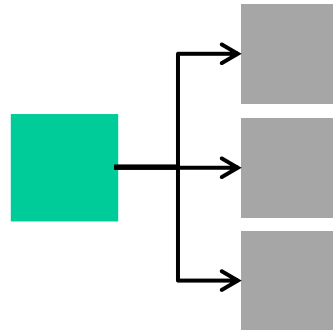


Continuous Improvement Toolkit

Tree Diagram



Managing Risk

PDPC
FMEA RAID Logs
Fault Tree Analysis
Risk Assessment*
Traffic Light Assessment

Deciding & Selecting

Pros and Cons
Break-even Analysis
Force Field Analysis
Decision Tree
QFD
Kano Analysis
Critical-to Tree
Matrix Diagram
TPN Analysis
Voting
SWOT
Prioritization Matrix
Paired Comparison
Cause & Effect Matrix
Pareto Analysis

Planning & Project Management*

RACI Matrix Stakeholders Analysis
PEST PERT/CPM Activity Diagram
Roadmaps Project Charter Gantt Chart
PDCA Control Planning Gap Analysis
Hoshin Kanri Kaizen
How-How Diagram
Standard work

Understanding Performance

Lean Measures KPIs
OEE Capability Indices
MSA RTY Descriptive Statistics
Cost of Quality
Probability Distributions
ANOVA
Reliability Analysis
Graphical Analysis
Hypothesis Testing

Understanding Cause & Effect

Confidence Intervals
ANOVA
Design of Experiments
Regression
Multi-Vari Charts
Relations Mapping*
5 Whys
Chi-Square Test
Fishbone Diagram
TRIZ***

Identifying & Implementing Solutions***

Simulation TPM
Mistake Proofing
Pull Systems JIT Ergonomics
Work Balancing Automation
Bottleneck Analysis
Visual Management
Flow Value Analysis
5S
Wastes Analysis
SMED

Understanding Performance

Run Charts
Control Charts
Benchmarking
Sampling
Focus groups
Interviews
Brainstorming
Analogy
SCAMPER***
Photography
Check Sheets
Nominal Group Technique
Mind Mapping*
Measles Charts
Surveys
Affinity Diagram
Attribute Analysis

Creating Ideas**

Lateral Thinking
Visioning

Designing & Analyzing Processes

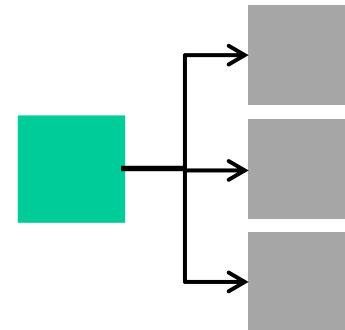
IDEF0
Value Stream Mapping
SIPOC
Flow Process Chart
Process Mapping
Flowcharting
Service Blueprints

Data Collection

Critical Incident Technique
Observations

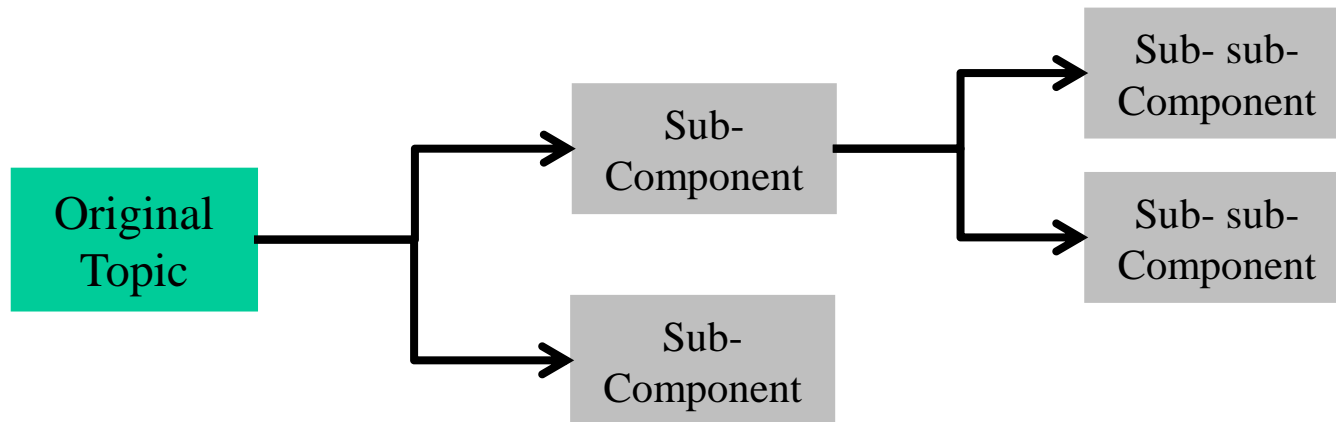
- Tree Diagram

- ❑ Breaking down a topic into successive levels of detail.
- ❑ Provides a simple method of breaking down a problem.
- ❑ Can be used in many analysis situations.
- ❑ An average score for the problem could be measured.
- ❑ The team should have sufficient subject expertise.



- Tree Diagram

- ❑ The topic would be broken down into its component parts.
- ❑ There is one initial node (or root) which has no parent.
- ❑ Each parent is completely described by its children.
- ❑ There should be no key factor missing.



- Tree Diagram

When to Use It?

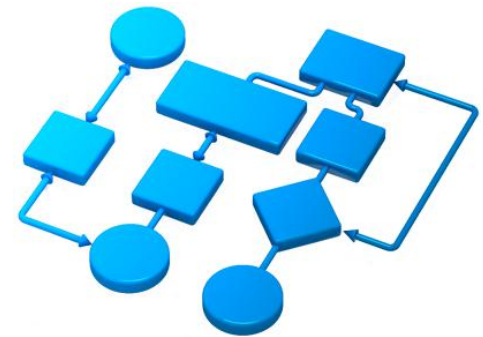
- ❑ To investigate problem causes.
- ❑ To determine the root causes of a problem.
- ❑ To find an appropriate solution.
- ❑ In planning, to break down a task into manageable units.
- ❑ To discover the detailed component parts of any complex topic.
- ❑ To describe all sub-assemblies of a product.
- ❑ To identify a customer's basic needs of a product.



- Tree Diagram

Approach:

- ❑ Identify the objective of using the Tree Diagram.
- ❑ Define the top-level root statement.
- ❑ **Ask:**
 - “What must be done to achieve the parent statement?”
 - OR “Why does the parent happen?”
 - OR “What are the physical parts of the parent?”
- ❑ Write the agreed answers on the flipchart.
- ❑ Repeat the process for each sub-component and until there is no further breakdown is required.
- ❑ Use the completed tree to help achieve the objective.



- Tree Diagram

