

Fundamentals of Human-Centered Design



Regroup: Reconnect + Review



**Reconnect
+ Review**

Welcome to Day 2!

How's everyone doing?

Any thoughts since yesterday?

Reconnect
+ Review

Day 2 Agenda

- Regroup: Reconnect + Review
- UNDERSTAND: Insight Synthesis

Break

- ENVISION: Idea Generation

Lunch 12:00-1:00

- ENVISION: Prioritizing Ideas
- ENVISION: Visualizing Concepts

Break

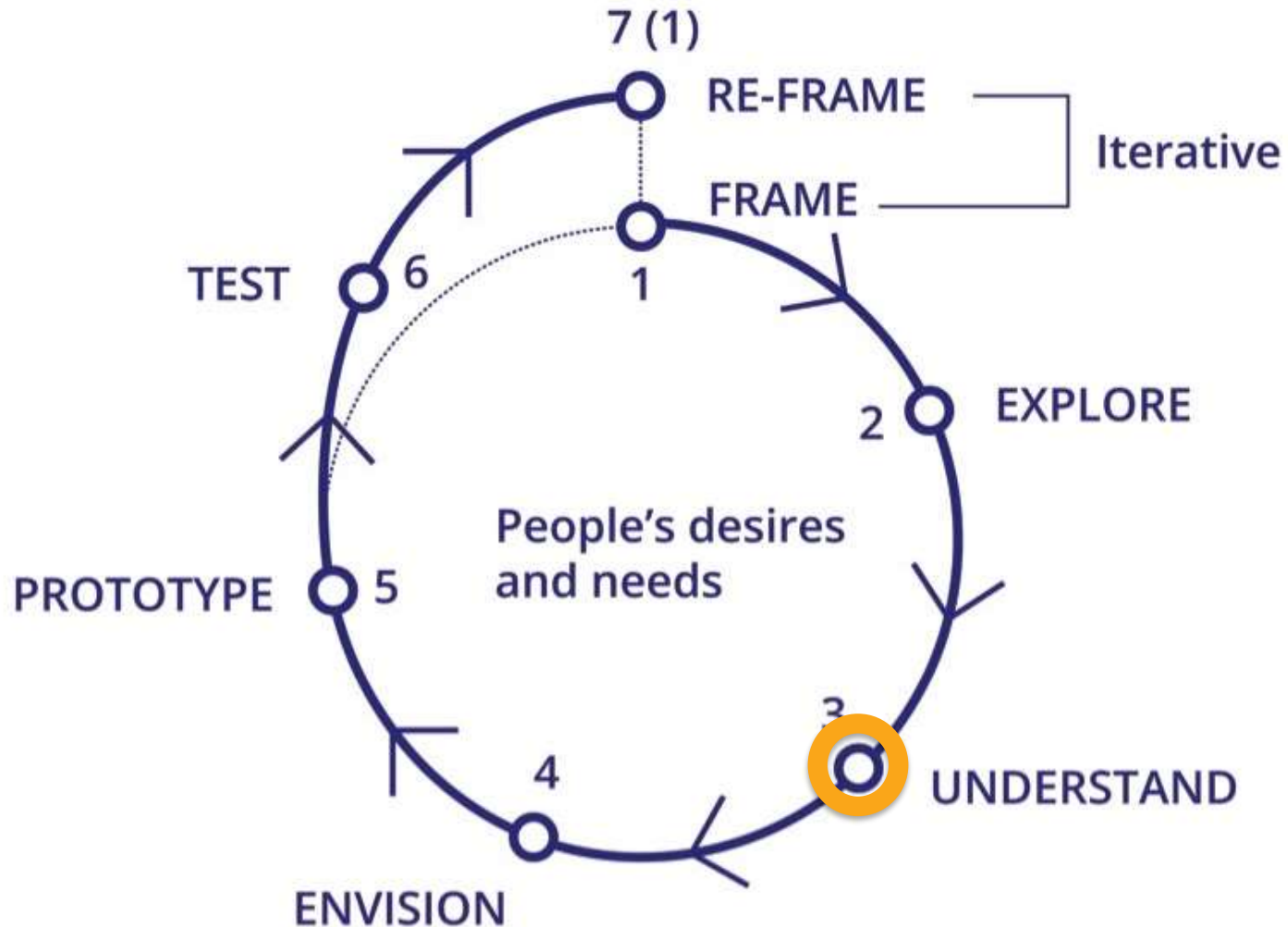
- PROTOTYPE: Learning by Making
- Reflect: Debrief + Preview

Wrap up 4:00

UNDERSTAND: Insight Synthesis



HCD Process Revisited

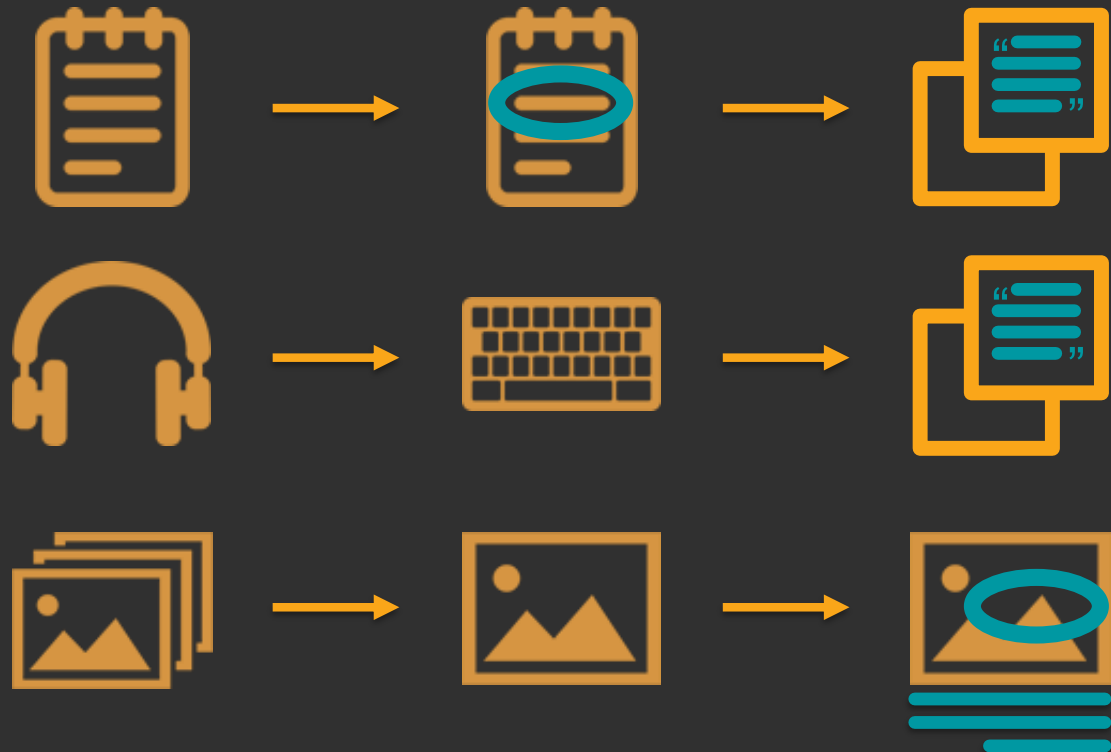


Insight Synthesis: A Definition

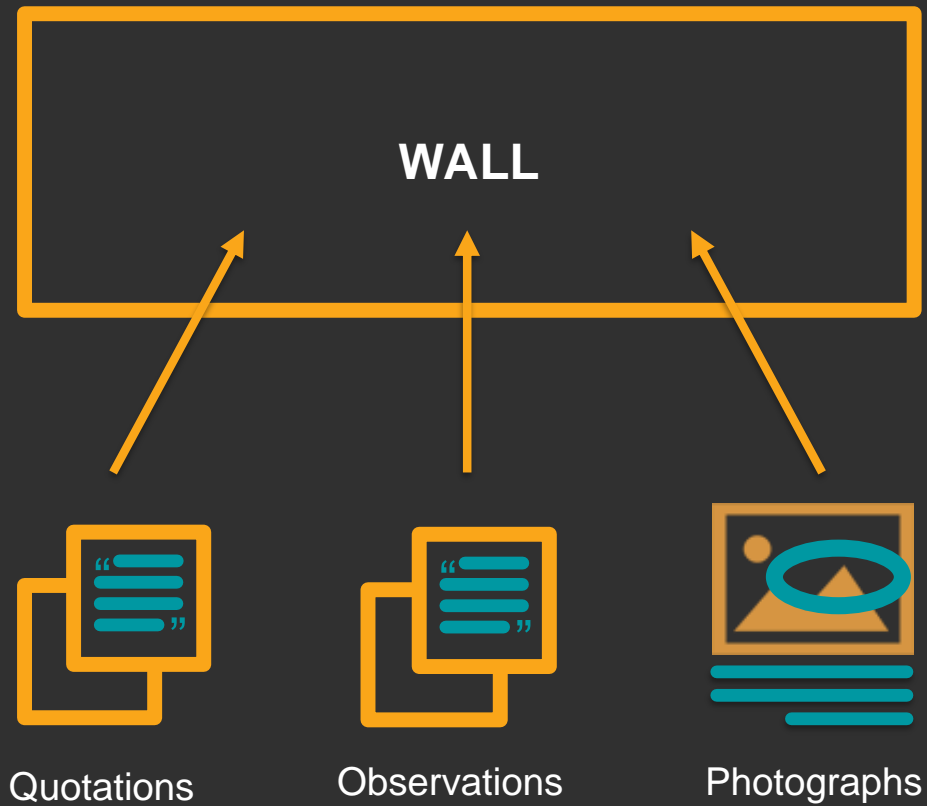
The process of uncovering the meaning behind data collected about people's needs.

In order to bring clarity to complex data sets and identify useful insights and patterns, we must be organized and adaptable.

Data Processing



Data Sharing



Insight
Synthesis

USAJobs Synthesis



Synthesis Process

1. Extract Takeaways

Review your notes and photos, and pull out any comments, quotations, or observations that could be important, and put them on sticky notes—one per sticky.

2. Categorize & Label

Share your data with your group by placing your sticky notes together on the wall. Sort similar takeaways into clusters. Iterate, refine, and give each cluster a label.

3. Articulate Insights

Discuss the deeper meaning and design opportunities suggested by the themes emerging from your data and distill each into a descriptive statement or “insight.”

Synthesis Overview



1. One person places and describes a **single data point**.

Synthesis Overview



2. Invite others to place items together to create **meaningful groups** from inferences.

Synthesis Overview



Meaning is generated by asking questions like:

- What is this saying about a particular context?
- What caused or prompted the person to think/say this?
- If I read between the lines, does it speak to something larger?
- What about this situation would lead a person to say this or do this? (Go back and remember the context for this moment)

2. Invite others to place items together to create **meaningful groups** from inferences.

Synthesis Overview



2. Invite others to place items together to create **meaningful groups** from inferences.

Synthesis Overview



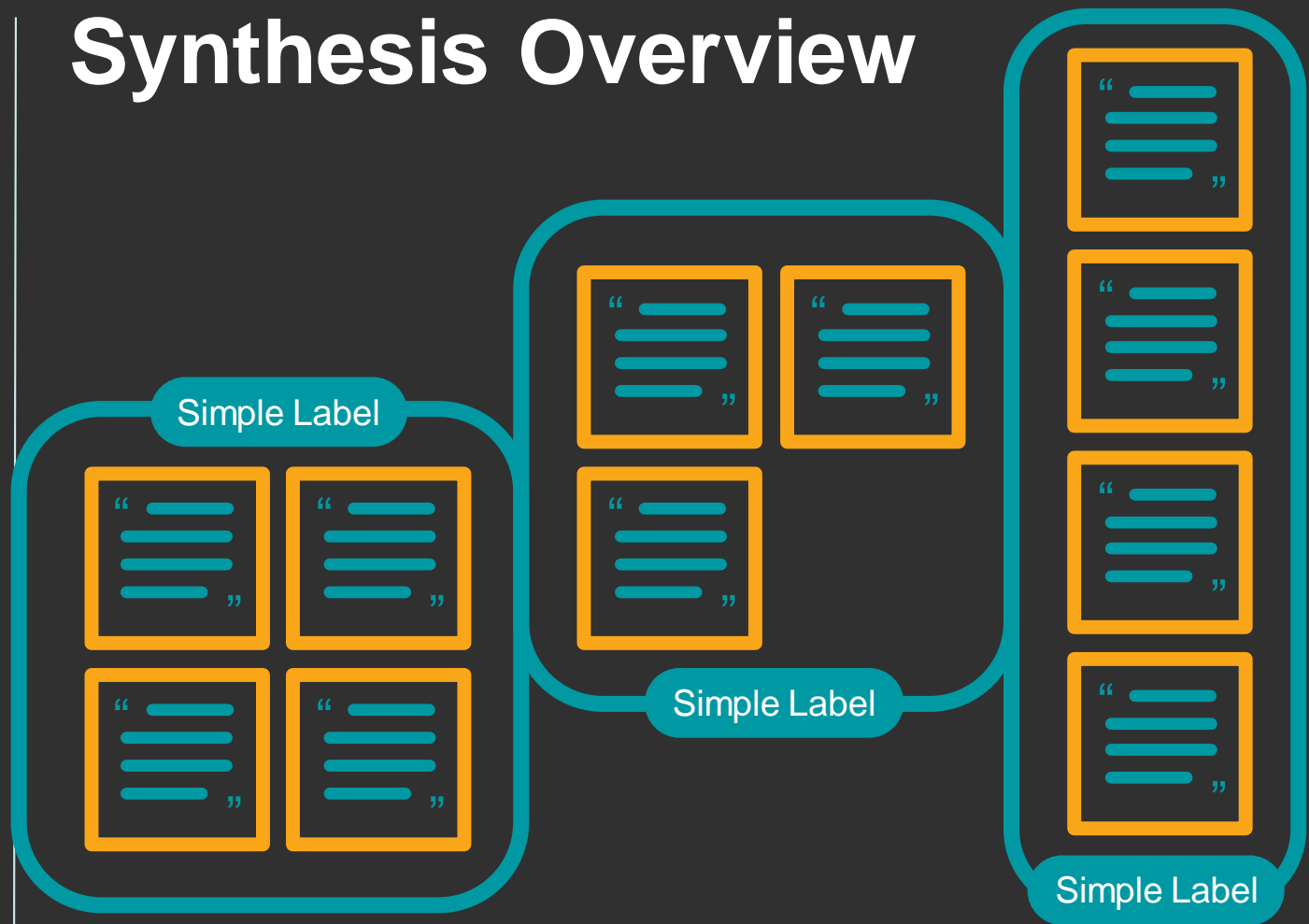
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Synthesis Overview



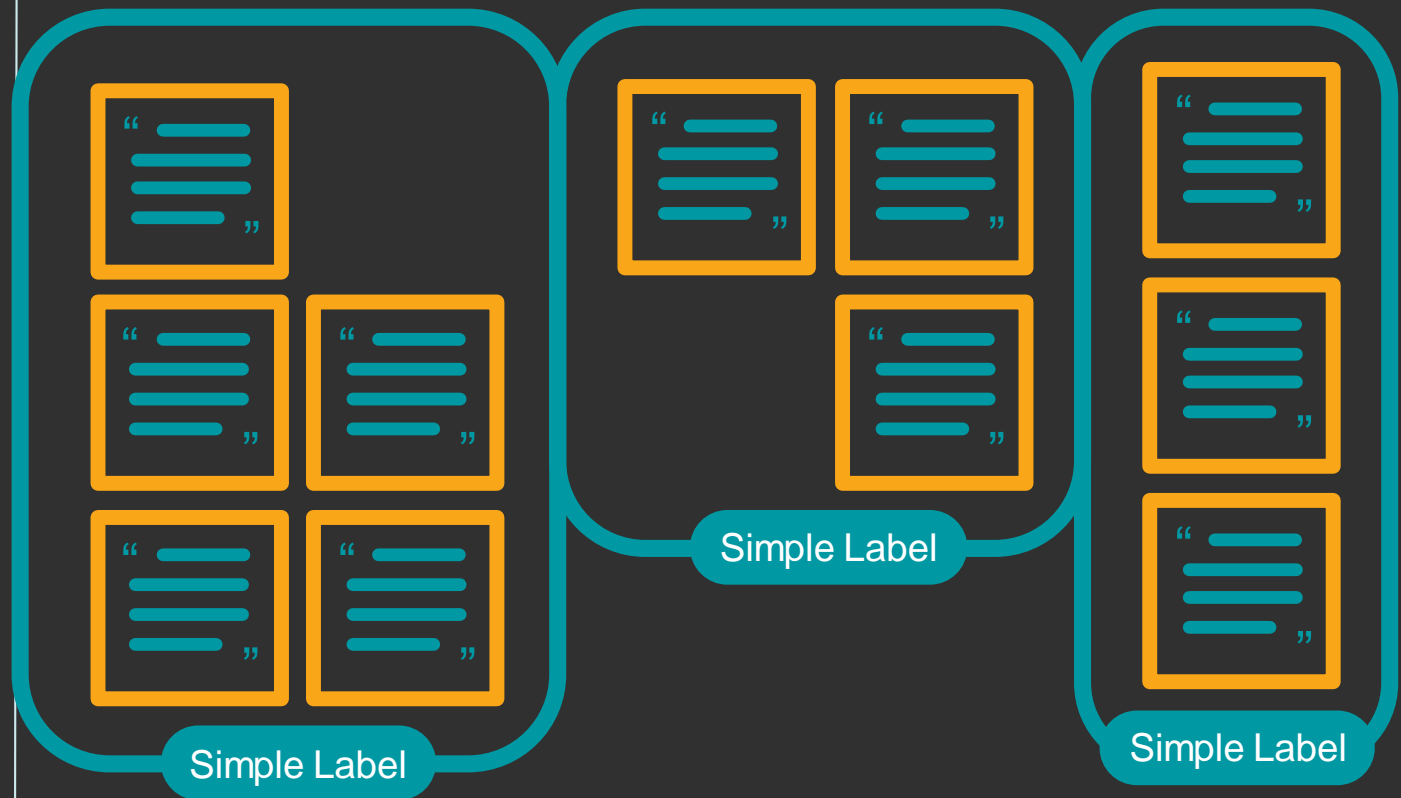
2. Invite others to place items together to create **meaningful groups** from inferences.

Synthesis Overview



3. As they take shape, **label each cluster** with a brief phrase.
Think: "This relationship has something to do with _____."

Synthesis Overview



4. Discuss, rearrange, and re-label as groupings emerge.

USAJobs Synthesis: Step 2

"Is this website made so complicated so people won't apply for jobs? USAJOBS is the most complicated system I have ever used. It is very daunting to spend that much time applying without ever getting a response."

"Applying for Federal jobs is going to be a long drawn out process and you will have your heart broken at the end of it."

Single transcribed data point.

"If you have questions about USAJOBS you have to figure it out on your own. I check with social media to get an understanding of the website."

"In USAJOBS a lot of language is extremely confusing, the structure of job announcements is not user friendly, interaction with our agency is clunky and we lose applicants along the way."

"I don't know what keywords to use since there are so many"

"No I am not receiving help. I search on my own...Where is there help? That is one of the major complaint-there is no help to find"

"I do search on my own in USAJOBS but what I have experienced - I may be looking for a physical science technician but it may not always be listed as physical science- if I type that in it will limit me and i could not get the right results"

"Usually when I hear i didn't make the list for consideration I don't care anymore. I tried that, you can't get in touch with anyone for an explanation. When you get through to someone they don't have answers for you."

USAJobs Synthesis: Step 2

Arduous Process

"Usually when I hear I didn't make the list for consideration I don't care anymore. I tried that, you can't get in touch with anyone for an explanation. When you get through to someone they don't have answers for you."

"Applying for Federal jobs is going to be a long drawn out process and you will have your heart broken at the end of it."

Finding Help

"No I am not receiving help. I search on my own...Where is there help? That is one of the major complaint-there is no help to find"

"If you have questions about USAJOBS you have to figure it out on your own. I check with social media to get an understanding of the website."

Feeling Lost

"I do search on my own in USAJOBS but what I have experienced - I may be looking for a physical science technician but it may not always be listed as physical science- if I type that in it will limit me and I could not get the right results"

"I don't know what keywords to use since there are so many"

Lack of Guidance

"Is this website made so complicated so people won't apply for jobs? USAJOBS is the most complicated system I have ever used. It is very daunting to spend that much time applying without ever getting a response."

"In USAJOBS a lot of language is extremely confusing, the structure of job announcements is not user friendly, interaction with our agency is clunky and we lose applicants along the way."

USAJobs Synthesis: Step 3

Applying for a government job is a long and arduous process which is made even worse because the government doesn't set user expectations up front about what they need to apply and how long it will take them.

Arduous Process

"Usually when I hear I didn't make the list for consideration I don't care anymore. I tried that, you can't get in touch with anyone for an explanation. When you get through to someone they don't have answers for you."

"Applying for Federal jobs is going to be a long drawn out process and you will have your heart broken at the end of it."

USAJOBS falls short of applicant expectations because it presents itself as a one-stop shop for federal hiring, but in reality it is laid on top of a disjointed process spread among 129 agencies, which disorients, frustrates, and misleads users

Finding Help

"No I am not receiving help. I search on my own...Where is there help? That is one of the major complaint-there is no help to find"

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Feeling Lost

"I do search on my own in USAJOBS but what I have experienced - I may be looking for a physical science technician but it may not always be listed as physical science- If I type that in it will limit me and I could not get the right results"

"I don't know what keywords to use since there are so many"

USAJOBS does not communicate eligibility and qualifications in a way that is meaningful to individual applicants, nor explain that these are prerequisites to being considered; applicants apply to jobs they can't get resulting in increased applications, workload for the government and frustration for multiple users in the system

Lack of Guidance

"Is this website made so complicated so people won't apply for jobs? USAJOBS is the most complicated system I have ever used. It is very daunting to spend that much time applying without ever getting a response."

"In USAJOBS a lot of language is extremely confusing, the structure of job announcements is not user friendly, interaction with our agency is clunky and we lose applicants along the way."

What's a Design Insight?

A single phrase that exhibits a deeper understanding of a person, a thing, or situation and embodies opportunities for design.

What *Isn't* a Design Insight?

- **Data**
(Insights call for action.)
- **Observations**
(Without the motivation or need suggested by the observation)
- **Wishes**
(Ask people what they want, and they'll tell you "a faster horse.")

What *is* a Design Insight?

- **Context**
Explain background
- **The challenge**
Explain the barrier/s
- **The cause**
What is causing the problem
- **Motivation**
What drives people's action?

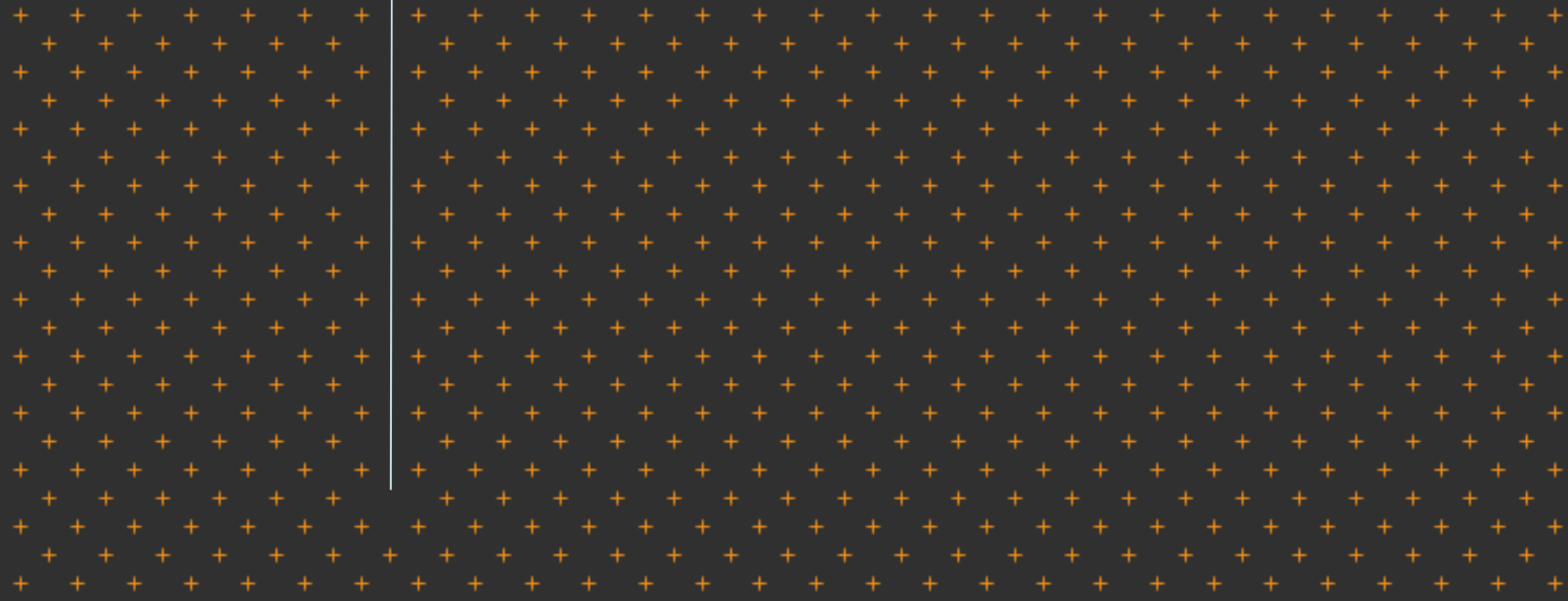
Synthesis Worksheet



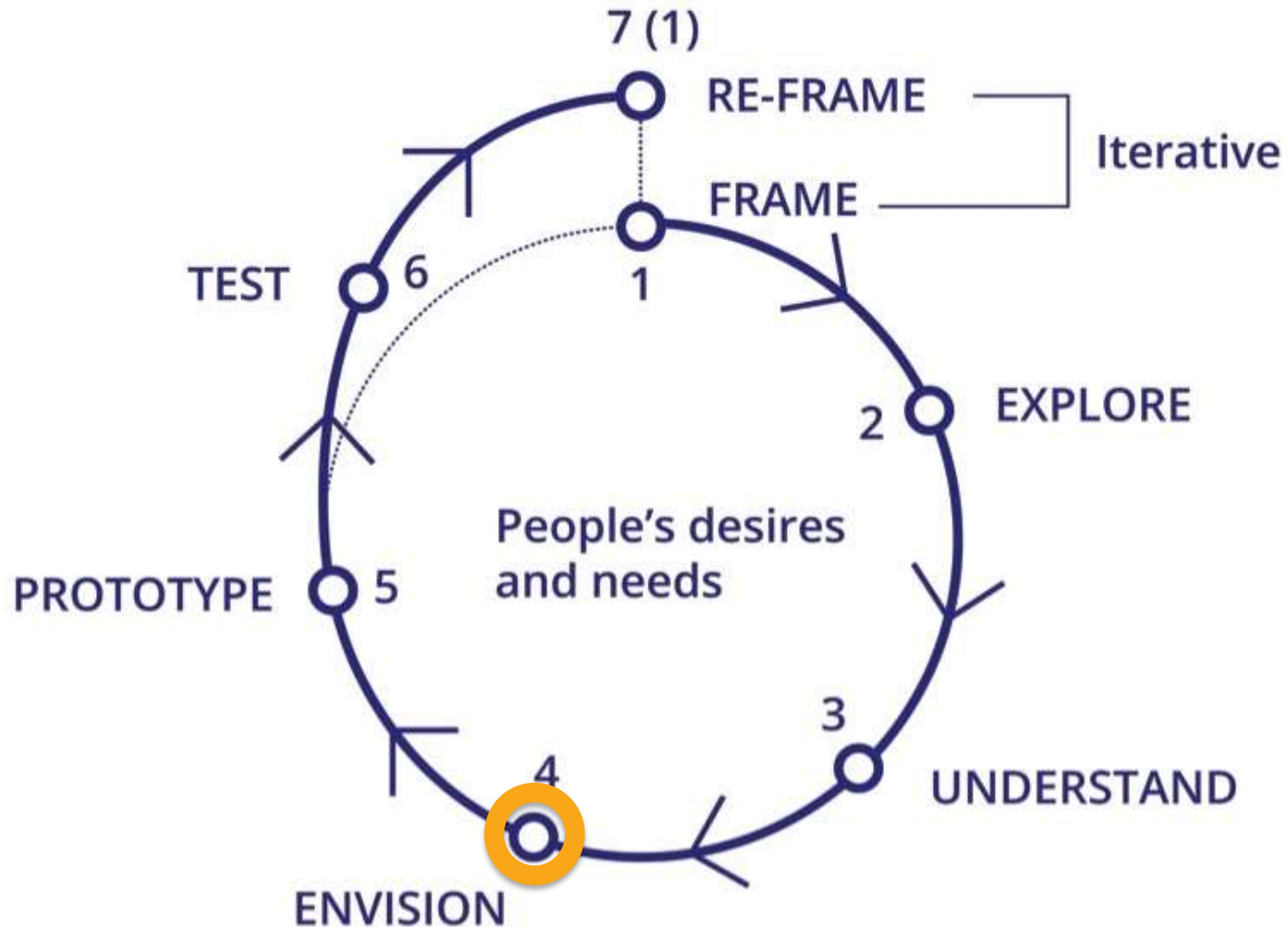
Break

15 min.

ENVISION: Idea Generation



HCD Process Check-In



Ideation: A Definition

Ideation is the creative process of generating, developing, and communicating new ideas within a design framework.

Envisioning new futures requires building on other people's ideas and "green housing" ideas that may feel unfinished or incomplete at the time.

Ideation: The Process

- *Choose 3 insights with your group*
- *Create 3 HMW for the 3 insights use the template*
- *Individually generate ideas for the HMWs*
- *As group use the matrix to place the HMW and your individual ideas*
- *Explain your ideas to your team*
- *Second round of Brainstorming*

The Spirit and Mindset of Ideation

- *Yes, and...*
- Defer judgment
- There is no right answer
- Diversity is good
- Work visually when possible
- Everything is temporary
- Take risks! Have fun!
- The goal is quantity not quality!

Ideation Process: Select Insights

- *3 insights*
- *Combine if needed*

Idea Generation

Ideation Process: Create HMW

Articulating Insights as Questions for Ideation

How might we...?

Articulating Insights as Questions for Ideation

How might we...?



Action/goal
oriented

Articulating Insights as Questions for Ideation

How might **we...**?



Action/goal
oriented



Open-ended
potential

Articulating Insights as Questions for Ideation

How might we...?



Action/goal
oriented



Open-ended
potential



Collaborative
+ inviting

Articulating Insights as Questions for Ideation

How might we...?

[Good question—let's brainstorm!]

Insight Synthesis

HOW MIGHT WE CARD

Team: _____

Reframed Challenge Statement

Given that _____

_____ (context, situation)

how might we (help) _____ (persona)

do/be/feel/achieve _____

_____ (immediate goal)

So they can _____

_____ (deeper, broader emotional goal)

*design*thinkersacademy

Free form Brainstorming

Individually Create ideas for each of the HMW

As many as possible

Idea Generation

Ideation Process

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ACTIVITY

Ideation Matrix

		Design challenge, opportunity, or prompt #1	Design challenge, opportunity, or prompt #2	Design challenge, opportunity, or prompt #3
<div> <p>HOW TO USE THIS CHART</p> <ol style="list-style-type: none"> 1. An organizer will post 3 challenges or opportunities within the larger problem space and begin asking students to brainstorm solutions or generate prompts. The organizer will assign an individual group challenge, and the 3 students will be responsible for the right. 2. Individuals will generate ideas about their own and the challenges and opportunities of the challenge. They will then discuss their ideas and the challenges and opportunities of the challenge. 3. Individuals will generate ideas about their own and the challenges and opportunities of the challenge. They will then discuss their ideas and the challenges and opportunities of the challenge. 4. Students will generate ideas about their own and the challenges and opportunities of the challenge. They will then discuss their ideas and the challenges and opportunities of the challenge. </div> <div> <p>WITH INPUT FROM:</p> <p>DATE & TIME:</p> </div>	<p>Products & Environments</p> <p>Think about physical and digital products, services, and systems emerging, not existing and new applications that could be developed, leveraged, or adapted.</p>			
	<p>Programs & Services</p> <p>Think about new digital and human services, users, providers, offerings, and forms of value exchange and peer-to-peer interactions.</p>			
	<p>Processes & Procedures</p> <p>Think about new approaches to planning, decision making, and action, communication, coordination, reflection, learning, maintenance, and change.</p>			
	<p>Policies & Regulations</p> <p>Think about regulations and policies and the systems they shape, rules, incentives, standards, and oversight of performance, priorities, resources, and outcomes.</p>			
	<p>Culture & Relationships</p> <p>Think about new rituals, routines, symbols, norms and customs, traditions, hierarchies, boundaries, and potential synergies in the future people interact.</p>			
	<p> Wild Card</p>			

Ideation Process

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ACTIVITY

Ideation Matrix

		HMW Question #1	HMW Question #2	HMW Question #3
<div> <p>HOW TO USE THIS CHART</p> <ol style="list-style-type: none"> 1. An organizer will lead 2 challenges in sequence within the larger problem space and begin with one. Students then as a group select solutions or generate proposals. The organizer "steals" right on solutions or great challenges, and we'll discuss each of the 2 solutions in the right. 2. Individuals, semi-circles generate ideas about them and then the challenges and each of the solutions. When an idea is selected, it will only go into the discussion about those ideas. The organizer will then discuss the challenges in the different ways. 3. Individuals, take time reflecting on your ideas as you share them, and as others in the group share theirs. You may be asked to share your ideas in order to share the ideas to others and/or continue ideas related to your own ideas. 4. Continue with the process to develop ideas from the ideas. Encourage students who already have ideas to share them, and encourage them to share their ideas, and to share their ideas. </div> <div> <p>WITH INPUT FROM:</p> <p>DATE & TIME:</p> </div>	<p>Products & Environments</p> <p>Think about physical and digital products, services, and systems emerging, not products and new applications that could be developed, leveraged, or adapted.</p>			
	<p>Programs & Services</p> <p>Think about new digital and human services, users, problems, offerings, and forms of value: external value exchanges and peer-to-peer transactions.</p>			
	<p>Processes & Procedures</p> <p>Think about new approaches to planning, decision making, and action: communication, coordination, reflection, learning, measurement, and change.</p>			
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	<p> Wild Card</p>			

Idea Generation

Ideation Process

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ACTIVITY

Ideation Matrix

	HMW Question #1	HMW Question #2	HMW Question #3
Products & Environments Think about physical and digital products, jobs-to-be, and systems integrating both physical and new applications that could be developed, leveraged, or adapted.			
Programs & Services Think about new digital and human services, users, providers, offerings, and forms of value exchange and peer-to-peer transactions.			
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Culture & Relationships Think about new rituals, routines, symbols, norms and customs, divisions, hierarchies, boundaries, and potential synergies in the future people interact.			
Wild Card			

HOW TO USE THIS CHART

1. An agency select 2 challenges or scenarios within the larger problem space to investigate. Select 2-3 items as your initial questions or goals to investigate. The selected "How might we..." questions should be "challenging" and "doable".
2. Individuals, separately, generate ideas about items within the challenges and/or the "How might we..." questions. Write or sketch the ideas on sticky notes and place them on the chart.
3. Individuals, take turns explaining your ideas to one another. One at a time, in the appropriate column, explain to the others why you think your idea is important and how it relates to the challenge.
4. Continue until everyone has explained their idea and others have asked questions, offered feedback, and/or added their own ideas.

WITH INPUT FROM:

DATE & TIME:

Free form Brainstorming

- Do a second round of brainstorming as a group
- Fill the gaps in the matrix



Lunch

ENVISION: Prioritizing Ideas



ENVISION: Design Criteria



Prioritizing Ideas

Prioritization Matrix



Prioritization Process

1. Define “Important + Difficult”

As a team, discuss what your specific **definitions** of importance and difficulty are.

2. Rank Ideas by Importance

Then take your ideas and force rank them across the matrix from least to most **important**. This will require discussion and collaboration.

3. Rank Ideas by Difficulty

Once in place on the horizontal axis, do not move your sticky notes horizontally. While keeping them in order, move them up or down depending on their **difficulty** in relation to one another.

Do it!

1. Define “Important + Difficult”

As a team, discuss what your specific **definitions** of importance and difficulty are.

2. Rank Ideas by Importance

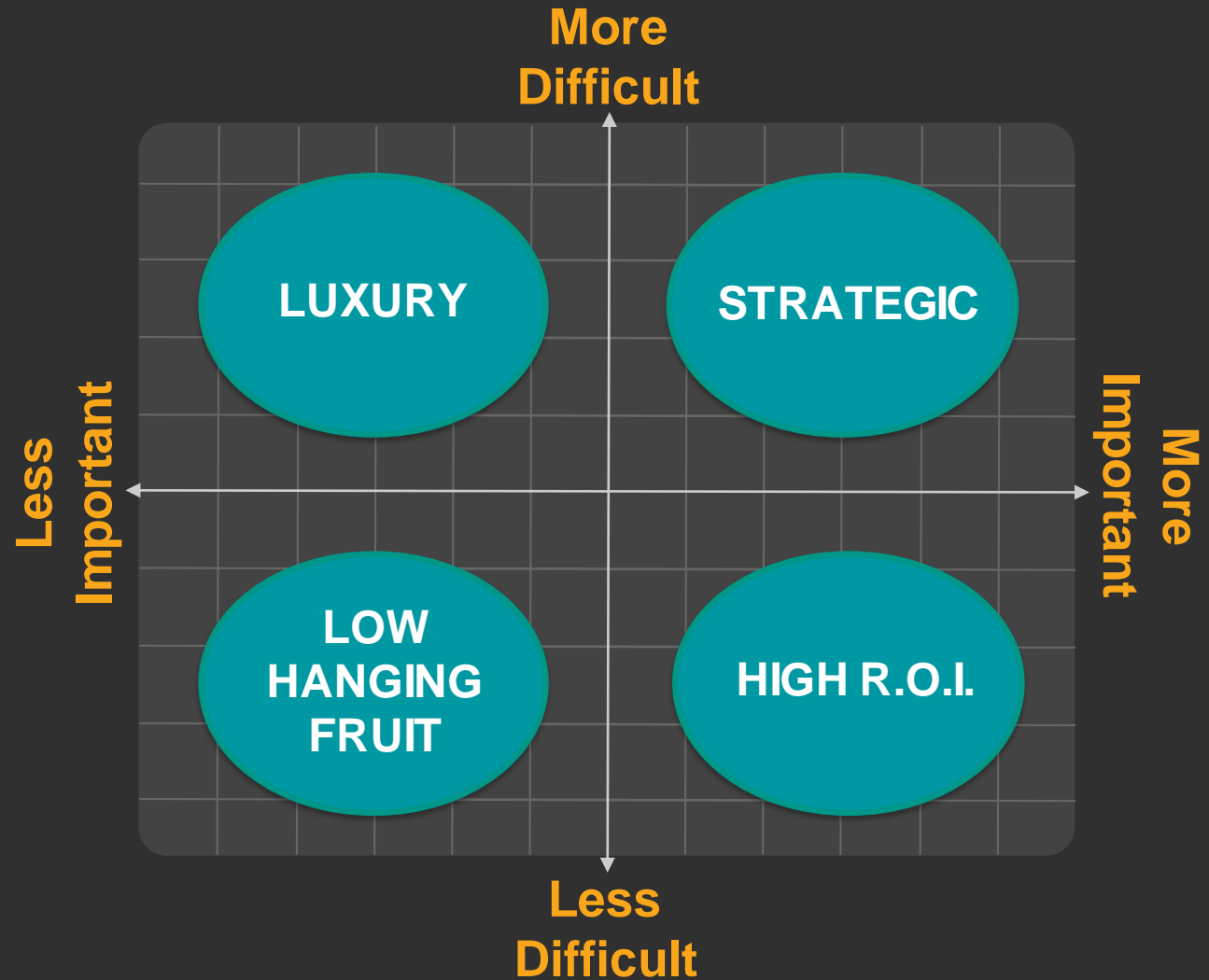
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Once in place on the horizontal axis, do not move your sticky notes horizontally. While keeping them in order, move them up or down depending on their **difficulty** in relation to one another.

Prioritizing Ideas

Prioritization Matrix



ENVISION: Developing Concepts



Visualizing Concepts

Concept Sketch

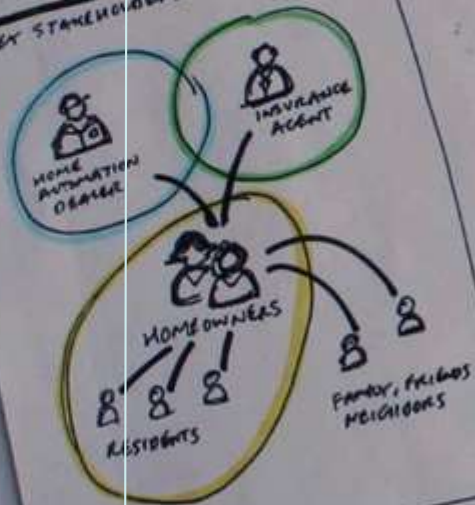


Smart Home Rewards®

Earn points for keeping things safe & sound



KEY STAKEHOLDERS:



KEY POINTS:

- Joint marketing of trusted brands
- Drives loyalty/retention
- Provides cross-selling and up-selling opportunities

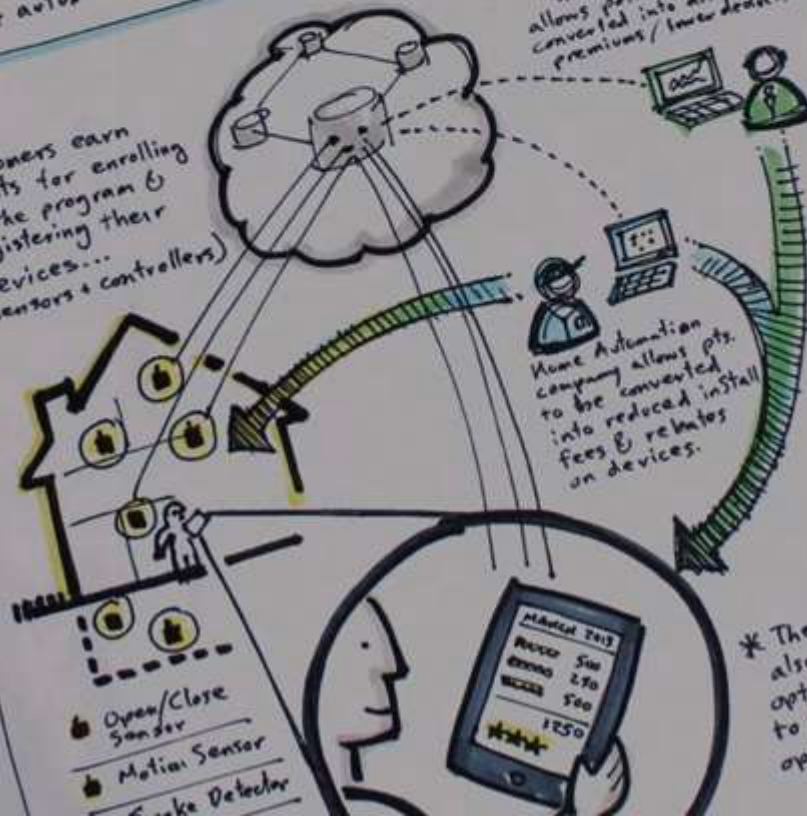
Homeowners become eligible for a reciprocal rewards program by...

Installing + using a home automation system

AND/OR

Purchasing/upgrading an insurance policy

Customers earn points for enrolling in the program & registering their devices... (sensors + controllers)



Insurance company allows points to be converted into discounts on premiums / lower deductibles.

Home Automation company allows pts. to be converted into reduced install fees & rebates on devices.

* The program also includes optional services to help customers optimize reward

Visualizing
Concepts

Concept Poster



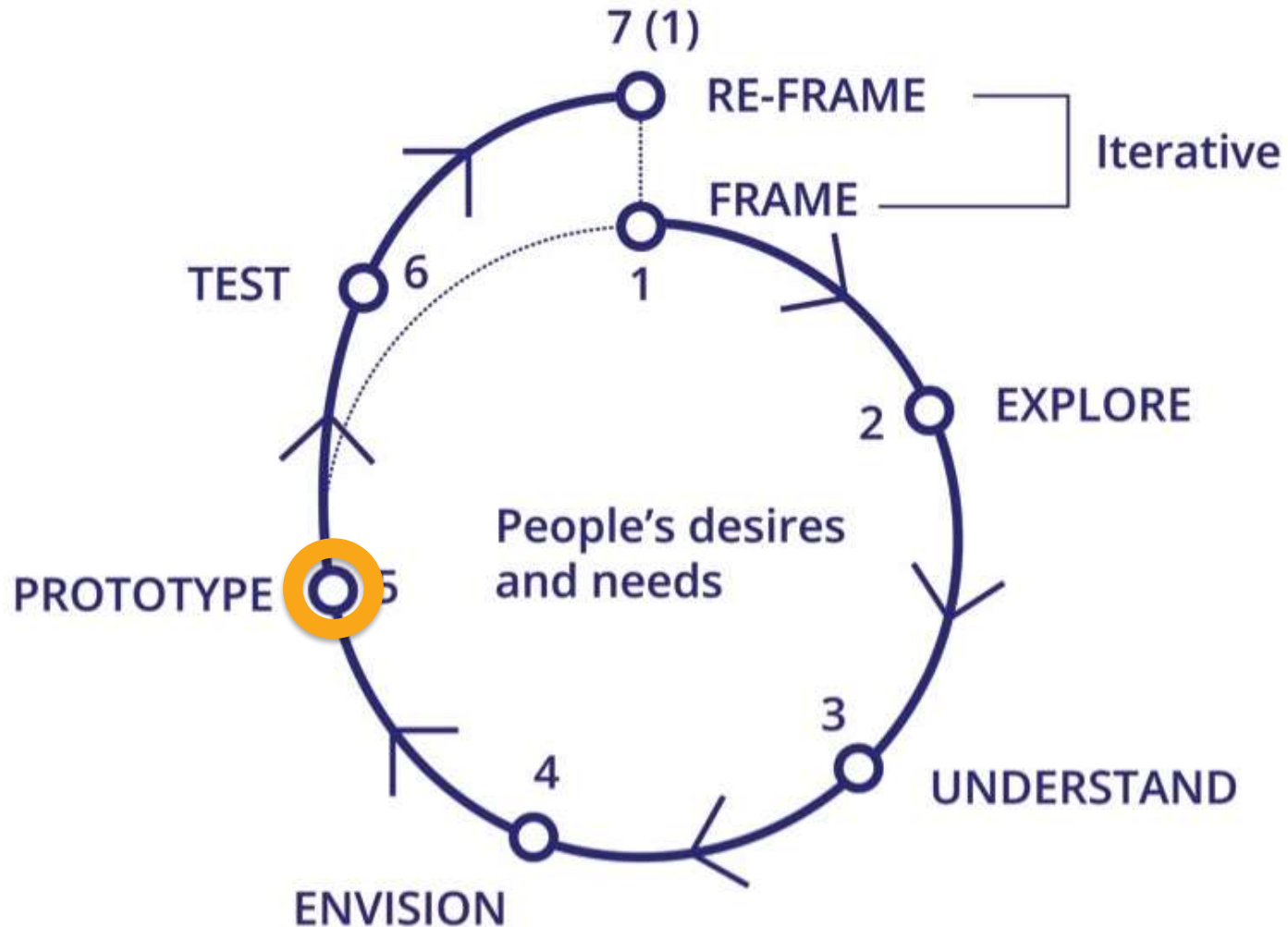
Break

15 min.

PROTOTYPE: Learning by Making



HCD Process Check-In



Prototype: A Definition

A first simple model, draft, or version of a design or an idea that tests a concept or process in the real world.

Why to Prototype?

- Tests designs in the real world.
- Manages the risk of misplaced investment in the wrong solution.
- Makes the abstract and intangible specific and concrete.
- Makes ideas accessible for interaction and critique by others.
- Enables collaboration & co-design

How to Prototype?

- Don't waste time on little details.
Don't waste \$ on fancy materials.
- Work with what you have on hand to create props, personas, and Frankenstein monsters, whatever you need to do to see and feel what's working and what's not.
- Seek to reveal, not conceal, flaws.

How to Prototype?

- Simple models or mock-ups will work for physical or digital designs, but less tangible services or experiences will need to be tested through performance, storyboarding, or other narratives.
- Test pieces and parts of your design when the whole is not testable. Mix levels of fidelity, focusing on critical components.

What to prototype?

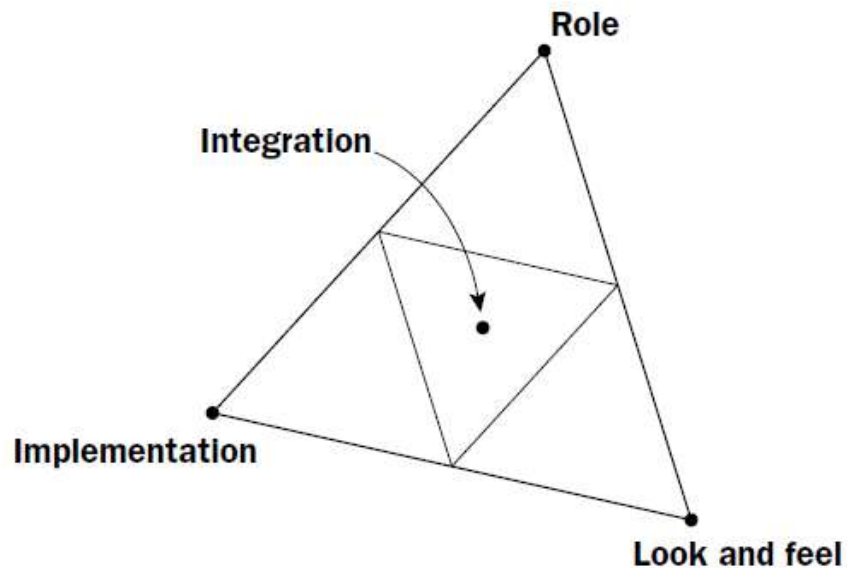


Figure 3. Four principal categories of prototypes on the model.

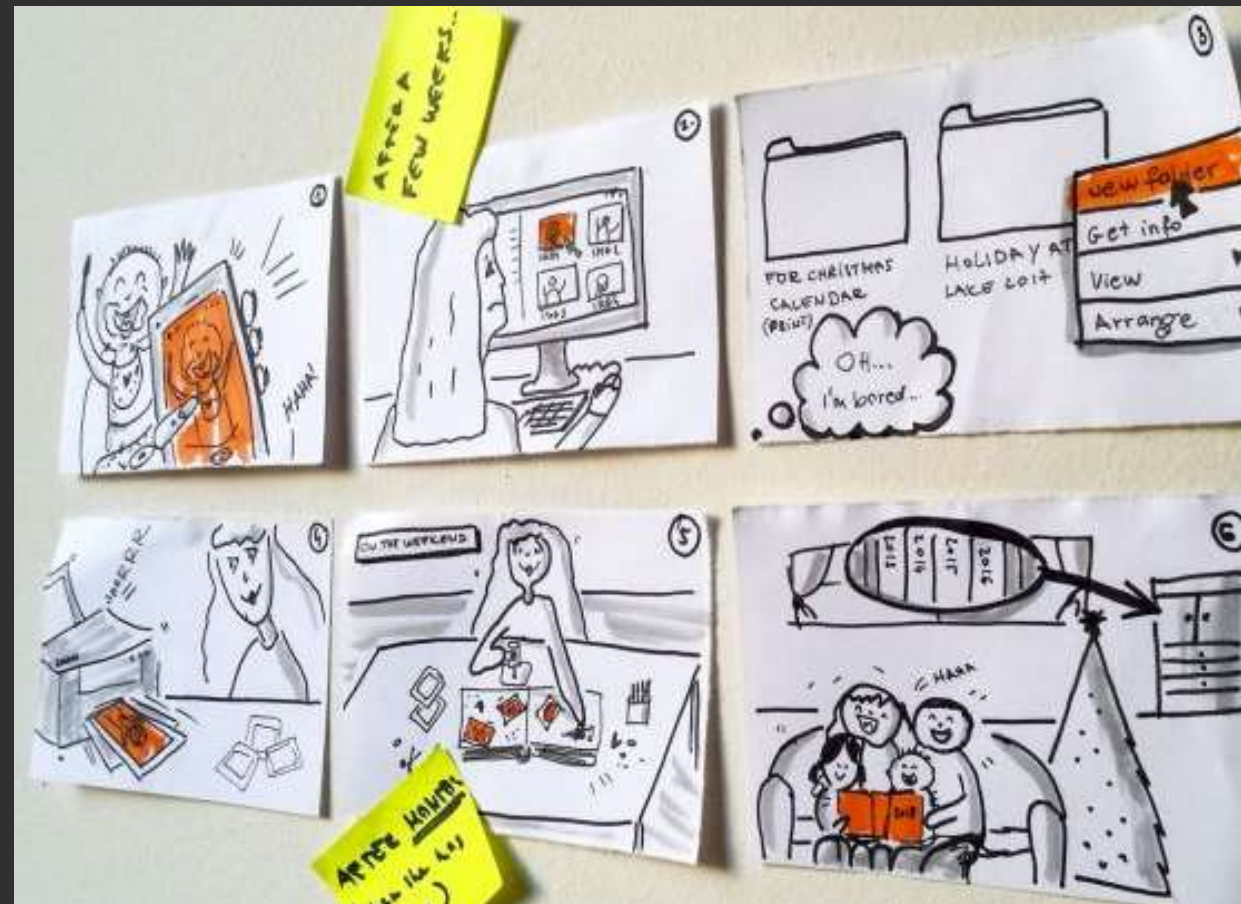
Prototyping Examples: Physical Models + Mockups



Prototyping Examples: Paper Prototypes



Prototyping Examples: Storyboards + Journeys



Prototyping Examples: Experience Models + Maps



Prototyping Examples: Performance + Roleplay

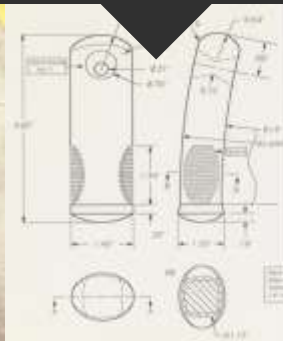


Prototyping Examples: Video



Learning by Making

Time to build your own!



Prototyping Process

1. Decide What to Prototype

Discuss which components of your design concept are particularly critical to its success and value. Determine which of these elements you need to learn more about through real-world prototyping and testing.

2. Develop Your Prototype

Create a prototype that models one or multiple aspects of your design concept. Use the materials provided or seek out your own. Get creative and be resourceful.

3. Test Out Your Prototype

Guide someone else (not in your group) through an interaction with your prototype. Observe what's working and what's not. Consider how to iterate and refine.

Reflect: Debrief + Preview



Daily Debrief

What you'd think?

- I learned...
- I wonder...
- I was surprised...
- I hope to...
- I plan to...

What's up next?

- More work on your designs tomorrow.
- Think about what + how to prototype.
- Consider bringing prototyping materials.
- We'll aim to wrap up at 3pm tomorrow.

*Rest up, and we'll
see you tomorrow!*



Thank You

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