Quality Management
Chapter 14

Objectives
- What is Quality?
- Total Quality Management
- TQM in Service
- Cost of Quality
- Quality Improvements
- Quality Awards and Certifications

What is Quality?
- Fitness for Consumer Use
- Producer's Perspective
  - Quality of Conformance
    - Conformance to specifications
    - Cost
  - Marketing
- Consumer's Perspective
  - Quality of Design
    - Quality characteristics
    - Price

The Meaning of Quality
Total Quality Mgmt
- Edwards Deming
  - Continuous improvement
  - Preventing not inspecting
  - Quality suppliers
  - Supervisor leadership
  - Worker training
  - Management commitment

Total Quality Mgmt
- Joseph Juran
  - Strategic quality planning
  - Quality improvement
- Philip Crosby
  - Cost of poor quality outweigh the cost of preventing poor quality
  - Zero-defects objective
- Total quality control (1980s)
  - Company-wide quality control
  - Quality circles and internal control

Principals of TQM
- TQM - a set of mgmt principles that focus on quality improvement throughout the entire company
  - Customer defines quality
  - Mgmt provides leadership for quality
  - Quality is everyone's responsibility
  - Quality problem solving involves statistical quality control methods
  - Quality is instilled in employees through education and training
**TQM Everywhere**
- Throughout the organization
  - Marketing - consumer research and quality characteristics
  - Sales - feedback information
  - Engineering - design for quality
  - Purchasing - quality parts and materials
  - HR - quality employees
  - Mgmt - top down commitment to quality
- External suppliers
  - Supplier quality partnering & standards
- Customer satisfaction
- Information Technology

**TQM and Strategy**
- Competing on quality
- Strategic mission and vision are focused on customer satisfaction
  - High goals of zero defects
  - Operational plans for achieving goals
  - Feedback mechanism for adjusting strategy
  - Strong mgmt leadership for quality
  - Environment for thriving quality

**TQM in Service**
- Measuring service defects
- Dimensions of service quality
  - Timeliness, courtesy, consistency, accuracy, convenience, responsiveness and completeness
- TQM programs focus on employee performance, training and satisfaction
- Quality on the Web
Cost of Quality

- Cost of good quality
  - Prevention costs - quality planning, product and process design, training, and information gathering
  - Appraisal costs - inspection and testing, testing equipment, operators

- Cost of poor quality
  - Internal failure costs - scrap, rework, process failure and downtime
  - External failure costs - customer complaints, returns, warranty, liability

Cost of Quality

- Measuring
  - Collecting data on quality difficult
  - Collecting cost data easier

- Reporting
  - Index numbers - labor, cost, sales and production indices

- Quality-cost relationship
  - Benefits of quality outweigh the cost of quality

Quality Improvement

- Employee development
  - Job training, rewards, recognition, satisfaction surveys
  - Employee and mgmt cooperation

- Quality circles
  - Work area or department
  - Brainstorming and consensus decision making

- Process improvement teams
  - Cross-functional and cross-business
Quality Control Tools
- Pareto chart
- Flow chart
- Check sheet
- Histogram
- Scatter diagram
- SPC chart
- Cause and effect diagram

Quality Awards
- Malcolm Baldrige
  - Given annually to few companies
  - Manufacturing, services and small business
- Defines quality criteria
  - Leadership, IT, strategy, HR, process management, results, customer focus
- Stimulates quality improvement
- Sets up quality benchmarking
- Other awards for quality

Quality Certifications
- ISO - International Organization for Standardization
- ANSI - American National Standard Institute
- System for certifying suppliers fulfilling quality standards
  - Technical specs, procedures, processes, operations, etc..
- ISO 9000 - series of quality management standards
- Register Accreditation Board in U.S.