

# Quality Management System And its Application in Dairy Business



# Competitive Risks

## ❑ Markets

- ✓ customers, competitors, pricing, changes

## ❑ Product

- ✓ quality, performance, reliability, maintainability, innovation, demand, mix, seasonality

## ❑ Processes

- ✓ facility, capability, capacity, technology, Suppliers
- ✓ quality, delivery, price, consistency, flexibility

## ❑ Other

- ✓ workforce, capital, governmental policies, health, safety & environment

# Business rationalization

- ❑ To achieve competitive advantage, every company must proactively implement business strategies to
  - ✓ meet customer requirements & enhance customer satisfaction
  - ✓ achieve, maintain and improve overall organizational performance & capabilities
  
- ❑ Implementing a **Quality Management System** must be a strategic decision
- ❑ Must be consistent with other business strategies
- ❑ Can be integrated with other management systems such as environmental, occupational health & safety, financial & risk management

# Reactive and Pro-active quality approach

TIME:	Early 1900s	1940s	1960s	1980s and Beyond
FOCUS:	Inspection	Statistical sampling	Organizational quality focus	Customer driven quality
	Old Concept of Quality: Inspect for quality after production.			New Concept of Quality: Build quality into the process. Identify and correct causes of quality problems.

**Quality assurance (QA):** *Quality assurance* is a set of activities intended to establish confidence that quality requirements will be met. QA is one part of quality management.

**Quality control:** *Quality control* is a set of activities intended to ensure that quality requirements are actually being met. *Quality control* is one part of quality management.

# Quality

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Degree to which a set of inherent characteristics fulfills requirements

- ❑ Quality is Conformance with requirements
- ❑ Quality is fitness for purpose
- ❑ Quality is fitness for use
- ❑ Quality is user dependent

**To achieve consistency in output, it is quality of everything that we do, which can be improved**

# Need for Quality

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Every organization would like to improve in different ways i.e.

- Improving customer satisfaction
- In means of operations
- Increasing market share
- driving down costs
- managing risk more effectively.

# Quality Management System

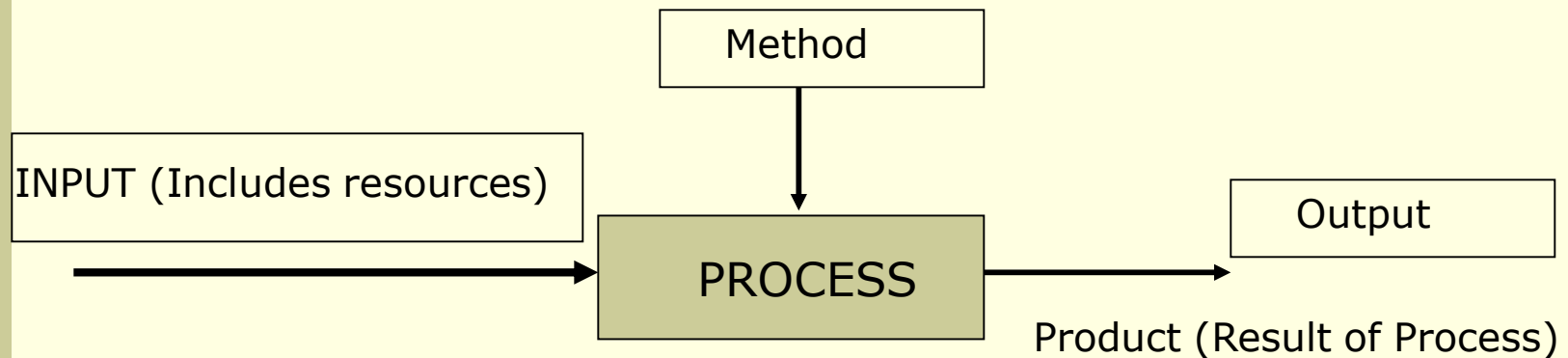
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A quality management system gives you the framework you need to monitor and improve performance in any area you choose.

- ❑ Management System to direct and control an organization with regard to quality
- ❑ To assess if a process is working, if things are being done in the way they are supposed to be done, however at the same time it is an excellent way of measuring the effectiveness of your Procedures

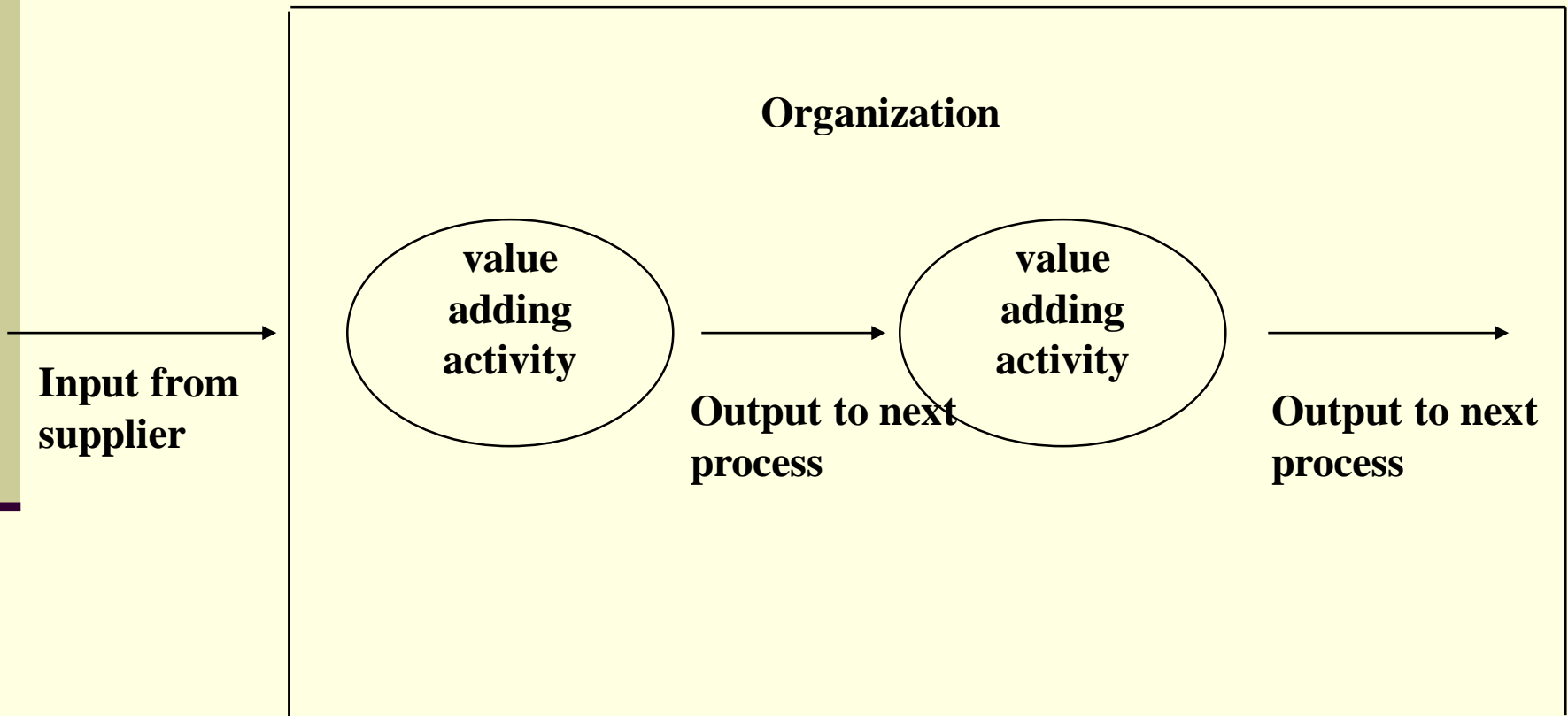
# Work Process

Monitoring and Measurement opportunities before, during and after the process





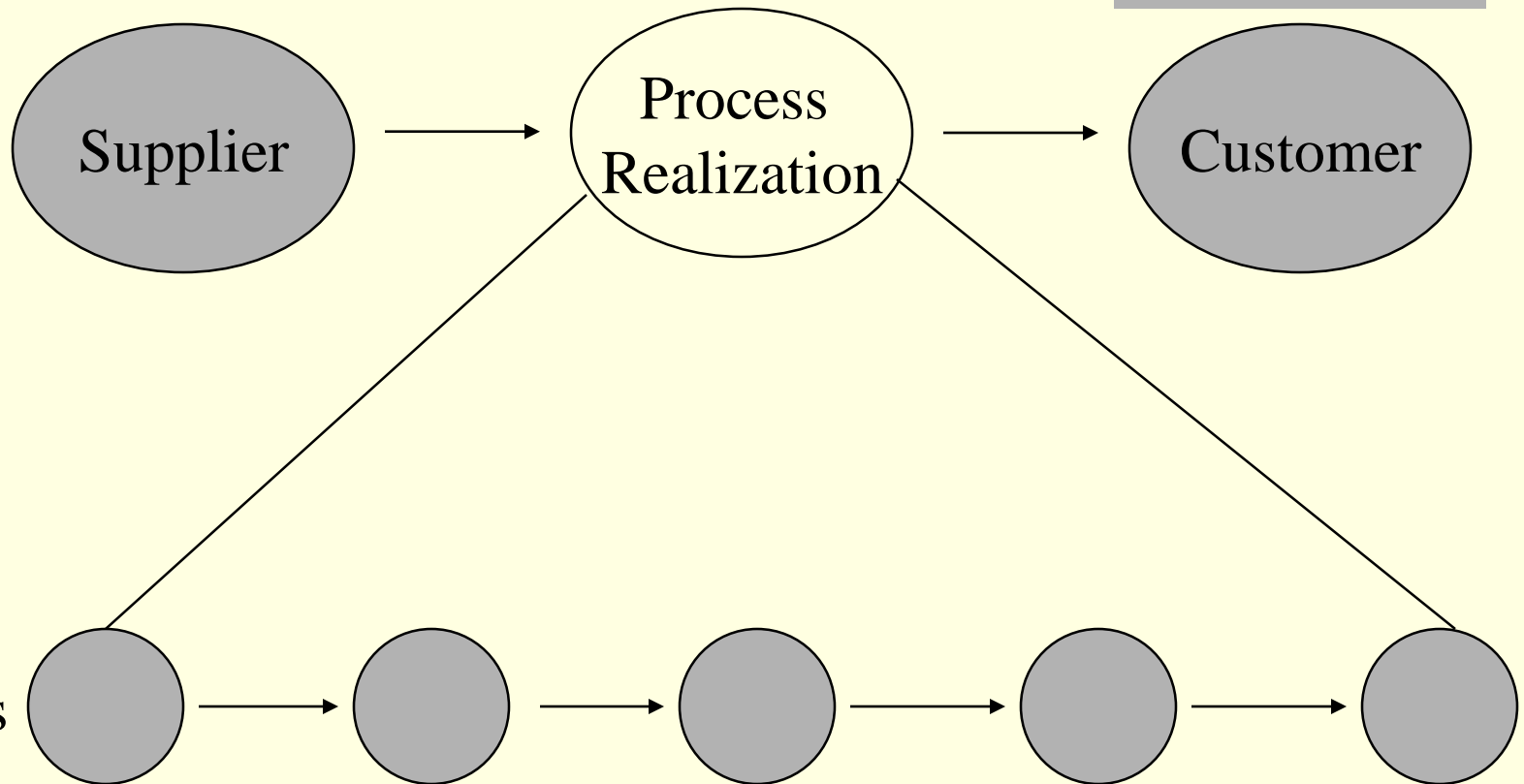
# Process Model



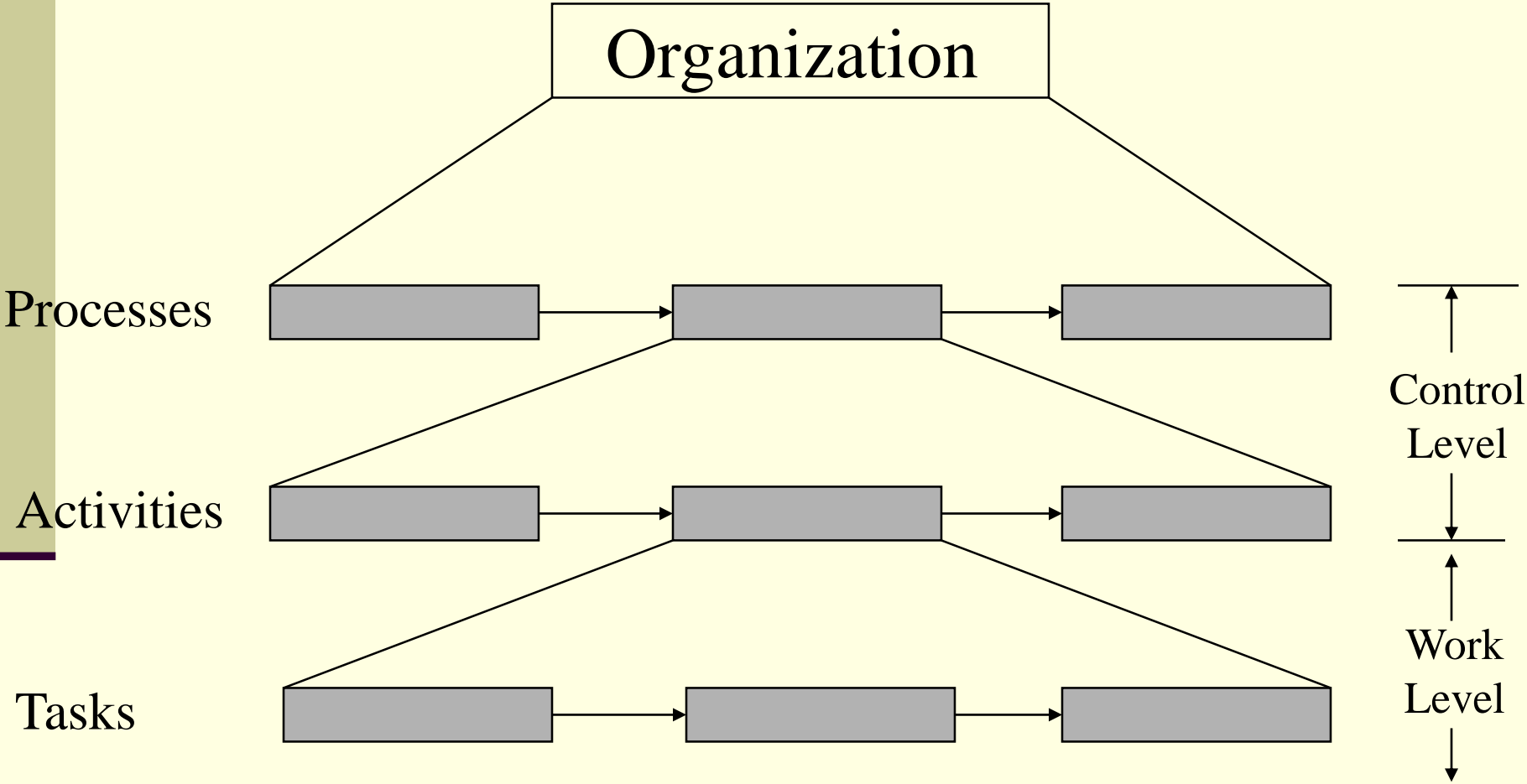
# Process Concepts

- ❑ All work is a process – things go in (inputs), get worked on (conversion), come out differently (output)
- ❑ Conversion activities transform inputs to outputs
- ❑ Activities require resources
- ❑ Outputs can be product or service
- ❑ Inputs, outputs and activities are measurable
- ❑ Each activity has a supplier and a customer
- ❑ Each process must have a process owner
- ❑ All businesses are defined by processes
- ❑ All processes must satisfy customer requirements
- ❑ All processes are capable of being improved

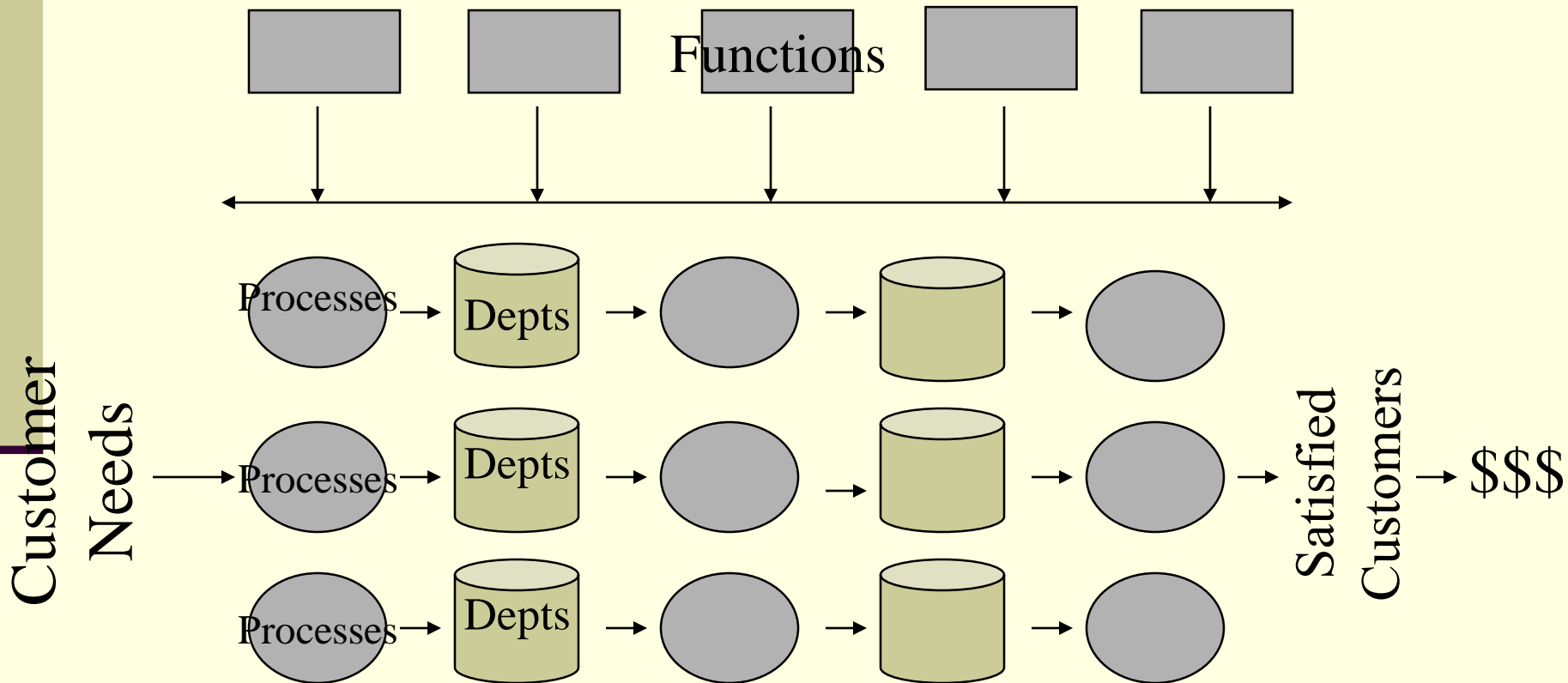
# Process Management



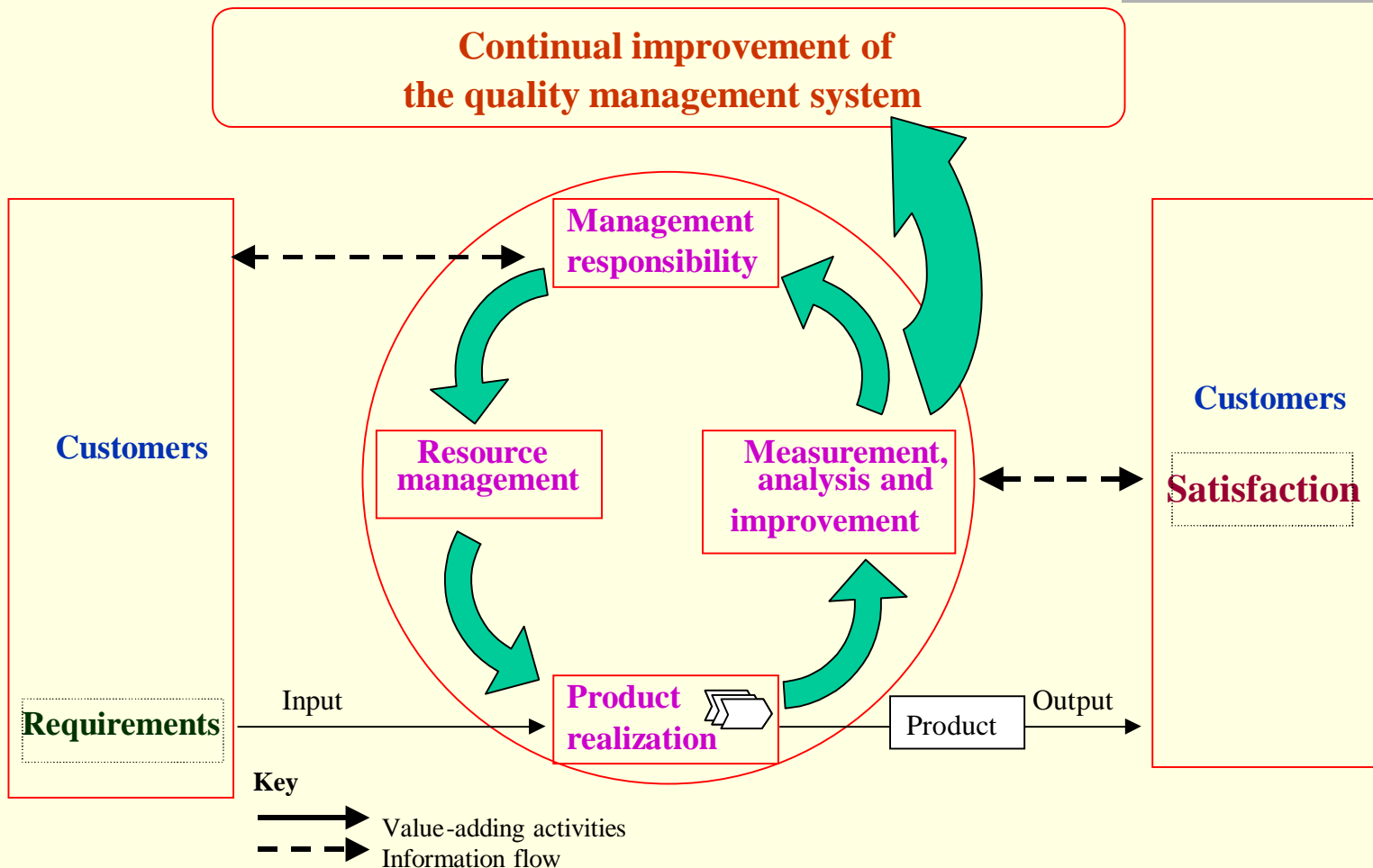
# Process Structure



# Relationship between processes, functions and departments



# Model of a process-based Quality Management System



# QMS



# Process deficiencies

- ❑ **Functional separatism** exists within the organization
- ❑ Problem analysis focuses on the **symptoms** rather the root causes
- ❑ Symptoms trigger the **change** rather than root cause analysis
- ❑ Changes are implemented mostly by management and take long to implement
- ❑ Inter-departmental politics and battles rage
- ❑ Employees do not see themselves as stakeholders
- ❑ Employees are unaware of how other processes & functions work
- ❑ Measurements exist to prove functional interaction
- ❑ Business objectives have a short term focus



# Quality Management Principles

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Eight quality management principles identified to implement a QMS : Must be used by top management to:

- ❑ Lead & operate an organization successfully
- ❑ Direct & control in a systematic & transparent manner
- ❑ Address the needs of all interested parties
- ❑ Maintain a management system & continually improve its performance
- ❑ Maintain consistency with other management disciplines

# Eight Principles of QMS

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- ❑ Customer Focus.
- ❑ Leadership.
- ❑ Involvement of People.
- ❑ Process Approach.
- ❑ System Approach to Management.
- ❑ Continual Improvement.
- ❑ Factual Approach to decision Making.
- ❑ Mutually beneficial supplier relationships.

# Customer Focus

- Understand current & future needs of customers
- Meet customer requirements
- Strive to exceed customer expectations

## Application

- Understand product, delivery, price, support, etc
- Communicate needs and expectations
- Measure customer satisfaction
- Manage customer relationships

# Leadership

- Establish unity of purpose
- Provide direction
- Create proper internal environment

## Application

- Have a clear vision of organization's future
- Demonstrate commitment to strategies & policies
- Provide required resources and authority
- Be proactive and lead by example
- Understand and respond to external changes
- Inspire, build trust and recognize
- Have open & honest communication

# Involvement of people

- ❑ Foster full involvement of people at all levels

## Application

- ❑ Encourage employees see themselves as stakeholders
- ❑ Empower them to take ownership and responsibility
- ❑ Motivate them to seek opportunities to make improvements & recognize achievements
- ❑ Allow them to be innovative and creative
- ❑ Assist them in enhancing their competencies
- ❑ Encourage them to share knowledge
- ❑ Help them derive satisfaction from their work
- ❑ Emphasize focus on creating value for customers

# Process Approach

- ❑ Manage resources and activities as a process to achieve more efficient results

## Application

- ❑ Define processes & their sequence & interaction
- ❑ Determine criteria, methods & responsibilities to operate & control processes
- ❑ Monitor & measure inputs, outputs and conversion
- ❑ Ensure adequate resources & information are available
- ❑ Analyze & improve process performance

# Systems approach to management

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- ❑ Understand and manage the system of inter-related processes

## Application

- ❑ Structure process flow to efficiently achieve customer requirements and internal objectives
- ❑ Understand the inter-dependencies
- ❑ Establish effective communication
- ❑ Measure and evaluate system effectiveness
- ❑ Continually improve the system
- ❑ Establish resource constraints prior to action

# Continual Improvement

- ❑ Establish continual improvement as a permanent objective

## Application

- ❑ Products, processes, system, customer satisfaction
- ❑ Make it the responsibility of every person
- ❑ Establish & achieve progressive objectives
- ❑ Focus on effectiveness and efficiency
- ❑ Use and provide training on tools and methods
- ❑ Promote prevention based activities
- ❑ Recognize improvements



# Factual approach to decision making

- ❑ Analyze and review operational results for effective management and decision-making

## Application

- ❑ Gather performance data relevant to business objectives
  - ✓ Products, processes, QMS, customer satisfaction, suppliers
- ❑ Ensure data is accurate, reliable and accessible
- ❑ Analyze data and information using valid methods
- ❑ Use analysis to make decisions balanced with experience and intuition

# Mutually beneficial supplier relationships

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- ❑ Create value by developing suppliers

## Application

- ❑ Identify and select key suppliers
- ❑ Balance long-term and short-term goals
- ❑ Create clear and open communications
- ❑ Jointly establish a clear understanding of customer needs
- ❑ Initiate joint development, but protect proprietary work & product
- ❑ Share information and future plans
- ❑ Recognize supplier achievements

# ISO Quality management -key requirements

- ❑ **QMS** - Document processes necessary to ensure product or service is of high quality and conforms to customer requirements
- ❑ **Management Responsibility** - Provide a vision. Show commitment. Focus on the customer. Define policy. Keep everyone informed
- ❑ **Resource Management** - Assign the right person to the job. Create and maintain positive workspace
- ❑ **Product Realization** - Clearly understand customer, product, legal and design requirements. Ensure specifications are followed. Check your suppliers
- ❑ **Measurement, Analysis & Improvement** - Identify current and potential problems. Monitor and measure customer satisfaction. Perform internal audits. Fix problems

# ISO

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To address this need of the customers and also to ensure that organization would improve their working internally, system standards were released by ISO, in the year 1987 which have been revised once in 1994 and latest version standards have been released in 2000.

**ISO stands for “*International Organization for Standardization*”**

# ISO Core Standards

ISO 9000:2000 Series, 1994 family of standards have been reduced to 4 core standards:

- ❑ ISO 9000:2005 - Fundamentals and Vocabulary
- ❑ **ISO 9001:2000 – Requirements**
- ❑ ISO 9004:2000 – Guidelines for performance improvements
- ❑ ISO 19011:2002 – Guidelines for Auditing Quality and/or Environmental Management Systems Auditing

# Management Responsibility

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Top management is responsible for the following:

- ❑ Management Commitment
- ❑ Customer Focus
- ❑ Quality Policy
- ❑ Planning
- ❑ Responsibility, Authority, & Communication
- ❑ Management Review

# Management Commitment

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Provide evidence of it's commitment to develop, implement, and improve the quality management system:

- ❑ Express importance of meeting requirements  
(customer, as well as, statutory and regulatory)
- ❑ Establish the quality policy
- ❑ Ensure quality objectives are established
- ❑ Conduct management reviews
- ❑ Ensure the availability of resources

# Quality Policy

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Top management must ensure quality policy:

- is appropriate to purpose of organization
- provides a framework for quality objectives
- is communicated & understood within organization
- is reviewed for continuing suitability
- includes commitment to comply with requirements and continually improve effectiveness of system



# Quality Planning

## Top management must:

- ensure measurable quality objectives are established at relevant functions and levels
- Establish objectives for products, processes, customer satisfaction, QMS, suppliers, dept's
- set objectives consistent with quality policy
- ensure QMS planning is carried out to manage & improve processes as well as meet objectives
- maintain integrity of system when changes to system are planned and implemented

# Responsibility, Authority and Communication

## Top management must ensure:

- responsibilities and authorities are defined and communicated within the organization
- a member of management is appointed as the Quality Management Representative
- external & internal communications processes are established
- communication takes place on the effectiveness of the QMS

# Management Review

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- ❑ Top management must perform reviews of QMS
- ❑ Conduct these reviews at planned intervals
- ❑ Ensure QMS is suitable, adequate, effective
- ❑ Evaluate need for changes or improvement to QMS, processes, product, quality policy, objectives & resource needs
- ❑ Maintain records of management reviews

# Provision of Resources

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Determine and provide needed resources to:

- Implement and maintain the quality system
- Continually improve its effectiveness
- Enhance customer satisfaction (by meeting their requirements)

# Personnel

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- ❑ Determine competency needs for personnel
- ❑ (education, training, skills, and experience)
- ❑ Provide training to satisfy competency needs
- ❑ Evaluate the effectiveness of training
- ❑ Make employees aware of importance of activities & contribution to quality objectives
- ❑ Maintain appropriate records (education, training, skills, and experience)

# Infrastructure

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Determine, provide, and maintain the infrastructure needed to achieve conformity to product requirements.

Infrastructure includes, as applicable:

- Buildings, workspace, and associated utilities
- Process equipment (hardware and software)
- Supporting services (such as transport or communication)

# Work Environment

Determine and manage the work environment needed to achieve conformity to product requirements.

## ❑ Facility

- ✓ Layout & condition of production, storage & office facilities

## ❑ Safety of workforce

- ✓ Temperature, dust, noise, ventilation, light, health & safety compliance

## ❑ Safety of product

- ✓ storage locations, containers, movement, mistake-proofing, preservation, packaging

# Performance indicators

## Market and Customer

- Share of market
- New and lost customers
- Customer satisfaction or dissatisfaction indices
- Quality performance
- Delivery performance
- Response time
- Market/channel/customer profitability
- Warranties, claims, returns



# Documentation

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## Quality Manual:

The quality manual gives the management's directions for Quality Management system, in which it will define the departments/ Areas to be covered in the process system.

## QMS - Procedures/ SOP:

- ✓ Control of Documents
- ✓ Control Records
- ✓ Internal Audits
- ✓ Control of Nonconformity
- ✓ Corrective Action
- ✓ Preventive Action

# Quality System Audit

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A systematic investigation of the intent, the implementation and the effectiveness of selected aspects of the quality system of an organization.

- Initiating an Audit
- Conducting document review
- Preparing for onsite activities
- Conducting onsite activities
- Preparing, approving and distributing the audit report
- Complete the audit
- Conducting the audit Follow-up.

# Non conformity

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- ❑ Nonconformity refers to a failure to comply with requirements. A requirement is a need, expectation, or obligation. It can be stated or implied by an organization, its customers, or other interested parties.
- ❑ There are many types of requirements. Some of these include quality requirements, customer requirements, management requirements, product requirements, and legal requirements. Whenever your organization fails to meet one of these requirements, a nonconformity occurs.
- ❑ ISO 9001 lists quality management system requirements. When your organization deviates from these requirements, a nonconformity occurs.

# Major Non conformity

- ❑ The absence or total breakdown of a system to meet the ISO 9000 requirement.
- ❑ A number of minor nonconformities against one requirement can represent a total breakdown of the system and thus be considered a major nonconformity.
- ❑ Any noncompliance that would result in the probable shipment of nonconforming product.
- ❑ A condition that may result in the failure or materially reduce the usability of the products or services for their intended purpose.
- ❑ A noncompliance that judgment and experience indicate is likely either to result in the failure of the quality system or to materially reduce its ability to assure controlled processes or products.

# Minor Non Conformity

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- ❑ An ISO 9000 nonconformance to that judgment and experience indicate is not likely to result in the failure of the quality system or reduce its ability to assure controlled processes or products.
- ❑ A failure in some part of the supplier's documented quality system relative to ISO 9000, or
- ❑ A single observed lapse in following one item of the company's quality system.