Design - Ideation

“The mere formulation of a problem is far more often essential than its solution, which may be merely a matter of mathematical or experimental skill”
Albert Einstein
The Design Process

**Ideation**
- Problem or Opportunity
- Discovery
- Interpretation
- Ideation
- Experimentation

**Evolution**

**Traditional Design**
- Client Statement
- Problem Definition
- Conceptual Design
- Preliminary Design
- Detailed Design
- Design Communication

**Final Design**
Today’s Objective

- Timeline and milestones
- Task Assignments
Atomize
(“Game Storming,” Gray, Brown, Macanufo)

Breaking the larger system into its components
1. Name the system at the top
2. Split the main system into components
3. For each item, repeat the splitting process
The 4C’s
(“Game Storming,” Gray, Brown, Macanufo)
Six Hats
(“Six Thinking Hats,” Edward De Bono)

The White Hat calls for information known or needed. "The facts, just the facts."

The Yellow Hat symbolizes brightness and optimism. Under this hat you explore the positives and probe for value and benefit.

The Black Hat is judgment - the devil’s advocate or why something may not work. Spot the difficulties and dangers; where things might go wrong. Probably the most powerful and useful of the Hats but a problem if overused.

The Red Hat signifies feelings, hunches and intuition. When using this hat you can express emotions and feelings and share fears, likes, dislikes, loves, and hates.

The Green Hat focuses on creativity: the possibilities, alternatives, and new ideas. It’s an opportunity to express new concepts and new perceptions.

The Blue Hat is used to manage the thinking process. It’s the control mechanism that ensures the Six Thinking Hats® guidelines are observed.
Method for Generating Provocation
(De Bono, Weaver)

**Escape:** Pick something we take for granted and drop that

**Reversal:** Take a normal relationship and reverse it

**Distortion:** Make a change to the normal sequence or change a relationship

**Exaggeration:** Exaggerate any one aspect (or dimension) of an initial statement making it somewhat unreasonable

**Wishful thinking:** Make a statement in the form wouldn’t it be nice if “...”
Method for Generating Movement
(De Bono, Weaver)

**Extract a principle:** Extract a principle, concept, feature, or aspect of the PO, then ignore the rest of the PO and work only with what you’ve extracted to generate ideas.

**Focus on the Difference:** Compare the provocation with the existing situation, identify the key differences, and pursue them.

**Moment to Moment:** Visualize the PO being put into effect moment to moment.

**Positive Aspects:** Look directly for any benefits or positive aspects.

**Circumstances:** Identify the circumstances under which the PO would have a direct value.
Method for Generating Provocation
(De Bono, Weaver)

Original Problem Statement:

<table>
<thead>
<tr>
<th>Method of generating PO</th>
<th>Resulting PO</th>
<th>Method of Generating Movement</th>
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<td>Extract a Principle</td>
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<td>Wishful Thinking</td>
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ThinkPack
(Michalko)

Substitute Something
Combine it with something else
Adapt something to it
Modify or Magnify it
Put it to some other use
Eliminate Something
Reverse or Rearrange it
<table>
<thead>
<tr>
<th>Who</th>
<th>What</th>
<th>Tasks</th>
<th>When</th>
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