

Chapter no.11 Cost of Quality/Quality Cost

Cost of poor quality (COPQ): The costs associated with providing poor quality products or services. There are four poor qualities that appraise the quality of the organization's products or services, and categories:

Internal failure costs -costs associated with defects found before the customer receives the product or service,

External failure costs -costs associated with defects found after the customer receives the product or service,

Appraisal costs -costs incurred to determine the degree of conformance to quality requirements.

Prevention costs -costs incurred to keep failure and appraisal costs to a minimum.

Cost of quality is a methodology that allows an organization to determine the extent to which its resources are used for activities that prevent that result from internal and external failures. Having such information allows an organization to determine the potential savings to be gained by implementing process improvements.

Quality-related activities that incur costs may be divided into prevention costs, appraisal costs, and internal and external failure costs.

12.1 Failure

Internal failure costs

Internal failure costs are incurred to remedy defects discovered before the product or service is delivered to the customer. These costs occur when the results of work fail to reach design quality standards and are detected before they are transferred to the customer. They could include:

- Waste—performance of unnecessary work or holding of stock as a result of errors, poor organization, or communication
- Scrap—defective product or material that cannot be repaired, used, or sold
- Rework or rectification—correction of defective material or errors
- Failure analysis—activity required to establish the causes of internal product or service failure

External failure costs

External failure costs are incurred to remedy defects discovered by customers. These costs occur when products or services that fail to reach design quality standards are not detected until after transfer to the customer. They could include:

- Repairs and servicing—of both returned products and those in the field
- Warranty claims—failed products that are replaced or services that are re-performed under a guarantee
- Complaints—all work and costs associated with handling and servicing customers' complaints
- Returns—handling and investigation of rejected or recalled products, including transport costs

12.2 Appraisal costs

Appraisal costs are associated with measuring and monitoring activities related to quality. These costs are associated with the suppliers' and customers' evaluation of purchased materials, processes, products, and services to ensure that they conform to specifications. They could include:

- Verification—checking of incoming material, process setup, and products against agreed specifications
- Quality audits—confirmation that the quality system is functioning correctly
- Supplier rating—assessment and approval of suppliers of products and services

12.3 Prevention costs

Prevention costs are incurred to prevent or avoid quality problems. These costs are associated with the design, implementation, and maintenance of the quality management system. They are planned and incurred before actual operation, and they could include:

- Product or service requirements—establishment of specifications for incoming materials, processes, finished products, and services
- Quality planning—creation of plans for quality, reliability, operations, production, and inspection
- Quality assurance—creation and maintenance of the quality system
- Training—development, preparation, and maintenance of programs