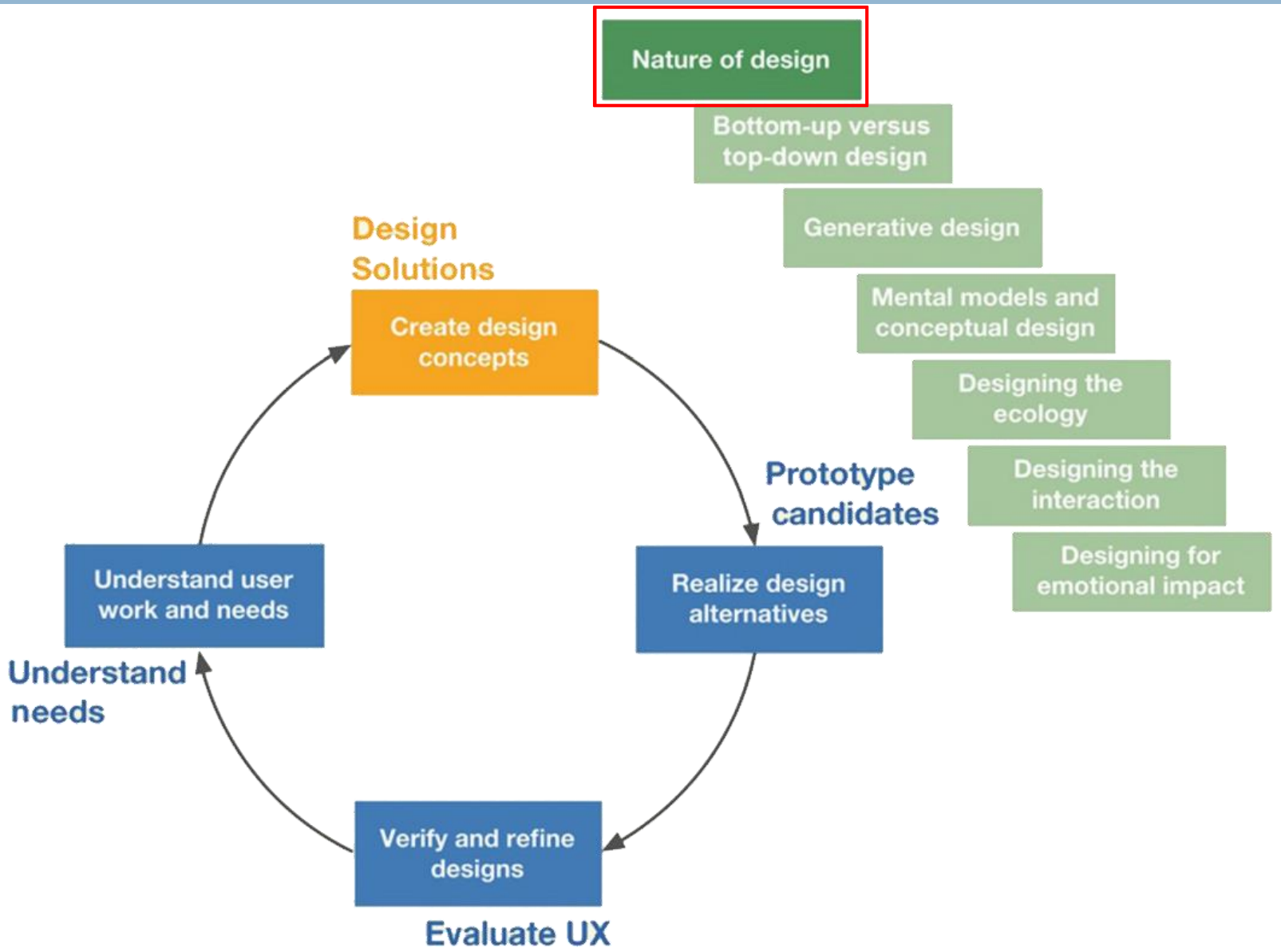
AGILE DEVELOPMENT AND UI/UX DESIGN

SUBJECT CODE: 3171610

UNIT - 4

THE NATURE OF UX DESIGN

Describing the nature of design within the Design Solutions lifecycle activity



The Interdisciplinary Nature of Design

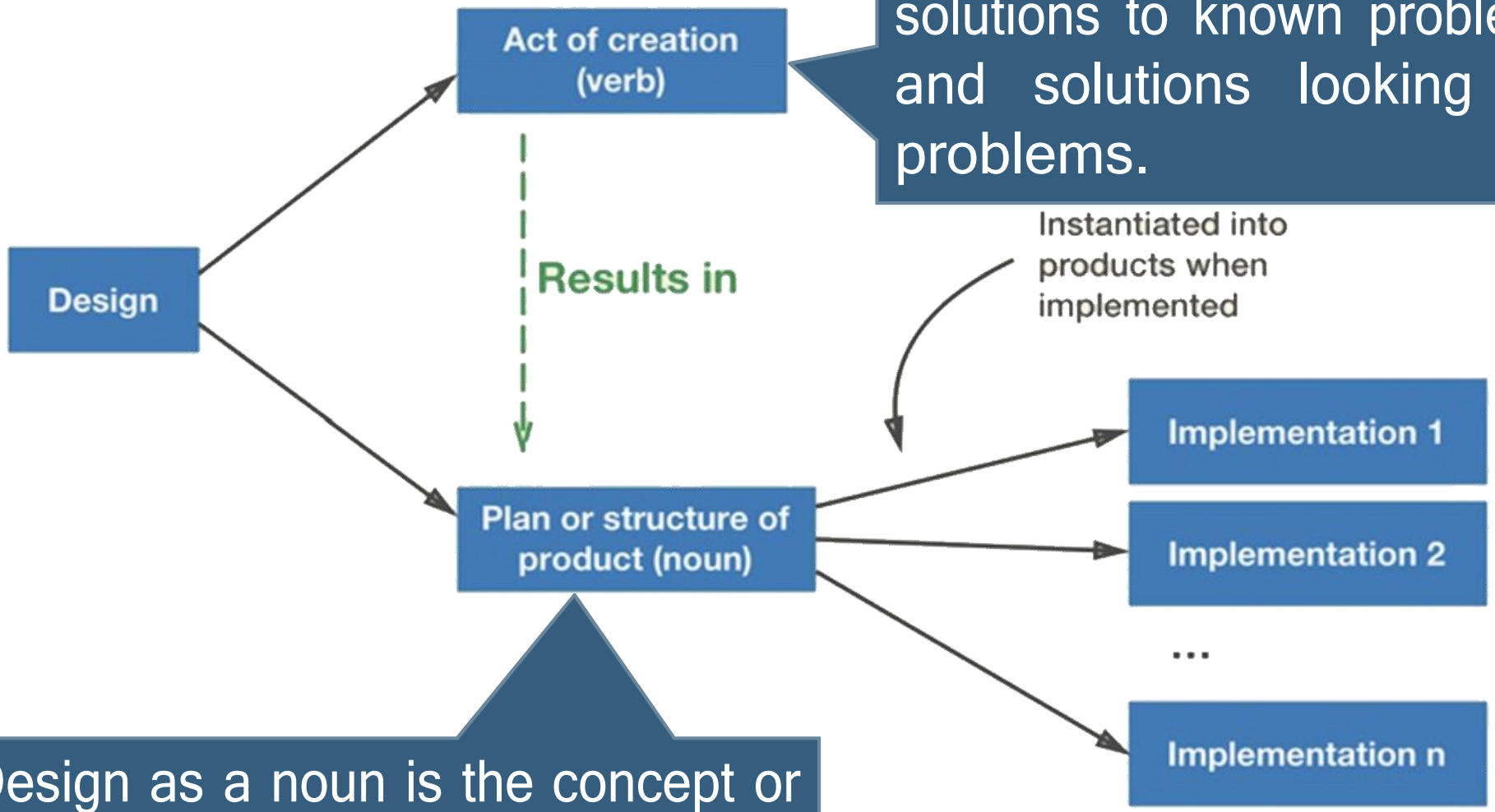
- We said that user experience “is the sum total of all the effects felt by the user from what the user sees, does, hears, and feels and all the behaviors of the artifact during contact and communication between them.”

The Interdisciplinary Nature of Design

- UX design teams have a wide variety of skills and backgrounds, including:
  - Expertise in problem solving, analysis, and reasoning.
  - Expertise in constraint solving and optimization.
  - Expertise in product development, including estimation, budgeting, and timelines.
  - Subject matter expertise in work domains and design platforms.
  - Design expertise in particular technologies.
  - Expertise in art, culture, liberal arts, and social sciences.

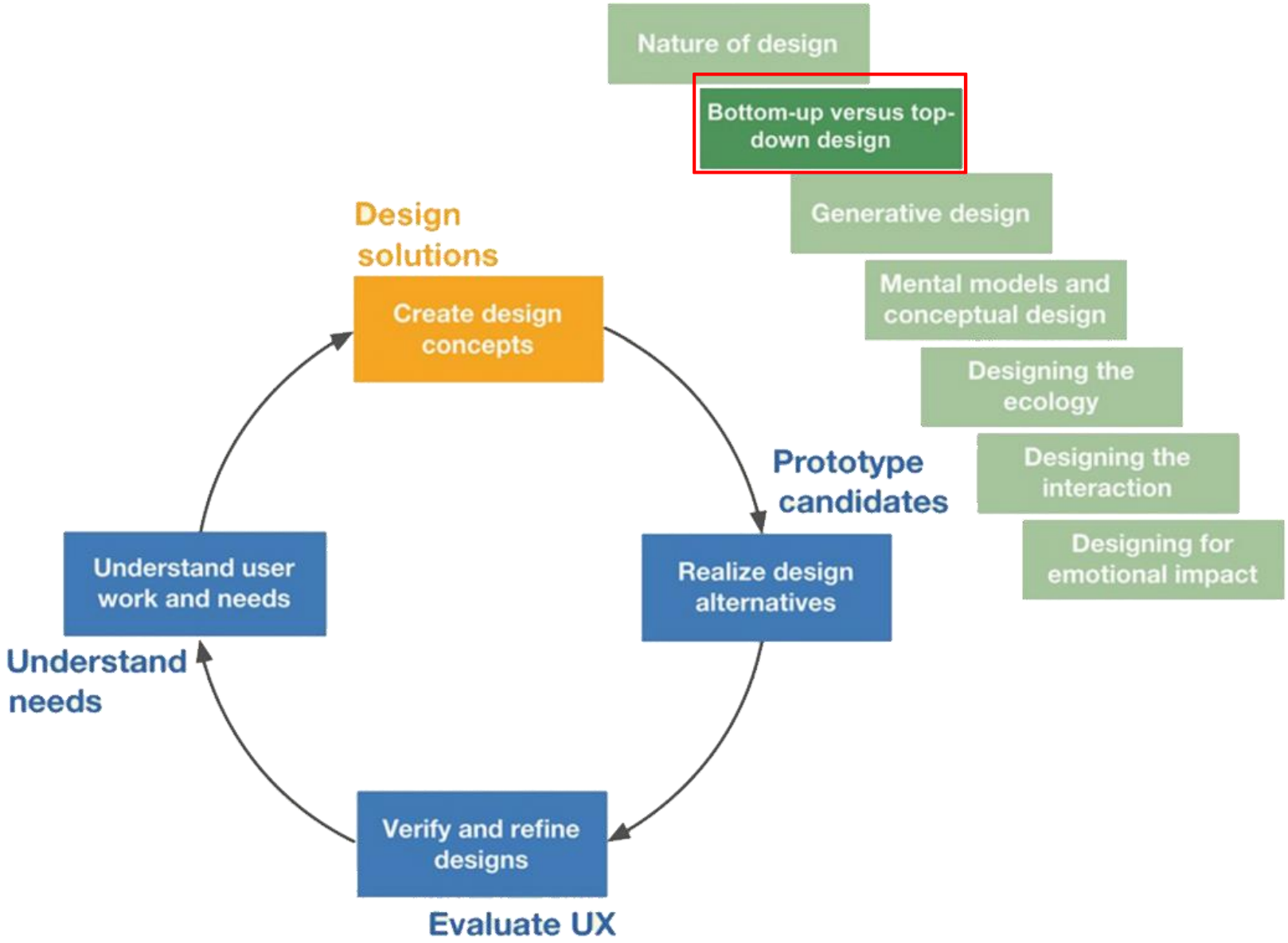
What is Design?

The act of creating something that did not exist before-solutions to known problems and solutions looking for problems.



Design as a noun is the concept or plan for a product or system.

Bottom-Up Versus Top-Down Design



Bottom-Up Design

- Bottom-up design is an approach to design that starts with the details known about the work domain, work practice, and how a product or system is being used and will be used. The design is then built up in a way that will support this known usage behavior
- Bottom-Up Design is Less Likely to Lead to Innovative Possibilities

Top-Down Design

- In top-down UX design creation, the goal is to create the best design solution that enhances and supports the fundamental nature of work irrespective of current practices, preferences, traditions, or constraints. The primary driver in the top-down approach to design is the designer and the designer's knowledge, skills, experience, and intuition

Bottom-Up Versus Top-Down Design

- Example: Voting in a Democracy
  - Imagine a business brief to design a voting booth for the state of Virginia in the United States. The state is in the process of updating their systems and is interested in going digital with touchscreen voting booths. This is a typical design brief where a client asks for a solution to support or solve specific problems facing a known practice.

Bottom-Up Versus Top-Down Design

- ***The bottom-up approach: Designing for the existing work practice.*** In a bottom-up approach, we would conduct usage research studies of voting with election booths to understand the current voting work practice in Virginia. We create work activity affinity diagrams, flow models, and other models to describe:
- Prevoting preparation:
  - How citizens register to vote.
  - How they find the nearest voting stations.
  - What they need when they show up at the voting stations.

Bottom-Up Versus Top-Down Design

- The onsite configuration:
  - How voting booths are set up.
  - How voters interact with the booths.
- The workflow of voting:
  - Voter identification.
  - Checking voters off the rolls.
  - Guiding voters to the appropriate booths.
- Postvoting follow-up:
  - Counting ballots.
  - Combining tallies from all sites.
  - Announcing winners.

Bottom-Up Versus Top-Down Design

- The design activity focuses on specifics of this particular work practice:
  - Physical design of the voting booth.
  - Clear labels on the touchscreen, accessibility issues with the booth, color contrasts and other sensory issues, ergonomics of the booth, error avoidance and recovery in case of user mistakes during voting, materials for the booth, etc.
  - Making sure it all fits with the already established ecology.

Bottom-Up Versus Top-Down Design

- The top-down approach. Using a top-down approach based on an abstract work activity, we would:
  - Focus on designing the best way to get eligible users to elect someone from a list of candidates.
  - Bring into consideration all ways, including voting booths, to make this work happen.
  - Consider a smartphone app or a website to vote from the comfort of the home?
  - Or a 1-800 number where citizens can call and cast their votes?

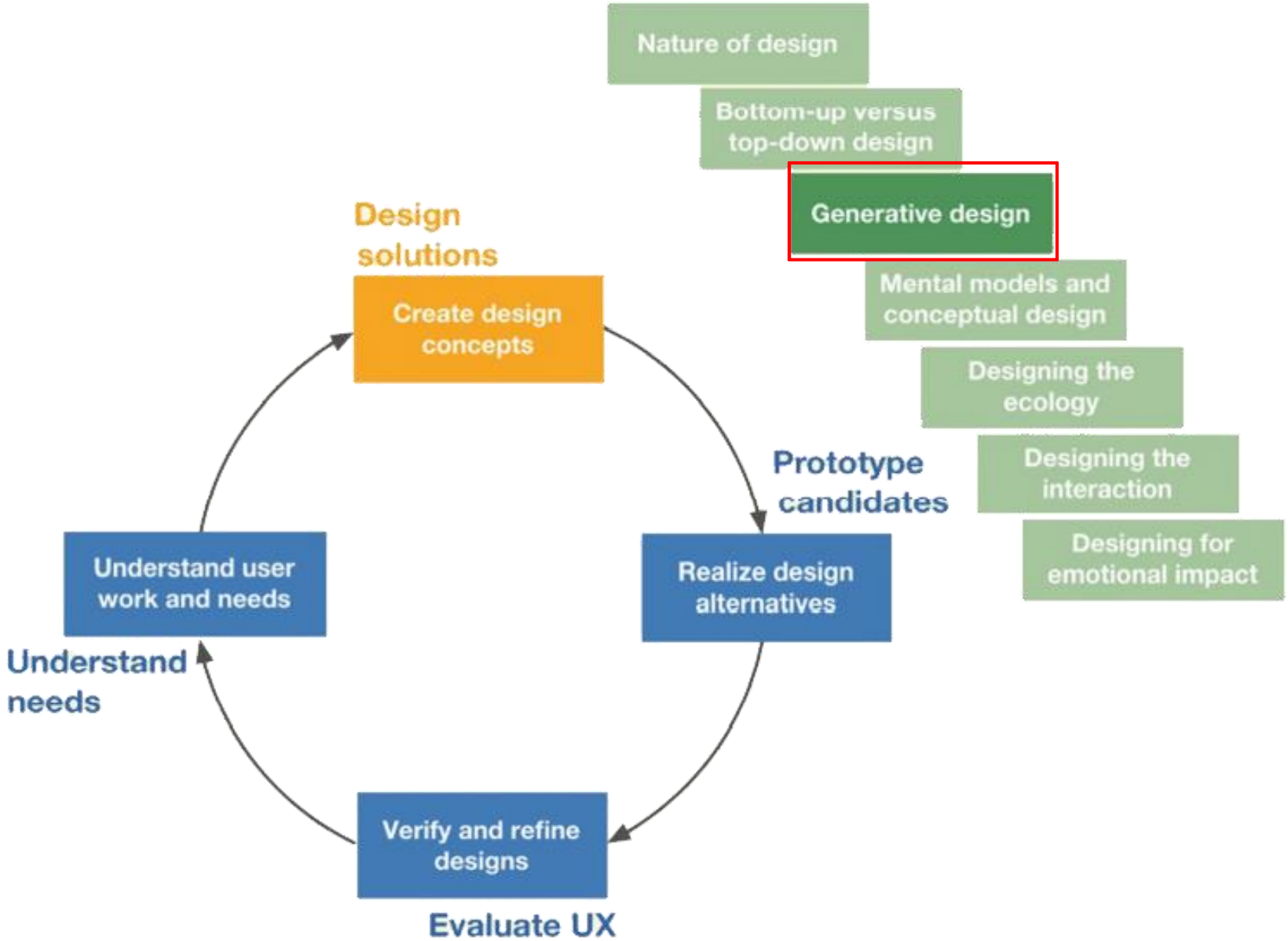
Bottom-Up Versus Top-Down Design

- An Internet-connected device in the home that could be used for voting and that could also be used for other expressions of opinions, including petitions, surveys, and likes or dislikes of products.
- Allow for possibilities where citizens can vote over a period of time leading up to a deadline.
- Even provides for flexibility, allowing citizens to change their vote after it is cast up to the deadline-something mail-in ballots do not allow:
  - Perhaps new information about a candidate was unearthed in the interim.

Bottom-Up Versus Top-Down Design

- Emphasize designing for a very different envisioned ecology (in fact, defining the ecology is part of the design).
- Design for the interaction (workflows, etc.), information needs (for example, full display of candidates and their party affiliations, which offices a given voter can cast ballots for, full description of each side of all issues and proposals up for a vote) and emotional needs after ecological design is completed.

Generative Design



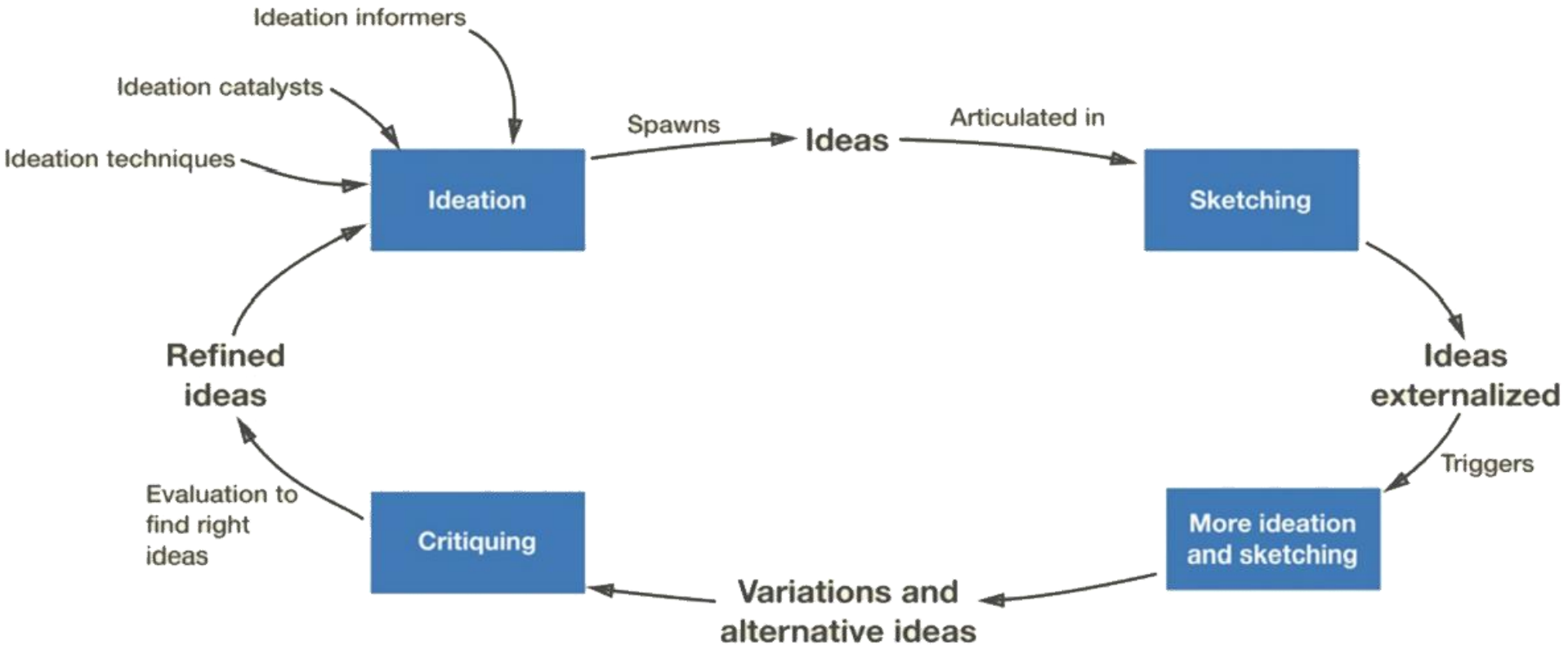
Preparing for Design Creation: Immersion

- Designers, like usage researchers, need immersion—a form of deep thought and analysis—to understand a problem and to be able to make connections among the different aspects of it.
- Get it all out there in front of you to point to, discuss, and critique.
- Fill your walls, shelves, and work tables with artifacts, representations of ideas, images, props, toys, notes, posters, sketches, diagrams, mood boards, and images of other good designs.

Overview of Generative Design:

Intertwining of Ideation, Sketching, and Critiquing

- *Designers perform generative design, an approach to design creation involving ideation, sketching, and critiquing in a tightly coupled, but not necessarily structured, iterative loop for exploring a design idea*



Generative Design activities

- Ideation: The activity where ideas are spawned. A cognitive technique to create varying and innovative design possibilities
- Sketching: An externalization activity that captures those ideas in concrete representations
- Critiquing: An analysis activity to evaluate the emergent design ideas for tradeoffs
- Refining: An activity (usually iterative) where ideas are adopted, modified, or discarded.

IDEATION

- Ideation is the process of creating various and innovative proposals for ecological, interaction, and emotional designs. This is a hugely creative and fun phase
- Diversity in the design team helps with ideation because it brings varied perspectives.
- Ideation is the time to get clients and users to participate.

IDEATION

- What is an idea?
  - *An idea is a visualized design proposal that can include visions of new ecologies, interactions, emotional responses, and capabilities in a system or product.*
  - Ideas are conjured by the human mind or borrowed from observations of nature, and are triggered by focused activity or unexpected catalysts.
  - Sometimes ideas occur as “eureka moments,” springing up at unexpected places and unexpected times.
  - Ideas can work together to generate a single design concept.
  - And finally, some ideas can be reused in different situations; we call such ideas design patterns.

Ideation Informers, Catalysts, and Techniques

- Ideation Informers:
  - Ideation informers provide information about usage, requirements, targets, and goals, and are part of immersion.
  - Ideation informers are not building blocks; you don't just take them and put them together to make a design.
  - Ideation informers are usually derived from the usage research data as a process step and manifest themselves as usage data models and, possibly, an affinity diagram of work activity notes

Ideation Informers, Catalysts, and Techniques

- Ideation Catalysts:
  - Ideation catalysts are design inspirers, design oriented flashes that inspire creative design solutions.
  - A catalyst in general is something that precipitates an event or change without itself being affected or changed.
  - An ideation catalyst is not something a designer can do; it just happens and that happening can spawn a new design idea.

Ideation Informers, Catalysts, and Techniques

- Ideation Techniques:
  - An ideation technique is something a designer can do to foster the spawning or nurturing of a design idea.
  - Brainstorming, framing, and storytelling are examples of ideation techniques.

Doing Ideation

- Setting the stage with immersion
- Ideation as a group activity.
- Mechanics of ideation
- Start with the ideation
- Proceed to ideation techniques
- Use teamwork and play off each other's ideas while "living the part of the user
- Make the outputs of your ideation as visual and tangible as possible

SKETCHING

- *Sketching is the rapid creation of freehand drawings expressing preliminary design ideas, focusing on concepts rather than details.*
- Characteristics of sketching
  - Everyone can sketch; you do not have to be artistic.
  - Most ideas are conveyed more effectively with a sketch than with words.
  - Sketches are quick and inexpensive to create; they do not inhibit early exploration.

SKETCHING

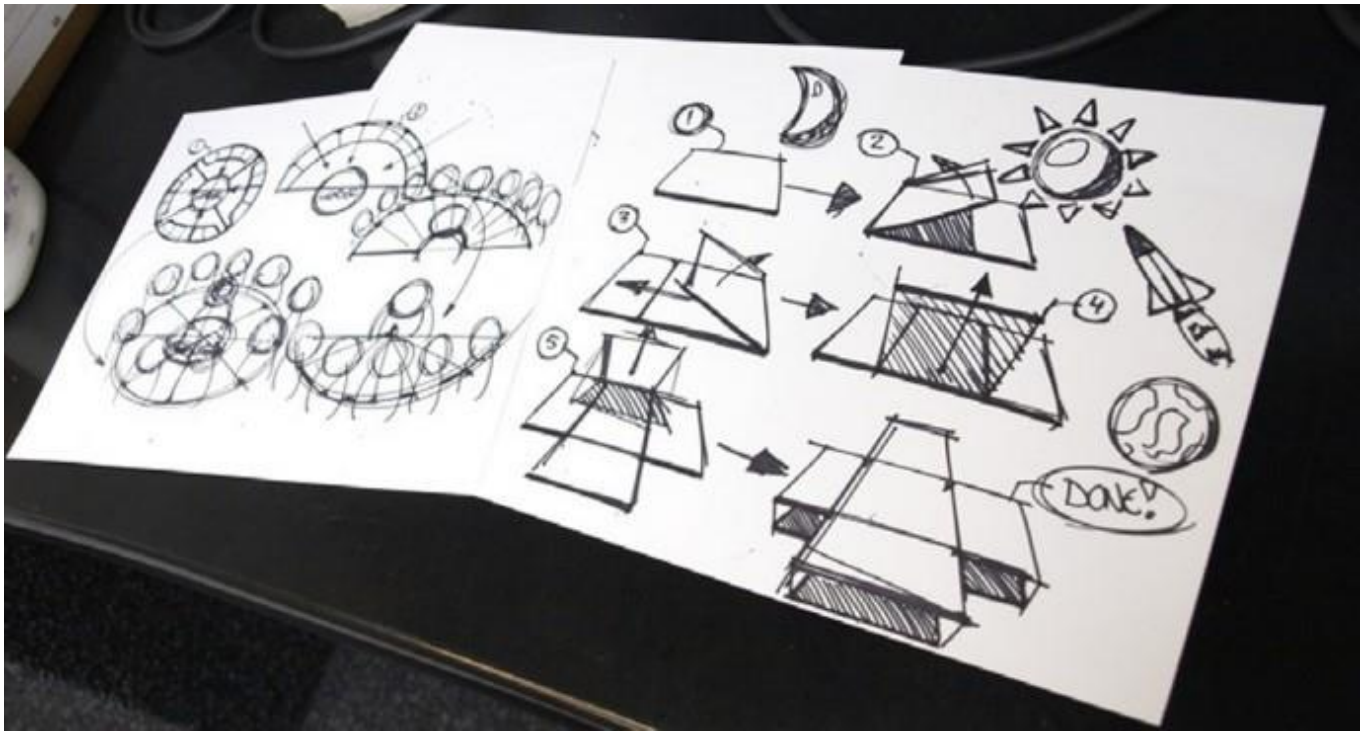
- Sketches are disposable; there is no real investment in the sketch itself.
- Sketches are timely; they can be made just in time, done in the moment, provided when needed.
- Sketches should be plentiful; entertain a large number of ideas and make multiple sketches of each idea.
- Textual annotations play an essential support role, explaining what is going on in each part of the sketch and how.

SKETCHING

- Sketching is essential to ideation and design.
  - Sketching is an indispensable part of design.
    - If you're not sketching, you're not doing design.
    - Design is a process of creation and exploration, and sketching is a visual medium for exploration.
    - Sketching captures ideas into an embodied and tangible form; it externalizes the mental description of an idea for sharing, analysis, and archiving.
    - By adding visualization to ideation, sketching adds cognitive supercharging, boosting creativity by bringing in more human senses to the task

SKETCHING

- Sketching is a conversation about user experience
  - Sketching is not art.
  - A sketch is a conversation.
  - A sketch is about the user experience, not the product.



SKETCHING

- Sketching is embodied cognition to aid invention
  - *Designers invent while sketching*.
    - A sketch is not just a way to represent your thinking; the act of making the sketch is part of the thinking. In fact, the sketch itself is less important than the process of making it.
  - *The importance of involving your hands in sketching.*
    - The kinesthetic of sketching, pointing, holding, and touching bring the entire hand-eye-brain coordination feedback loop to bear on the problem solving. Your physical motor movements are coupled with visual and cognitive activity; the designer's mind and body potentiate each other in invention

Practice in Ideation and Sketching

- **Goal**: To get practice in ideation and sketching for design.
- **Activities**: Doing this in a small group is strongly preferable, but you can do it
  - Get out blank paper, appropriate marking pens, and any other supplies you might need for sketching.
  - Pick a topic, a system, or device. Our recommendation is something familiar, such as a dishwasher.
  - Start with some free-flow ideation about ways to design a new and improved concept of a dishwasher. Do not limit yourself to conventional designs.
  - Go with the flow and see what happens. with one other person.

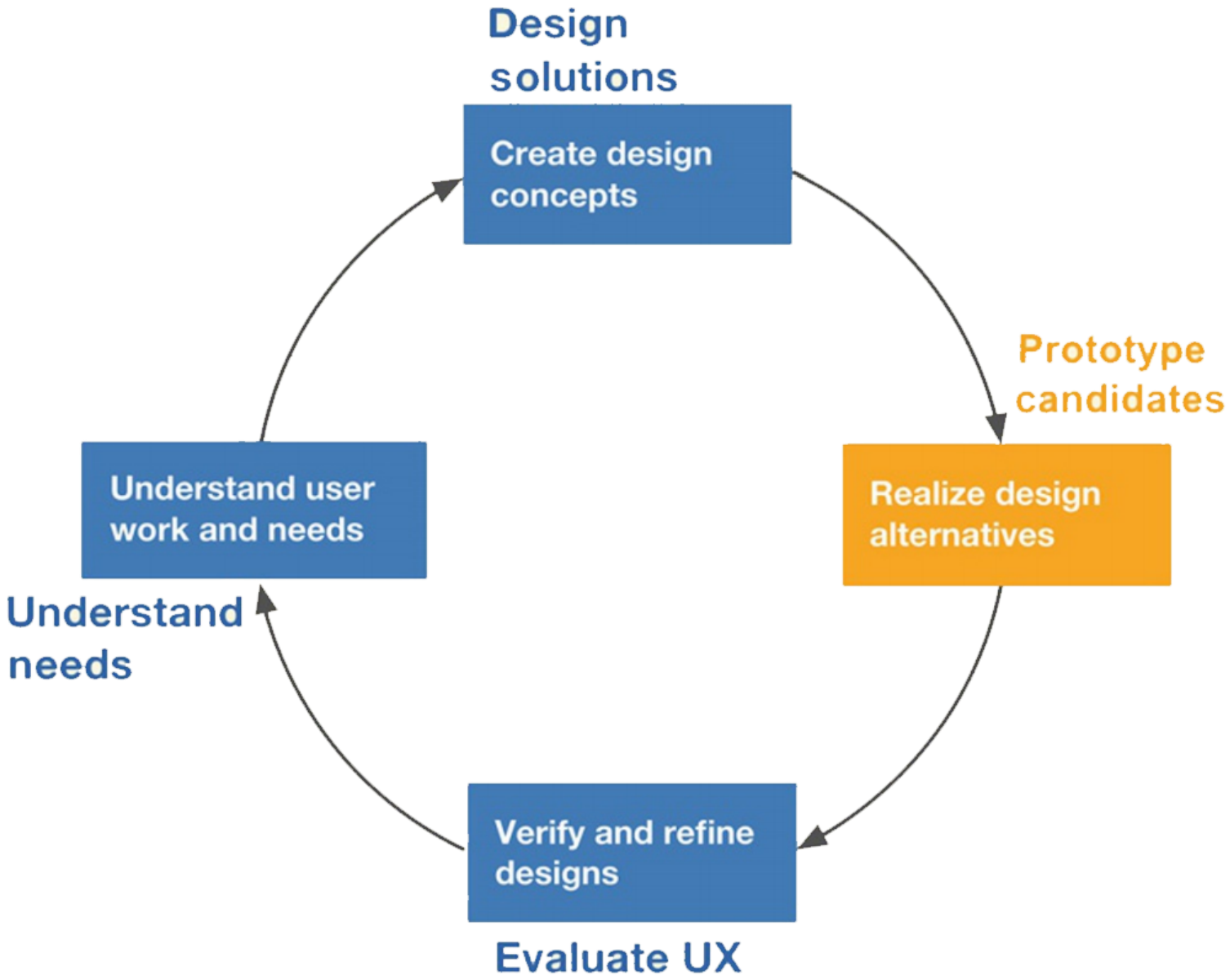
Practice in Ideation and Sketching (Cont...)

- Remember that this is an exercise about the process, so what you come up with for the product is not that crucial.
- Everyone should make sketches of the ideas that arise about a dishwasher design, as you go in the ideation.
- Start with design sketches in the ecological perspective. For a dishwasher, sketch a conveyor belt from the dinner table through your appliance and out into the dish cabinets.
- Make some sketches from an interaction perspective showing different ways you can operate the dishwasher: how you load and unload it
- Make sketches that project the emotional perspective of a user experience with your product. This might be more difficult, but it is worth taking some time to try.
- Ideate. Sketch, sketch, and sketch. Brainstorm and discuss.

Prototype Candidate Designs

- Prototyping is a good example intertwining. On generative design where prototyping occurs right from the start of design creation in the form of sketches and continues to occur as wireframes and other forms throughout much of the remaining design process.

Prototype Candidate Designs



Advantages of Prototyping

- Provide a platform to support UX evaluation with users.
- Offer concrete baseline for communication between users and designers.
- Provide a conversational “prop” to support communication of concepts not easily conveyed verbally.
- Allow users to “take the design for a spin” (who would buy a car without taking it for a test drive or buy a stereo system without first listening to it?).

Advantages of Prototyping

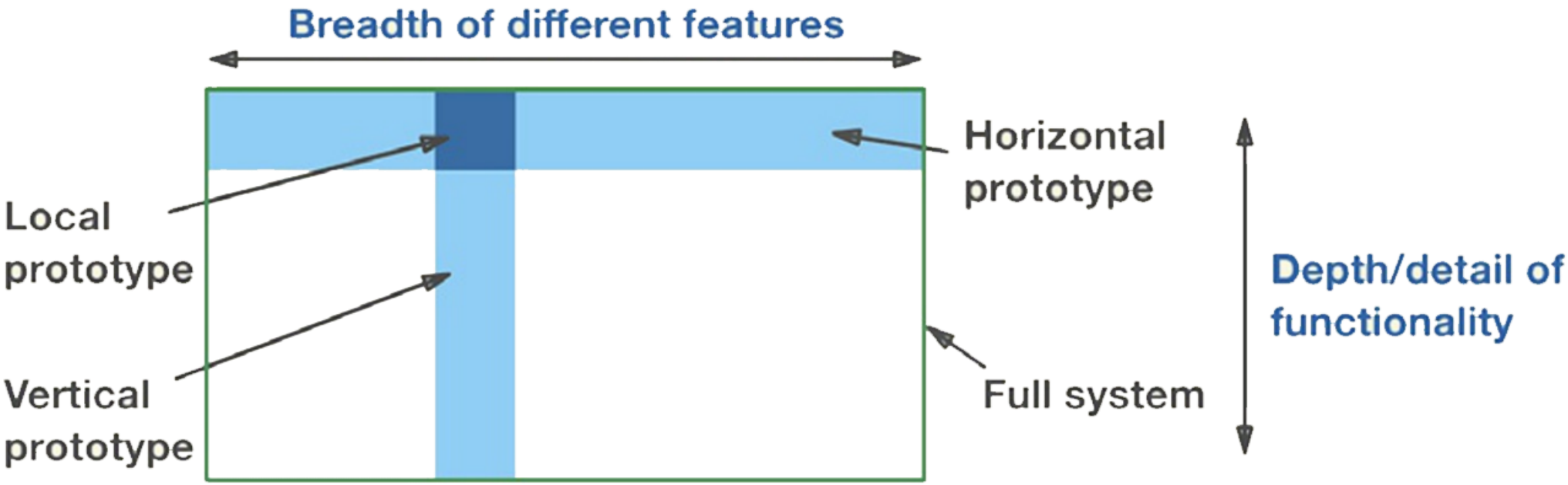
- Give project visibility and buy-in within customer and developer organizations.
- Encourage early user participation and involvement.
- Give the impression that design is easy to change because a prototype is obviously not finished.
- Afford designers immediate observation of user performance and consequences of design decisions.
- Help sell management on an idea for new product.
- Help affect a paradigm shift from an existing system to a new system

Depth and Breadth of a Prototype

- The idea behind prototypes is to provide fast and easily changed early views of an envisioned UX design. *Because it must be quickly and easily changed, a prototype is a design representation that is in some way(s) less than a full implementation.* The choices for your approach to prototyping are about how to make it less. One way you can make it less is by focusing on just the *breadth* or just the *depth* of the system.

Depth and Breadth of a Prototype

- When you slice the features and functionality of a system by breadth, you get a horizontal prototype. And when you slice by depth, you get a vertical prototype



Horizontal Prototypes

- A horizontal prototype is very broad in the features it incorporates, but offers less depth in its coverage of how that functionality works.
- It provides an overview on which you can base a top-down approach.
- Effective in demonstrating the product concept and for conveying an early product overview to managers, customers, and users.
- Horizontal prototypes usually do not support complete workflows, and user experience evaluation with this kind of prototype is generally less realistic.
- Prototyping in the early funnel tends to be horizontal in nature.

Vertical Prototypes

- A vertical prototype contains more depth of detail for some functionality, but only for a narrow selection of features.
- A vertical prototype allows testing a limited range of features but those functions that are included are evolved in enough detail to support realistic user experience evaluation.
- Often the functionality of a vertical prototype can include a stub for or a connection to an actual working backend database.
- Is ideal, when you need to represent completely the details of an isolated part of an individual interaction workflow in order to understand how those details play out in actual usage.
- They are most commonly used in the late funnel part of the process.

Local Prototypes

- A prototype that is narrow in both dimensions, limiting its focus to a localized interaction design issue.
- Is used to evaluate design alternatives for particular isolated interaction details, such as one dialogue box, the appearance of an icon, the wording of a message, or the behavior of an individual interaction object.
- A local prototype is the solution for those times when your design team encounters an impasse in design discussions where, after a while, there is no agreement and people are starting to repeat themselves.

“T” Prototypes

- A “T” prototype combines advantages of both the horizontal and vertical prototypes, offering a good compromise for design evaluation. Much of the feature breadth is realized at a shallow level (the top of the T), but a few parts are done in depth (the vertical part of the T).
- It is recommend the T prototype because it provides a nice balance between the two extremes, giving you some advantages of each.
- Once you have established a system overview in your horizontal prototype, as a practical matter the T prototype is the next step toward achieving some depth.
- The horizontal foundation supports evolving vertical growth across the whole prototype.

Wireframe Prototypes

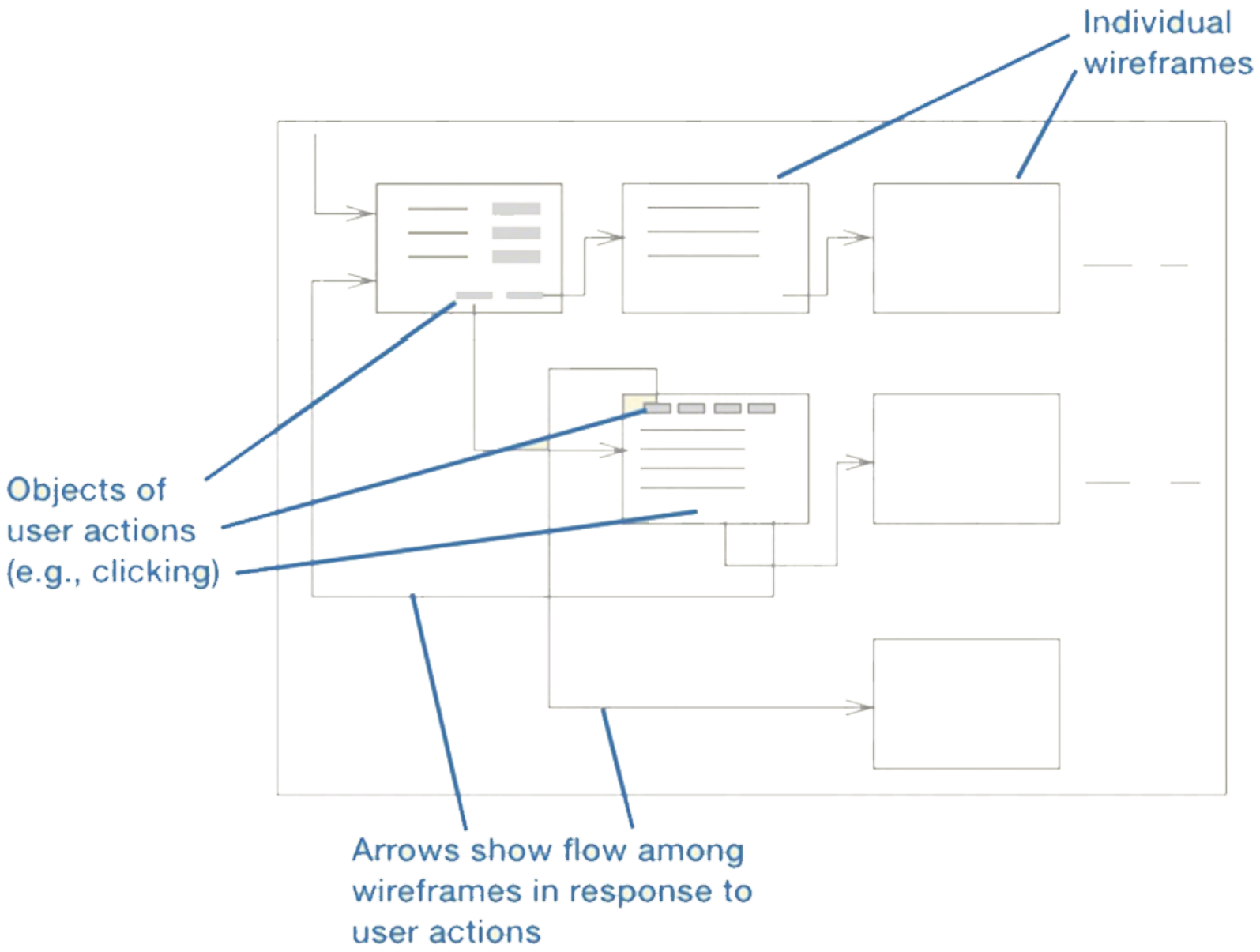
- A wireframe is a sketch, image, or prototype of a single interaction page or screen (in the broadest sense of “screen”).
- Wireframes are described as two-dimensional sketches or drawings consisting of lines, arcs, and vertices (thus the name wireframe), plus some text for labels, representing the layout of an interaction design for a page or screen.
- These wireframes are best generated with a software tool (such as Sketch).

Wireframe Prototypes

- Wireframe Design Elements
  - Low-fidelity wireframes usually do not have graphical design elements such as images or specific colors or typography. Typical elements represented in a wireframe can include:

- Header.
- Footer.
- Content areas.
- Labeling.
- Menus.
- Tabs (possibly with drop-downs).
- Buttons.
- Icons.
- Pop-ups.
- Messages.
- Navigation bar, navigation links.
- Placeholders for logo and branding images.
- Search field.

What is a wireflow prototype?



Wireflow Prototype


Do you have any
QUESTIONS?