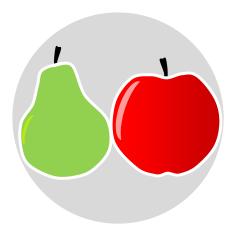
Continuous Improvement Toolkit

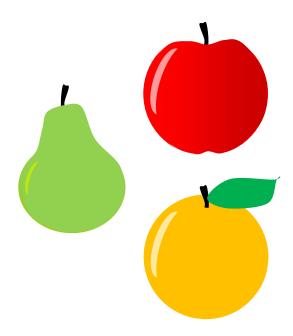
Paired Comparison



The Continuous Improvement Map

Selecting & Decision Making Managing Planning & Project Management* Risk **PDPC** Importance Urgency Matrix Break-even Analysis Daily Planning PERT/CPM **RAID Log*** Quality Function Deployment Cost Benefit Analysis **FMEA** MOST RACI Matrix **Activity Networks** Payoff Matrix Delphi Method **TPN Analysis** Risk Analysis* **SWOT Analysis** Stakeholder Analysis Pick Chart Voting Decision Tree Four Field Matrix Fault Tree Analysis **Project Charter** Improvement Roadmaps Force Field Analysis Portfolio Matrix Critical-to X Traffic Light Assessment PDCA Policy Deployment Gantt Charts Paired Comparison Kano Decision Balance Sheet Lean Measures OFF **DMAIC** Kaizen Events Control Planning **Prioritization Matrix Pugh Matrix** Cost of Quality* Standard Work Document control A3 Thinking Process Yield Pareto Analysis Matrix Diagram **Project KPIs KPIs Best Practices Implementing Understanding** Capability Indices Chi-Square Nonparametric **Descriptive Statistics** Solutions*** TPM Automation Cause & Effect Gap Analysis* Probability Distributions Hypothesis Mistake Proofing Health & Safety **ANOVA** DOE **Bottleneck Analysis Histograms** Normal Distribution Multivariate Simulation Just in Time 5S Multi-vari Studies Reliability MSA Scatter Plots **Graphical Methods** Quick Changeover Visual Management Correlation Regression **Understanding Run Charts** 5 Whys Root Cause Analysis Data Mining Product Family Matrix Flow Pull Performance** SIPOC* Spaghetti** Process Redesign **Control Charts** Fishbone Diagrams Relations Mapping Benchmarking*** Waste Analysis** Value Stream Mapping** How-How Diagram*** Data collection planner* Sampling Tree Diagram* Brainstorming SCAMPER*** Attribute Analysis Value Analysis** **Process Mapping** Check Sheets** Interviews Flow Process Charts** Time Value Map** Affinity Diagrams Morphological Analysis Questionnaires **Focus Groups** Data Mind Mapping* Lateral Thinking Flowcharting IDEF0 Service Blueprints Observations Collection Group Creativity **Designing & Analyzing Processes** Suggestion Systems Five Ws

A technique for evaluating a small range of options by **comparing** them against each other



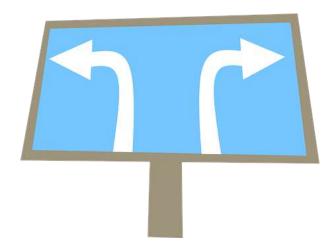
A useful tool for analyzing the relative importance of different options to determine which is the most appropriate to select



Uses . . .

To select the alternative that will be the most effective

To choose the most compelling **problem** to solve



When to Use?

When alternatives are completely different

When comparing different subjective options

Where there is little objective data to base our decision on



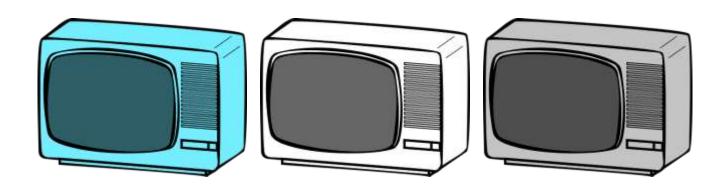






Examples of Use

Selecting the product idea or **concept design** for a new product before it goes into production



Examples of Use

Deciding which skills, qualifications and experience are essential when hiring people for a new role



The Paired Comparison Matrix

	Option A	Option B	Option C	Option D
Option A		A vs. B		
Option B				
Option C				
Option D				

The matrix will ensure that each comparison is made only once to avoid duplicating a comparison

It is also not allowed to compare an option with itself

The Paired Comparison Matrix

	Option A	Option B	Option C	Option D
Option A				
Option B				
Option C				
Option D				
Count				
Rank				

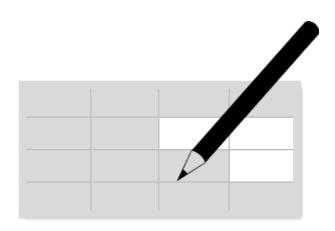
The highest ranking alternative is not necessary the most important

It provides however a basis for further thoughts and discussion

How to Implement a Paired Comparison Analysis

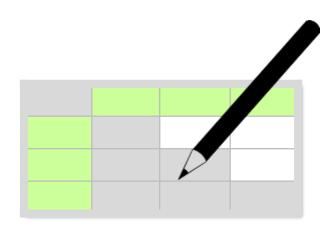
Identify the alternatives to be evaluated

Identify the **evaluation criteria** (e.g. the most important or the easiest to implement)



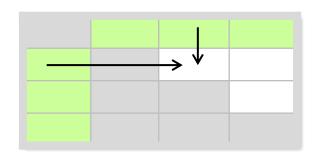
How to Implement a Paired Comparison Analysis

List all alternatives on the left hand column and on the top row of the matrix



How to Implement a Paired Comparison Analysis

In each blank cell, **compare** the option in the row with the option in the column, then write in the cell the option that better meets the evaluation criteria



How to Implement a Paired Comparison Analysis

Count the number of times each option has been chosen

Rank the options based on their count

Consider the options with the highest ranking

Count		
Rank		

Example – How to spend your coming summer holidays:

	A: Write a book	B: Take a course		D: Long walks		
A: Write a book		В	С	D		
B: Take a course			С	В		
C: With family				С		
D: Long walks						
Count	0	2	3	1		
Rank	4	2	1	3		

Example – How to spend your coming summer holidays:

	A: Write a book	B: Take a course	C: With family	D: Long walks
A: Write a book		В,3	C,1	D,2
B: Take a course			C,1	B,1
C: With family				C,1
D: Long walks				
Count	0	2	3	1
Weight	0	4	3	2

You may give a weighted score to each comparison where: **0** means no difference, and **3** means major difference

8

Score

Rank

0

4

Example – Asking a team about their biggest motivators:

	А	В	С	D	Е	F	G	Н	- 1
A: Appreciation		Α	Α	Α	Α	Α	Α	Α	А
B: Achievement			С	В	В	В	G	В	В
C: Work condition				С	С	С	G	С	С
D: Power					D	D	G	D	1
E: Creativity						F	G	Е	1
F: Interest							G	F	1
G: Financial benefits								G	G
H: Relationship									1
I: Self development									
Count	8	5	6	3	1	2	7	0	4
Rank	1	4	3	6	8	7	2	9	5

Further Information

If it's a team exercise, the **selection of people** should be based on their knowledge of the subject matter



Further Information

Further solutions can be developed by mixing the positive aspects of a number of solutions

Use common sense, and manually adjust the results if necessary

