Management systems include quality management, emergency management, food safety management, occupational health and safety management, information security management systems and business continuity management systems.
- 17. Nonconforming product:** When one or more characteristics of a product fail to meet specified requirements, it is nonconformity product. Nonconformity products must be identified and controlled to prevent uninterrupted delivery.
- 18. Nonconformity:** Refers to failure to comply with requirements.
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19. Procedure: A way of carrying out a process/activity. According to ISO 9000, procedures may or may not be documented. Documented procedures can be very general or very detailed. General procedure could take form of simple flow diagram, a detailed procedure could be a one page form or it could be several pages of text.

20. Process: Set of activities that are interrelated or that interact with one another. Processes use resources to transform inputs into outputs. Processes are interconnected because output from one process becomes input for another process. Organizational processes should be planned and carried out under controlled conditions.

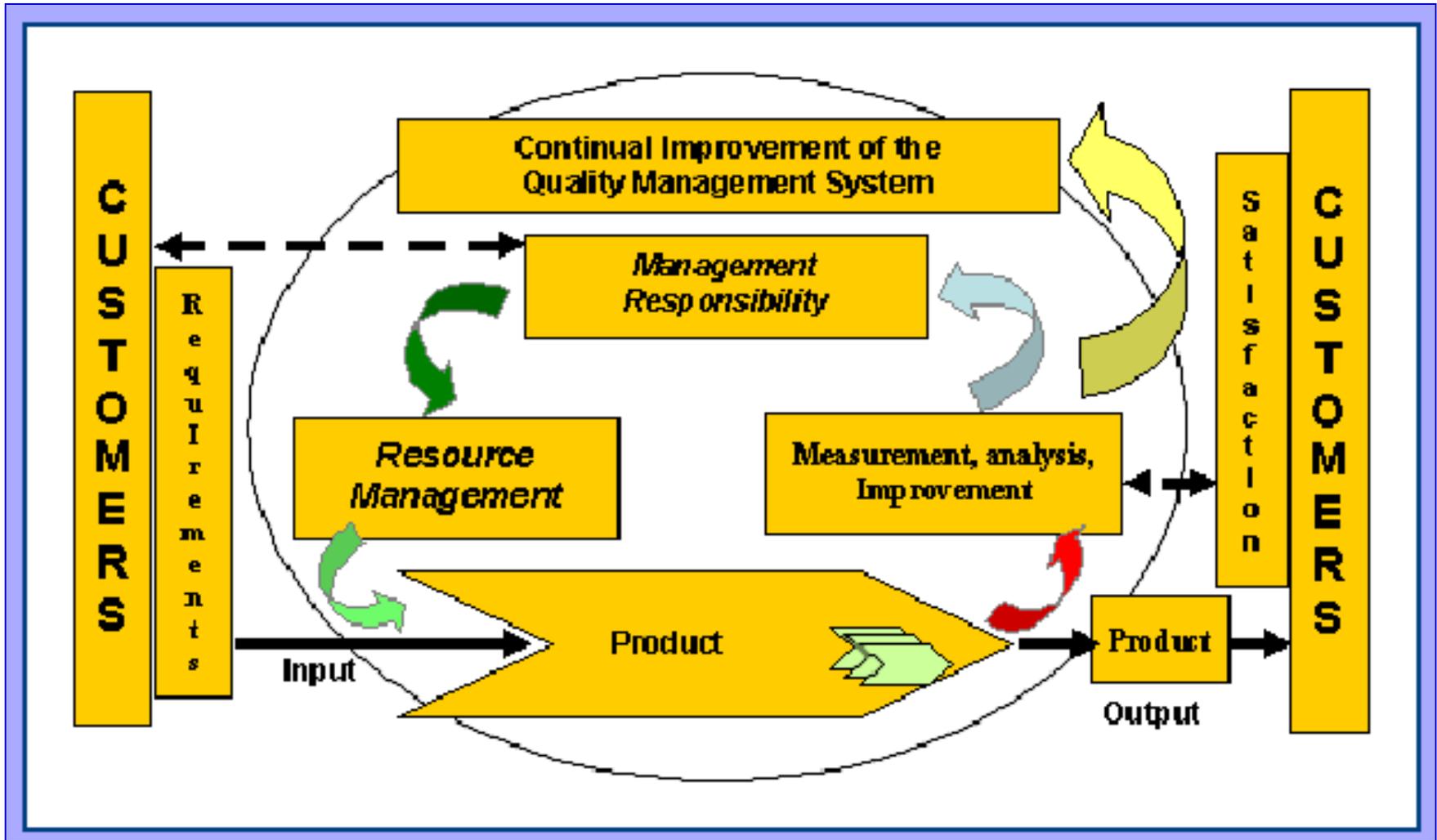
21. Process approach: It is a management strategy. When managers use a process approach, it means that they manage processes that make up their organization, the interaction between these processes and the inputs and outputs that tie these processes together.

QMS Concept

Process-based quality management system (QMS):

- ✓ A quality management system is a set or network of many of interrelated or interacting and interconnected processes (elements) that organizations use to direct and control how quality policies are implemented and quality objectives are achieved.
- ✓ Process-based quality management system uses a process approach to manage and control how its quality policy is implemented and how its quality objectives are achieved.
- ✓ Process-based QMS is a network of interrelated and interconnected processes.
- ✓ Each process uses resources to transform inputs into outputs.
- ✓ These process interactions create a single integrated process-based QMS.

- ✓ Since output of one process becomes input of another process, processes interact and are interrelated by means of such input-output relationships.
- ✓ These process interactions create a single process-based QMS.
- ✓ Top management is called to establish a customer oriented organization:
- ✓ By defining systems and processes that can be managed and improved in effectiveness and efficiency
- ✓ Acquiring and using process data and information on a continuing basis
- ✓ Directing progress towards continual improvement
- ✓ Using suitable methods to evaluate process improvement.



Process module of the standard ISO 9000:2000

Interpretation of basic quality concepts and processes:

- ✓ Changes, constant improvement and process approach are attributes of Total Quality Management (TQM) concept and characteristic of new edition of ISO 9000:2000 standard.
- ✓ Definition of TQM and process approach definition points that TQM is a concept/philosophy for management operations where as quality is a function of management.
- ✓ Way how to manage processes in order to achieve success and has become a movement and an approach, a religion of how to live.

Approaches that act on the removal of burden created by traditional way of work

Approaches that allow science method usage in working process

Approaches that allow equal distribution of work functions

Approaches that provide engineering of the process

Approaches that allow transparency of organization

Group of approaches to TQM that enable competing ability



ISO 9000:2000



ISO 9000:2000 standard defines process as the "system of activities that uses resources to transform inputs into outputs". Two major rules (1) inputs of one process are mainly outputs of another and (2) processes are managed in order to create new values that correspond to requirements and expectations of customers.

ISO 9000:2000 standards recommend

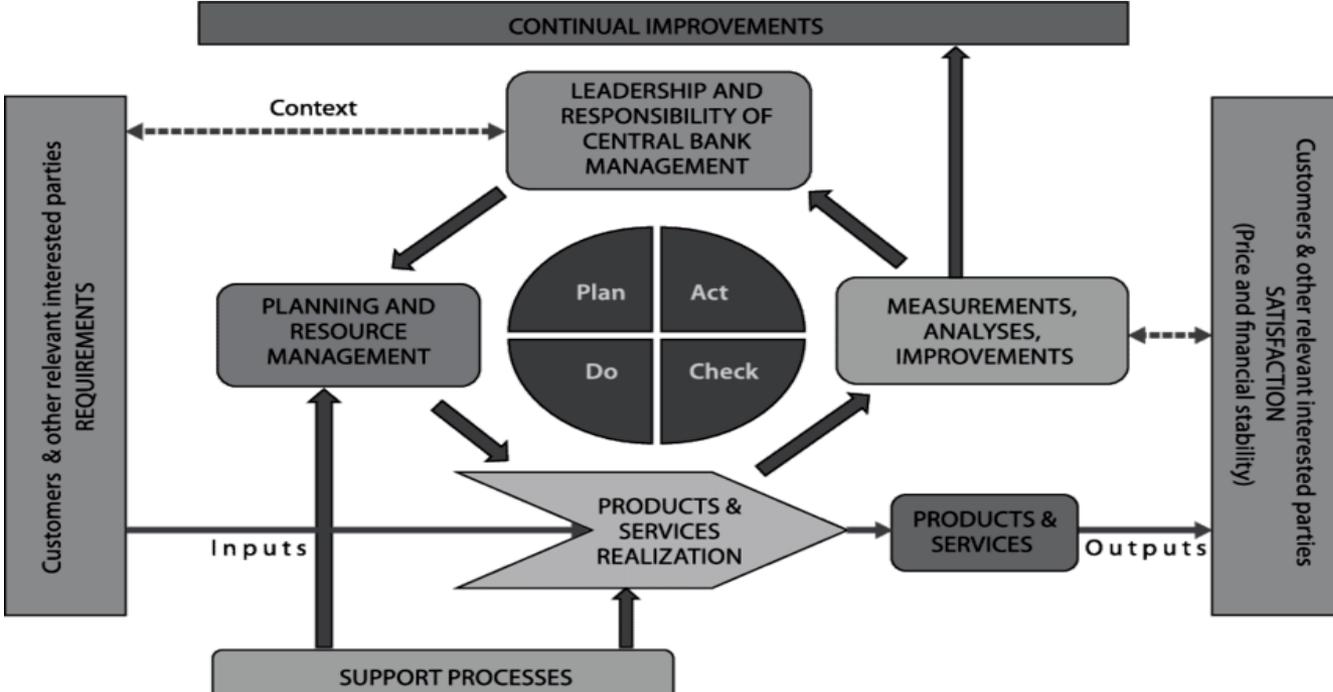


Desired results can be more efficiently achieved if proper resources and activities are managed as processes

System approach to management: identification, understanding and system management of related processes to achieve set goal

Process network - network architecture:

- ✓ Every process can be structured as unity of activities/chain of activities and any activity can be structured as chain of elementary tasks.
- ✓ ISO 9000:2000 standards explain consistency of such structure as follows: Any activity that transforms inputs into outputs can be considered as process.
- ✓ In order for its efficient functioning, organization should identify and manage inter related process.



Benefits of QMS:

Important Requirements

- ✓ **Customers' requirements:** Confidence in ability of organization to deliver desired product and service consistently meeting their needs and expectations.
- ✓ **Organization's requirements:** Both internally and externally and at an optimum cost with efficient use of available resources-materials, human, technology and information.

❖ QMS enables an organization to achieve goals and objectives set out in its policy and strategy.

❖ Provides consistency and satisfaction in terms of methods, materials, equipment, etc., and interacts with all activities of organization, beginning with identification of customer requirements and ending with their satisfaction.

A good QMS will ensure the following in organization

Set direction and meet customers' expectations

Improve process control

Reduce wastage

Lower costs

Increase market share

Facilitate training

Involve staff

Raise morale

A	Product quality	Improved product design; Reduced liability risk; New product introduction; Improved reaction to competition; Enhanced reputation; Improved after sales service; Better advertising strategies
B	Production quality	(i) Reduction of rework and other operating losses; (ii) Decreased labor/material cost; (iii) Improved managerial control of operations; (iv) Better employee morale; (v) Smoother production flow; (vi) Improved reliability.
C	Business for performance	(i) Improved delivery times; (ii) Reduced order processing times; (iii) Reduced cycle times for new product introduction; (iv) Improved return on investment; (v) Higher market share; (vi) Customer relation