8 Quality

A

Quality means **meeting** the minimum set of **requirements** in a product's **specification** and then being **delighted** that the customer's **expectations** have been met and **exceeded**. Therefore, the goal of a business should be to find out **customer needs** and then fine tune the **process** to ensure that they are met.

Quality **improvement** concepts have developed over several decades. They began simply as a method for **detecting defective** products by **inspection** at the end of the production line. In recent years the emphasis has changed from inspection to **prevention**. Today **sampling** methods **monitor** processes and keep them under control. The ultimate aim, of course, is **zero defects**.

B

In recent years different approaches to quality improvement have been developed. The overall aim is to prevent *defects* through:

continuous process improvement
customer focus

Defect prevention

error • failure • inspect • prevent
process control • repair • rework • scrap

Continuous process improvement

add value • analysis • cause/effect analysis • check • commitment
control • define • facilitate • monitor • prioritize
inventory control • system failure analysis • variability

Customer focus

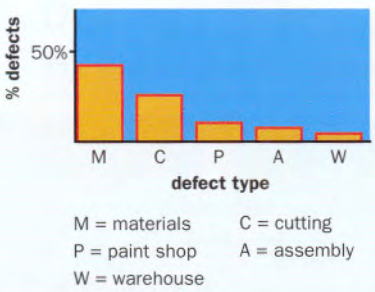
accurate • comply with • needs • rectify

C

Below are three examples of useful quality summary charts:

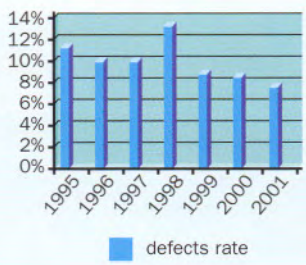
A **Pareto chart** is a type of bar chart typically used to improve quality, process capability, or to conserve materials and energy.

Pareto chart

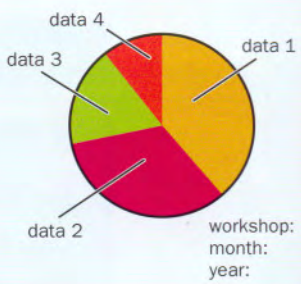


M = materials C = cutting
P = paint shop A = assembly
W = warehouse

Vertical bar chart



Pie chart



A **bar graph** uses either horizontal or vertical bars to show comparisons among categories.

A **pie chart** helps you to visualize the relative importance of several categories of a variable.