



# *Quality Management*



# Lecture Outline

- Meaning of Quality
- Total Quality Management
- Quality Improvement and Role of Employees
- Strategic Implications of TQM
- Six Sigma

# Lecture Outline (cont.)

- TQM in Service Companies
- Cost of Quality
- Quality Management and Productivity
- Identifying Quality Problems and Causes
- Quality Awards and Setting Quality Standards
- ISO 9000

# Meaning of Quality

- Webster's Dictionary
  - degree of excellence of a thing
- American Society for Quality
  - totality of features and characteristics that satisfy needs
- Consumer's and Producer's Perspective

# Meaning of Quality: Consumer's Perspective

- **Fitness for use**
  - how well product or service does what it is supposed to
- **Quality of design**
  - designing quality characteristics into a product or service
- A Mercedes and a Ford are equally “fit for use,” but with different design dimensions



# Dimensions of Quality: Manufactured Products

- Performance
  - basic operating characteristics of a product; how well a car is handled or its gas mileage
- Features
  - “extra” items added to basic features, such as a stereo CD or a leather interior in a car
- Reliability
  - probability that a product will operate properly within an expected time frame; that is, a TV will work without repair for about seven years

# Dimensions of Quality: Manufactured Products (cont.)

- Conformance
  - degree to which a product meets pre-established standards
- Durability
  - how long product lasts before replacement
- Serviceability
  - ease of getting repairs, speed of repairs, courtesy and competence of repair person

# Dimensions of Quality: Manufactured Products (cont.)

- Aesthetics
  - how a product looks, feels, sounds, smells, or tastes
- Safety
  - assurance that customer will not suffer injury or harm from a product; an especially important consideration for automobiles
- Perceptions
  - subjective perceptions based on brand name, advertising, and the like



# Dimensions of Quality: Service

- Time and Timeliness
  - How long must a customer wait for service, and is it completed on time?
  - Is an overnight package delivered overnight?
- Completeness:
  - Is everything customer asked for provided?
  - Is a mail order from a catalogue company complete when delivered?

# Dimensions of Quality: Service (cont.)

- **Courtesy:**
  - How are customers treated by employees?
  - Are catalogue phone operators nice and are their voices pleasant?
- **Consistency**
  - Is the same level of service provided to each customer each time?
  - Is your newspaper delivered on time every morning?

# Dimensions of Quality: Service (cont.)

- Accessibility and convenience
  - How easy is it to obtain service?
  - Does a service representative answer you calls quickly?
- Accuracy
  - Is the service performed right every time?
  - Is your bank or credit card statement correct every month?
- Responsiveness
  - How well does the company react to unusual situations?
  - How well is a telephone operator able to respond to a customer's questions?

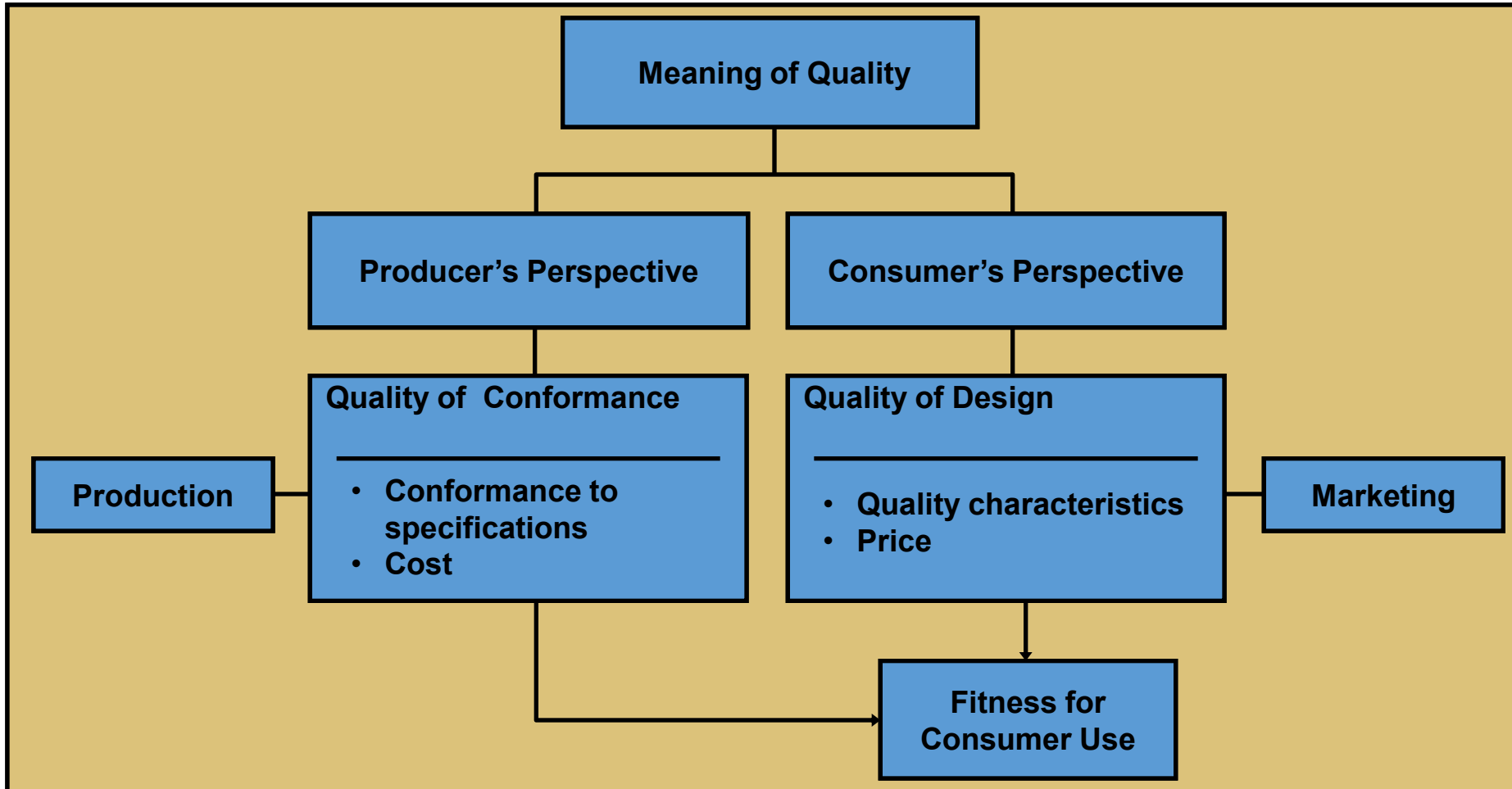
# Meaning of Quality: Producer's Perspective

- Quality of Conformance
  - Making sure a product or service is produced according to design
    - if new tires do not conform to specifications, they wobble
    - if a hotel room is not clean when a guest checks in, the hotel is not functioning according to specifications of its design

# Meaning of Quality: A Final Perspective

- Consumer's and producer's perspectives depend on each other
- Consumer's perspective: PRICE
- Producer's perspective: COST
- Consumer's view must dominate

# Meaning of Quality



# Total Quality Management

- Commitment to quality throughout organization

- Principles of TQM
  - Customer-oriented
  - Leadership
  - Strategic planning
  - Employee responsibility
  - Continuous improvement
  - Cooperation
  - Statistical methods
  - Training and education

# Quality Gurus

- Walter Shewart
  - In 1920s, developed control charts
  - Introduced the term “*quality assurance*”
- W. Edwards Deming
  - Developed courses during World War II to teach statistical quality-control techniques to engineers and executives of companies that were military suppliers
  - After the war, began teaching statistical quality control to Japanese companies
- Joseph M. Juran
  - Followed Deming to Japan in 1954
  - Focused on strategic quality planning



# Quality Gurus (cont.)

- Armand V. Feigenbaum
  - In 1951, introduced concepts of total quality control and continuous quality improvement
- Philip Crosby
  - In 1979, emphasized that costs of poor quality far outweigh the cost of preventing poor quality
  - In 1984, defined absolutes of quality management—conformance to requirements, prevention, and “zero defects”
- Kaoru Ishikawa
  - Promoted use of quality circles
  - Developed “fishbone” diagram
  - Emphasized importance of internal customer

# Deming's 14 Points

- 1. Create constancy of purpose***
- 2. Adopt philosophy of prevention***
- 3. Cease mass inspection***
- 4. Select a few suppliers based on quality***
- 5. Constantly improve system and workers***

# Deming's 14 Points (cont.)

- 6. *Institute worker training***
- 7. *Instill leadership among supervisors***
- 8. *Eliminate fear among employees***
- 9. *Eliminate barriers between departments***
- 10. *Eliminate slogans***

# Deming's 14 Points (cont.)

- 11. *Remove numerical quotas***
- 12. *Enhance worker pride***
- 13. *Institute vigorous training and education programs***
- 14. *Develop a commitment from top management to implement above 13 points***

# Deming Wheel: PDCA Cycle

