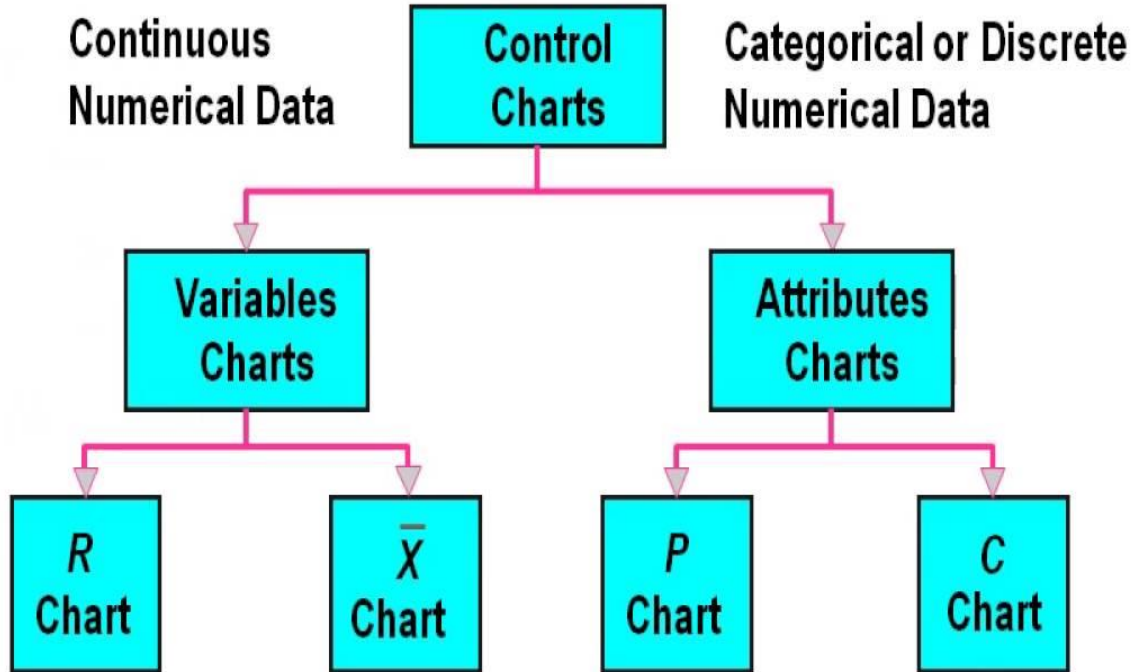


Control Chart Types





The Seven TQM Tools

1. Check Sheets
2. Histograms
3. Scatter Diagrams
4. Control Charts
5. Run Charts
6. Ishikawa Diagram
7. Pareto Diagram

Check Sheets

Check Sheets are simple documents that are used for collecting data in real-time.

A Check Sheet is typically a blank form that is designed for the quick, easy and efficient recording of the desired information, which can be either quantitative or qualitative.

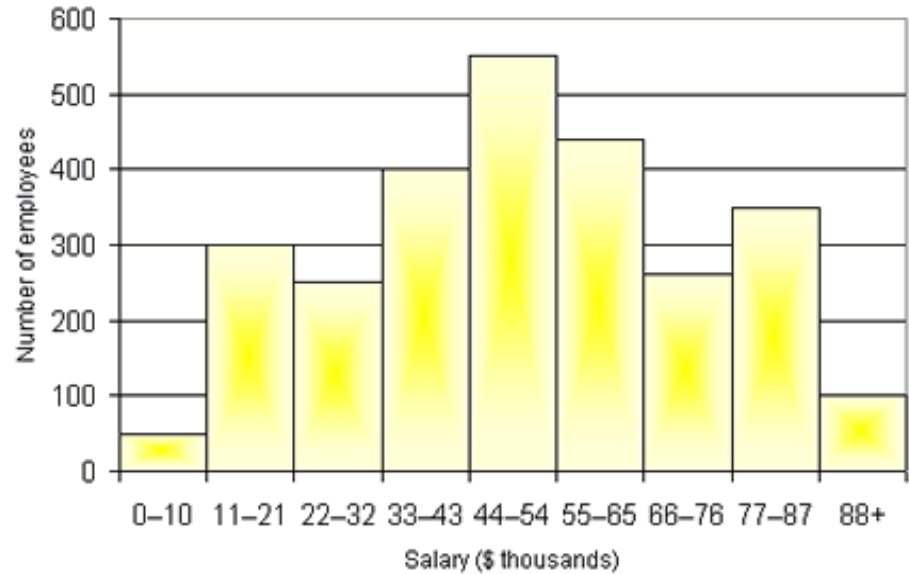
When the information is quantitative, the check sheet is called a Tally Sheet.



Histograms

A **histogram** divides up the range of possible values in a data set into classes or groups.

For each group, a rectangle is constructed with a **base length equal to the range of values in that specific group**, and an area proportional to the number of observations falling into that group.

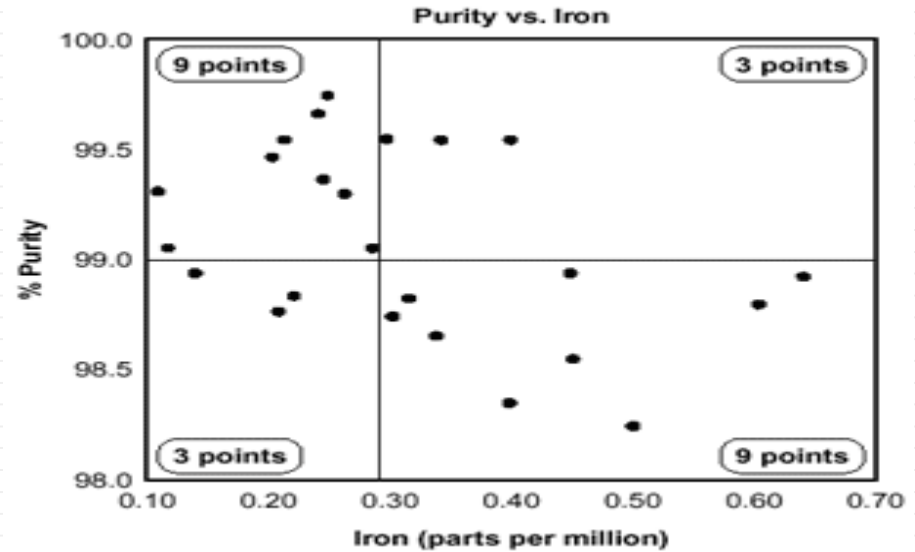


Scatter Diagrams

Scatter Diagrams are used to present measurements of two or more related variables. A Scatter Diagram does not specify dependent or independent variables.

Either type of variable can be plotted on either axis.

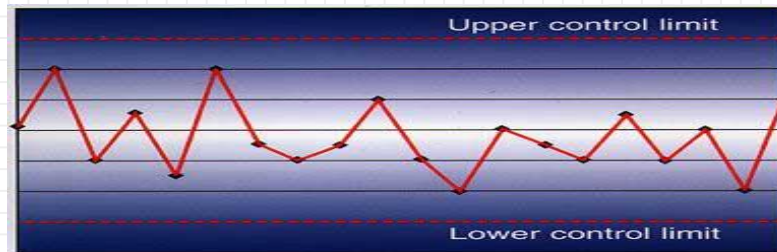
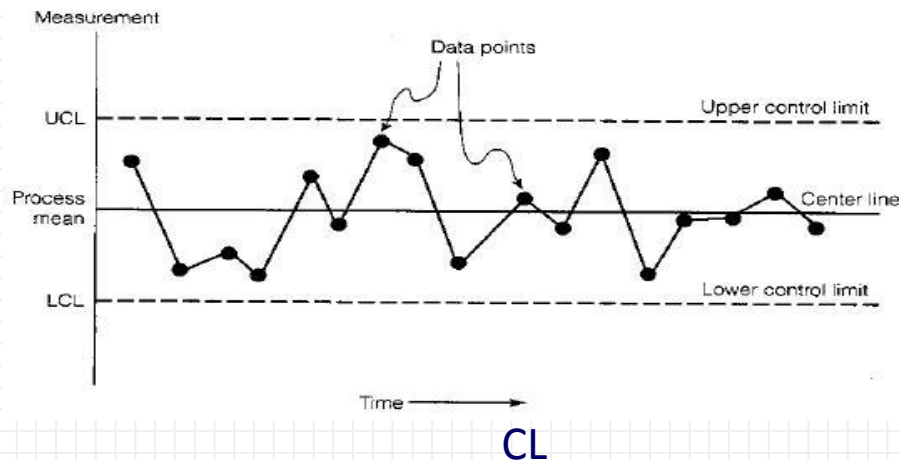
Scatter Diagrams represent the association between two variables.



Control Charts

A control chart consists of the following:

A Centre Line (CL) drawn at the process mean value.

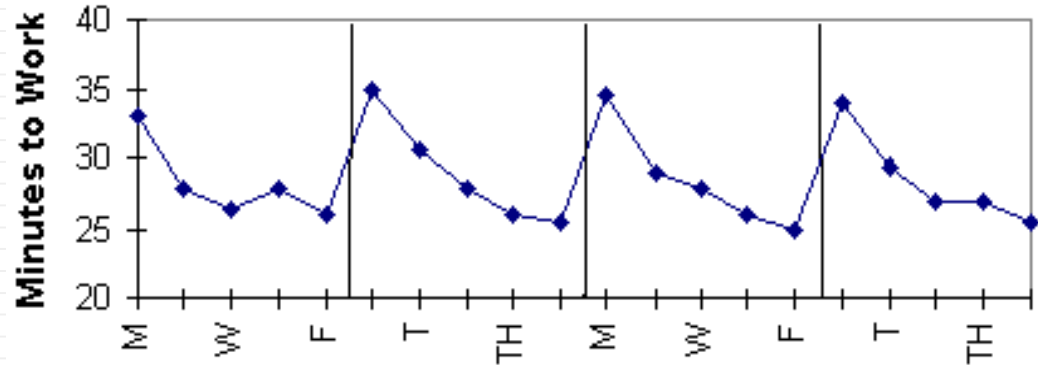


Lower and Upper Control Limits that indicate the threshold at which the process output is considered statistically unlikely.

Run Charts

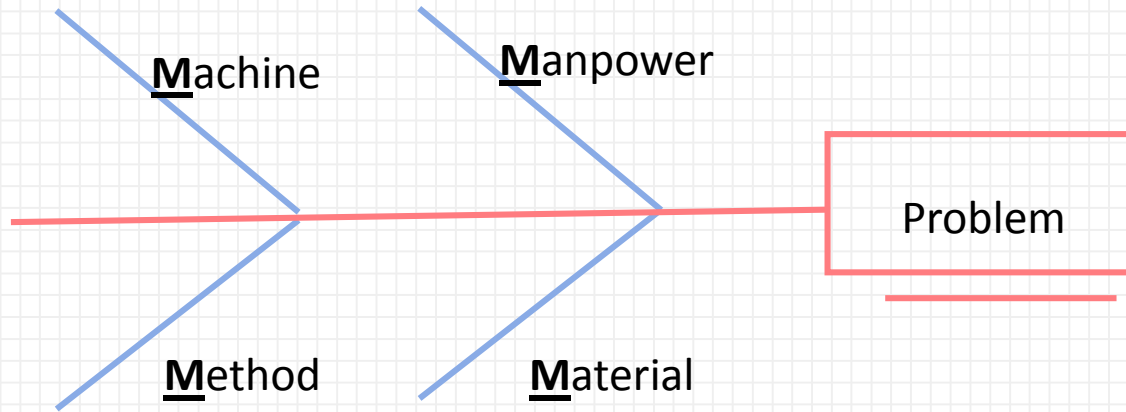
Run Charts are similar in some regards to Control Charts, but do not show the control limits of the process.

They are therefore simpler to produce, but do not allow for the full range of analytic techniques supported by Control Charts.



- Run chart: Measurement against progression of time.
- Control chart: Add Upper Control Limit and Lower Control Limit to the run chart.

Ishikawa Diagram



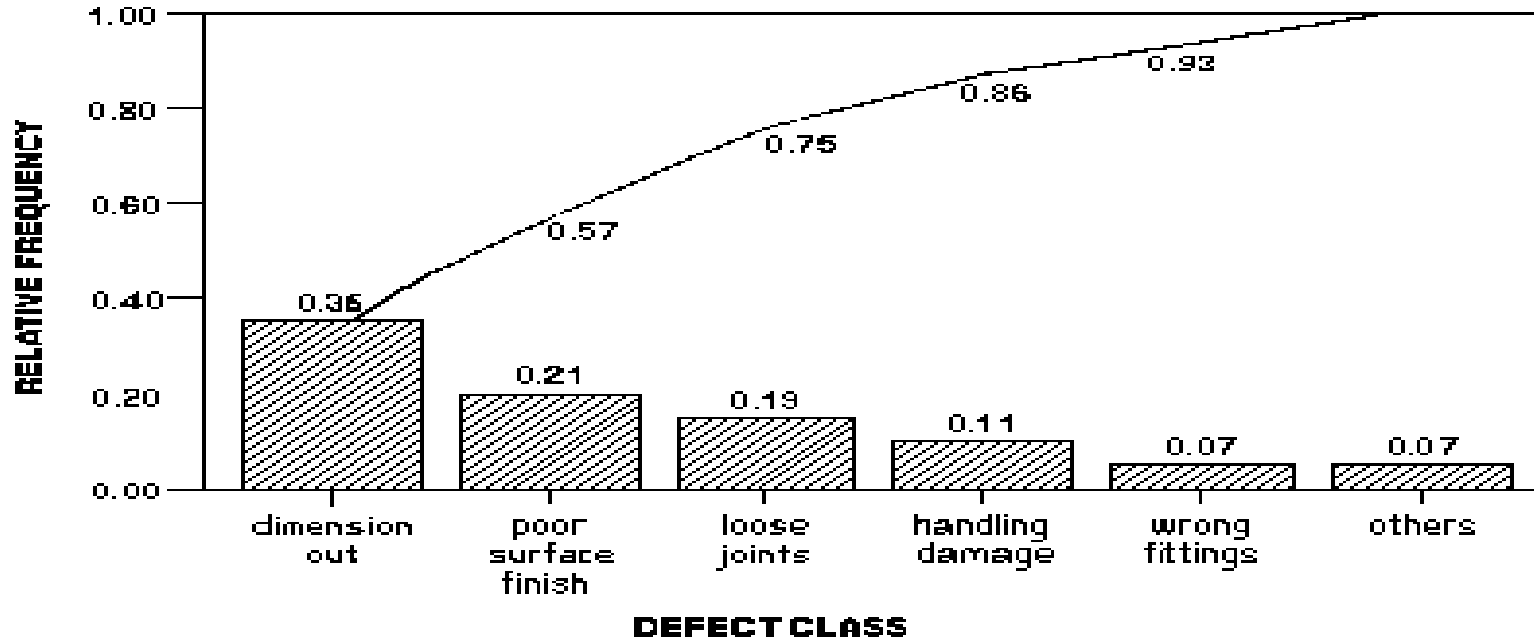
Ishikawa Diagram is also called Cause-and-Effect Diagram.
Often are four generic heading used: **4 M's!**

Pareto Diagram

The purpose of the Pareto Diagram is to highlight the most important set of factors among a typically large amount of causes for a problem.

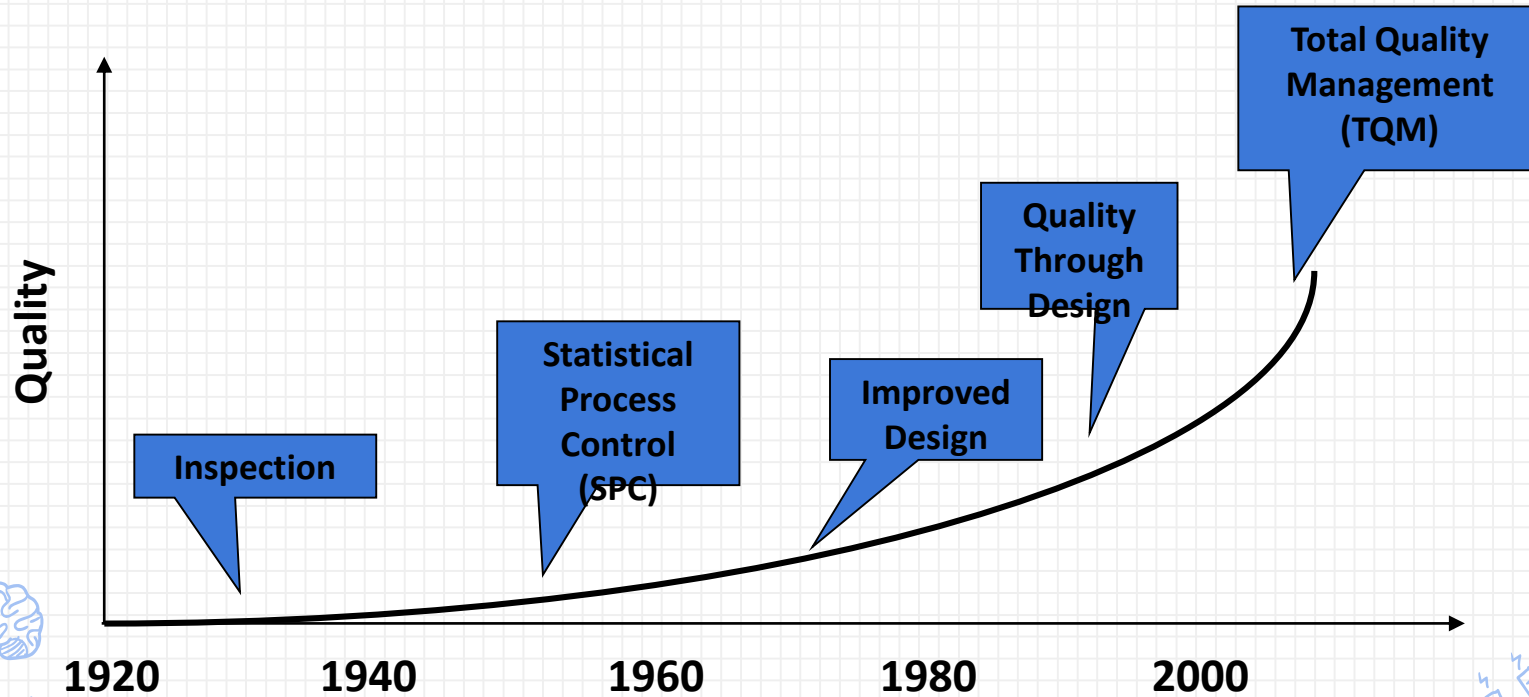
In order to develop the Pareto Diagram for a specific process, the knowledge of Frequency, Relative Frequency, Cumulative Frequency and Percentage Frequency is needed.

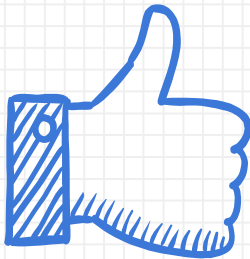
Pareto Diagram



It can be noted that the 3 defects of out-of-dimension, poor surface finish and loose joints account for 75% of the rejections.

Quality as a Function of Time and Methods





THANKS!

03/09/2024

CONTROL CHARTS/19MEE304 –TQM/GOWTHAM M/MECH/SNSCT

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