Modular Course B: Creative Design in shoe Industry

Unit B1 – Creative Design

Lecture LB1.3 – Concept Development Methods

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T2.2 – Development of modular courses and training material.

D2.2 – Modular Course in Creative Design

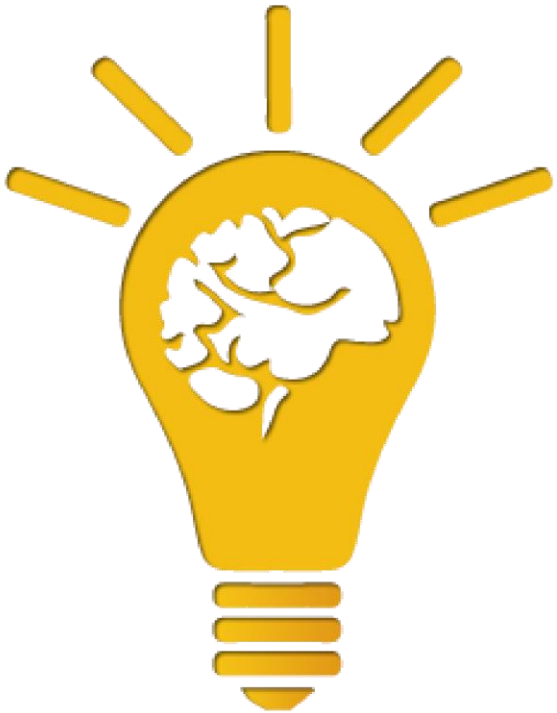
1.1 Contents

- Advantages of ideation methods
- Ideation methods
- Basic guidelines for ideation
- Classical brainstorming (+ steps) for concept development
- 6-3-5 / C-sketch (+ steps, examples, exercise)
- Prototyping (+ parallel prototypes, why they matter)

1.2. Introduction to Ideation in Creative Design

Why Ideation Matters in Creative Design

- Problem-solving in design starts with ideas
- Quantity leads to quality
- Methods help break fixation and spark novelty
- In footwear & leather – speed and trends demand rapid concept generation



1.3. Ideation Methods

- **Human beings have an innate ability for problem solving by synthesis and analogy**
  - **Synthesis – combining existing parts into novel combinations (creativity)**
  - **Analogy – illustration or extraction of an idea by means of another familiar idea that is similar or parallel to it in some significant features**
- **Most system design is a synthesis/analogy from knowledge of physical principles and existing designs**

1.4. Advantages Of Ideation Methods

- **Amplify concept generation ability**
- **Guide the process towards desired results**
- **Diminish preconceived solutions (obstacles, since first ideas are rarely "best")**
- **Overcome "group think" and design fixation**

1.5. BASIC GUIDELINES FOR IDEATION

Applies to all idea ideation methods

- Suspended judgment of ideas
- Present all ideas, including the bad or silly ones
- Wild and crazy Ideas are good
- Build from others' ideas: Piggy Backing and Leap Frogging
- Strive for quality and quantity
- Review the problem at the beginning of the session; re-represent the problem especially in action

CLASSICAL BRAINSTORMING: WHAT IS IT?

- **Group based intuitive method**
- **Mode of Communication: Verbal – writing, speaking, listening**
- **Generating ideas through discussion and by building off of one another's**

Osborn, A.F. (1963) Applied imagination: Principles and procedures of creative problem solving (Third Revised Edition). New York, NY: Charles Scribner's Sons.

CLASSICAL BRAINSTORMING: BASIC STEPS

1. Select a facilitator and scribe
2. Review / Re-represent the problem ~10 minutes - (task clarification, CN's, specifications, etc.)
3. Rapid idea generation: facilitator uses categories of ideas to piggy-back and leap-frog
4. When ideas trickle, either stop or use idea generators
   (analogies, physical principles, etc.)

2.3 The Collaborative Sketch Method

- **Group based intuitive method**
- **Mode of Communication: Verbal and visual – writing, sketching, reading but NO TALKING!**
- **Graphical method for sharing and building on each other's ideas sequentially by rotating the ideas around a table**

Rohrbach, Bernd: "Kreativ nach Regeln – Methode 635, eine neue Technik zum Lösen von Problemen". Creative by rules - Method 635, a new technique for solving problems first published in the German sales magazine "Absatzwirtschaft", Volume 12, 1969. p73-75 and Volume 19, 1 October 1969.

Shah, J., Vargas-Hernandez, N., Summers, J.S., & Kulkarni, S. (2001). Collaborative sketching (C-Sketch)-An idea generation technique for engineering design. Journal of Creative Behavior, 35(3), 168-198

2.4 The Collaborative Sketch Method (Cont'd)

- **PURPOSE**
- **C-Sketch is a graphical, team based ideation technique for generating refined solutions to design problems and opportunities**

- **PROCESS**
- **The process centres on the concept of parallel sketching by each team member, and revision after passing**

- **UNDERLYING IDEAS**
- **Maximize performance, work in parallel Iterate to improve quality**

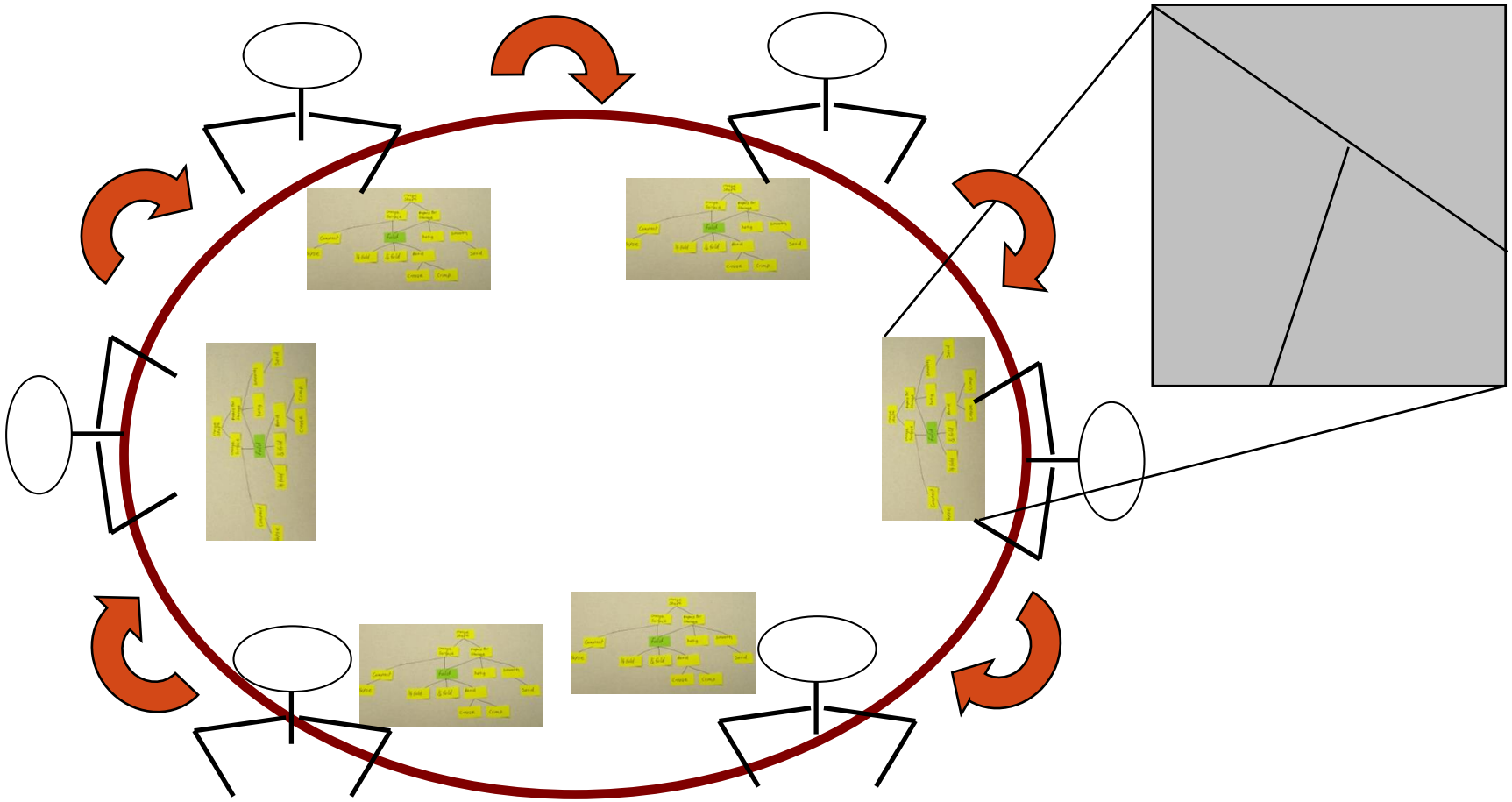
2.5 Collaborative Sketching: The Basic Steps

1. Form teams of 6 group members
2. Generate 3 ideas each (sketches & keywords) per paper (sub-round #1, 15 minutes)
3. Pass your sheet with 3 ideas to the right, add/synthesize/combine ideas to what you have been passed.
4. Complete 5 rounds of exchanging papers (5-10 min/exchange*6 people*5 round =2.5-5 hours for 5 rounds)

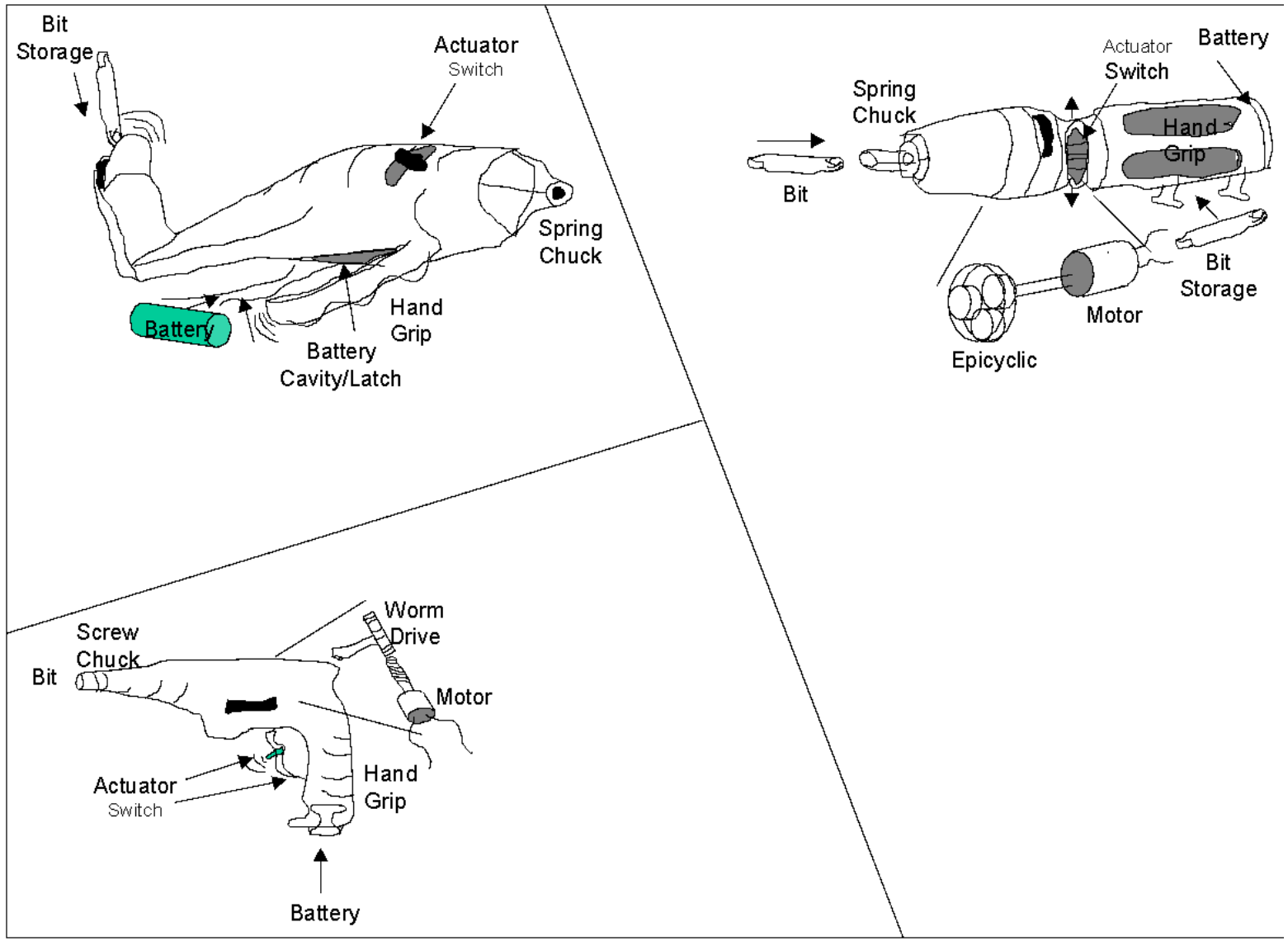
Guidelines

- Each rotation allows adding to and synthesizing (combining) ideas
- Avoid negative written comments
- No talking! (Emphasizes sketching)
- Sketches with brief keywords

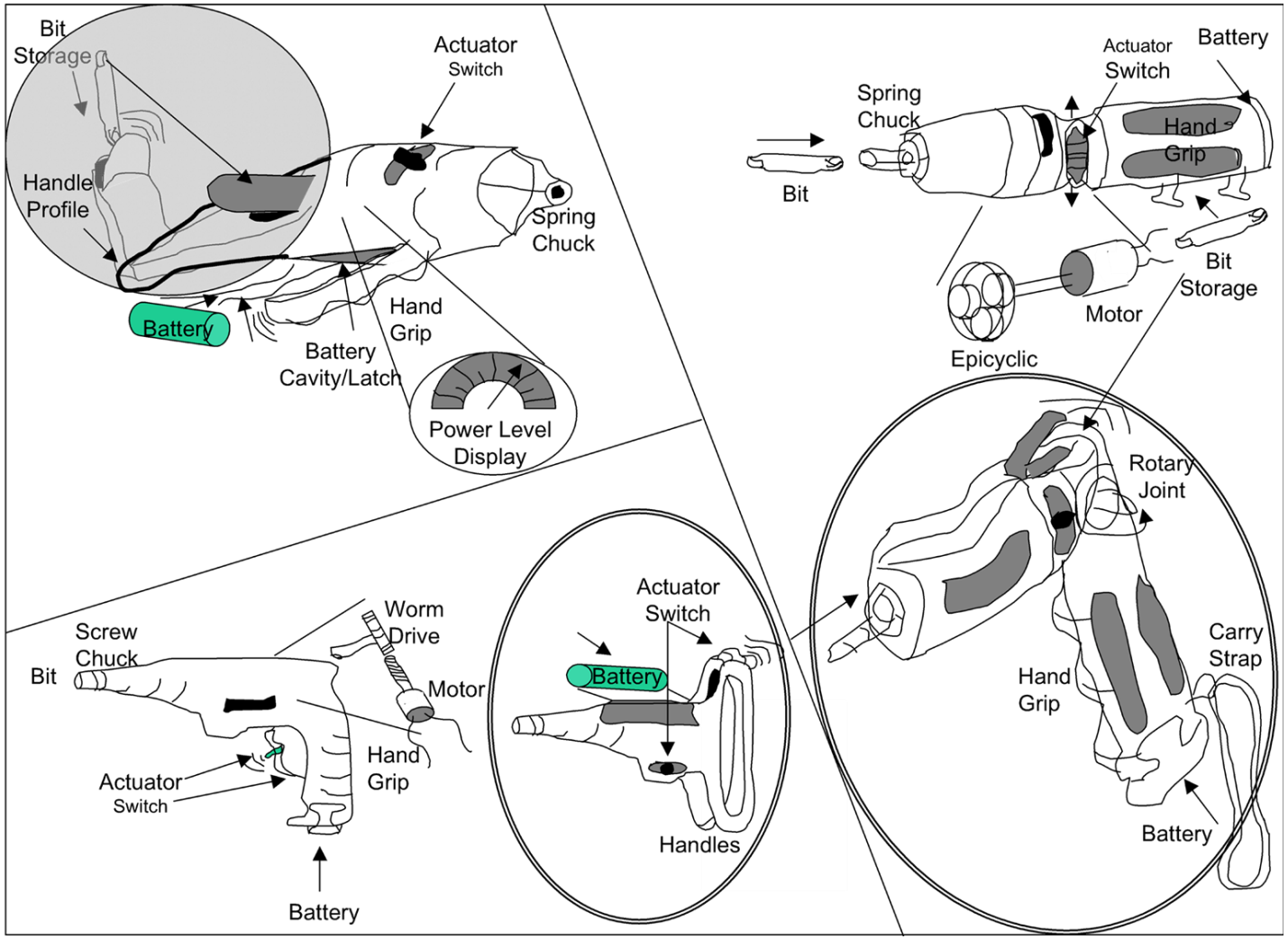
Collaborative Sketching: The Basic Steps



2.6 Collaborative Sketching Example – Round 1



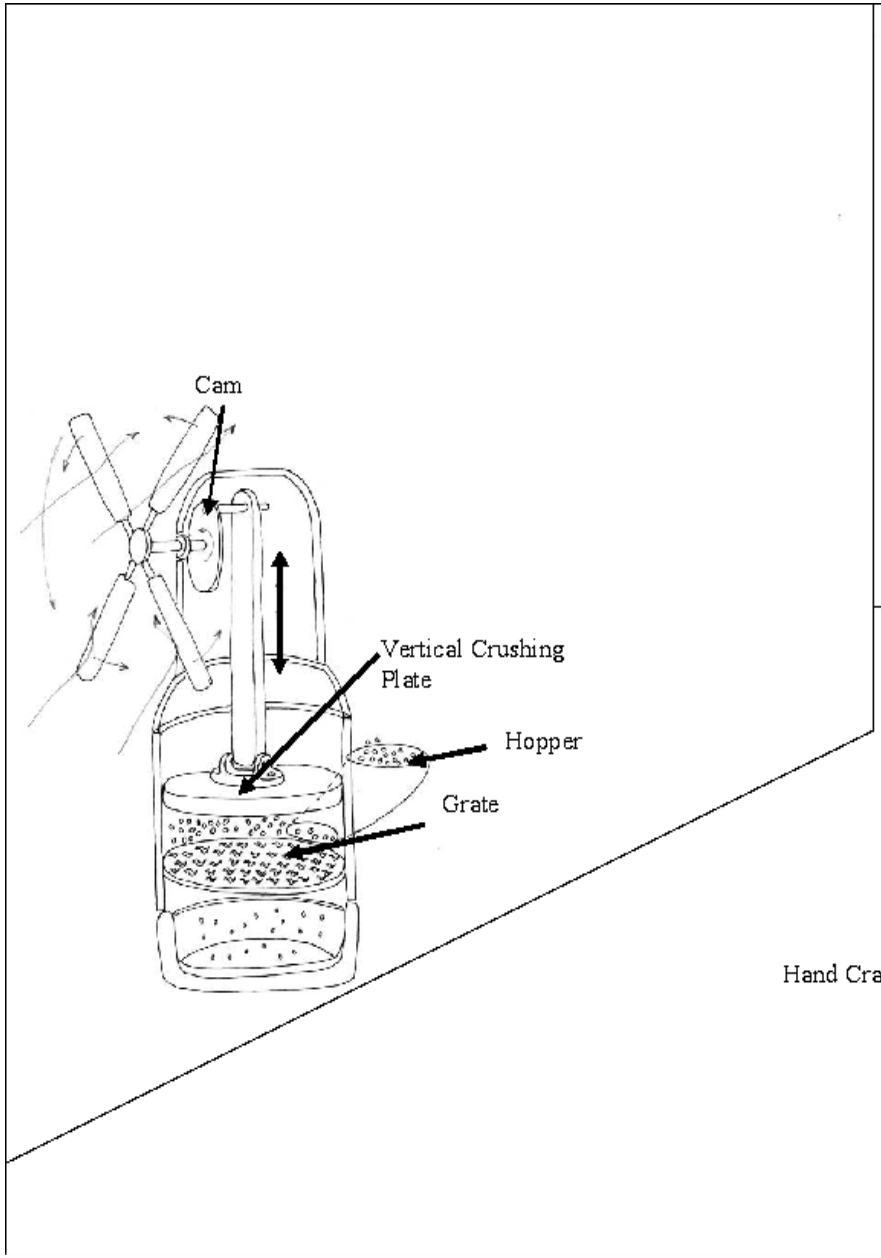
2.6 Collaborative Sketching Example – Round 2

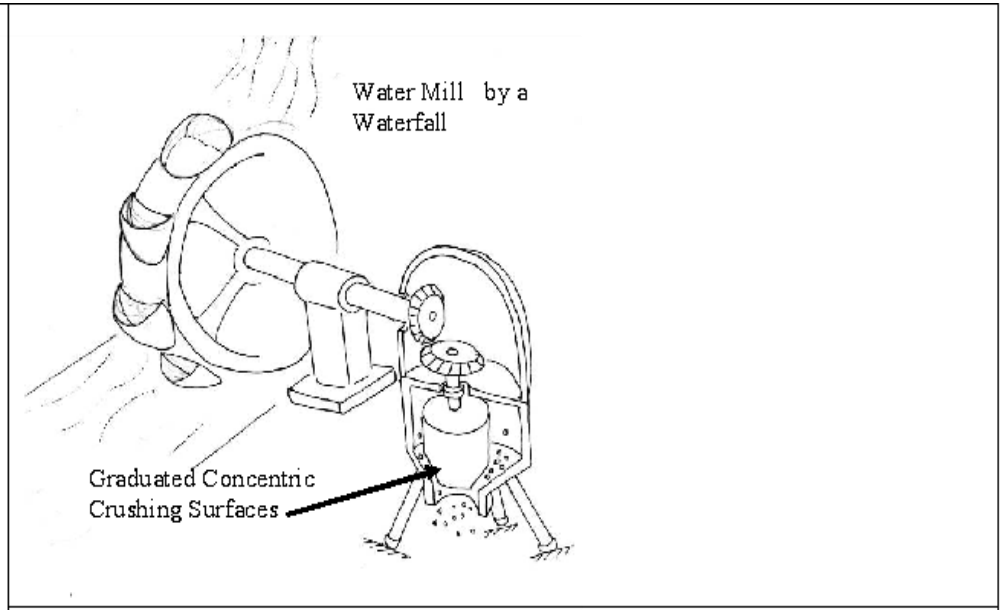


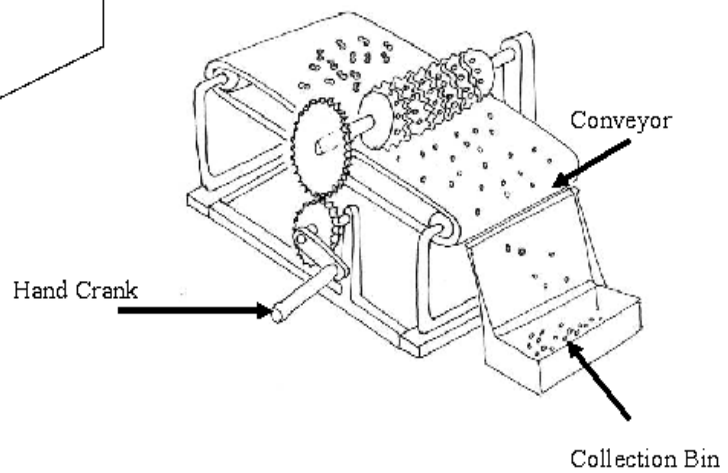
2.7 Collaborative Sketching Brief Example

Design Problem	**Design a device to quickly shell peanuts for use in places like Haiti and West African countries.**
Customer Needs	• **Low cost** • **Easy to manufacture** • **Quickly shelling of a large quantity of peanuts** • **Remove the shell with minimal damage to the peanuts**
Functions	• **Import energy** • **Break the shell** • **Separate the peanut from the shell**

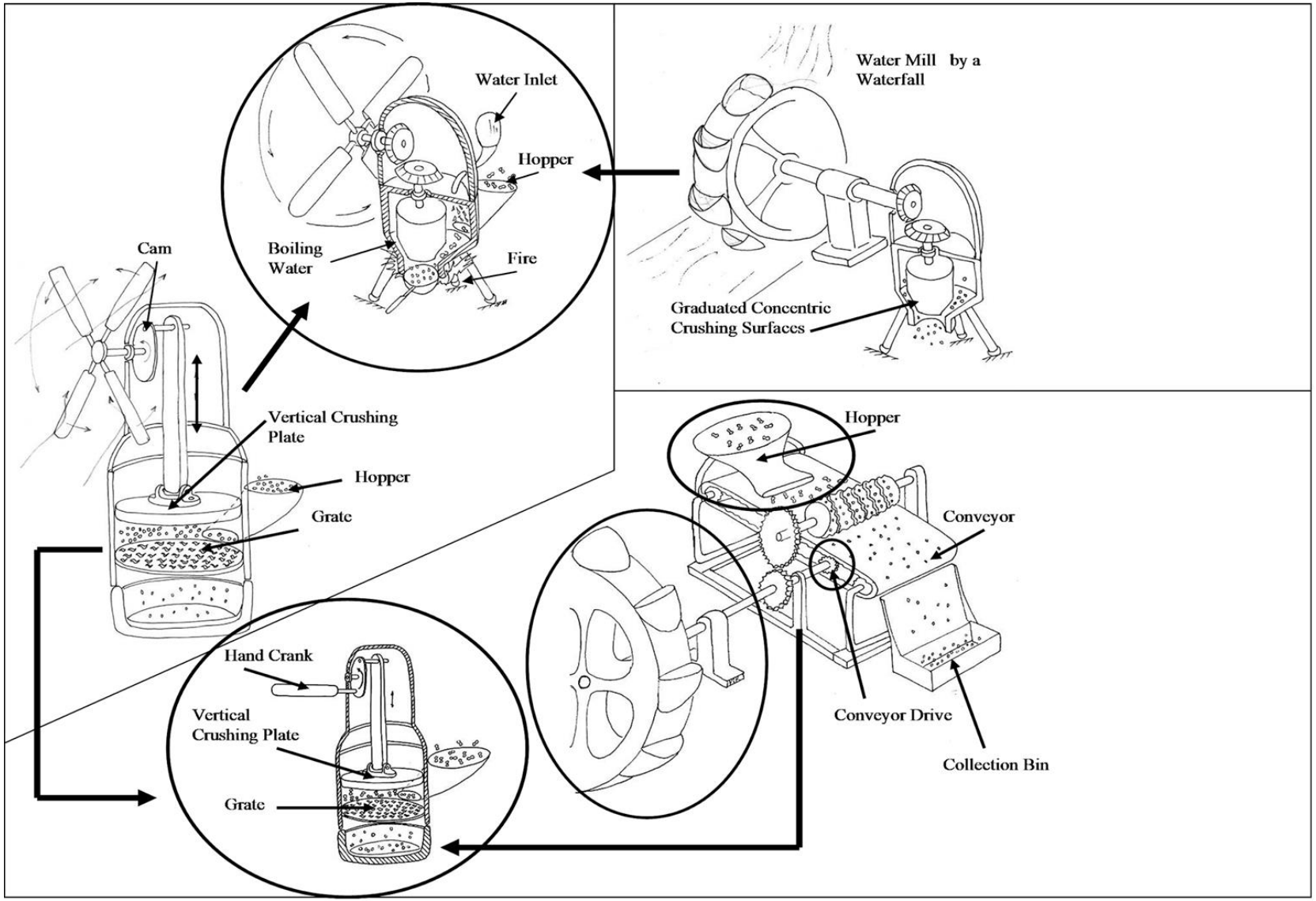
C-SKETCH BRIEF EXAMPLE– ROUND 1







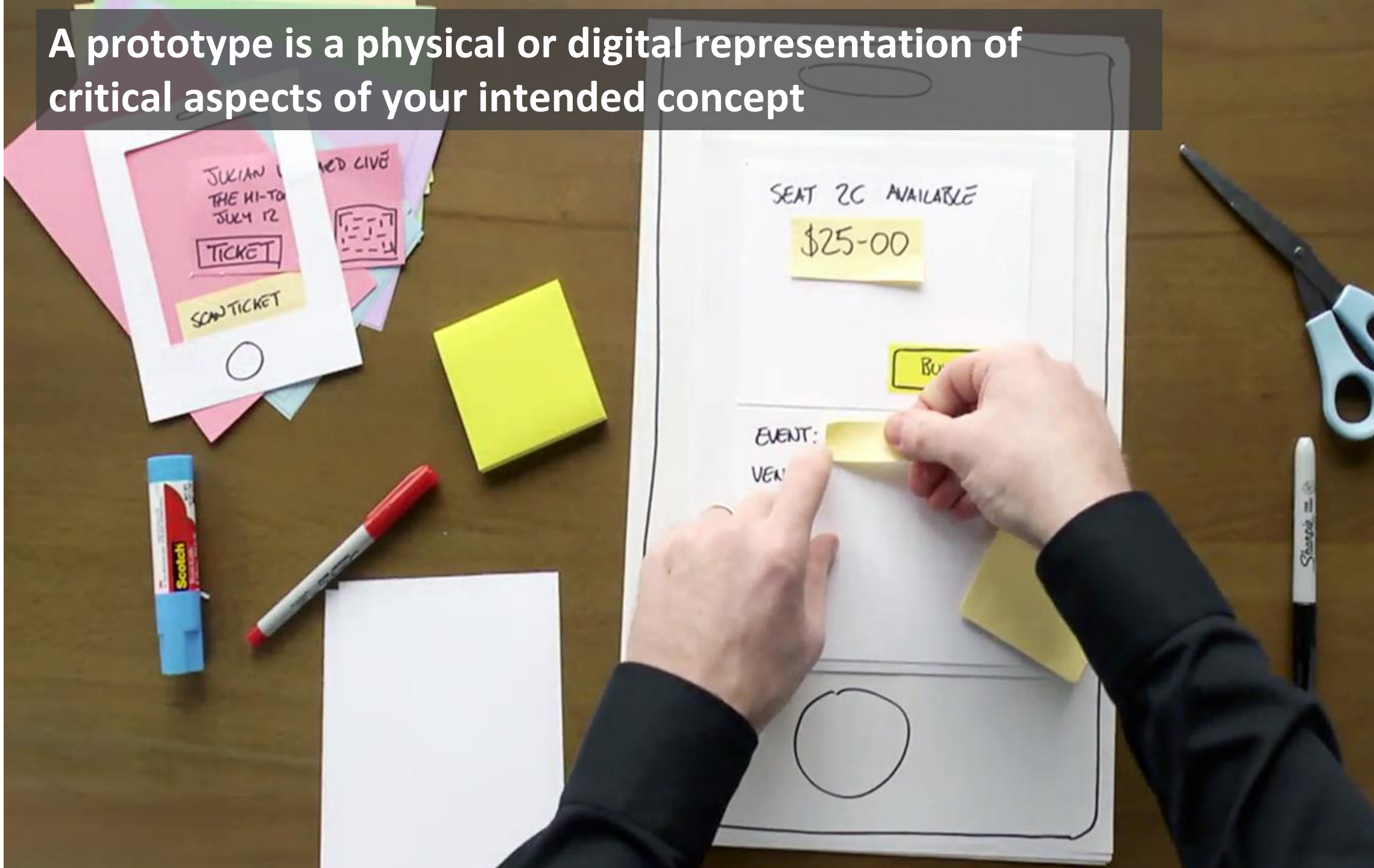
C-SKETCH BRIEF EXAMPLE– ROUND 2



2.8. Exercise: C-sketching Method

- **Using refined opportunity statements as well as your insights / foresights, individually sketch 3 ideas (10 minutes).**
- **Pass your paper to the person next to you and receive the paper from the person on the other side of you. Add / Alter / Augment / Enhance their sketches (5 minutes)**
- **Rotate the papers again (5 minutes)**
- **Get your original drawings back and discuss ideas as a group**

A prototype is a physical or digital representation of critical aspects of your intended concept



3.1 OBJECTIVES: CONCEPT REPRESENTATION

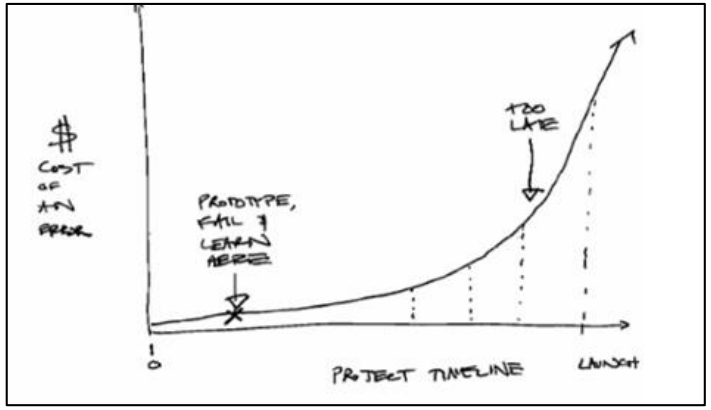
Design prototyping is the representation of concepts in any medium that permits feedback and testing- either quantitative or **qualitative**

Prototyping mindsets and best practices

Non-attachment *(iterate and evolve)*

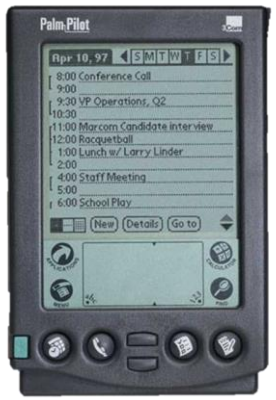
Find the quickest path to experience

Bias towards action – *MAKE!*

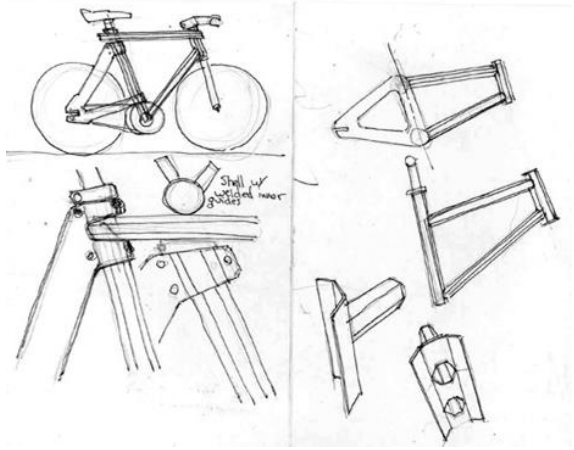


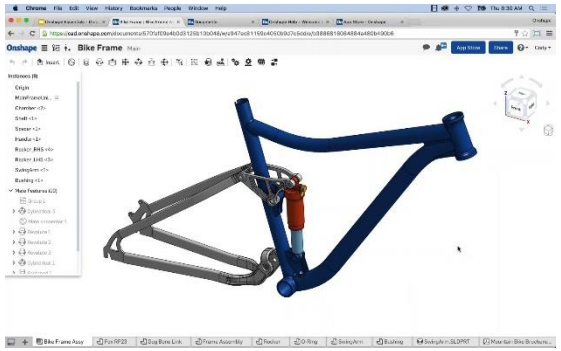
Reframe failure as learning

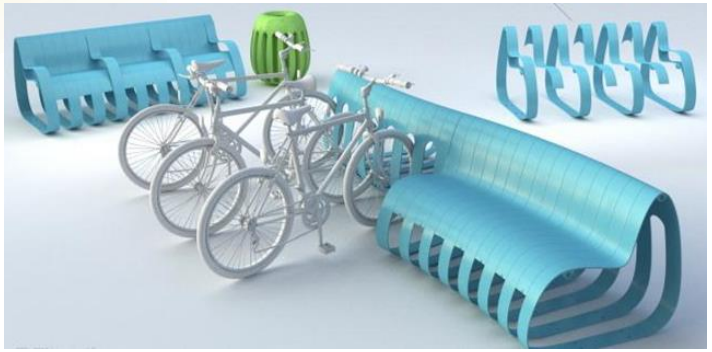
3.3 Guess the final product from these famous prototypes



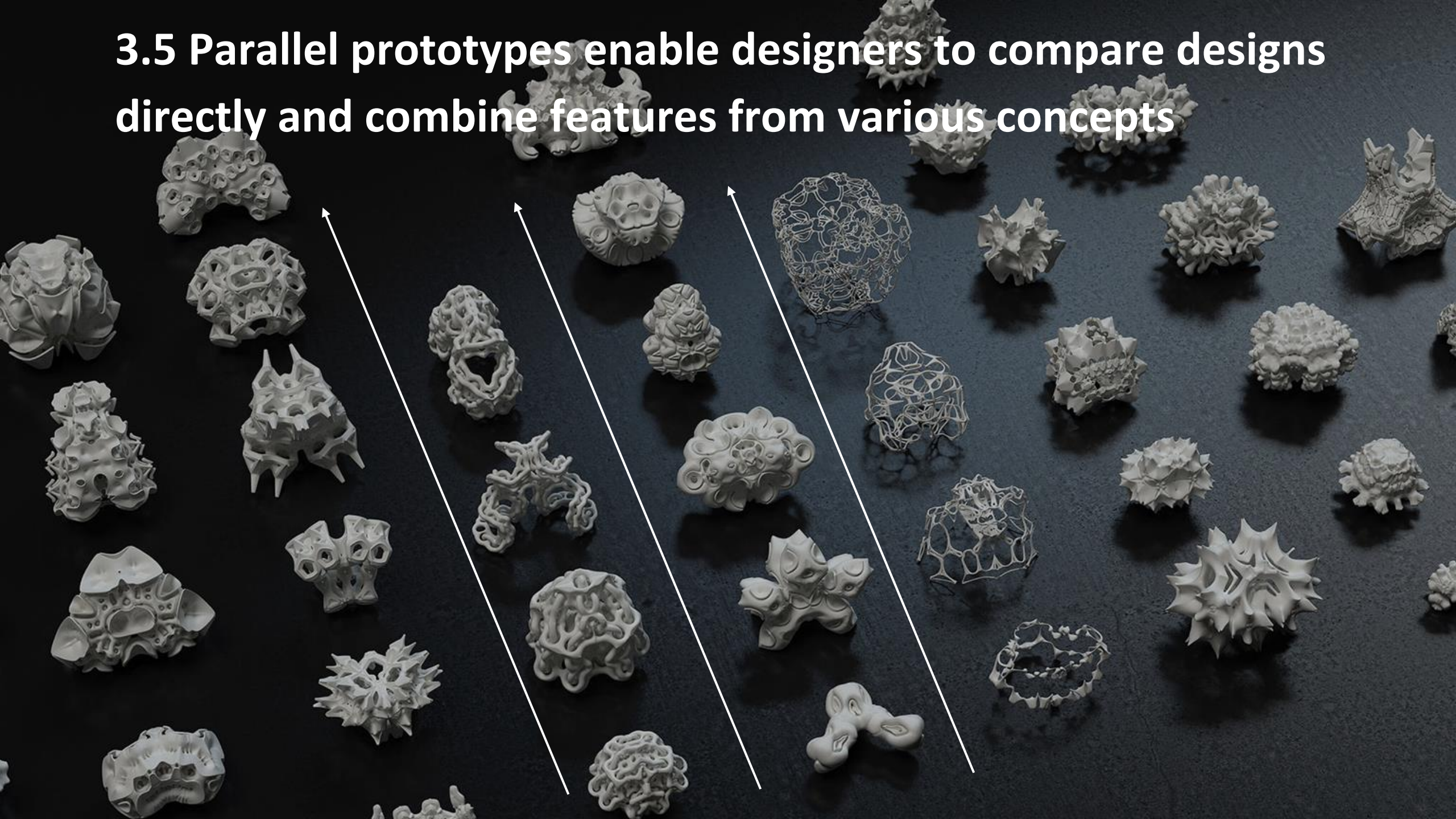
3.4 Prototypes can look very different. They are meant to answer questions and test assumptions.



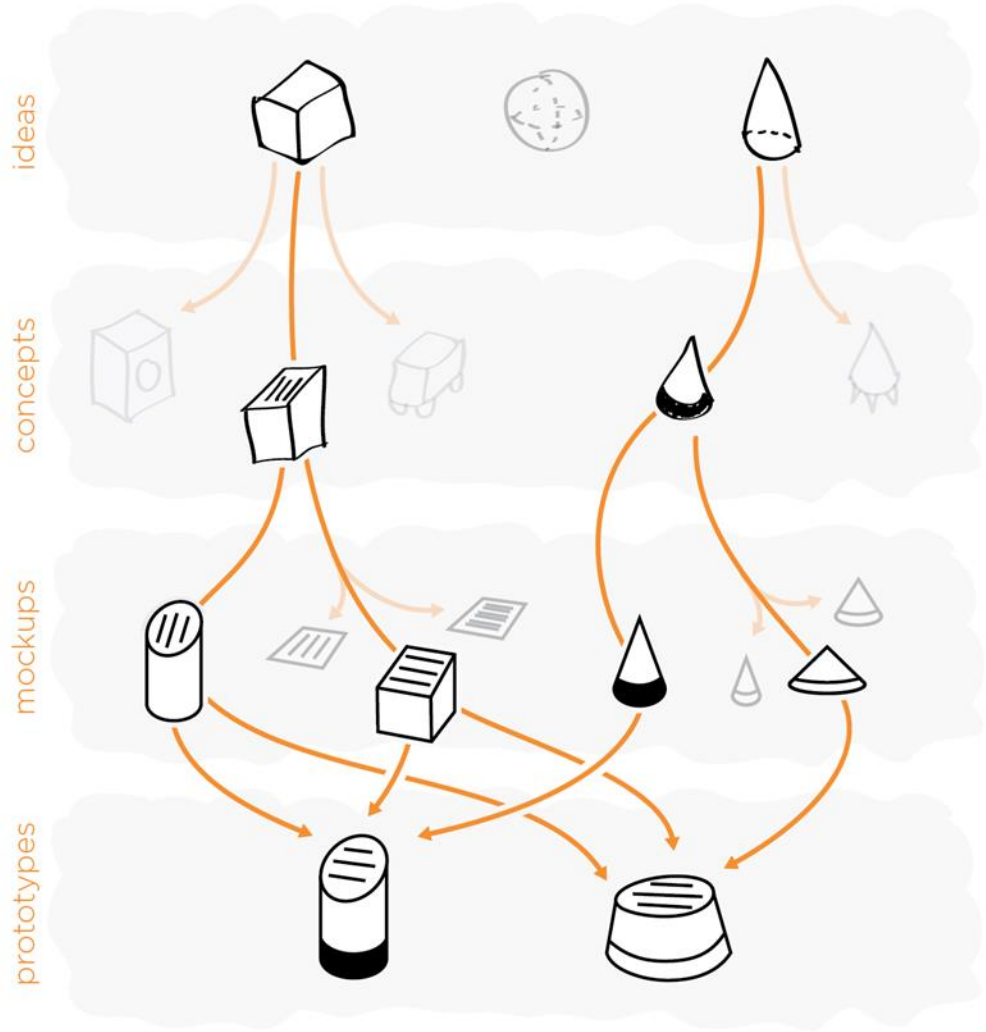




3.5 Parallel prototypes enable designers to compare designs directly and combine features from various concepts



3.6 Why Parallel prototype matters



- Groups using parallel prototypes → **better designs** than single-design teams
- Works with or without iteration **Comparative feedback** highlights strengths & weaknesses
- Encourages higher concept diversity
- Can increase **time pressure** (more concepts = more effort)

3.7 Use prototypes as tools to communicate the concept, learn about unknowns, and make informed decisions.

Communicate Learn Decide

4.1 Pitfalls in Concept Development

1. **Design Fixation – over-focusing on first ideas, limiting creativity**
2. **Groupthink – teams converging too quickly, ignoring alternatives**
3. **Over-complexity – trying to add too many features instead of focusing on core needs**
4. **Neglecting the user – forgetting customer needs in pursuit of novelty**
5. **Resource blind spots – ignoring time, budget, or material constraints**

4.2 Wrap-up / Key Takeaways

1. **Multiple methods expand creativity**
2. **Visual + Group methods overcome fixation**
3. **Prototyping = test early, fail fast, learn quickly**
4. **In footwear & leather → short cycles, trend-driven → methods must be fast + collaborative**