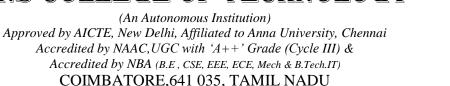


SNS COLLEGE OF TECHNOLOGY





DEPARTMENT OF AEROSPACE ENGINEERING 19MEE304 Total Quality Management

Topic: Introduction - Need for quality

Introduction to Total Quality Management (TQM) – Need for Quality

Definition of Quality

- Quality refers to the degree to which a product or service meets customer requirements.
- Defined by **ISO 9000** as "the totality of features and characteristics of a product or service that bear on its ability to satisfy stated or implied needs."

Need for Quality

- **Customer Expectations:** Consumers demand high-quality products and services.
- Global Competition: Companies must maintain high standards to compete internationally.
- Cost Reduction: Quality reduces defects, rework, and waste.
- **Compliance:** Many industries require adherence to strict quality regulations.
- **Brand Reputation:** High quality improves brand image and customer loyalty.
- **Employee Satisfaction:** A quality-focused work environment leads to higher employee engagement.

Definition of TQM

- Total Quality Management (TQM) is a management philosophy that focuses on continuous improvement, customer satisfaction, and total employee involvement.
- It integrates **quality planning, control, assurance, and improvement** into every aspect of an organization.

Evolution of Quality Management

- 1. Inspection Era Focused on detecting defects.
- 2. Statistical Quality Control (SQC) Era Introduced statistical techniques for quality measurement.
- 3. **Quality Assurance Era** Implemented preventive measures.
- 4. **TQM Era** Comprehensive, organization-wide approach to quality.
- 5. Six Sigma & Lean Quality Advanced methodologies for minimizing defects.

Principles of TQM

1. **Customer Focus** – Quality is determined by the customer's needs and expectations.

- 2. Leadership Commitment Management must lead by example in quality initiatives.
- 3. Continuous Improvement (Kaizen) Quality enhancement is an ongoing process.
- 4. **Employee Involvement** Employees at all levels contribute to quality.
- 5. **Process Approach** Focus on optimizing processes to improve output.
- 6. Data-Driven Decision Making Use statistical tools for quality control.
- 7. **Mutually Beneficial Supplier Relationships** Collaboration with suppliers for quality enhancement.

Benefits of TQM

- Improved **customer satisfaction** and loyalty.
- Increased **efficiency** and reduced waste.
- Enhanced **employee morale** and teamwork.
- Stronger **brand reputation** and competitive advantage.
- Cost savings through defect prevention and process optimization.

Key Contributors to TQM

- W. Edwards Deming 14 Points for Quality Management.
- Joseph Juran Juran Trilogy (Planning, Control, Improvement).
- Philip Crosby "Zero Defects" and "Quality is Free."
- Kaoru Ishikawa Fishbone Diagram and Quality Circles.
- Genichi Taguchi Robust Design and Quality Loss Function.

Case Study Example: Toyota's TQM Approach

- Toyota implemented **Kaizen** (**Continuous Improvement**) and **Just-in-Time** (**JIT**) to enhance quality and efficiency.
- Emphasis on employee involvement, root cause analysis, and waste elimination.
- Result: Toyota became a global leader in automobile manufacturing quality.

Conclusion

Total Quality Management is a strategic approach that enhances quality across all levels of an organization. By focusing on customer satisfaction, continuous improvement, and employee involvement, companies can achieve long-term success and operational excellence.