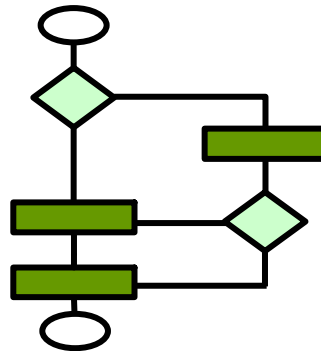


Continuous Improvement Toolkit

Flowcharting



Managing Risk

PDPC

FMEA RAID Logs

Fault Tree Analysis

Risk Assessment*

Decision Tree

Traffic Light Assessment

Lean Measures

KPIs

OEE

Capability Indices

MSA

RTY

Descriptive Statistics

Cost of Quality

Probability Distributions

ANOVA

Reliability Analysis

Graphical Analysis

Hypothesis Testing

Understanding Performance

Run Charts

Scatter Plot

Correlation

Regression

Understanding Cause & Effect

Control Charts

5 Whys

Chi-Square Test

Multi-Vari Charts

Benchmarking

Sampling

Fishbone Diagram

TRIZ***

Relations Mapping*

Focus groups

Interviews

Brainstorming

Analogy

SCAMPER***

Photography

Check Sheets

Nominal Group Technique

Mind Mapping*

Measles Charts

Surveys

Affinity Diagram

Attribute Analysis

Data Collection

Critical Incident Technique

Lateral Thinking

Visioning

Flowcharting

Observations

Creating Ideas**

Designing & Analyzing Processes

Deciding & Selecting

Pros and Cons

Importance-Urgency Mapping

Break-even Analysis

Cost -Benefit Analysis

Force Field Analysis

Pugh Matrix

Voting

SWOT

Risk Assessment*

Decision Tree

QFD

Matrix Diagram

TPN Analysis

Traffic Light Assessment

Kano Analysis

Prioritization Matrix

Lean Measures

KPIs

Critical-to Tree

Paired Comparison

OEE

Capability Indices

Cause & Effect Matrix

Pareto Analysis

MSA

RTY

Descriptive Statistics

Confidence Intervals

Pareto Analysis

Cost of Quality

Probability Distributions

ANOVA

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Graphical Analysis

Hypothesis Testing

Design of Experiments

Understanding Performance

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Creating Ideas**

Designing & Analyzing Processes

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

Tree Diagram**

Standard work

Simulation

TPM

Identifying & Implementing Solutions***

Mistake Proofing

Pull Systems

JIT

Ergonomics

Work Balancing

Automation

Bottleneck Analysis

Visual Management

Flow

Value Analysis

5S

Wastes Analysis

SMED

Time Value Map

Process Redesign

IDEF0

Value Stream Mapping

SIPOC

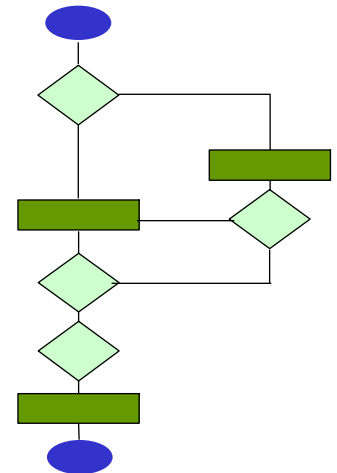
Flow Process Chart

Process Mapping

Service Blueprints

- Flowcharting

- ❑ Flowcharts are used in designing and documenting complex processes or programs.
- ❑ Visually show the steps and decisions and how they fit together.
- ❑ Contained in procedures and quality manuals.
- ❑ Show how the process should be.



- Flowcharting

When to Use It?

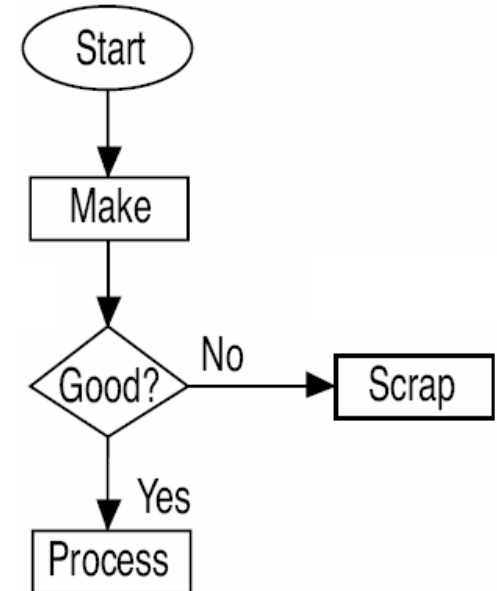
- ❑ Define a process.
- ❑ Analyze a process.
- ❑ Identify bottlenecks and troubleshoot a problem.
- ❑ Document a process.
- ❑ Communicate steps to other people involved in a process.
- ❑ Improve a process.
- ❑ Standardize a process.



- Flowcharting

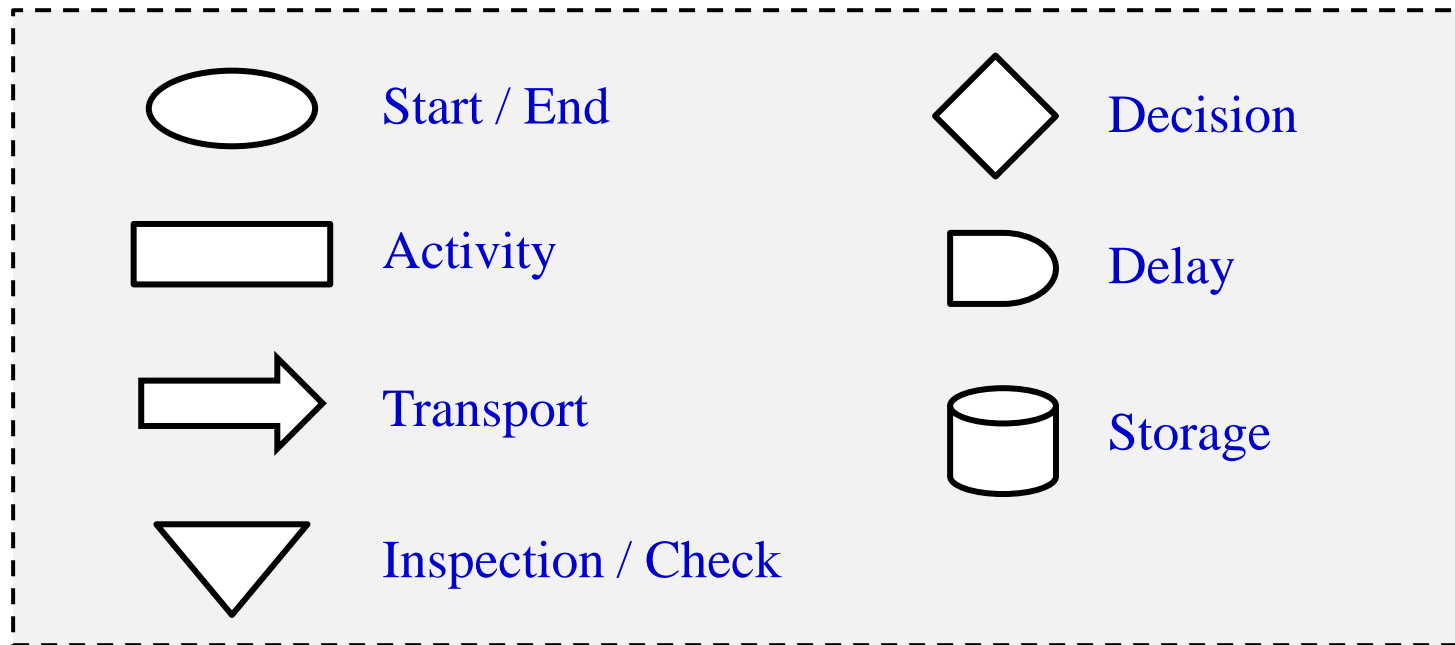
Components:

- ❑ Step name.
- ❑ Step number.
- ❑ Step description.
- ❑ Relationships between steps.
- ❑ The decision points.
- ❑ The control / inspection points.
- ❑ Data collection / storage points.
- ❑ The inputs and the outputs for each step.
- ❑ Reference to the SOP or work instruction.



- Flowcharting

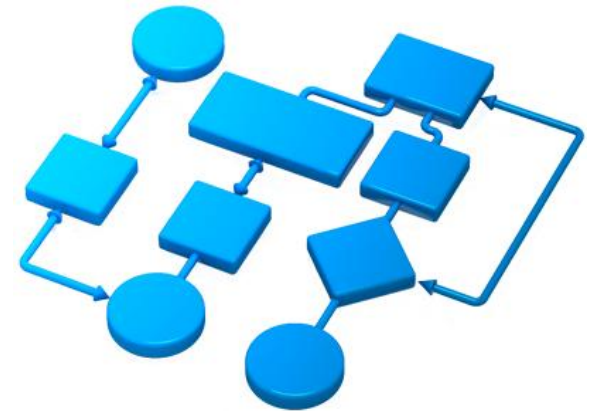
Standard Symbols:



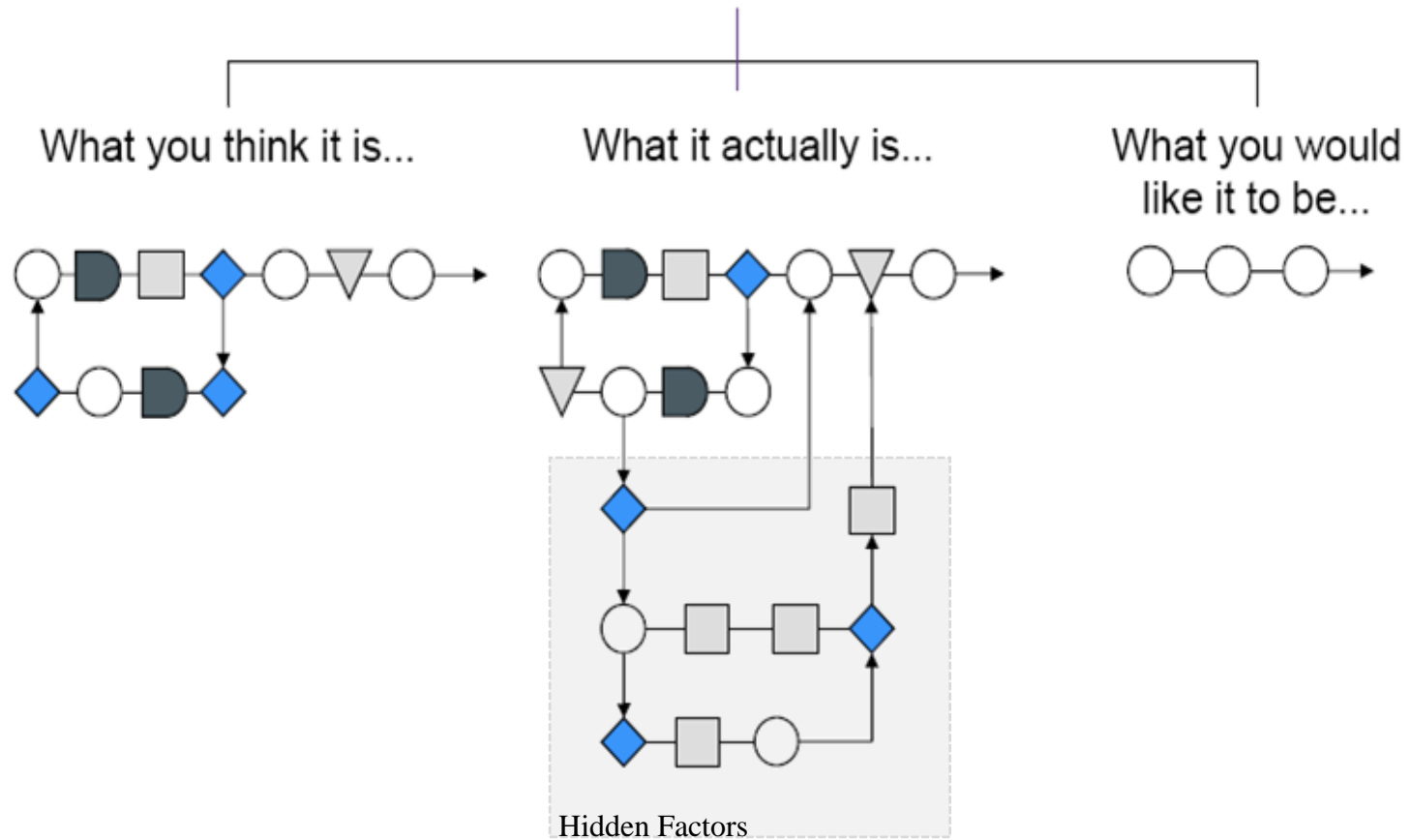
- Flowcharting

Approach:

- ❑ Identify the process owners.
- ❑ Identify the process boundaries.
- ❑ Document the inputs and outputs of the process.
- ❑ Document the **ideal** operations (brainstorming).
- ❑ Add decision, inspection, data collection & storage points.
- ❑ Test the Flowchart.
- ❑ Challenge the Flowchart if you want to improve it.

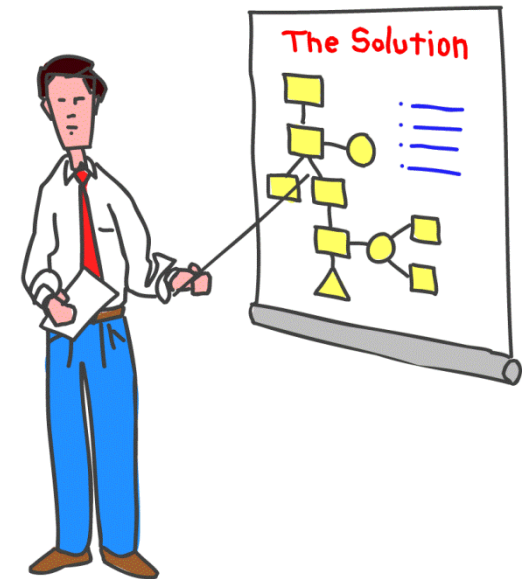


- Flowcharting



- Flowcharting

- ❑ A flowchart is described as cross-functional when the page is divided into different “**swimlanes**” describing the control of different organizational units.
- ❑ Use **connectors** when they become long and complicated.
- ❑ Software developers can use flow charts to map out a process that needs to be automated.



- Flowcharting

Example – Shipping Flowchart:

