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# Cost of Poor Quality



# Cost of Poor Quality (COPQ)



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- **The costs of poor quality (COPQ) are those costs associated with providing poor quality products or services.**



# Categories of Cost of Poor Quality



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**Prevention costs:** The costs of activities specifically designed to prevent poor quality in products or services.

**Appraisal costs:** The costs associated with measuring, evaluating, or auditing products or services to ensure conformance to quality standards and performance requirements.

**Internal failure costs:** Failure costs which occur prior to delivery or shipment of the product, or the furnishing of a service, to the customer.

**External failure costs:** Failure costs which occur after shipment of the product, or during or after furnishing a service, to the customer.

Failure  
Cost

A blue box labeled 'Failure Cost' has a line extending from its bottom right corner that branches into four lines, each pointing to one of the four category boxes: Prevention costs (blue), Appraisal costs (green), Internal failure costs (orange), and External failure costs (red).



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# Three Levels of Product Cost

Preventive  
Cost

Appraisal Cost

Failure Cost



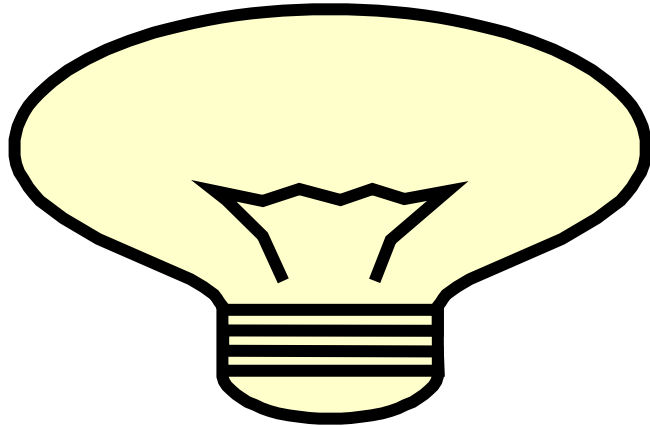
# Limitations of a Quality Cost System



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- **Quality cost measurement does not solve quality problems**
- **Quality cost reports do not suggest specific actions**
- **Quality costs are susceptible to short-term mismanagement**
- **It is often difficult to match effort and accomplishments**
- **Many quality costs are susceptible to measurement errors**

# Exercise



- List down the potential prevention, appraisal and failure costs at any organisation.



# Examples of COPQ

## Prevention Cost

Applicant screening

Capability studies

Controlled storage

Design reviews

Education (Quality or SPC)

Equipment maintenance

Equipment repair

Field testing

Fixture design and fabrication

Forecasting

Housekeeping

Job descriptions

Market analysis

Personnel reviews

Pilot projects

Planning

Procedure reviews

Procedure writing

Prototype testing

Quality design

Safety reviews

Surveys

Time and motion studies

Training

Vendor evaluation

Vendor surveys



# Examples of COPQ

## Appraisal Cost

### Audits

Document checking

Drawing checking

Equipment calibration

Final inspection

In-process inspection

Inspection and test

Inspection and test reporting

Laboratory testing

Other expense reviews

Personnel testing

Procedure checking

Prototype inspection

Receiving inspection

Shipping inspection

Test equipment maintenance





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# Examples of COPQ

## Internal Failure Costs

Accounting error corrections

Design changes

Employee turnover

Engineering changes

Equipment downtime\*

Excess interest expense\*

Excess inventory\*

Excess material handling\*

Excess travel expense

Failure reviews

Late time cards

Obsolescence

Overpayments\*

Premium freight

Redesign

Reinspection

Repair and retesting

Retyping letters

Rework

Scrap

Sorting



# Examples of COPQ

## External Failure Costs

Bad debts\*

Customer complaint visits

Customer dissatisfaction\*

Engineering change notices

Equipment downtime\*

Excess installation costs

Excess interest expense\*

Excess inventory\*

Excess material handling\*

Excess travel expense

Failure reviews

Field service training costs

Liability suits

Liability\*

Loss of market share\*

Obsolescence (design changes)

Overpayments\*

Penalties\*

Premium freight

Price concessions\*

Pricing errors\*

Recalls\*

Redesign

Reinspection

Repair costs

Restocking costs

Retesting

Returns

Rework

Scrap

Sorting

Warranty expenses