



# 100 Methods for Total Quality Management (TQM)

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# Types of Methods

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- Management Methods
- Analytical methods
  - Idea Generation
  - Data collection analysis and display



# Management Methods

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- Acceptable Quality Level (AQL) (sampling plans, risk and inspection strategy to ensure quality in the product.)
- Affinity diagram (Organizing large amount of data)
- Arrow diagram (Problem solving tool)
- **Benchmarking**
- Consensus reaching (methodical way of examining alternatives)
- Cost benefit analysis (To estimate the real cost & benefit)
- Criteria testing( evaluate and compare alternative solutions)
- **Deming Cycle**
- Departmental Purpose Analysis (DPA) (Review internal customer supplier relationship)
- **ISO9000**
- **Kaizen**



# Management Methods (Cont..)

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- Mystery shopping (looking at your business from the customer's point of view)
- Objective ranking
- Pareto analysis (Root cause identification)
- Potential problem analysis (PPA)
- Problem Prevention Plan (PPP)
- Process Decision Programme chart (Focus on process sequences leading to desirable results.)
- Programme Evaluation and Review Technique (PERT)
- **Quality Control Circles**



# Management Methods (Cont..)

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- **Quality Function Deployment (QFD)**
- **Relation Diagram (illustrate the relationship between problems and ideas.)**
- **Team Work**
- **Total Productive Maintenance (TPM)**
- **Zero Defect-Six Sigma**



# Analytical methods

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- Cause and Effect Diagram
- Critical path analysis (CPA) (Project planning technique)
- Departmental Cost of quality (Provide financial measure of quality performance of an organization)
- Evolution operation (EVOP) (process improvement during online production without disturbing output)
- Failure mode and effect analysis (To assist in the fool proofing of a design or process)
- Fault tree analysis (Productivity Audit)
- Force field analysis (Bridging the gap)
- Minute analysis (Estimate the survival period of a particular product unit under certain conditions.)
- Paired comparisons (Priority setting among groups)



# Analytical methods (Cont..)

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- Parameter design (identification of important process and providing optimal set of working conditions)
- Process cost of quality (Financial measures)
- Reliability (identifying failure cause then eliminating and reduce the effects and consequences of failure)
- Robust design (Off line Quality control)
- Solution Effect Analysis (Examine the solution to the problems)
- Stratification (assist in definition of a problem)
- System design (apply special scientific and engineering knowledge to produce a basic functional prototype model.)
- Taguchi Methods (Optimization of product or process.)
- Tolerance design. (Experimental Identification of variance occurred and rectification.)



# Analytical methods (Cont..)

## Idea Generation

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- Brainstorming
- Brain writing (To generate as many ideas as possible)
- Breaking set (To overcome blocks in thinking by generating new ideas.)
- Buzz Groups (A way of getting the immediate reaction of a group to new idea and problem.)
- Idea writing (to bring all participants into group work.)
- Imagineering (identifying opportunity areas by concentrating on ideal outcome)
- Improve Internal Process (IIP) plan
- Lateral thinking (A way of transferring from one frame of reference to another, gives birth to creative thoughts)



# Analytical methods (Cont..)

## Idea Generation

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- List reduction (To reduce a list of ideas to one of manageable size.)
- Mind Mapping (Individual ideas recording)
- Nominal Group Technique (A way of generating ideas from a group and identifying the level of support within the group for those ideas.)
- Opportunity Analysis (quick evaluation of available resources in order to fulfill organization goals.)
- Rich pictures (To allow group to capture all ideas developed without judgment in a pictorial form.)
- Snowballing (Information gathering tool)
- **Suggestion Schemes.**



# Analytical methods (Cont..)

Data collection analysis

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- Bar charts
- Basic statistics
- Box and whisker plots
- C charts
- Check sheets
- Concentration diagram
- Dot plots
- Flow charts Geometric moving average
- Histograms



# Analytical methods (Cont..)

## Data collection analysis

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- Hoshin kanri (Quality policy deployment)
- Matrix diagram
- Pie Charts
- Process Analysis
- Process capability
- Tree Diagram
- U charts
- Sampling
- Scatter Diagram
- Statistical Process Control
- X-R charts