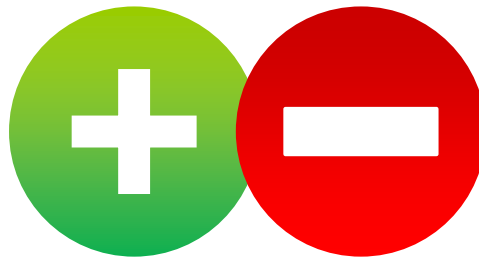


Continuous Improvement Toolkit

Pugh Matrix



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
Cause and Effect Matrix
Confidence Intervals
Probability Distributions
Graphical Analysis
Run Charts
Control Charts
Sampling
Brainstorming
Nominal Group Technique
Affinity Diagram
Lateral Thinking

Pugh Matrix

Planning & Project Management*

Importance-Urgency Mapping
Cost Benefit Analysis
SWOT
TPN Analysis
Prioritization Matrix
Paired Comparison
Pareto Analysis
Simulation
Mistake Proofing
Pull Systems
JIT
Ergonomics
Work Balancing
Automation
Bottleneck Analysis
Flow
Value Analysis
Waste Analysis
Time Value Map
Process Redesign
IDEF0
Value Stream Mapping
SIPOC
Flow Process Chart
Process Mapping
Service Blueprints

Tree Diagram**

Identifying & Implementing Solutions***

RACI Matrix
Stakeholder Analysis
PEST
PERT/CPM
Activity Diagram
Roadmaps
Project Charter
Gantt Chart
PDCA
Control Planning
Gap Analysis
Hoshin Kanri
Kaizen
How-How Diagram
Standard work
TPM
Visual Management
5S
SMED
Process Mapping

Understanding Performance

OEE
MSA
RTY
Descriptive Statistics
Cost of Quality
Reliability Analysis
Benchmarking
Focus groups
Photography
Observations
Data Collection

Understanding Cause & Effect

ANOVA
Design of Experiments
Regression
Multi-vari Charts
Relationship Mapping*
TRIZ***
SCAMPER***
Mind Mapping*
Attribute Analysis
Visioning

Creating Ideas**

Designing & Analyzing Processes

- Pugh Matrix

- ❑ A scoring method used to compare and select the best solution from an option set.
- ❑ It helps determine which potential solutions are of much value compared to others.
- ❑ It allow comparing different concepts, processes, products or services based on customer requirements, design parameters or project goals.
- ❑ **Benefits:**
 - It does not require a great amount of quantitative data.
 - Subjective opinions about one alternative versus another can be made more objective.



- Pugh Matrix

When to Use It?

- ❑ When making design decisions during the product development cycle.
- ❑ When designing or redesigning service processes to achieve faster, more convenient and more efficient performance.
- ❑ **It is also often used to rank:**
 - Investment decision.
 - Vendor selection.
 - Improvement project selection.
 - Etc.



- Pugh Matrix

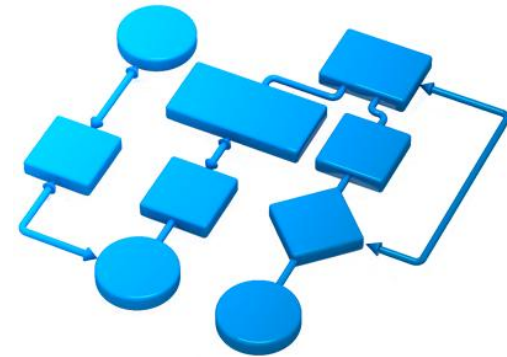
- ❑ **A basic Pugh Matrix consists of:**
 - A set of criteria options.
 - The alternative solutions under consideration.
- ❑ The more important the criteria, the higher the **weighting** it is given.
- ❑ **Solutions are evaluated against:**
 - The current solution that is already established.
 - A chosen standard or benchmark.
- ❑ The selection of the best solution is then made based on the consolidated scores.
- ❑ Further solutions can be developed by mixing the positive aspects of a number of solutions.

Solution/ Criteria	Weight	Current or Ref.	1	2
1				
2				
3				
4				
		Score		
		Rank		

- Pugh Matrix

How to Create a Pugh Matrix:

- ❑ Prepare the list of solutions and identify relevant criteria.
- ❑ Weight the criteria with your team.
- ❑ Select the baseline solution that will be used as a standard for comparison.
- ❑ Score each alternative solution against the baseline:
 - ‘+’ means better than baseline.
 - ‘-’ means worse than baseline.
 - ‘0’ means about the same.
- ❑ Notice the strongest solutions (the alternatives with the most pluses and the fewest minuses).
- ❑ Look for opportunities to combine the best aspects of different solutions.



- Pugh Matrix

Example – Concept Selection from Among Three Alternatives:

	Baseline	Alternative 1	Alternative 2	Alternative 3	Weight
Safe	0	-	-	0	1
Durable	0	+	0	-	1
Weight	0	-	-	+	1
Easy to Assemble	0	+	0	-	1
Reliable	0	-	-	-	1
Cost	0	+	0	+	1
Net Score		0	-3	-1	
Rank		1	4	3	
Continue?		Yes	No	No	