CHAPTER 5: Introduction to Quality Management (QM)
CONTENTS

• Definition of Quality
• Quality Management
• Total Quality Management (TQM)
• Customer Satisfaction
What is QUALITY?

• “Quality lies in the eye of the beholder”

• People deal with quality in daily lives.
  eg: Shopping, eating in restaurant, buying motorbikes, buying cars, a house, TV, PC, etc

• Quality is a major factor people consider in market place.
What is QUALITY?

• Quality, simplistically, means that a product should meet its specification.

• Consider you are eating in a restaurant;
  – How will you judge the quality of the restaurant?
  – Most people apply such criteria below;
    • Service
    • Response time
    • Food preparation
    • Environment
    • Price
    • Selection / food varieties.
    • Tasty
**Quality**: Fitness for use - the ability of a good or service to meet customer needs

**Quality Management**: systematic policies, methods, and procedures used to ensure that goods and services are produced with appropriate levels of quality meeting customer needs.
Also: Multiple Definitions for Quality

– perfection
– consistency
– eliminating waste
– speed of delivery
– compliance with policies and procedures
– providing a good, usable product
– doing it right the first time
– delighting or pleasing customers
– total customer service and satisfaction
Scope of Quality Management

- Quality management is particularly important for large, complex systems. The quality documentation is a record of progress and supports continuity of development as the development team changes.
- For smaller systems, quality management needs less documentation and should focus on establishing a quality culture.
- Quality management should be separate from project management to ensure independence.
Quality Management Activities

- **Quality assurance**
  Establish organisational procedures and standards for quality.

- **Quality planning**
  Select applicable procedures and standards for a particular project and modify these as required.

- **Quality control**
  Ensure that procedures and standards are followed by the software development team.
Quality Assurance

- provides the basic components required of a quality system.
- uses standards as the benchmark quality
- control of systems and processes
- focused on efficiency
- ‘assures’ quality
A quality plan sets out the desired product qualities and how these are assessed and defines the most significant quality attributes.

The quality plan should define the quality assessment process.

It should set out which organisational standards should be applied and, where necessary, define new standards to be used.
Quality Plans

• Quality plan structure
  – Product introduction;
  – Product plans;
  – Process descriptions;
  – Quality goals;
  – Risks and risk management.

• Quality plans should be short. If they are too long, no-one will read them.
Quality Control

- This involves checking the development process to ensure that procedures and standards are being followed – Quality Reviews
Quality Reviews

- A group of people carefully examine part or all of a software system and its associated documentation.
- Software or documents may be 'signed off' at a review which signifies that progress to the next development stage has been approved by management.
Quality Reviews

• The objective is the discovery of system defects and inconsistencies.
• Any documents produced in the process may be reviewed.
• Review teams should be relatively small and reviews should be fairly short.
• Records should always be maintained of quality reviews.
Quality Management

• Quality Management is designed to provide evidence that a specified standard of quality has been met and *continuously improved*. 

![Quality Management System Diagram]

- **Quality assurance**
  - Standards
  - Documentation
  - Standardisation of process
  - Process control
  - Planning & evaluation

- **Continuous improvement**
  - Leadership
  - Consumer focus
  - Participation
  - Culture that embraces change
  - Continuous improvement

Organisational performance

Outputs

Outcomes

Arizadayana Zahalan PPKSE
Components of Quality Management

- Focused on outcomes
- Aims to establish new benchmarks for ‘best practice’
- Continuous improvement of systems and processes
- Focus on effectiveness
- Embraced organisation-wide
- Improves quality
Principles of Quality Management

• Quality is defined by service user outcomes
• Standardisation of processes
• Continual process review and improvement
• Measurability
• Continual systems monitoring
• Continuous improvement
• Continual learning
• People are the most valuable resource
• Organisation-wide commitment/involvement
• Leadership

Quality management is a journey, not a destination
Benefits of a quality management approach for service users

- Improved service delivery outcomes
- Increased consistency and reliability in service provision
- Opportunities to participate in service planning, evaluation and improvement
- Confidence in the quality of services offered
Benefits of a quality management approach for service providers

- Improved performance
- Satisfied service users
- Improved image for your service
- A culture of continuous improvement
- Creates a ‘learning’ organisation
- Increased efficiencies
- More effective service delivery
Total Quality

• Also known as Total Quality Management (TQM).
• The culture of an organization where continuous improvement is integrated into all activities with the objective of improving the quality of all Business Processes.
• Total quality tools include **process charts**, **pareto analysis**, **cause and effect diagrams**, **histograms**, **run diagrams**, **check sheets** and **statistical process control**.

• You will learn later in the next chapter
## 2 Views of Quality

<table>
<thead>
<tr>
<th>Traditional view of Quality</th>
<th>Total Quality Philosophy</th>
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</thead>
<tbody>
<tr>
<td>Measured process performance in defective parts per hundred produced</td>
<td>Measured process performance in defective parts per million produced</td>
</tr>
<tr>
<td>Inspection of products</td>
<td>Emphasis on Continual Improvement of product, processes, people.</td>
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<tr>
<td>Employee as passive workers, follow orders given. Brains not wanted.</td>
<td>Employees empowered to think, make recommendations for CI.</td>
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9 Key elements of TQ

1. Strategically based
2. Customer focus
3. Obsession with Quality
4. Scientific Approach
5. Long term commitment
6. Teamwork
7. Continual Process Improvement
8. Education and Training
9. Freedom through Control
1. Strategically based

- Organizations contains at least vision, mission and broad objectives.
- Strategic plan designed to give sustainable competitive advantage.
- Toward achieving world-leading quality and improve forever.
2. Customer Focus

• “Customer is the driver”
• Applied to both customers:
  – Internal Customer
  – External customer
3. Obsession with Quality

- Organization must become obsessed with meeting or exceeding quality.
- “How can we do this better?”
- “Good enough is never enough”
4. Scientific Approach

- Hard data are used to establish benchmarks, monitoring performance, and making improvements.
5. Long term commitment

- Management innovations after attending short term seminars often FAIL in their initial attempts to adopt quality approach.
- Because they often look TQ as another management innovation rather than as a whole new way of culture.
6. Teamwork

• Partnership is not a pretense, it is a common struggle for the customers, not separate struggles for power.

• Also applies to relationship with suppliers, regulating agencies, and local communities.
7. Continual Process Improvement

• Fundamental of Total Quality goal is; *Quality of products / services.*

• To continually improve the quality of the *product*, it is necessary to continually improve *systems*.
8. Education and Training

- Fundamental to TQ
- Represent the best way to improve people.
- In an organization, every should constantly learning.
- Encouraged by management
- Know how to work hard and smart.
9. Freedom through Control

- Increase the ownership feel about the decision made.

- **Mistake**: Management see employee involvement as a loss of management control.
Understanding who is the customer
Historically - customers were considered who used a company’s products and suppliers were outsiders who provided the materials needed to produce the products.

A more contemporary view - every organization has both internal and external customers.
Understanding who is is customer

- An external customer - one referred to in the traditional definition.
- An internal customer - any employee whose work depends on that of employees whose work precedes his or hers.
• Product/service must have attributes customers want.

• Factors important to customers:
  – Products/service quality
  – Service provided by organization
  – Organization’s personnel
  – Organization’s image
  – Selling price
  – Overall cost of product.
In a total quality setting, customers define quality.

Customer satisfaction must be the HIGHEST PRIORITY.!!!

- Can be achieved by producing high-quality products that meet or exceed expectations.
- Must be renewed with each purchase.
- The key to establishing a customer focus is to put employees in touch with customers so that customer needs are understood.
Customer Satisfaction

- Customer defines Quality, employee produce it.
- In a TQ setting, External Customers (Buyers/purchasers) define quality, and Internal Customer (staff) produce it.
Identifying customer needs

- Scholtes’ six-step strategy for identifying customer needs:
  1. speculate about results,
  2. develop an information-gathering plan,
  3. gather information,
  4. analyze the results,
  5. check the validity of conclusions
  6. take action.
Customer needs are NOT STATIC.
So constant contact with customers is important in a total quality setting.
Should be in-person or by telephone, written surveys.
Quality function deployment (QFD) is a mechanism for putting into operation the concept of building in quality. It makes customer feedback a normal part of the product development process, thereby improving customer satisfaction.
General organization of a QFD matrix.
Completed QFD matrix.
THE END