Notes:

Pugh Matrix

Key Learning Points

1. Describe the importance of a Pugh Matrix.
2. Explain how to develop a Pugh Matrix.
3. Utilize Pugh Matrices in improvement projects.

What is a Pugh Matrix?

The Pugh Matrix is a useful tool for comparing several alternative concepts against a baseline. It is a tool used to facilitate a disciplined, team-based process for concept generation and selection. Several concepts are evaluated according to their strengths and weaknesses against a reference concept called the datum (base concept). The datum is the best current concept at each iteration of the matrix.

The Pugh Matrix encourages the comparison of several different concepts against a base concept, creating stronger concepts, and eliminating weaker ones until an optimal concept finally is reached. Also, the Pugh Matrix is useful because it does not require a great amount of quantitative data on the design concepts, which generally are not available at this point in the process.

Comparison

The Pugh Matrix compares different concepts against a baseline.

Alternatives

It creates strong alternative concepts from weaker concepts.

Decision

It helps a team arrive at an optimum concept that may be a hybrid or variant of the best of other concepts.

Pugh Matrix Example

Criteria-based Selection Matrix									
		Option							
Criteria	Weight	X4: Strategy: Redistribute work load across staff	X4: Strategy: Separate out exceptions	X4: Strategy Physician Offices responsible obtain add-on auths		X1E: Assign patient calls based on language	X2/X3B: Personal policy manuals w/ mgmt electronic communications	X4C: Designated person works on special cases (add-on's)	X5G: Clinic must provide authorization for late add-on's
		Score	Score	Score		Score	Score	Score	Score
Affordable cost	5	3	0	0		5	5	0	0
Impact on the problem	9	3	3	9		1	5	3	9
Benefit and cost relationship	5	3	3	5		5	5	3	5
Cultural impact and resistance to change	1	9	0	9		-1	-3	0	-9
Implementation time	3	5	3	0		9	-1	3	0
Uncertainty about effectiveness	5	9	3	1		5	1	3	1
Health and safety*	1	0	0	0		0	0	0	0
Environment*	1	0	0	0		0	0	0	0
CTQ: A minimum of 24 hour notification of financial clearance to patient, responsibility and expectations.	9	3	5	9		3	0	5	9
CTQ: 100% correct insurance information a minimum of 24 hours prior to service.	9	0	0	3		0	0	0	3
CTQ: ≥90% of patients arrive with all required paperwork.	5	0	0	0		5	0	0	0
CTQ: Precert staff are competent in obtaining financially cleared visits	9	5	3	0		0	9	3	0
CTQ: 100% of C1200 staff have 90% or greater competency score in recognizing correct paperwork for financially cleared visits.	5	0	0	0		0	0	0	0
CTQ: 100% of registrars can determine 90% or better of financially cleared visits.	5	0	0	0		0	0	0	0
CTQ: Support for 100% of staff directly involved in the event a patient is not prepared.	3	0	0	0		0	0	0	0
Total	75	264	184	280	#3	216	233	184	280
		PURSUE	DROP	PURSUE		JDI	PURSUE	DROP*	PURSUE

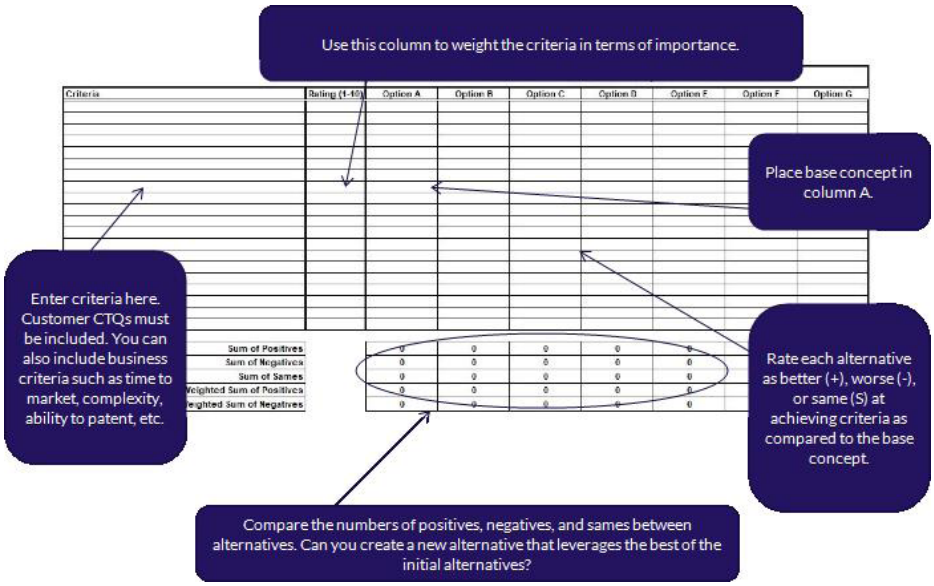
*Note: Health and safety, Environment were evaluated and found not to be relevant criteria for the selection process.

Pugh Matrix Template

		Alternative Concepts						
Criteria	Rating (1-10)	Option A	Option B	Option C	Option D	Option E	Option F	Option G
Sum of Positives		0	0	0	0	0	0	0
Sum of Negatives		0	0	0	0	0	0	0
Sum of Sames		0	0	0	0	0	0	0
Weighted Sum of Positives		0	0	0	0	0	0	0
Weighted Sum of Negatives		0	0	0	0	0	0	0

Notes:

Aspects of Pugh Matrix Template



Steps in Using a Pugh Matrix

1. Enter criteria you want to test into the criteria column. Use customer CTQs or business criteria such as time to market, complexity, ability to patent, etc.
2. Assign each criteria a rating between 1-10 based on it's importance.
3. Insert your baseline concept ranking factor. This can be a preferred option, or a system you already have in place. This is known as the "datum." Each criteria should get a zero.
4. Insert your alternative concepts into the remaining columns. Rate each alternative as better (+), worse (-), or same (S) at achieving criteria as compared to the base concept.
5. Compare the number of positives, negatives, and sames between alternatives. Can you create a new alternative that leverages the best of the initial alternatives?

When Should A Pugh Matrix Be Used?

A Pugh Matrix is generally used when evaluating alternative solutions or improvements against each other.

Pitfalls to Avoid

The Pugh matrix doesn't provide the solution and solve your problem, it is just a tool to help narrow down your possible choices.

Notes: