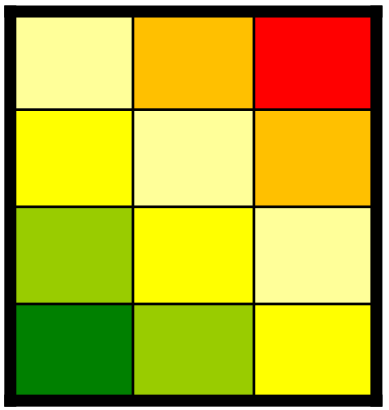
Continuous Improvement Toolkit

Matrix Diagram


Managing Risk
PDPC
FMEA
RAID Logs
Fault Tree Analysis
Risk Assessment*
Traffic Light Assessment
Deciding & Selecting
Pros and Cons
Importance-Urgency Mapping
Break-even Analysis
Cost -Benefit Analysis
Force Field Analysis
Voting
Pugh Matrix
Decision Tree
TPN Analysis
QFD
Matrix Diagram
Prioritization Matrix
Kano Analysis
Paired Comparison
Critical-to Tree
Planning & Project Management*
RACI Matrix
Stakeholders Analysis
PEST
PERT/CPM
Activity Diagram
SWOT
Roadmaps
Project Charter
Gantt Chart
PDCA
Control Planning
Gap Analysis
Hoshin Kanri
Kaizen
How-How Diagram
Tree Diagram**
Standard work
Lean Measures
KPIs
OEE
Capability Indices
MSA
RTY
Descriptive Statistics
Cost of Quality
Reliability Analysis
Graphical Analysis
Cause & Effect Matrix
Pareto Analysis
Confidence Intervals
Understanding Cause & Effect
Probability Distributions
ANOVA
Hypothesis Testing
Design of Experiments
Scatter Plot
Correlation
Regression
Multi-Vari Charts
5 Whys
Chi-Square Test
Relations Mapping*
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
Time Value Map
Process Redesign
IDEF0
Value Stream Mapping
SIPOC
Flow Process Chart
Process Mapping
Flowcharting
Service Blueprints
Designing & Analyzing Processes
Understanding Performance
Run Charts
Control Charts
Benchmarking
Sampling
Focus groups
Interviews
Photography
Check Sheets
Measles Charts
Surveys
Data Collection
Critical Incident Technique
Observations
Brainstorming
Analogy
SCAMPER***
Nominal Group Technique
Mind Mapping*
Affinity Diagram
Attribute Analysis
Lateral Thinking
Visioning
Creating Ideas**

- Matrix Diagram

- Used to understand the many-to-many relationship.
- Allows two lists (or more) to be compared.
- The second list is turned on its side to form a matrix.
- The relationships can now be indicated in the cell where the row and column of the two items cross.
- An example is to compare between causes and effects.



- Matrix Diagram

- Used typically to compare two lists where the list on the left represents a problem (the 'WHAT') and the list above represents a solution to that problem (the 'HOW').

E.g. customer requirements **v.s.** E.g. design specifications

List 1	List 2
Item 1	Item A
Item 2	Item B
Item 3	Item C
Item 4	Item D

What / How	A	B	C	D
Item 1		O		O
Item 2	O			
Item 3	O	O		
Item 4			O	O

L-Matrix

- Matrix Diagram

- A common extension is to use different symbols/numbers in the matrix cells to show the strength of the relationship.

Symbol	Relationship	Value
⦿	Strong	9
O	Medium	3
Δ	Weak	1

	A	B	C	D	
Item 1		O		⦿	**12**
Item 2	Δ				**1**
Item 3	Δ	⦿			**10**
Item 4			Δ	O	**4**
	2	**12**	**1**	**12**	

- Matrix Diagram

Example – Explore the Process of Doing a Load of Laundry:

Inputs / Outputs	Clean clothes	Clothes smell good	Wrinkle free	No shrinkage	
Laundry sorted	Δ			Δ	2
Cycle used	O	Δ	Δ	O	8
Wash temperature	◉	Δ		O	13
Rinse temperature			Δ		1
Load size	O		◉		10
Softener		◉	O	Δ	13
Detergent	◉	O	O	Δ	15
Washer type	O		O		6
	28	15	20	9	