

Unit - III

Juran Trilogy

- One of the best approaches is the one developed by Dr. Joseph Juran.
- It has three components:
 - 1] Planning
 - 2] Control
 - 3] Improvement.

1] Planning:- The planning component begins with external customers.

- Once quality goals are established, marketing determines the external customers.
- All organizational personnel determine the internal customers.
- Once the customers are determined, their needs are discovered.

2] Control :- Control is used by operating forces to help meet the product, process, and service requirements.

- It uses the feedback loop and consists of the following steps:

- 1] Determine items/subjects to be controlled and their units of measure.
- 2] Set goals for the controls and determine what sensors need to be put in place to measure the product, process, or service.
- 3] Measure actual performance.
- 4] Compare actual performance to goals.
- 5] Act on the difference.

3) Improvement:- Process improvements begin with the establishment of an effective infrastructure such as the quality council.

- Two of the duties of the council are to identify the improvement projects and establish the project teams with a project ~~owner~~ owner.

2B

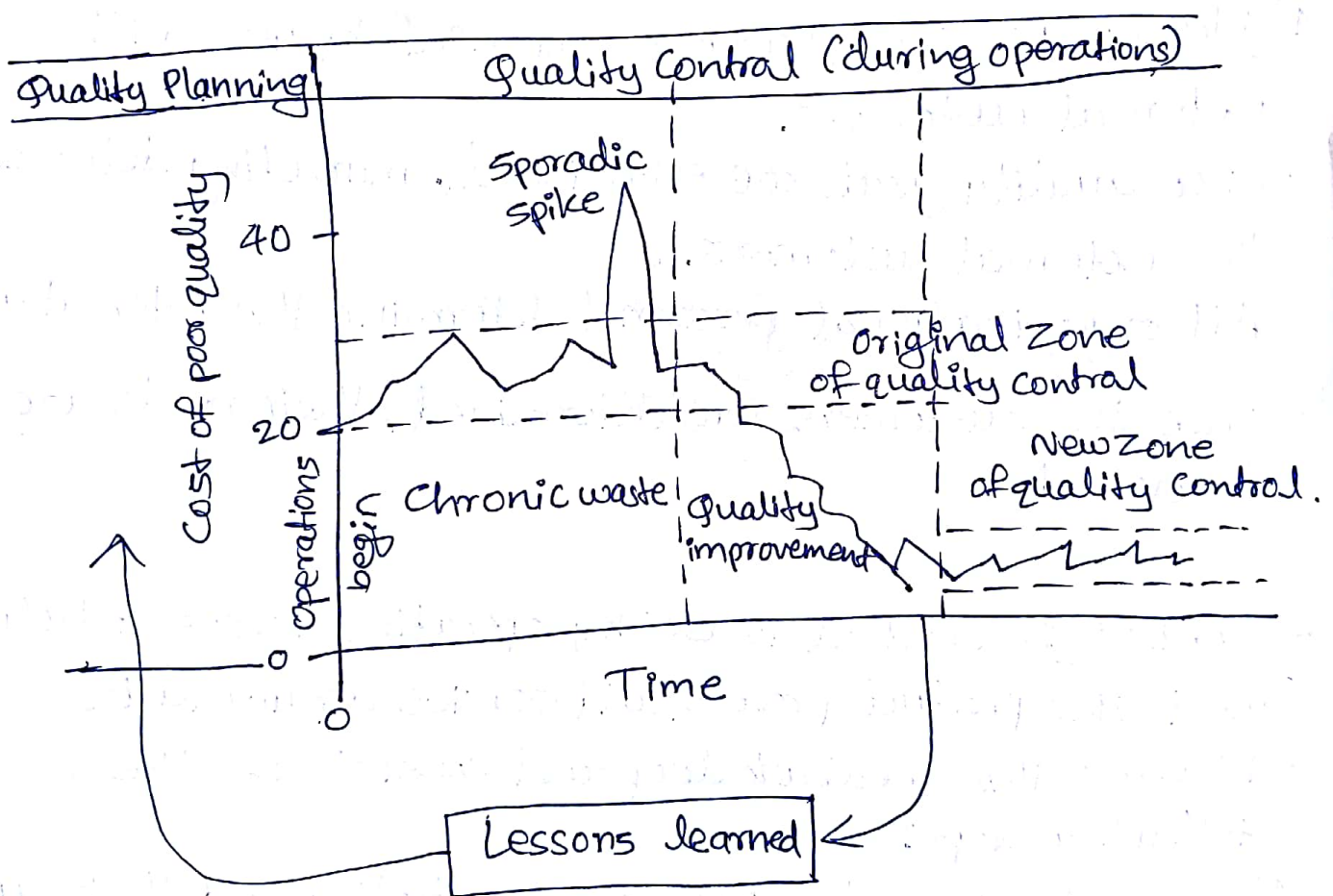


Figure:- The Juran Trilogy Diagram.

Categories of Quality Cost.

1] Preventive cost category:- Activities planned and designed before operations to guarantee good quality and prevent bad quality products or services.

- Marketing / Customer / User
- Product / Service / Design Development.
- Purchasing
- Operations
- Quality Administration

2] Appraisal cost category:- The first responsibility of a quality management system is assurance of the acceptability of product or service as delivered to customers.

- Purchasing Appraisal Costs.
- Operations Appraisal costs.
- External Appraisal costs.
- Review of Test and Inspection Data.
- Miscellaneous Quality Evaluations.

3] Internal Failure Cost category:-

- Product or Service Design Failure costs
- Purchasing Failure Costs.
- Operations Failure costs.

→ whenever quality appraisals are performed, the possibility exists for discovery of a failure to meet requirements.

4) External Failure Cost Category:- This category includes all costs incurred due to actual or suspected nonconforming product or service after delivery to the customer.

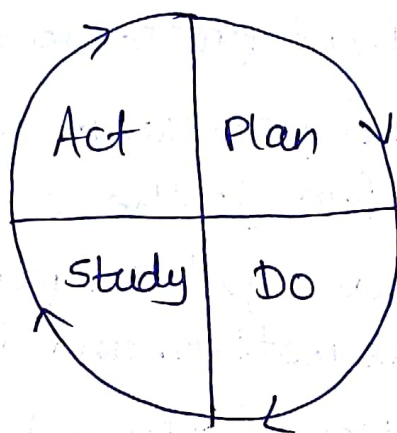
- Complaint Investigations of Customer or User service.
- Returned Goods.
- Warranty claims
- Liability costs
- Penalties
- Customer or User Goodwill
- Lost Sales.

• TQM Unit-3

①

PDSA Cycle :- Plan-Do-Study-Act.

- The basic Plan-Do-Study-Act (PDSA) cycle was first developed by Shewhart and then modified by Deming.
- It is an effective improvement technique.
- The below figure illustrates the cycle.



- The four steps in the cycle are exactly as stated.
 - i] First, plan carefully what is to be done.
 - ii] Next, carry out the plan (do it).
 - iii] Third, study the results - did the plan work as intended, or were the results different?
 - iv] Finally, act on the results by identifying what worked as planned and what didn't.
- The PDSA cycle is a simple adaptation of the more elaborate problem-solving method.

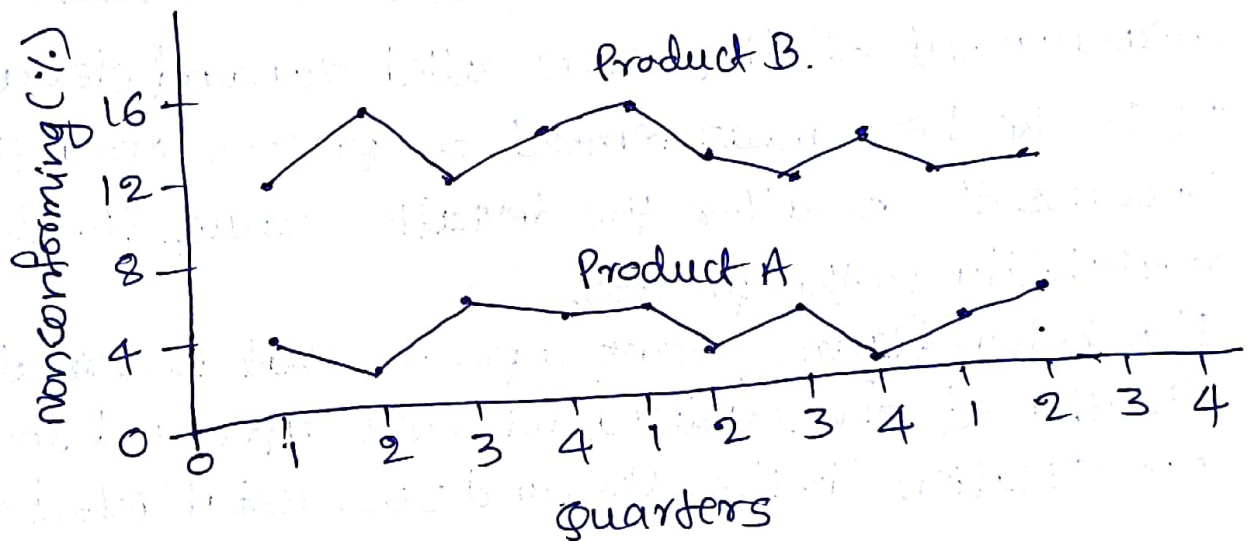
Performance Measure Presentation.

- There are six basic techniques for presenting performance measures.

1) Time series graph:-

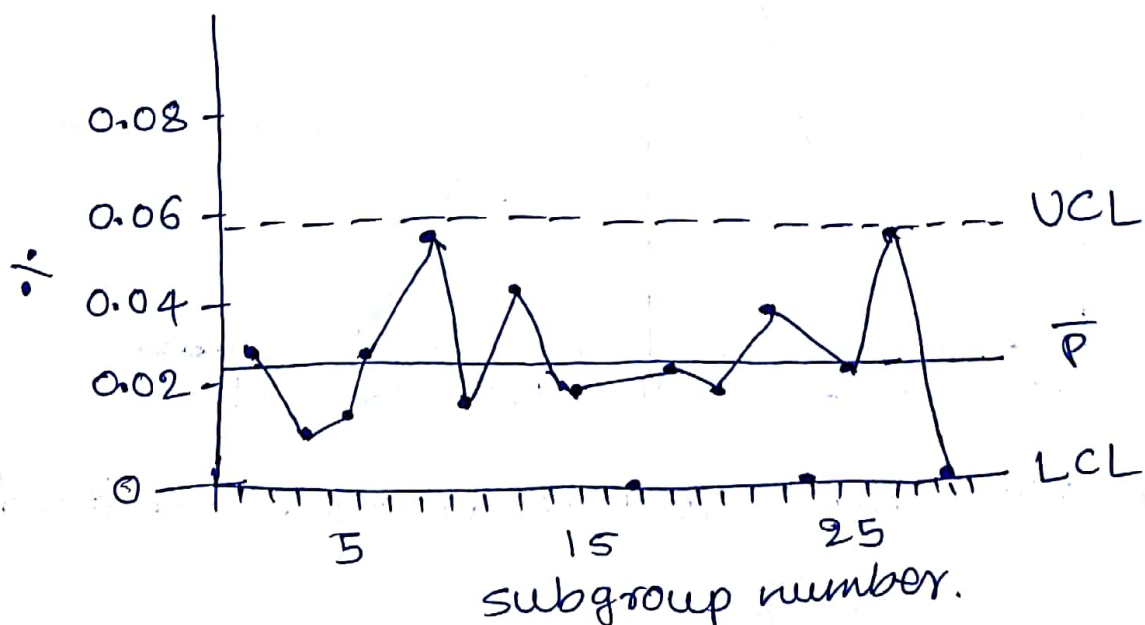
Time as measured by days, weeks, months, and so forth, is shown on the horizontal axis, and the performance measure is shown on the vertical axis.

→ Time series graph for percent Nonconforming.



2) Control chart:- Second form of presentation technique

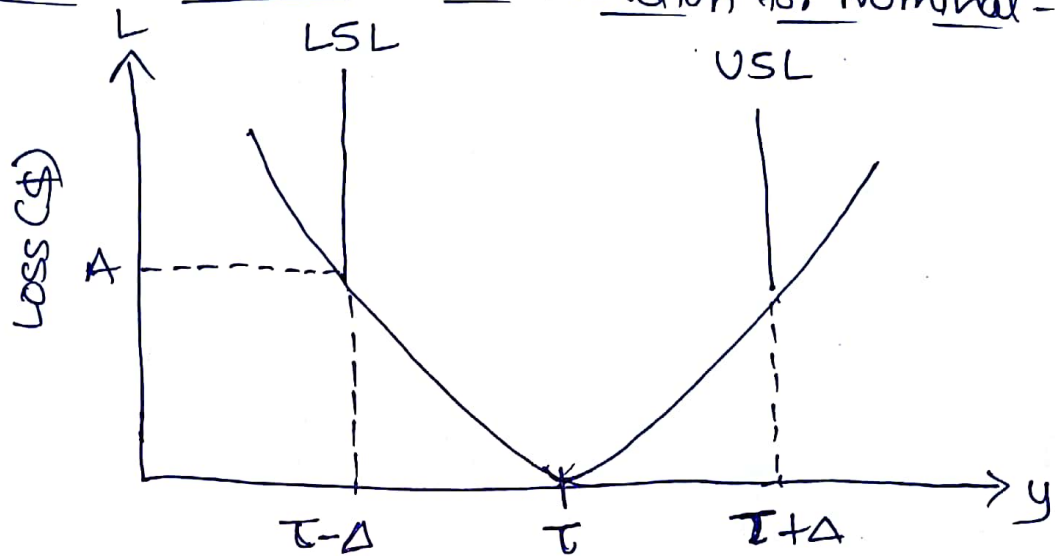
→ Control chart for percent Nonconforming.



3] Taguchi's Quadratic Loss Function:-

- This technique combines target, cost and specifications into one measurement.

→ Taguchi's Quadratic Loss Function for Nominal-the-Better



4] Capability index :- which is the ratio of the tolerance of the capability.

- There are two measures :- one indicates the ability of the process to meet specification and the other indicates the centering of the process on the target.

5] Cost of poor quality :- Money attracts the attention of senior management.

6] Malcolm Baldrige National Quality Award :-

- criteria for this award quite effectively measure the performance of TQM effort on an annual basis.