TOTAL QUALITY MANAGEMENT-ME4122OE

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CSE IV-I

UNIT– I
INTRODUCTION

Total Quality Management (TQM)

Various Definitions

- Total quality management (TQM) has been defined as an integrated organizational effort designed to improve quality at every level.

- The process to produce a perfect product by a series of measures require an organized effort by the entire company to prevent or eliminate errors at every stage in production is called total quality management.

- According to international organization for standards defined tqm as, "TQM is a management approach for an organization, centered on quality, based on the participation of all its members and aiming at long-term success through customer satisfaction and benefits to all members of the organization and to the society.

Source: cleartax.in total-quality-management

Source: smartsheet.com/total-quality-management

Characteristics

- Adopting and communicating about total quality management
- Closer customer relations and provider relations
- Committed management
- Benchmarking
- Increased training and Open organization
- Employee empowerment
- Flexible production
- Process improvements
- Process measuring

Concept of TQM

Improve	Improve continuously
Produce	Produce quality work the first time
Have	Have a strategic approach to improvement
Encourage	Encourage mutual respect and teamwork
Focus on	Focus on customer

Key elements of TQM

FOCUS ON CUSTOMER

EMPLOYEE INVOLVEMENT

CONTINUOUS IMPROVEMENT

Source: Isixsigma.com total-quality-management

Traditional approach vs TQM

Traditional approach and TQM

Clip slide

Quality element	Previous state	TQM
Definition	Product-oriented	Customer-oriented
Priorities	Second to service and cost	First among equals of service and cost
Decisions	Short-term	Long-term
Emphasis	Detection	Prevention
Errors	Operations	System
Responsibility	Quality Control	Everyone
Problem solving	Managers	Teams
Manager's role	Plan, assign, control, and enforce	Delegate, coach, facilitate, and mentor

Source: Isixsigma.com total-quality-management

Key Principles of TQM

Commitment from the management

- Plan (drive, direct)
- Do (deploy, support, and participate)
- Check (review)
- Act (recognize, communicate, revise)

Total Quality Management Principles

- Customer Satisfaction
- Employee Commitment
- Fact-Based Decision Making
- Strategic Thinking
- Effective Communications
- Integrated System
- Process Centered

Source: 5stoday.com/total-quality-management/

Total Quality Management Tools

Benefits of TQM

BENEFITS OF TQM:

- Improved quality.
- Employee participation.
- Team work.
- Working relationships.
- Customer satisfaction.
- Employee satisfaction.
- Productivity.
- Communication.
- rofitability.
- arket share.

Why Is TQM Important to an Organization?

Ensure	• Ensure increased revenues and higher productivity
Reduce	• Reduce waste and inventory
Improve	• Improve design
Adapt	• Adapt to changing markets and regulatory environments
Increase	• Increase productivity
Enhance	• Enhance market image

Example:

Companies as diverse as Ford Motor Company, Toyota, Motorola, and the Xerox Corporation use this methodology. With its focus on the customer, it can create or deepen customer loyalty to the organisation.

Source: cleartax.in total-quality-management

Conclusion

- A successful TQM implementation requires a significant training for the employees involved in it. Since the training program can take employees away from their day-to-day work, this eventually can have a negative short-term impact. Also, since Total Quality Management tends to result in a consistent series of incremental changes, it can lead to creating an unpleasant response from those employees who prefer the existing system, or employees who are afraid of losing their jobs because of it. Total Quality Management works best in an environment where there is strong support and commitment from the management.

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SONALI KOYAL

MBA-IB (2019-21)

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Total Quality Management Tools

1. **Fishbone Diagram / Ishikawa Chart:** Used to visualize cause and effect and identify the root cause.
2. **Check Sheet Template:** Used to collect data in real time.
3. **Control Chart:** Used to check if the process is in a state of control.
4. **Histogram:** Used to estimate probability distribution based on values within a certain range.
5. **Pareto Chart:** Used to evaluate the defects that are frequently occurring and assessing them by category.
6. **Scatter Diagram:** Used to represent two values in a set of data.
7. **Stratification Diagram:** Also called a flow diagram or a run diagram, stratification diagrams are used to sample a group.

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- Market share.

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UNIT-II

Customer Focus

- Customer focus is a strategic approach that centers on understanding and meeting the needs, expectations, and preferences of customers. It involves:
- **Understanding Customer Needs**: Actively listening to customers, conducting market research, and analyzing customer feedback to gain insights into their preferences and challenges.
- **Aligning Products and Services**: Tailoring products, services, and experiences to meet or exceed customer expectations. This includes ensuring quality, reliability, and value that resonate with the target audience.

Customer Satisfaction

- Customer satisfaction is the measure of how well products, services, and experiences meet or exceed customer expectations. Key aspects include:
- **Meeting Expectations**: Delivering on promises and providing value that aligns with what customers anticipate from their interactions with the business.
- **Quality and Reliability**: Ensuring that products or services consistently perform as expected and meet defined standards of quality.
- **Service Excellence**: Providing responsive and effective customer support, resolving issues promptly, and making the customer experience seamless and enjoyable

Process Orientation

- **Definition**:
  - **Processes**: These are structured sets of activities designed to achieve specific outcomes or objectives within an organization. Processes can be operational (e.g., manufacturing, service delivery), managerial (e.g., decision-making, resource allocation), or support-based (e.g., IT support, HR processes).

Customer Orientation

- **Definition**:
  - **Customer**: The recipient or end-user of products, services, or experiences provided by an organization. Customers can be individuals, businesses, or other entities that derive value from interacting with the organization.

Role of Marketing

- **Market Research and Analysis**:
  - Conducting market research to understand customer needs, preferences, and market trends.
  - Analyzing competitor strategies and industry dynamics to identify opportunities and threats.
- **Strategic Planning and Positioning**:
  - Developing marketing strategies and plans aligned with business objectives and target markets.
  - Positioning the brand effectively in the market to differentiate from competitors and resonate with target audiences.
- **Brand Management**:
  - Managing brand identity, values, and messaging to build brand equity and awareness.
  - Developing consistent branding across all communication channels to maintain brand integrity.

Role of Sales

- **Customer Acquisition**:
  - Prospecting and identifying potential customers who have a need for the products/services offered.
  - Initiating contact and building relationships to convert prospects into paying customers.
- **Consultative Selling**:
  - Understanding customer needs and pain points to offer tailored solutions that address their specific challenges.
  - Providing expertise, guidance, and support throughout the buying process to build trust and confidence.
- **Negotiation and Closing Deals**:
  - Presenting proposals, handling objections, and negotiating terms to reach mutually beneficial agreements.

BENCHMARKING

- Benchmarking has evolved significantly since its inception, transforming from a simple performance comparison tool into a strategic management practice aimed at achieving excellence and competitive advantage

Types of Benchmarking

- **Internal Benchmarking**: Comparing performance and processes within different departments or units within the same organization.
- **Competitive Benchmarking**: Comparing performance against direct competitors or industry peers.
- **Functional Benchmarking**: Comparing specific functions or processes across different industries to identify best practices.
- **Strategic Benchmarking**: Comparing strategic goals and practices with organizations that are leaders in similar industries or markets.

Benefits of Benchmarking

- **Performance Improvement**: Identifying areas where performance can be enhanced through adopting best practices.
- **Innovation**: Stimulating innovation by learning from industry leaders and exploring new approaches.
- **Cost Reduction**: Achieving cost efficiencies by implementing more effective processes.
- **Quality Enhancement**: Improving product or service quality to meet or exceed industry standards.
- **Strategic Alignment**: Aligning organizational goals and practices with industry trends and best practices.

UNIT-III

Organizing for TQM

- The systems approach is a holistic and interdisciplinary way of understanding and managing complex phenomena, whether they are organizations, processes, ecosystems, or social systems. It views these entities as interconnected and interdependent systems rather than isolated components.
- The systems approach in TQM involves viewing the organization as a complex system of interconnected processes and subsystems, where improving one part impacts the whole.

Key Elements of the Systems Approach in TQM

- **Holistic View of the Organization**:
  - TQM adopts a holistic perspective, considering the entire organization as a system composed of interrelated departments, functions, and processes. This includes suppliers, employees, customers, and stakeholders as integral parts of the system.
- **Process Orientation**:
  - TQM focuses on improving processes across the organization to achieve consistent quality and efficiency. Processes are analyzed, standardized, and optimized to eliminate waste, reduce variation, and meet customer requirements.
- **Continuous Improvement**:
  - The systems approach emphasizes continuous improvement as a fundamental principle of TQM. Improvement efforts are ongoing and systematic, driven by data, feedback, and the pursuit of excellence in all aspects of operations.
- **Customer Focus**:
  - Understanding and meeting customer needs and expectations is central to TQM. The systems approach ensures that all processes and activities are aligned with delivering value to customers and enhancing their satisfaction.

Characteristics of the Systems Approach

- **Systems Thinking**:
  - Systems thinking involves understanding the relationships and dynamics within a system rather than focusing solely on individual elements. It requires a shift from linear, cause-and-effect thinking to considering multiple interactions and feedback loops.
- **Integration of Disciplines**:
  - The systems approach integrates knowledge and perspectives from various disciplines, including engineering, biology, sociology, economics, and management. This interdisciplinary approach helps in addressing complex challenges that span multiple domains.
- **Emphasis on Relationships and Context**:
  - Relationships between components and their context are critical in the systems approach. It considers how external factors, such as environmental conditions or stakeholder interactions, influence system behavior.

QUALITY CIRCLES

- Quality Circles are small groups of employees who voluntarily come together to identify, analyze, and solve work-related problems and improve processes within their organization.

Principles of Quality Circles

- **Voluntary Participation**:
  - Quality Circles are composed of employees who voluntarily join based on their interest in improving quality and productivity. Participation is not mandatory but driven by intrinsic motivation to contribute positively to the organization.
- **Small Group Dynamics**:
  - Typically, Quality Circles consist of 6 to 12 members who work together regularly to discuss issues, brainstorm solutions, and implement improvement projects. The small group size facilitates effective communication and collaboration.
- **Problem-Solving Focus**:
  - The primary goal of Quality Circles is to identify and solve problems related to quality, productivity, safety, or other work-related issues. Members analyze root causes, propose solutions, and implement changes to achieve measurable improvements.

Key Benefits of Quality Circles

- **Enhanced Quality and Productivity**: By addressing operational challenges and inefficiencies, Quality Circles contribute to improved product quality, reduced defects, and increased productivity.
- **Employee Engagement**: Participation in Quality Circles enhances employee morale, job satisfaction, and engagement. It provides opportunities for skill development, teamwork, and recognition for contributions.
- **Cost Savings**: Implementing solutions identified by Quality Circles can lead to cost savings through reduced waste, improved process efficiency, and fewer defects or rework.
- **Culture of Innovation**: Quality Circles stimulate innovation by encouraging creative problem-solving and the implementation of new ideas or techniques.

SEVEN TOOLS OF TQM

- **Check Sheet (Tally Sheet)**
- **Histogram**
- **Pareto Chart**
- **Cause-and-Effect Diagram (Fishbone Diagram)**
- **Scatter Diagram (Scatter Plot)**
- **Control Charts**
- **Flowcharts**

UNIT-IV

COST OF QUALITY

The Cost of Quality

- The Cost of Quality (COQ) refers to the total cost incurred by an organization to ensure that its products or services meet quality standards. It encompasses costs associated with preventing, detecting, and correcting defects or issues in products or processes. Understanding and managing the COQ is crucial for organizations aiming to improve quality, reduce waste, and enhance customer satisfaction.

Components of the Cost of Quality

- **Prevention Costs**:
  - Costs incurred to prevent defects from occurring in the first place. This includes activities such as:
    - Quality planning and training
    - Process improvements
- **Appraisal Costs**:
  - Costs incurred to evaluate and verify that products or services meet quality standards. This includes activities such as:
    - Inspection and testing of materials and finished products
- **Internal Failure Costs**:
  - Costs incurred as a result of defects found before the product or service is delivered to the customer. This includes:
    - Rework or scrap of defective products
    - Repair and re-inspection of faulty work
- **External Failure Costs**:
  - Costs incurred as a result of defects found after the product or service has been delivered to the customer. This includes:
    - Customer complaints and returns
    - Warranty claims and repairs

Importance of Understanding Quality Costs

- **Cost Reduction**: By identifying and reducing quality costs, organizations can improve profitability and operational efficiency.
- **Customer Satisfaction**: Investing in prevention and appraisal activities can lead to higher quality products and services, thereby enhancing customer satisfaction and loyalty.
- **Competitive Advantage**: Lower quality costs allow organizations to offer competitive pricing or higher quality products/services in the market.
- **Continuous Improvement**: Monitoring quality costs helps in identifying areas for improvement, driving continuous improvement initiatives across the organization.

Benefits of Measuring Quality Costs

- **Data-Driven Decision Making**: Provides objective data to support decision-making related to quality management strategies and resource allocation.
- **Cost Reduction**: Helps in identifying opportunities to reduce waste, rework, and warranty claims, thereby improving profitability.
- **Continuous Improvement**: Facilitates ongoing improvement efforts by focusing on areas with the highest impact on quality and customer satisfaction.
- **Enhanced Customer Satisfaction**: Ensures products or services consistently meet customer expectations, leading to higher satisfaction and loyalty.

UNIT–V

ISO STANDARDS

- **ISO Standards**:
  - **ISO 9000 series**: These standards provide guidelines and criteria for quality management systems (QMS), covering areas such as quality planning, management responsibility, resource management, product realization, measurement, analysis, and improvement.
  - **ISO 9001**: Specifically focuses on requirements for a QMS, ensuring organizations consistently meet customer and regulatory requirements while enhancing customer satisfaction through effective application of the system.
- **Six Sigma**:
  - A methodology focused on improving process outputs by identifying and removing causes of defects and minimizing variability in manufacturing and business processes. Six Sigma aims to achieve near perfection in quality performance, typically by targeting a defect rate of 3.4 defects per million opportunities.

- **Total Quality Management (TQM)**:
  - A management approach that emphasizes continuous improvement in all aspects of an organization's operations. TQM integrates principles of quality management across departments and functions, aiming to enhance customer satisfaction and achieve long-term success through customer-focused processes and employee involvement.
- **Lean Manufacturing**:
  - A systematic approach to minimizing waste (non-value-added activities) while maximizing productivity. Lean principles focus on creating more value for customers with fewer resources, reducing cycle time, improving quality, and increasing efficiency

Benefits of Universal Standards of Quality

- **Consistency and Reliability**: Universal standards provide a common framework for defining and assessing quality, ensuring consistency and reliability across industries and organizations.
- **Competitiveness**: Organizations that adhere to recognized quality standards can enhance their competitiveness by demonstrating their commitment to quality and meeting customer expectations consistently.
- **Continuous Improvement**: Standards like ISO 9001, Six Sigma, and TQM promote a culture of continuous improvement, driving organizations to identify and eliminate inefficiencies and enhance processes.
- **Customer Confidence**: Meeting universal quality standards can build trust and confidence among customers, stakeholders, and partners, enhancing reputation and brand value

ISO Standards Adoption

- **ISO 9000 Series**:
  - **ISO 9001**: The most widely recognized standard for Quality Management Systems (QMS). It is adopted by organizations in manufacturing, services, healthcare, education, government, and other sectors to demonstrate their ability to consistently provide products and services that meet customer and regulatory requirements.
- **ISO 14000 Series**:
  - Focuses on Environmental Management Systems (EMS). ISO 14001 is the cornerstone standard that helps organizations manage their environmental responsibilities effectively and improve environmental performance.

- **ISO 45001**:
  - Provides requirements for Occupational Health and Safety Management Systems (OHSMS). It aims to help organizations improve employee safety, reduce workplace risks, and create safer working environments globally.
- **ISO 27000 Series**:
  - Addresses Information Security Management Systems (ISMS). ISO 27001 specifies requirements for establishing, implementing, maintaining, and continually improving an ISMS, helping organizations manage and protect their information assets.
- **ISO 50001**:
- Focuses on Energy Management Systems (EnMS). ISO 50001 provides requirements for improving energy performance, efficiency, and sustainability in organizations worldwide

Benefits of ISO Standards Adoption

- **International Recognition**: ISO certifications provide organizations with international recognition and credibility, facilitating global trade and partnerships.
- **Enhanced Quality and Efficiency**: Implementing ISO standards helps organizations improve processes, reduce waste, and optimize resource utilization.
- **Risk Management**: Standards like ISO 9001 and ISO 14001 help mitigate risks, enhance organizational resilience, and improve customer satisfaction.
- **Sustainability**: ISO standards such as ISO 14001 and ISO 50001 promote sustainable practices by addressing environmental impact and energy efficiency.