

QUALITY MANAGEMENT— CUSTOMER SATISFACTION

Course title: International Project
Management

Lecturer: Nodirjon Makhkamov

Learning Objectives

- Define the term quality.
- Explain why quality is important and the consequences of poor quality.
- Identify the determinants of quality.
- Describe the costs associated with quality.
- Describe the quality awards.

Learning Objectives

- Discuss the philosophies of quality gurus.
- Describe TQM.
- Give an overview of problem solving.
- Give an overview of process improvement.
- Describe and use various quality tools.

Quality Management

- What does the term *quality* mean?
- *Quality* is the ability of a product or service to consistently meet or exceed customer expectations.

Evolution of Quality Management

- 1924 - Statistical process control charts
- 1930 - Tables for acceptance sampling
- 1940's - Statistical sampling techniques
- 1950's - Quality assurance/TQC
- 1960's - Zero defects
- 1970's - Quality assurance in services

Quality Assurance vs. Strategic Approach

- Quality Assurance
 - *Emphasis on finding and correcting defects before reaching market*
- Strategic Approach
 - *Proactive, focusing on preventing mistakes from occurring*
 - *Greater emphasis on customer satisfaction*

The Quality Gurus

- Walter Shewhart
 - *“Father of statistical quality control”*
- W. Edwards Deming
- Joseph M. Juran
- Armand Feignbaum
- Philip B. Crosby
- Kaoru Ishikawa
- Genichi Taguchi

Key Contributors to Quality Management

Table 9.2

<u>Contributor</u>	<u>Known for</u>
Deming	14 points; special & common causes of variation
Juran	Quality is fitness for use; quality trilogy
Feignbaum	Quality is a total field
Crosby	Quality is free; zero defects
Ishikawa	Cause-and effect diagrams; quality circles
Taguchi	Taguchi loss function
Ohno and Shingo	Continuous improvement

Dimensions of Quality

- *Performance* - main characteristics of the product/service
- *Aesthetics* - appearance, feel, smell, taste
- *Special Features* - extra characteristics
- *Conformance* - how well product/service conforms to customer's expectations
- *Reliability* - consistency of performance

Dimensions of Quality (Cont'd)

- *Durability* - useful life of the product/service
- *Perceived Quality* - indirect evaluation of quality (e.g. reputation)
- *Serviceability* - service after sale

Examples of Quality Dimensions

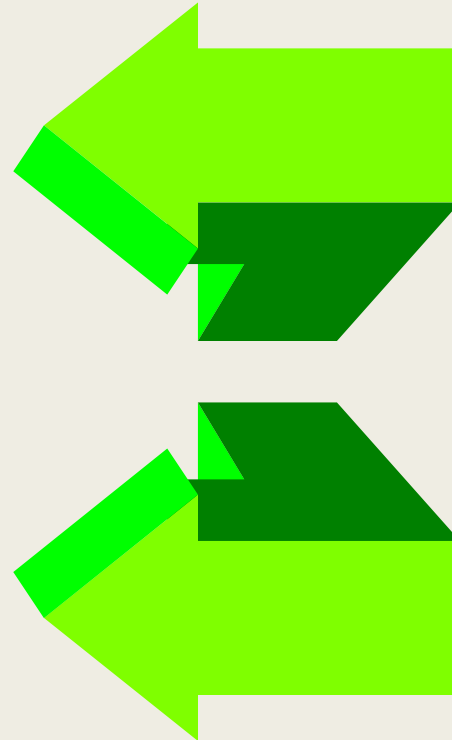
Dimension	(Product) Automobile	(Service) Auto Repair
1. Performance	Everything works, fit & finish Ride, handling, grade of materials used	All work done, at agreed price Friendliness, courtesy, Competency, quickness
2. Aesthetics	Interior design, soft touch	Clean work/waiting area
3. Special features	Gauge/control placement Cellular phone, CD player	Location, call when ready Computer diagnostics

Examples of Quality Dimensions (Cont'd)

<u>Dimension</u>	<u>(Product)</u> <u>Automobile</u>	<u>(Service)</u> <u>Auto Repair</u>
5. Reliability	Infrequency of breakdowns	Work done correctly, ready when promised
6. Durability	Useful life in miles, resistance to rust & corrosion	Work holds up over time
7. Perceived quality	Top-rated car	Award-winning service department
8. Serviceability	Handling of complaints and/or requests for information	Handling of complaints

Service Quality

- Convenience
- Reliability
- Responsiveness
- Time
- Assurance
- Courtesy
- Tangibles



Examples of Service Quality

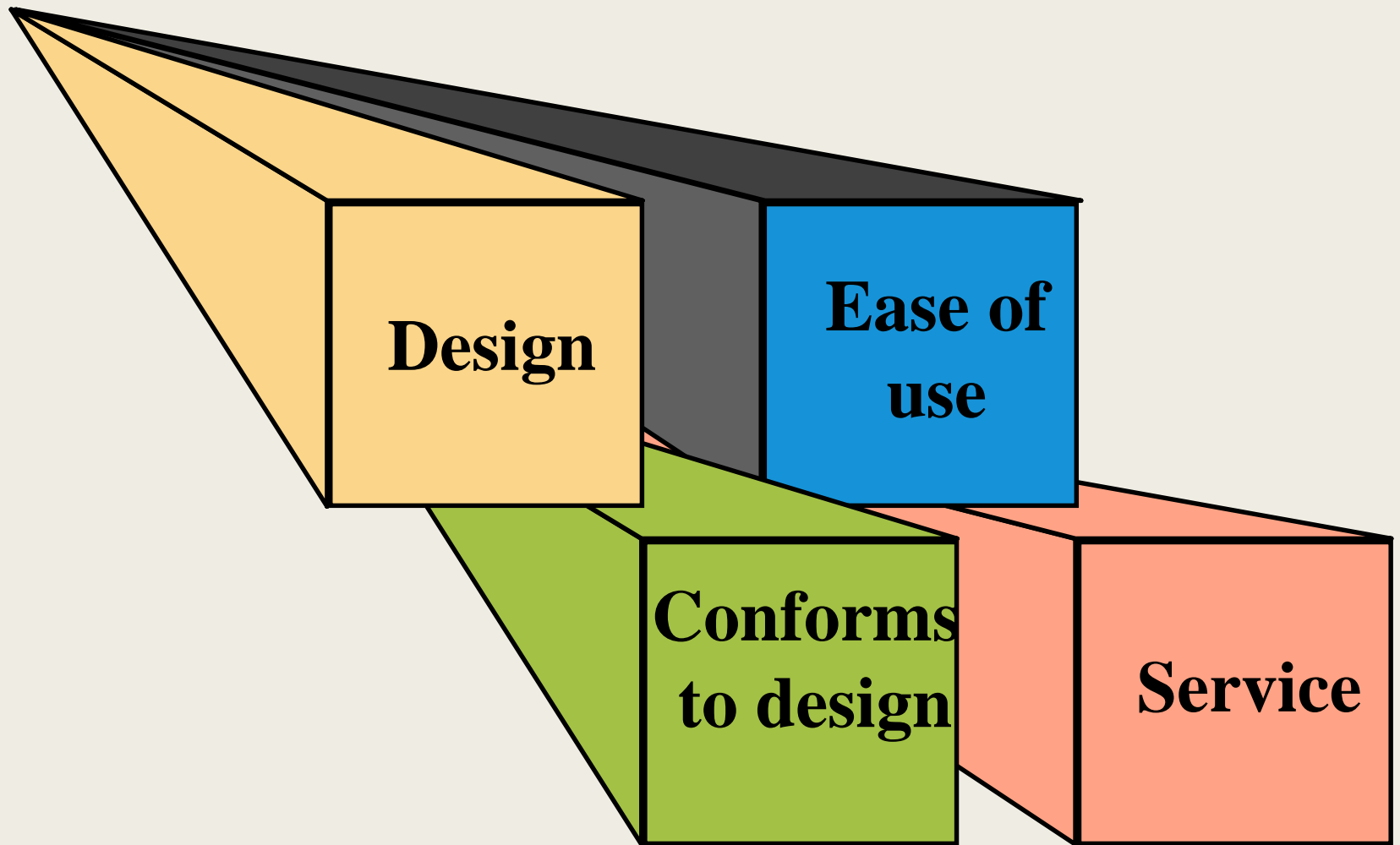
Table 9.4

Dimension	Examples
1. Convenience	Was the service center conveniently located?
2. Reliability	Was the problem fixed?
3. Responsiveness	Were customer service personnel willing and able to answer questions?
4. Time	How long did the customer wait?
5. Assurance	Did the customer service personnel seem knowledgeable about the repair?
6. Courtesy	Were customer service personnel and the cashier friendly and courteous?
7. Tangibles	Were the facilities clean, personnel neat?

Challenges with Service Quality

- Customer expectations often change
- Different customers have different expectations
- Each customer contact is a “moment of truth”
- Customer participation can affect perception of quality
- Fail-safing must be designed into the system

Determinants of Quality

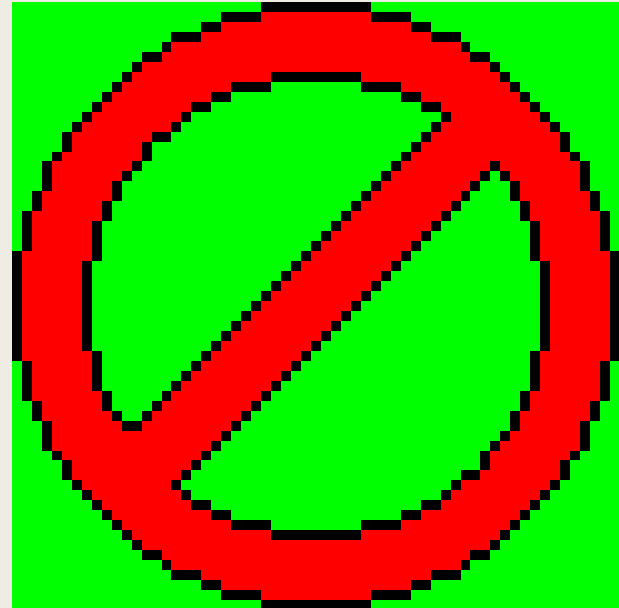


Determinants of Quality (cont'd)

- Quality of design
 - *Intension of designers to include or exclude features in a product or service*
- Quality of conformance
 - *The degree to which goods or services conform to the intent of the designers*

The Consequences of Poor Quality

- Loss of business
- Liability
- Productivity
- Costs



Responsibility for Quality

- Top management
- Design
- Procurement
- Production/operations
- Quality assurance
- Packaging and shipping
- Marketing and sales
- Customer service

Costs of Quality

- Failure Costs - costs incurred by defective parts/products or faulty services.
- Internal Failure Costs
 - *Costs incurred to fix problems that are detected before the product/service is delivered to the customer.*
- External Failure Costs
 - *All costs incurred to fix problems that are detected after the product/service is delivered to the customer.*

Costs of Quality (continued)

- Appraisal Costs

- *Costs of activities designed to ensure quality or uncover defects*

- Prevention Costs

- *All TQ training, TQ planning, customer assessment, process control, and quality improvement costs to prevent defects from occurring*

Ethics and Quality

- Substandard work
 - *Defective products*
 - *Substandard service*
 - *Poor designs*
 - *Shoddy workmanship*
 - *Substandard parts and materials*

Having knowledge of this and failing to correct and report it in a timely manner is unethical.

Quality Awards



Malcolm Baldrige National Quality Award

- 1.0 Leadership (125 points)
- 2.0 Strategic Planning (85 points)
- 3.0 Customer and Market Focus (85 points)
- 4.0 Information and Analysis (85 points)
- 5.0 Human Resource Focus (85 points)
- 6.0 Process Management (85 points)
- 7.0 Business Results (450 points)

Benefits of Baldrige Competition

- Financial success
- Winners share their knowledge
- The process motivates employees
- The process provides a well-designed quality system
- The process requires obtaining data
- The process provides feedback

European Quality Award

- Prizes intended to identify role models
 - *Leadership*
 - *Customer focus*
 - *Corporate social responsibility*
 - *People development and involvement*
 - *Results orientation*

The Deming Prize

- Honoring W. Edwards Deming
- Japan's highly coveted award
- Main focus on statistical quality control

Quality Certification

- ISO 9000
 - *Set of international standards on quality management and quality assurance, critical to international business*
- ISO 14000
 - *A set of international standards for assessing a company's environmental performance*

ISO 9000 Standards

Requirements

- System requirements
- Management
- Resource
- Realization
- Remedial

ISO 9000 Quality Management Principles

- Customer focus
- Leadership
- People involvement
- Process approach
- A systems approach to management
- Continual improvement
- Factual approach to decision making
- Mutually beneficial supplier relationships

ISO 14000

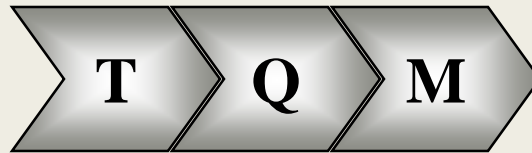
- ISO 14000 - A set of international standards for assessing a company's environmental performance
- Standards in three major areas
 - *Management systems*
 - *Operations*
 - *Environmental systems*

ISO 14000

- Management systems
 - *Systems development and integration of environmental responsibilities into business planning*
- Operations
 - *Consumption of natural resources and energy*
- Environmental systems
 - *Measuring, assessing and managing emissions, effluents, and other waste*

Total Quality Management

A philosophy that involves everyone in an organization in a continual effort to improve quality and achieve customer satisfaction.



The TQM Approach

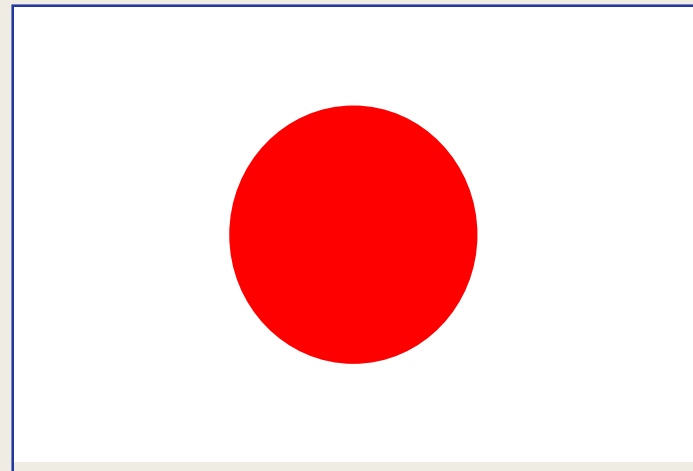
1. Find out what the customer wants
2. Design a product or service that meets or exceeds customer wants
3. Design processes that facilitates doing the job right the first time
4. Keep track of results
5. Extend these concepts to suppliers

Elements of TQM

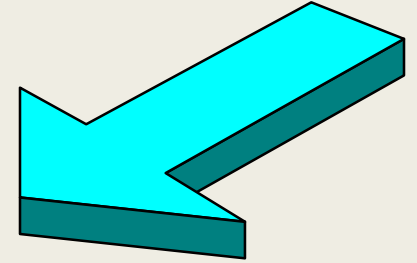
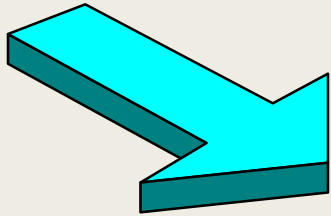
1. Continual improvement
2. Competitive benchmarking
3. Employee empowerment
4. Team approach
5. Decisions based on facts
6. Knowledge of tools
7. Supplier quality
8. Champion
9. Quality at the source
10. Suppliers

Continuous Improvement

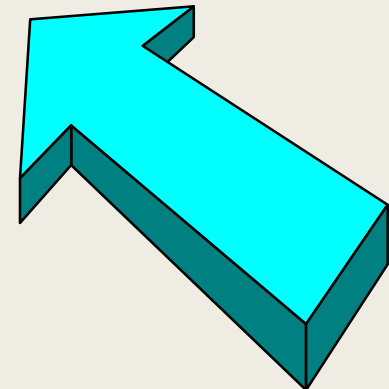
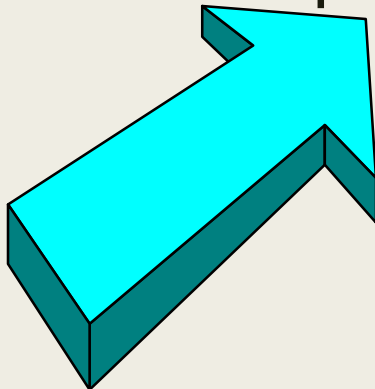
- Philosophy that seeks to make never-ending improvements to the process of converting inputs into outputs.
- Kaizen: Japanese word for continuous improvement.



Quality at the Source



The philosophy of making each worker responsible for the quality of his or her work.



Six Sigma

- Statistically
 - *Having no more than 3.4 defects per million*
- Conceptually
 - *Program designed to reduce defects*
 - *Requires the use of certain tools and techniques*

Six sigma: A business process for improving quality, reducing costs, and increasing customer satisfaction.

Six Sigma Programs

- Six Sigma programs
 - *Improve quality*
 - *Save time*
 - *Cut costs*
- Employed in
 - *Design*
 - *Production*
 - *Service*
 - *Inventory management*
 - *Delivery*

Six Sigma Management

- Providing strong leadership
- Defining performance metrics
- Selecting projects likely to succeed
- Selecting and training appropriate people

Six Sigma Technical

- Improving process performance
- Reducing variation
- Utilizing statistical models
- Designing a structured improvement strategy

Six Sigma Team

- Top management
- Program champions
- Master “black belts”
- “Black belts”
- “Green belts”

Six Sigma Process

- Define
- Measure
- Analyze
- Improve
- Control

DMAIC

Obstacles to Implementing TQM

- Lack of:
 - *Company-wide definition of quality*
 - *Strategic plan for change*
 - *Customer focus*
 - *Real employee empowerment*
 - *Strong motivation*
 - *Time to devote to quality initiatives*
 - *Leadership*

Obstacles to Implementing TQM

- Poor inter-organizational communication
- View of quality as a “quick fix”
- Emphasis on short-term financial results
- Internal political and “turf” wars

Criticisms of TQM

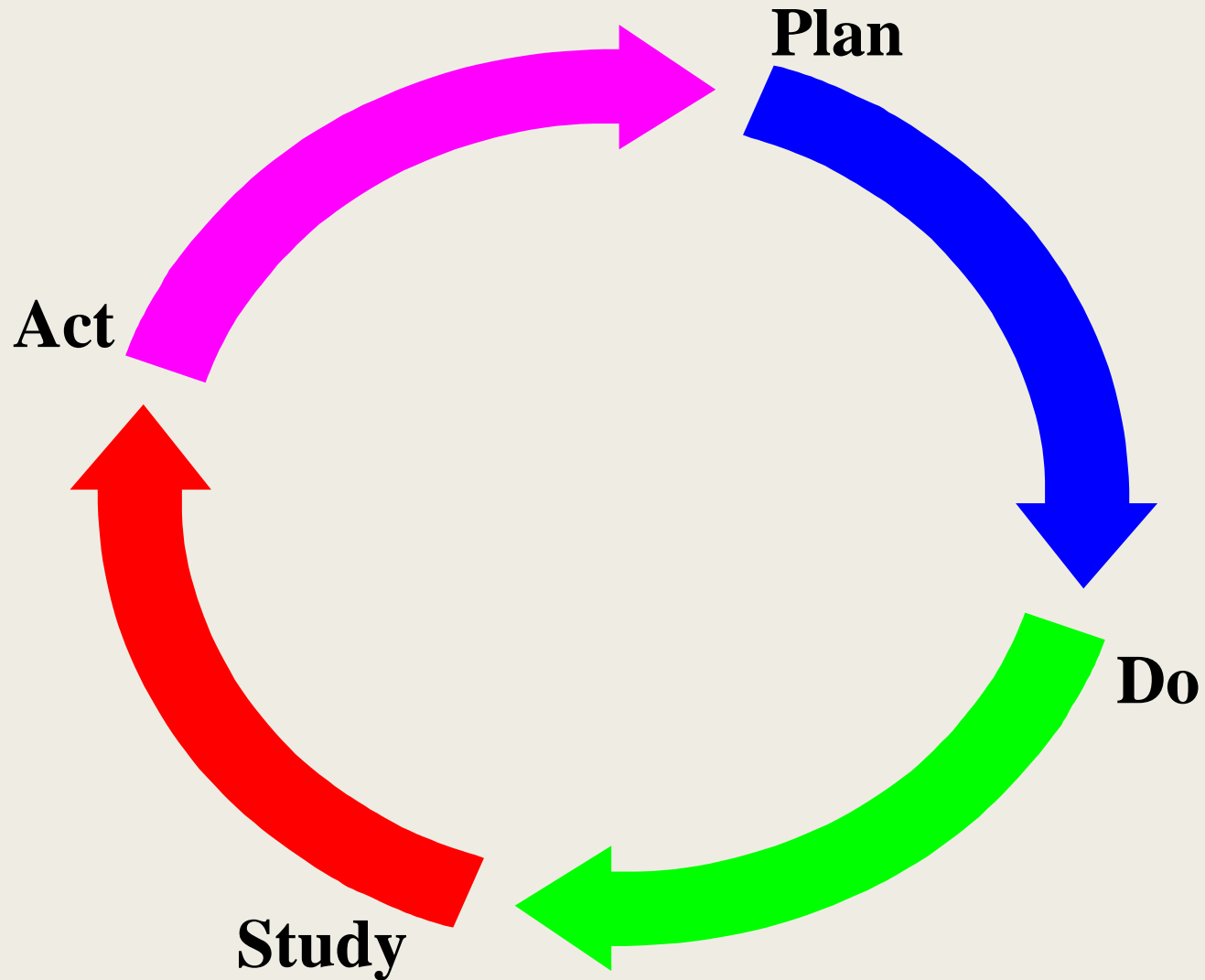
1. Blind pursuit of TQM programs
2. Programs may not be linked to strategies
3. Quality-related decisions may not be tied to market performance
4. Failure to carefully plan a program

Basic Steps in Problem Solving

1. Define the problem and establish an improvement goal
2. Define measures and collect data
3. Analyze the problem
4. Generate potential solutions
5. Choose a solution
6. Implement the solution
7. Monitor the solution to see if it accomplishes the goal

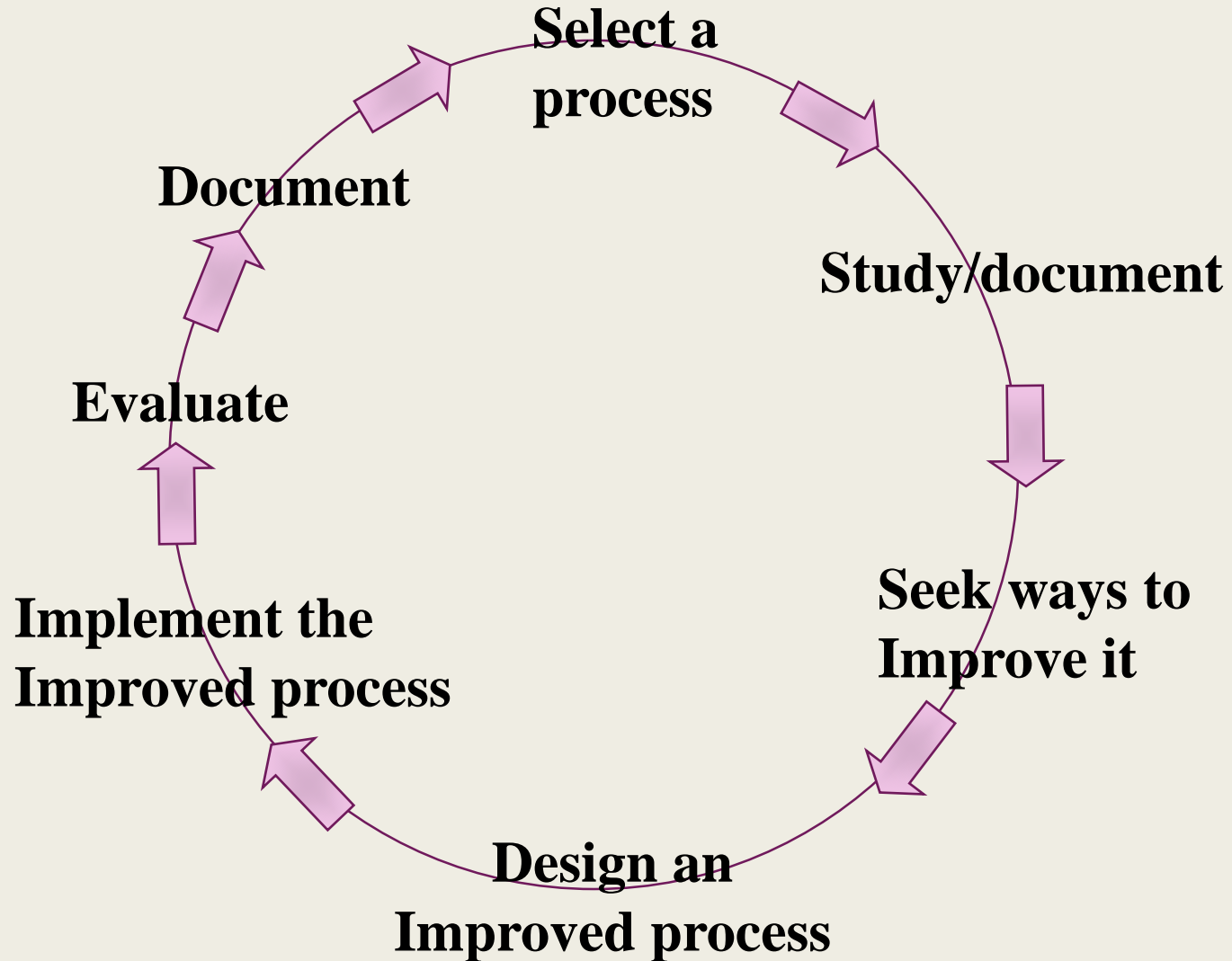
The PDSA Cycle

Figure 9.2



The Process Improvement Cycle

Figure. 9.3



Process Improvement

- Process Improvement: A systematic approach to improving a process
- Process mapping
- Analyze the process
- Redesign the process

Process Improvement and Tools

- Process improvement - a systematic approach to improving a process
 - *Process mapping*
 - *Analyze the process*
 - *Redesign the process*
- Tools
 - *There are a number of tools that can be used for problem solving and process improvement*
 - *Tools aid in data collection and interpretation, and provide the basis for decision making*

Basic Quality Tools

- Flowcharts
- Check sheets
- Histograms
- Pareto Charts
- Scatter diagrams
- Control charts
- Cause-and-effect diagrams
- Run charts

Check Sheet

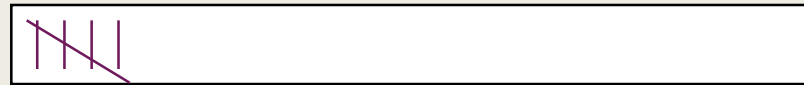
Billing Errors

Monday

Wrong Account

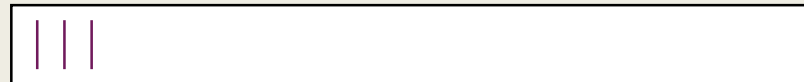


Wrong Amount



A/R Errors

Wrong Account

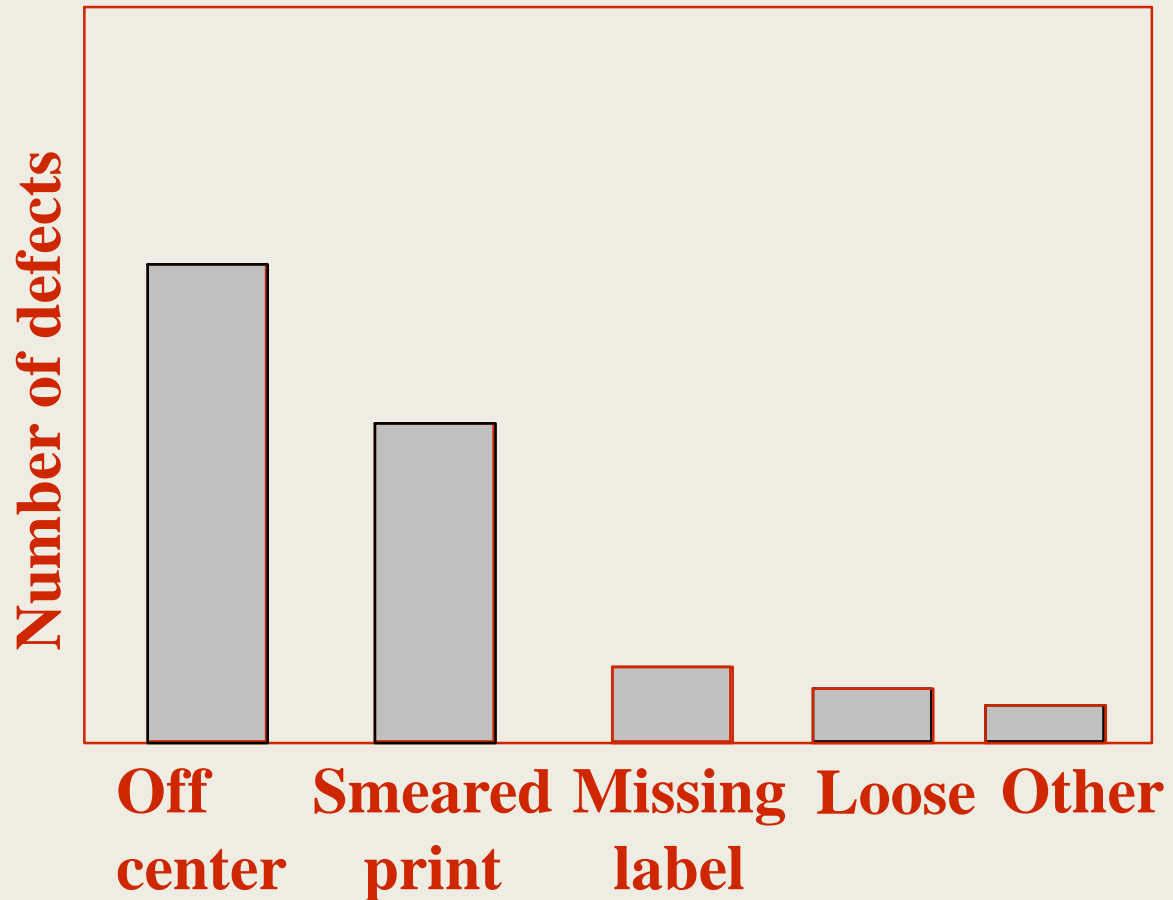


Wrong Amount



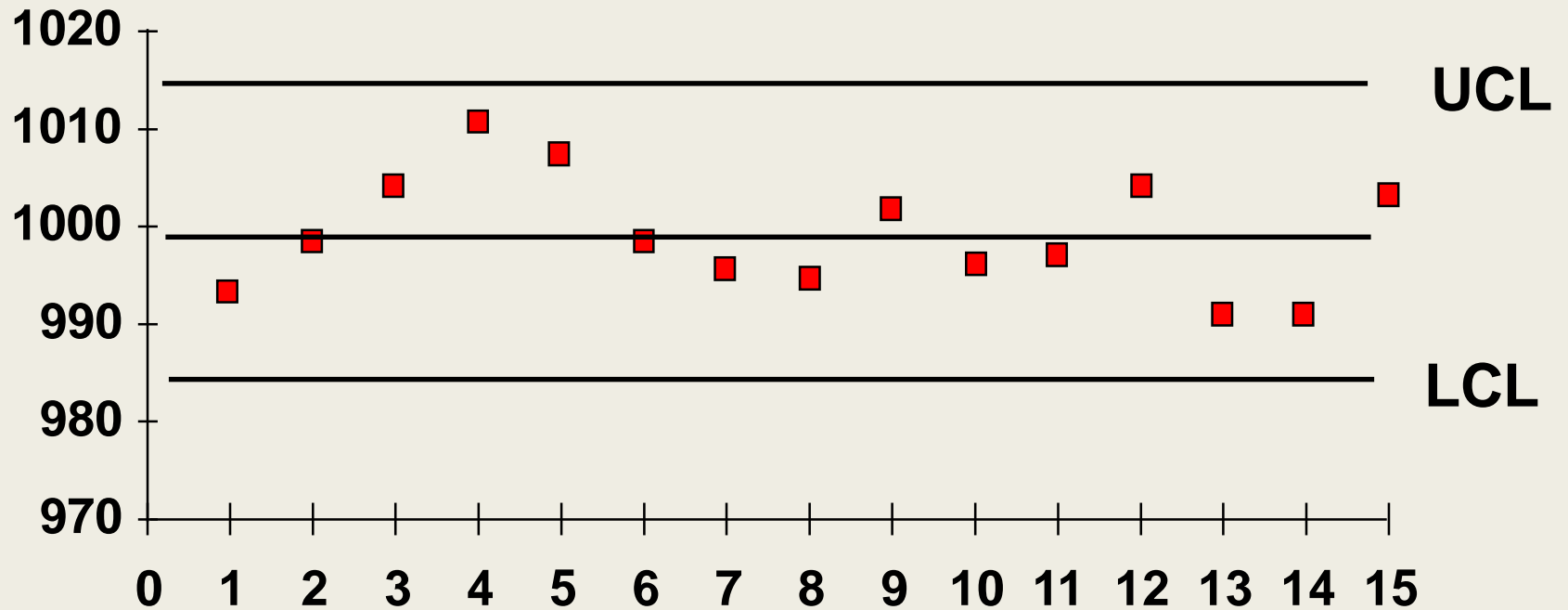
Pareto Analysis

80% of the problems may be attributed to 20% of the causes.



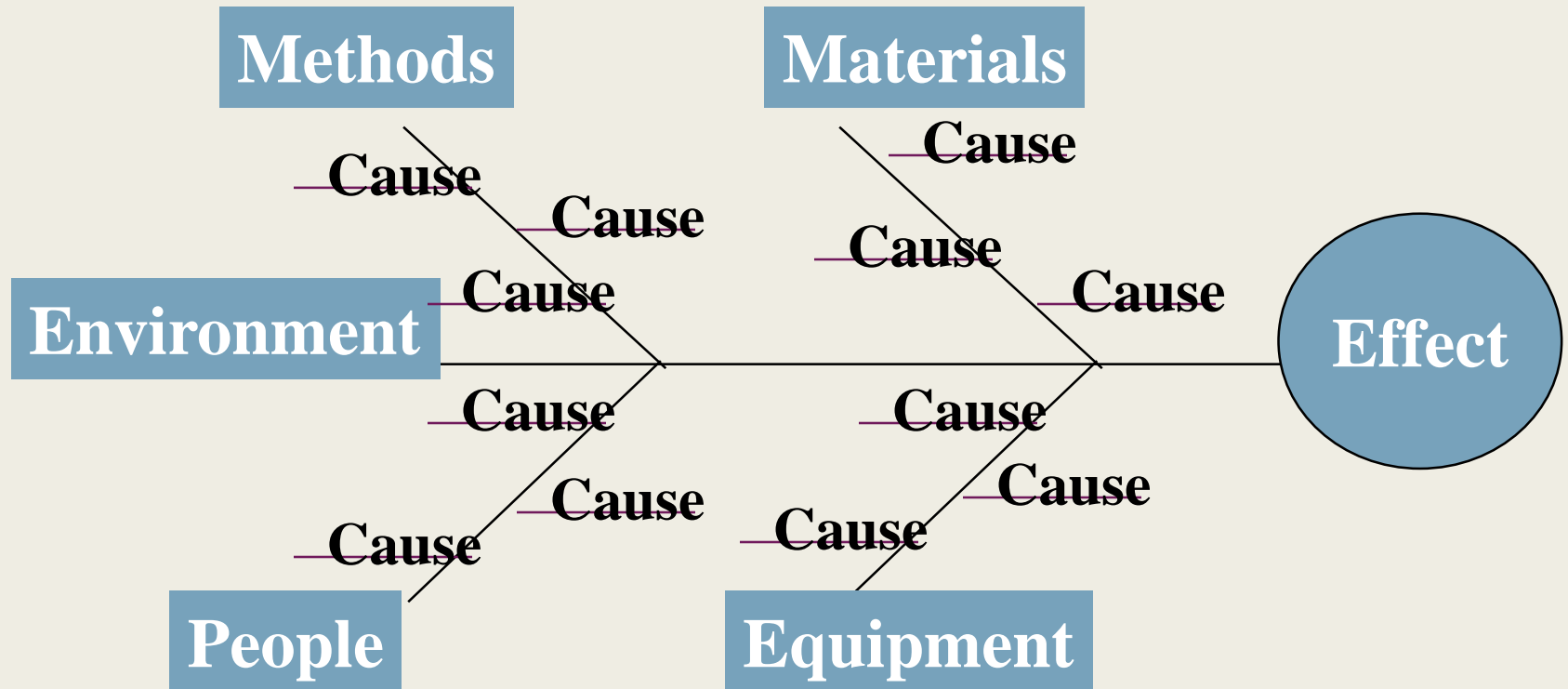
Control Chart

Figure 9.11



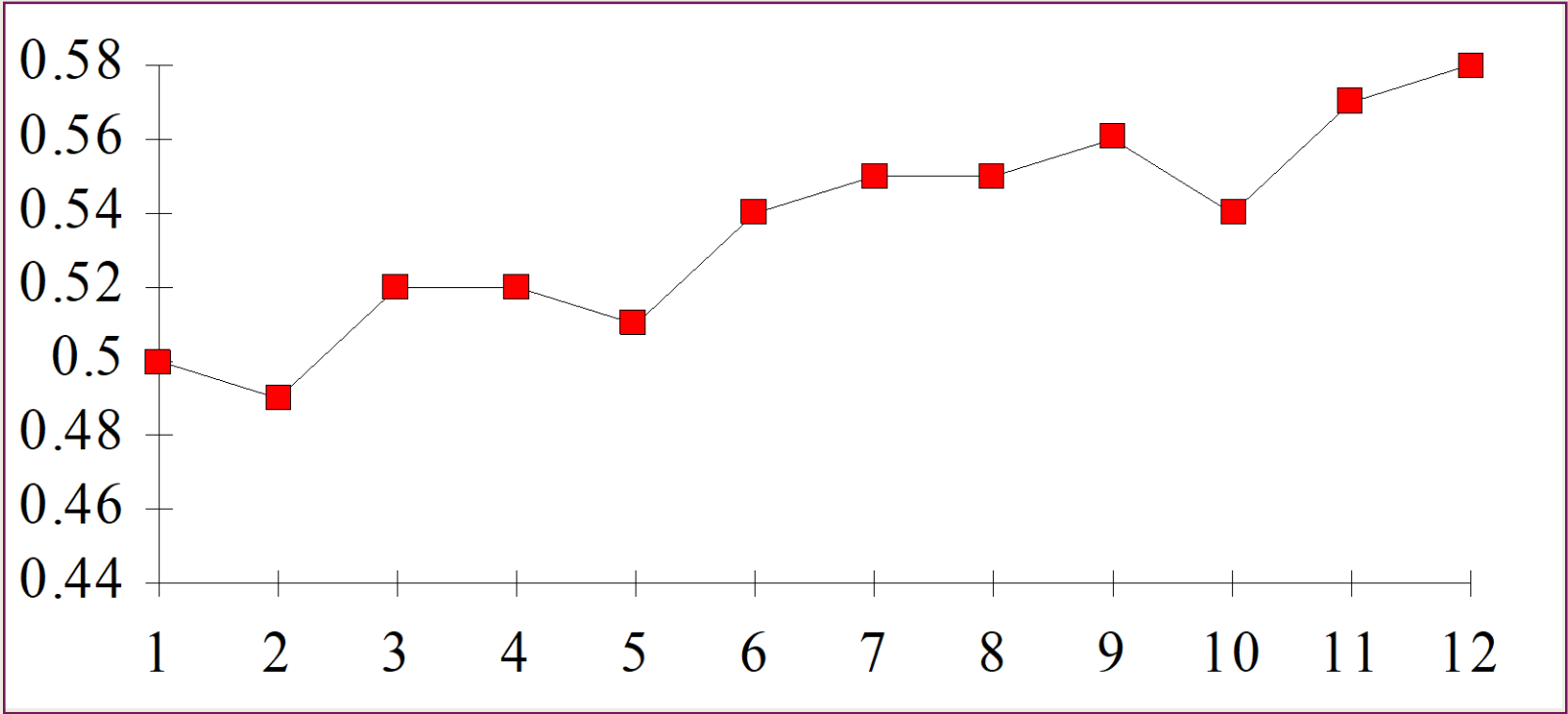
Cause-and-Effect Diagram

Figure 9.12



Run Chart

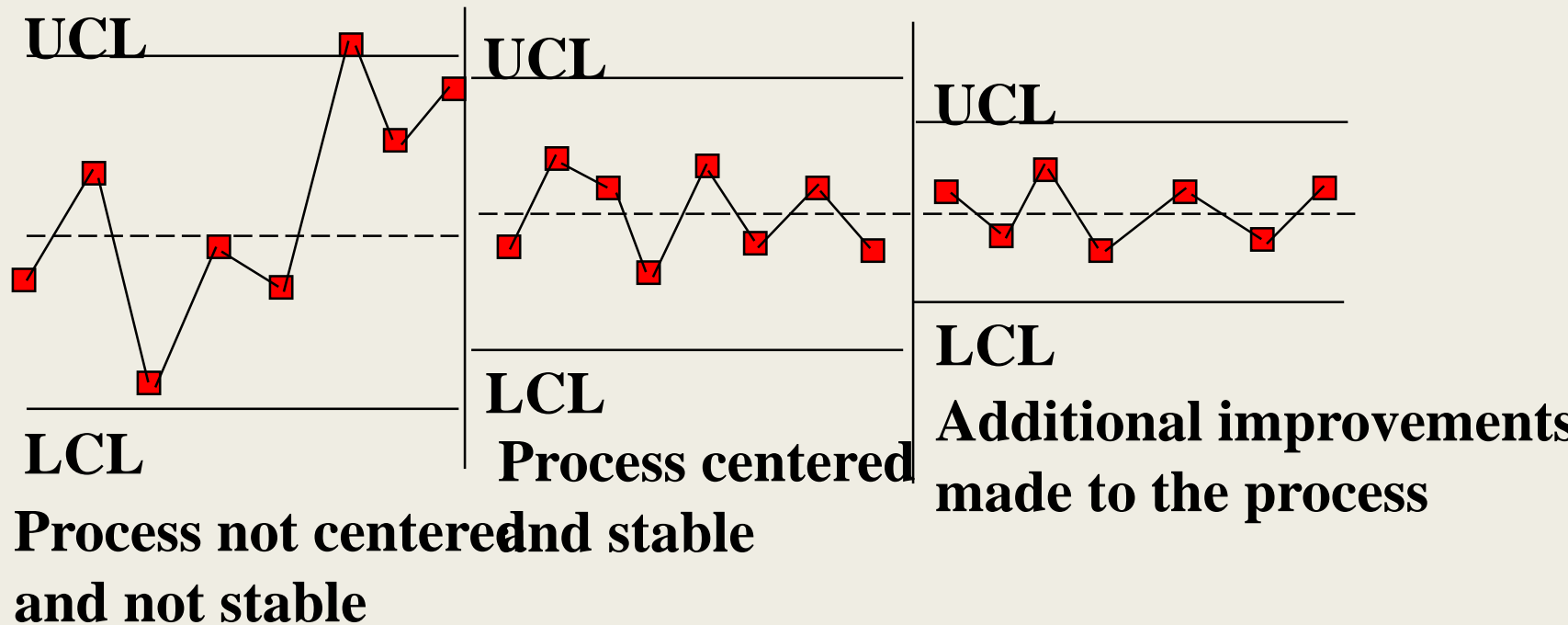
Diameter



Time (Hours)

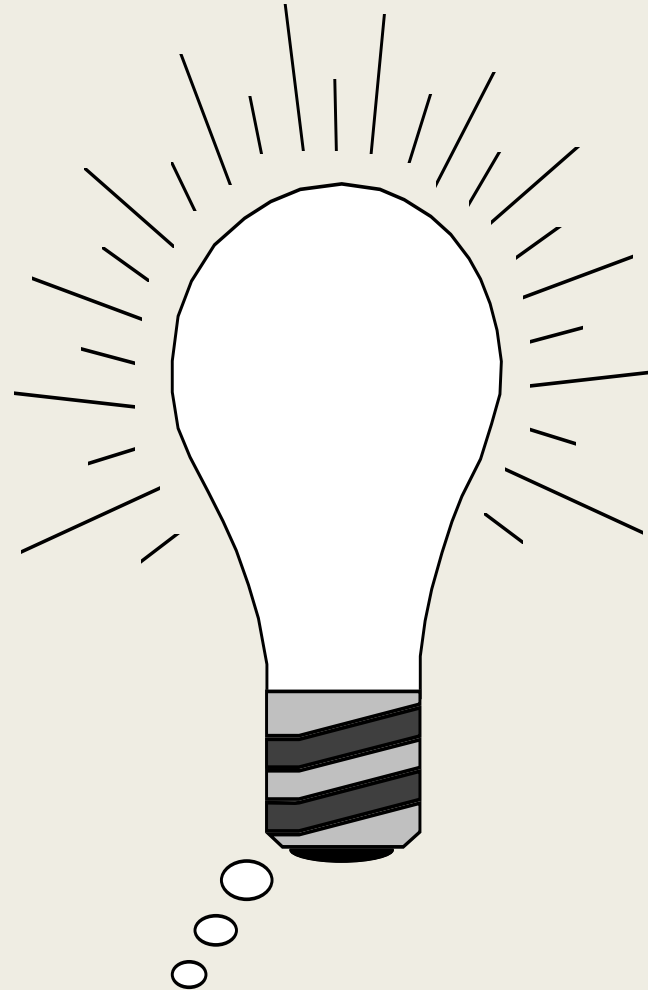
Tracking Improvements

Figure 9-18



Methods for Generating Ideas

- Brainstorming
- Quality circles
- Interviewing
- Benchmarking
- 5W2H



Quality Circles

- Team approach
 - *List reduction*
 - *Balance sheet*
 - *Paired comparisons*

Benchmarking Process

- Identify a critical process that needs improving
- Identify an organization that excels in this process
- Contact that organization
- Analyze the data
- Improve the critical process

Reference and source

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