END4651
QUALITY MANAGEMENT

Asst. Prof. Dr. Özge Nalan BİLİŞİK

PART 1: Definitions and evolution of quality

?

Perspectives of customers and companies

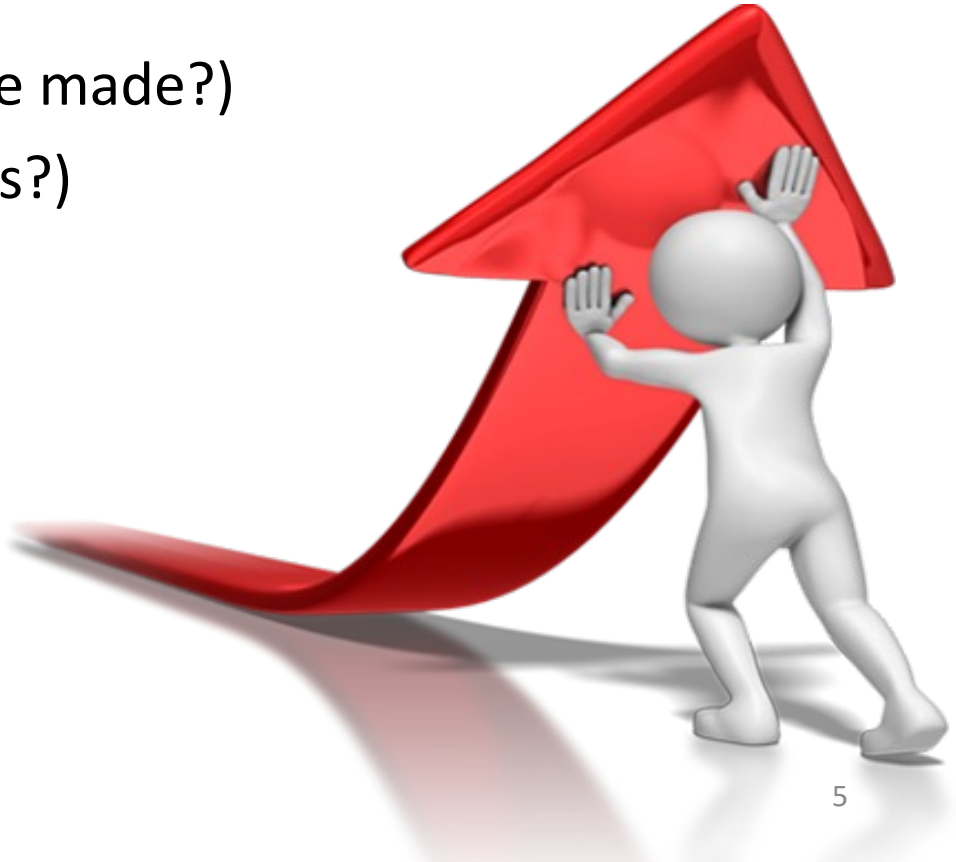
Perspective of sales (movie theater)	**Perspective of customer (audiences)**
Ticket revenue	Delicious popcorn
Lounge occupancy rates	Cleaning of the hall
Non-ticket revenues	Clean toilets
Staff / labor costs	Booking opportunities
Profit reports	Sound system
	Air-conditioning

Why are there so many differences in perspectives ?

Quality

Defined by;

- Customers (How good is it?)
- Producers (How good can it be made?)
- Values set (Financial indicators?)



Quality

Quality in fact;

- Doing the right thing
- Doing it in the right way
- Doing it right in the first time (FTR)
- Doing it on time

Quality in perception;

- Delivering the right product
- Satisfying our customer's needs
- Meeting the customer's expectations
- Treating every customer with integrity, courtesy and respect

Definition of Quality

Quality can be quantified as follows:

$$Q=P/E$$

where

Q = Quality

P = Performance

E = Expectation

Quality

Contrary to popular idea, the belief ‘quality is cost’ has lost its validity. Because, quality means:

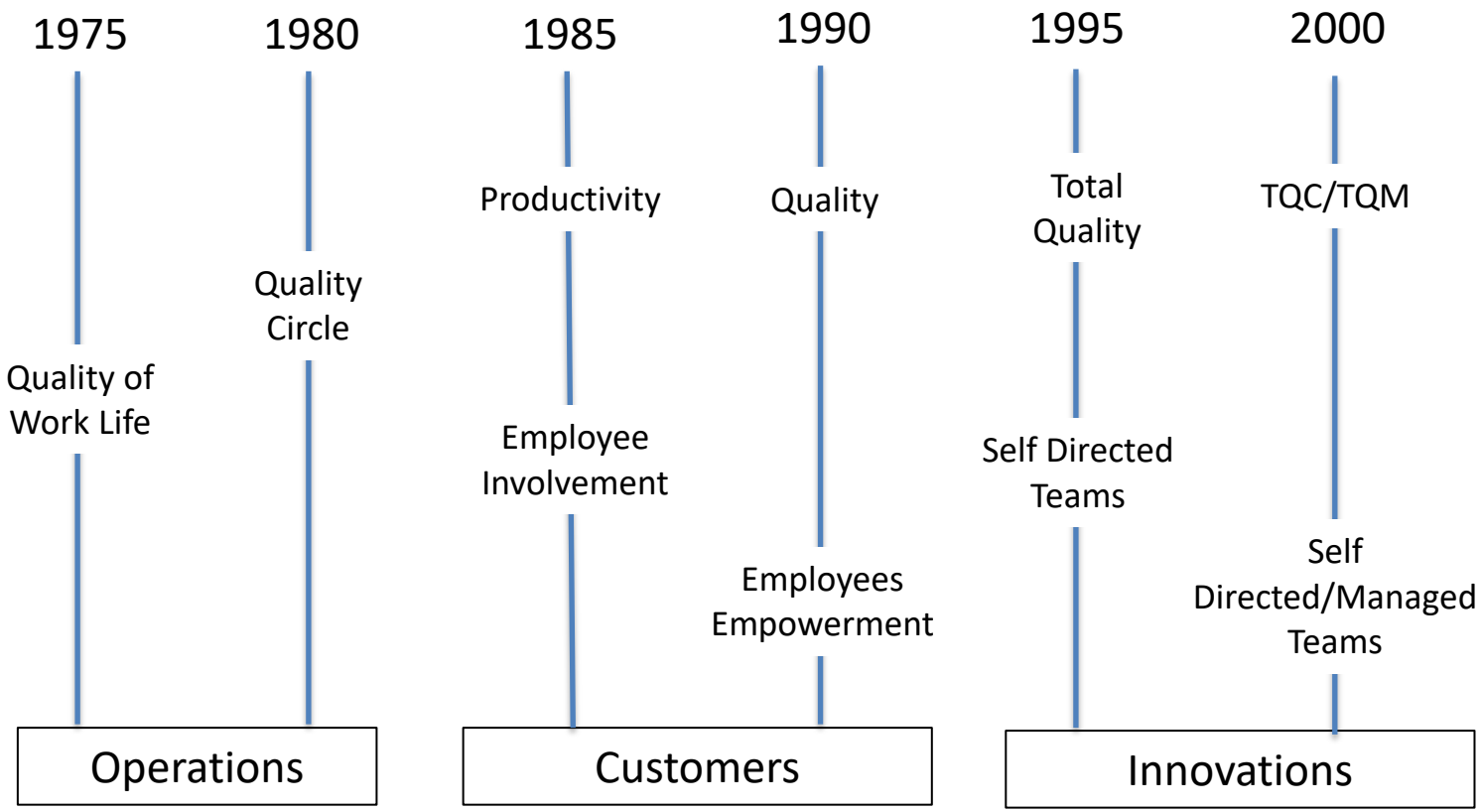
- Customer satisfaction
- Productivity
- Being proactive
- Flexibility
- Effectiveness
- To follow a program
- An investment to human
- Endless process
- Future
- Fitness to goal, usage and circumstances.

‘In brief; quality is a systematic approach to perfectness.’

Quality Concepts

Concept	Main Idea
Customer focus	Goal is to identify and meet customer needs.
Continuous improvement	A philosophy of never-ending improvement.
Employee empowerment	Employees are expected to seek out, identify, and correct quality problems.
Use of quality tools	Ongoing employee training in the use of quality tools.
Product design	Products need to be designed to meet customer expectations.
Process management	Quality should be built into the process; sources of quality problems should be identified and corrected.
Managing supplier quality	Quality concepts must extend to a company's suppliers.

Evolution of Quality – Means and Focus



Evolution of Quality

In addition, the historical development of Quality can be classified in four categories:

1. **Inspection:**

- The aim of inspection is to prevent the wrong product from going to consumer.
- This approach protects the consumer, but it is troublesome for producers. Because these studies did not increase the quality of the business, they increased the costs of the inspection of the emergence of defective products.

Evolution of Quality

2. Quality Control:

- The inspection process has been extended from the last control to the intermediate controls and the input control.
- This structure requires that an independent department undertake quality control work.
- At this stage, statistical science has begun to be widely used in quality control.
- This period is referred to as statistical quality control.
- Acceptance sampling studies was started to be seen in this period.

Evolution of Quality

3. Quality Assurance:

- The belief that accepting or rejecting incoming parties is not the best system has begun to develop.
- For example, it is obvious that the rejection of vital materials for an army in a war will cause trouble.
- For this reason, what is important is that all of the incoming parties are acceptable.

Evolution of Quality

4. Total Quality:

- Feingenbaum is the pioneer of total quality control, quality control is a concept that concerns the whole business, not just the production units.
- This understanding requires that all business units be highly responsible for the creation, retention and development of qualifications.
- This approach has only begun to be implemented by the influence of the competitive environment of the 1970s.

Quality Gurus - Walter Andrew Shewhart

- Pioneer and visionary of modern quality control
- Developed control charts (X-bar and R charts, p and np charts etc.)
- Statistical contributions
- Defined two common aspects of quality
  - Objective quality
  - Subjective quality

Quality Gurus – William Edwards Deming

- Described the ‘chain reaction’
- Proposed a 14-point quality architecture
- Understanding and use of statistical tools
- Developed PDCA (Plan – Do – Control – Act)

Quality Gurus – Joseph Moses Juran

- Quality management
- Juran trilogy
    1. Quality planning
    2. Quality control
    3. Quality improvement
- Basic of Quality Function Deployment (QFD)

Quality Gurus – Philip Bayard Crosby

- Quality means conformance to requirements, not elegance.
- There is no such thing as a quality problem.
- There is no such thing as the economics of quality.
- The only performance measurement is the cost of quality.
- The only performance standard is ‘ZERO DEFECTS’

Armand Vallin Feigenbaum

- Total quality control concept and strategies
  - Quality development
  - Quality maintenance
  - Quality improvement
- Full customer satisfaction
- System approach to quality
- Total quality control as a cross-functional concept
- The development of the concept of total quality control

Kaoru Ishikawa

- Quality first, not short term profits first
- The next process is your customer
- Using facts and data to make presentations
  - Cause-effect diagram
  - Check sheet
  - Histogram
  - Scatter diagram
  - Pareto chart
- Respect for humanity as a management philosophy, full participatory management
- Cross-functional management

PART 2: Quality Management Principles and Categories of Quality

Dimensions of Quality

- **Performance:** Primary product characteristics; such as the brightness of the picture, customer satisfaction
- **Features:** Secondary characteristics, added features; such as fingerprints technology
- **Conformance:** Meeting specifications or industry standards; quality assurance standards, calibration etc.
- **Reliability:** Consistency of performance over time; warranty
- **Service:** Solution of problems and complaints, ease of repair; complaint management services
- **Response:** Human – to – human interface, such as the courtesy of the dealer; call centers
- **Aesthetics:** Sensory characteristics;
- **Reputation:** Past performance and other intangibles; such as being ranked first

General Quality Management Principles