

CONCEPT GENERATION PROCESSES ASSIGNMENT

Your Initials: _____ ID No: _____ Team: _____ Date: _____

Purpose

The *concept generation* design phase identifies and communicates a preferred solution concept to satisfy the requirements (project objectives and specification targets) defined previously. The resulting “product” from this phase is a preliminary concept communicated to stakeholders in a form (physical, analytical, graphical, descriptive) that demonstrates how project requirements will be achieved. The purpose of this exercise is to strengthen your *concept generation processes* so they produce the solution concept of greatest value to stakeholders.

In this exercise, you will review your team’s processes for the *concept generation* phase of the design process. You will then assess your performance and identify steps to improve your effectiveness in the *concept generation* phase.

Effectiveness of Concept Generation Processes

In the table below, please rate how **effectively** your team **implemented** or is **currently implementing** each of the listed processes. Use the following definitions for **effectiveness** ratings:

Not Applicable (NA): Process not yet begun

Low Effectiveness (L): Poorly defined process; very limited scope; results incomplete or of little value

Moderately Effective (M): Generally understood process; moderate scope; results partially complete and somewhat useful

Highly Effective (H): Well understood process; implemented broadly and competently; results credible and valued; process improved for greater effectiveness

For each of the four *concept generation* processes listed, identify the **effectiveness** level that best describes your team’s execution of the process to date.

Process	Process Definition / Typical Content	Effectiveness			
		NA	L	M	H
Decomposing Functions	• Decomposing major functions (of desired solution) into simpler sub-functions				
Generating Concept Ideas	• Generating many and varied concept ideas through various methods (brainstorming, literature searches, etc.)				
Evaluating Potential Concepts	• Evaluating potential concepts against design requirements and competing concepts (decision matrix, etc.)				
Synthesizing Final Concept	• Synthesizing and improving selected concept components to meet overall requirements				

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Effective Concept Generation Process

From the list below, identify which of the *concept generation* processes has been implemented **most effectively** by your team (choose one).

- Decomposing functions
- Evaluating potential concepts
- Generating concept ideas
- Synthesizing final concept

For the selected process, explain what your team did and what impacts it is having on your concept generation and selection. In 200 to 300 words, describe your process in ways that demonstrate your understanding of the process and how it has been used effectively. Provide:

- (a) Details of **what you did** (what was done, with whom, and how)
- (b) Specific **impacts** of your process on producing a high quality selected concept.

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Underdeveloped Concept Generation Process

From the list below, identify which of the *concept generation* processes has been **most underdeveloped** by your team (choose one).

- Decomposing functions
- Evaluating potential concepts
- Generating concept ideas
- Synthesizing final concept

For the selected process, explain what your team needs to further develop and how you would achieve the desired level of development. In 200 to 300 words, describe your process in ways that demonstrate your understanding of the process and how to make it highly effective. Describe:

- (a) Details of **what is underdeveloped** (and its impacts on your concept generation)
- (b) Specific **action plan** to make your process effective in producing a high quality selected concept