

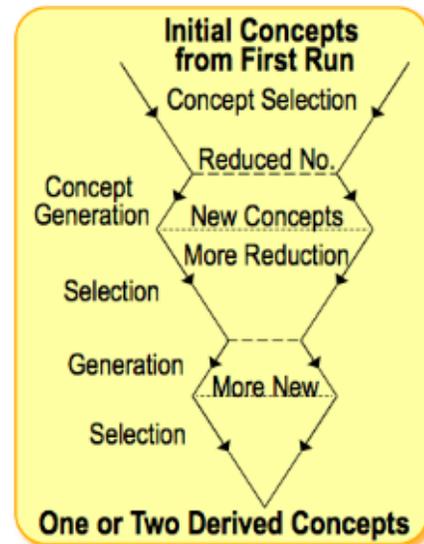
4 Concept Selection

After going through the concept generation process, you now have a long list of creative ideas. The question now is: how do you decide which ideas to pursue? This can be decided through external decision-making, e.g. by a manager or customer, or through team decision-making. The two team decision-making structure approaches we will cover are prototype & test and the Pugh concept selection.

Pugh Concept Selection

The Pugh concept selection method does not aim to select the best concept, but to develop the best concept. Most of the time, there is not one superior concept, but each with strengths and weaknesses. Thus, the Pugh concept selection combines and improves concepts by removing bad features and combining only the best ones.

The Pugh concept selection method aims to go from specification to concept. It emphasizes both convergent thinking and divergent thinking. Convergent by selecting among options and divergent by synthesizing new options.



When performing Pugh, it is best to work in teams and with a workspace that allows for lots of sketching and discussion. While there should be at least three concepts to compare amongst, they do not always have to be variants of the same concept. Pugh can be used to compare completely different concepts on their appropriateness as a project.

Design Selection

This section outlines how to execute the Pugh Concept Selection. Firstly, prepare the selection matrix with design concepts on the top row

- Prepare selection matrix with design concepts (top row) and criteria (leftmost column)
- Select the datum, the “best” concept, the concept to beat. Could be a competitors’
- Rate each concept against the selection criteria relative to the neutral
- Use the key
 - 0 = Same
 - + = Better
 - - = Worse
 - Search for info from external source (spec sheets), ask an expert
 - Build a prototype and test!
- Rank concepts
- Combine and improve concepts
- Select one or more
- Reflect on results and process

SELECTION CRITERIA	CONCEPT VARIANTS							REF.
	A	B	C	D	E	F	G	
Ease of Handling	0	0	-	0	0	-	-	0
Ease of Use	0	-	-	0	0	+	0	0
Number Readability	0	0	+	0	+	0	+	0
Dose Metering	+	+	+	+	+	0	+	0
Load Handling	0	0	0	0	0	+	0	0
Manufacturing Ease	+	-	-	0	0	-	0	0
Portability	+	+	-	-	0	-	-	0
PLUSES	3	2	2	1	2	2	2	
SAMES	4	3	1	5	5	2	3	
MINUSES	0	2	4	1	0	3	2	
NET	3	0	-2	0	2	-1	0	
RANK	1	3	7	5	2	6	4	
CONTINUE?	Yes	Yes	No	No	Yes	No	Yes	

Figure 1 - Example of a Pugh Selection Matrix

Determining Criteria

- Customer/need related
 - Based on related
 - Often qualitative: “A travel mug that is comfortable to hold”
- Technical/performance related
 - Often quantitative: “A travel mug that can keep coffee at 155 degrees for 10 min”
- Process/enterprise related
 - Low manufacturing cost
 - Short time to market
 - Time/cost of development

Activity:

Sophia just purchased a new iPad and wants to carry it around campus all day. She would like it to be protected by a new iPad cover. She also uses her iPad to watch videos, take notes in class amongst other uses. She does not want to spend a lot of money but wants the case to look good and last.

In groups, decide which of 3 concepts to pursue.

Choose amongst: [smart cover](#), [with keyboard](#), [folio case](#)

View example [here](#)