CHAPTER 2

COST OF POOR QUALITY

Expected Outcomes

Understanding of how quality costs can be used in decision making

Identify the interrelationships between and among the different types of quality costs

Chapter Outline

1. Defining Quality Costs
2. Types of Quality Costs
    - Prevention Costs
    - Appraisal Costs
    - Failure Costs
    - Intangible Costs

Chapter Outline

- Understanding of how quality costs can be used in decision making
- Identify the interrelationships between and among the different types of quality costs

Cost of Poor Quality

What are quality costs?

The cost that would disappear if every activity was performed without defects every time.

Benefits if products / processes are defect free :

1. Faster cycle times
2. Decreased production costs
3. Lower warranty costs
4. Less wasted material
5. Reduced scrap / rework costs

Lead to:

1. Lower total cost
2. More competitive pricing
3. Higher company revenue

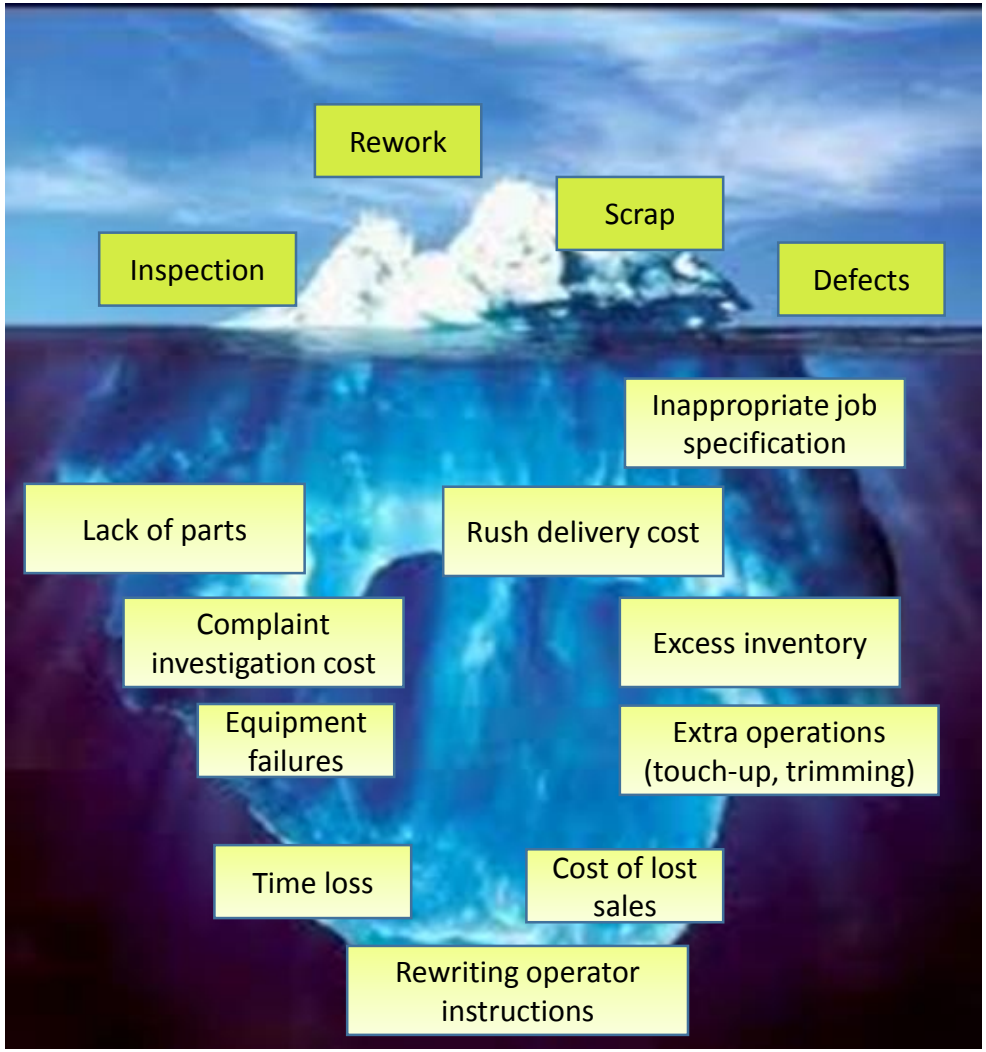
Defining Quality Cost

- A quality cost is considered to be any cost that a company incurs in order to ensure that the quality of the product or service is perfect.
- Quality costs are the portion of the operating costs brought about by providing a product or service that does not conform to performance standards.
- Quality costs are also the costs associated with the prevention of poor quality.

Iceberg of Quality Cost

Visible

Less Visible



Examples of Quality Cost

- Redesigning a faulty component that never worked right
- Reworking a shock absorber after it was completely manufactured
- Retesting a computer chip that was tested incorrectly
- Repurchasing because of nonconforming materials
- Replacing a shirt the dry cleaner lost
- Returning a meal to the kitchen because the meat was overcooked
- Retrieving lost baggage
- Responding to a customer’s complaint

Types of Quality Cost

PREVENTION COSTS

Those cost that occur when a company is performing activities designed to prevent poor quality in products or service.

- Examples:
  - Design reviews
  - Education and training
  - Supplier selection and capability reviews
  - Process capability reviews

- Prevention efforts try to determine the root causes of problems and eliminate them at the source so reoccurrences do not happen.

Types of Quality Cost

APPRAISAL COSTS

The cost associated with measuring, evaluating or auditing products / services to make sure that they conform to specifications or requirements.

- Examples:
  - Incoming, WIP and final inspection or testing
  - Material reviews
  - Calibration of measuring or testing equipment

- Appraisal activities are necessary in an environment where product, process or service problems are found.

Types of Quality Cost

FAILURE COSTS

Occur when the completed product or service does not conform to customer requirements. 2 types exist :

- **Internal**
  - Those cost associated with product nonconformities or service failures found before the product is shipped or the service is provided to the customer.
  - Examples : scrap, rework, retesting, remaking

Types of Quality Cost

FAILURE COSTS

- **External**
  - The cost that occur when a nonconforming product or service reaches the customer.
  - Examples : customer returns and complaints, warranty claims, product recalls – greatest impact on the corporate pocketbook

Types of Quality Cost

INTANGIBLE COSTS

The hidden costs associated with providing a nonconforming product or service to a customer, involve the company's image.

- Examples:
  - Cost of missing an important deadline (schedule delays)
- Difficult to identify and quantify
- Can be three or four times as great as the tangible costs of quality
- Must not be overlooked or disregarded

Quality Costs

Total Quality Costs =

Prevention costs + Appraisal costs + Failure costs + Intangible costs

- Once quantified, quality costs enhance decision making if they are used to determine which projects will allow for the greatest return on investment and which projects are most effective at lowering failure and appraisal quality costs.

- Quality costs information should be used to guide improvement.