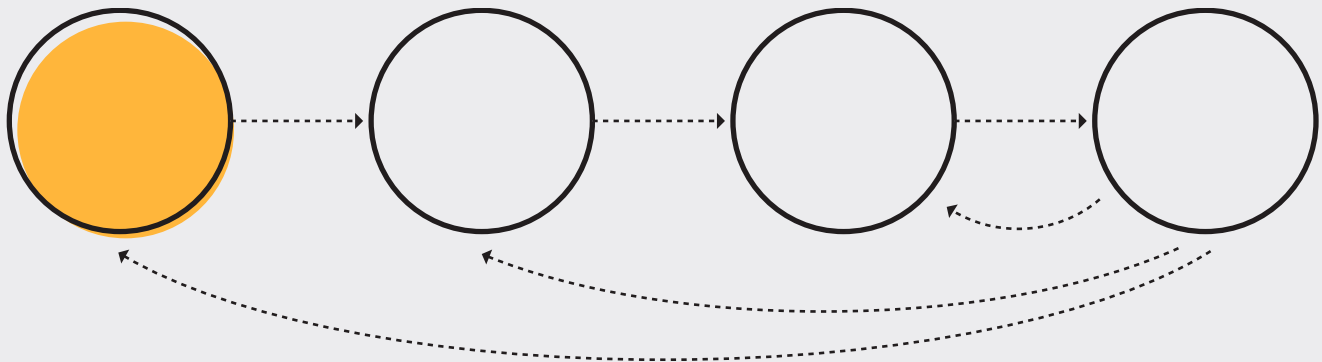


HUMAN CENTERED DESIGN (HCD) DISCOVERY STAGE FIELD GUIDE V.1



Purpose of This Guide

This Human-Centered Design Discovery Stage Field Guide is a teaching tool and a reference guide. It was originally created for Veterans Experience Office (VEO) by Insight & Design, a team within VEO that has expertise in Human-Centered Design (HCD). This guide was later adapted for use across other agencies through a partnership between GSA's Office of Customer Experience and The Lab at OPM.

HCD is a qualitative research method that helps groups solve problems and seek solutions in a way that prioritizes customer needs over a system's needs.

HCD involves four key phases of work. This guide solely focuses on the first phase, called the Discovery phase, or simply discovery.

Discovery provides an opportunity to carry out an ongoing and high-priority assignment by using the teams best equipped to conduct on-the-ground qualitative research.

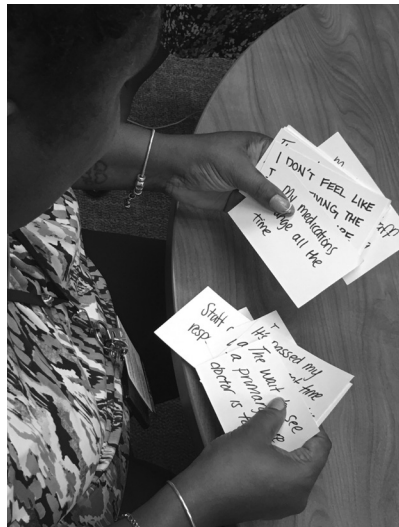
This guide offers step-by-step guidance on how to conduct HCD discovery and then synthesize the research findings, towards the goal of helping your agencies identify opportunities to improve service. The qualitative data can also help provide a more nuanced perspective of the quantitative data that is collected and interpreted.

In a broader sense, this guide also enhances the understanding and practice of HCD throughout the Federal Government. Use the tools and techniques within this guide to build a better understanding the problems your agency is facing, whether through mastering the process individually or identifying the right internal or external partners who can help deliver your agency's mission.

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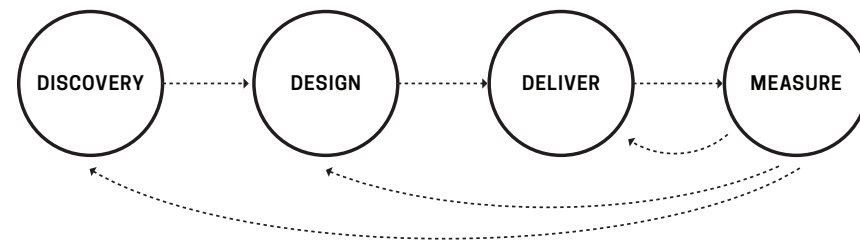
Human-Centered Design



What is HCD?

Human-Centered Design (HCD) is a problem-solving framework that helps make systems and products more responsive to the people, or the customers, who use those systems and products. It requires rigorous qualitative research and it directs that research towards the goal of deeply understanding the needs, insights, and emotions of customers. By using Human-Centered Design, we can focus our time, resources, and energy on solutions and innovations that make service delivery effective, easy, and in tune with the emotions of our customers.

HCD involves four phases of sequential work: discovery, design, delivery, and measurement. HCD is also cyclical. Once a design solution is launched, we measure its effectiveness against initial and intended aims, and then we continually tweak it, thus improving the solution over time. HCD recognizes that people and their needs are dynamic and changing and so our solutions are dynamic and changing.

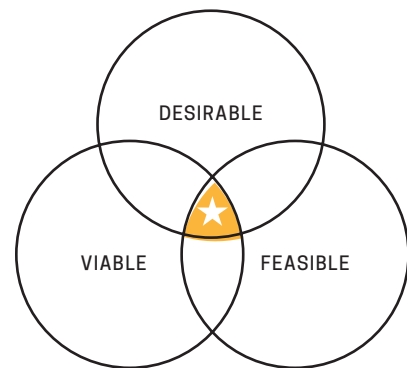


HCD allows us to understand the types of experiences customers want from a system, product or service. We refer to the customers' desired experience as the "front stage" of the design effort. HCD also helps us craft the processes that creates those desired experiences. We refer to this behind-the-scenes work as "the back stage" of the design effort. By tending to the front stage and the back stage, HCD allows us to put the customer at the center of our design development.

The HCD approach has already created immense value in advancing agency missions. For example, redesigning USAJOBS, the hub for federal hiring where nearly 1 billion job searches are done annually by over 180 million people, has resulted in a 30% reduction in help desk tickets after the first round of improvements. Not only does this reflect an easier experience for those involved in the hiring process, this change also creates savings in support costs.

DESIRABILITY LENS

The Desirability Lens, popularized by the design consultancy, IDEO, illustrates that Human-Centered Design should focus at the intersection between of what customers want (DESIRABLE), what is possible with current means (FEASIBLE), and what is capable of working within constraints (VIABLE).



HCD in Practice

Another example involves rethinking USDA's application process for free and reduced lunch for low-income students. By leveraging HCD techniques to identify issues and simplify the form from 5 pages to 1 page, USDA anticipates a system-wide savings of \$600M over 5 years. Following that initial effort, USDA utilized rapid iteration through a challenge platform to create a digital prototype available to districts nationwide in order to create greater cost savings and efficiency as well as a better experience for parents and program administrators in the future.

Guiding Principles

When engaging in Human-Centered Design (HCD) Research:

1. Listen deeply for what people say they want and need and how they may be creating workarounds to meet their needs.
2. Listen for the root causes that inform the attitudes, behaviors, and beliefs of the people you're interviewing.
3. Be aware of your own internal biases or judgments.
4. Fail early; fail fast; fail small. Know that iteration is learning.
5. Learn first, don't jump to solutions.
6. Be inclusive and make sure you're always hearing multiple perspectives. This goes for researchers and research subjects.
7. Be flexible in your thinking and plans. Adapt to changing conditions. Sometimes unexpected events or even kinks in the process can open the door to key insights or findings.

Keywords

These keywords embody the Guiding Principles of Human-Centered Design:

Empathy

No wrong ideas

Yes, and

Collaboration

Inclusion

Innovation

Iteration

Throughout this guide, you may encounter words or concepts that are unfamiliar to you. Definitions and explanations can be found in the glossary on pages 30-31.

Working With HCD

PURPOSE

This section provides a brief conceptual background for Human-Centered Design (HCD). While not exhaustive, this summary explains that HCD is a rigorous social science methodology used by groups in the public and private sectors to understand complex, interrelated problems and then craft dynamic solutions.

Checklist

- Review the HCD Discovery Guide.
- Ensure your team and leadership is aware that your team is using HCD.
- Review any other references you may have read in the past that seem applicable to this project.
- Review and take stock of past efforts that are relevant to your current project. What previous work has been done in this area? Can you measure the effectiveness or validity of these past efforts? If you find previous work to be effective and valid, how will you integrate those findings into your current project?

REFERENCES

Additional Research Methods

Additional social science research methods are abound. They all drive towards finding the truth of situations or the core causes of problems. You can find more on social science research methods via: <https://iriss.stanford.edu/>

Basics of the HCD Approach

Human-Centered Design is grounded in empathy and understanding. It begins with observation and research. We hear from people in their own words, in order to gain an understanding of what they want, expect, and need from a system, product, or experience.

HCD and LEAN

HCD and LEAN complement each other. HCD is based heavily on qualitative research, while LEAN is quantitative. LEAN enacts the first two Es of customer experience: Ease and Effectiveness, very well. HCD also enacts Ease and Effectiveness, but adds the third E, Emotion, into the process, through an understanding of human needs, and identification of the desired experience.

The two methods complement each other. HCD helps to define the desired customer experience front-stage, and then LEAN can be used to architect the backstage to deliver on that desired experience.

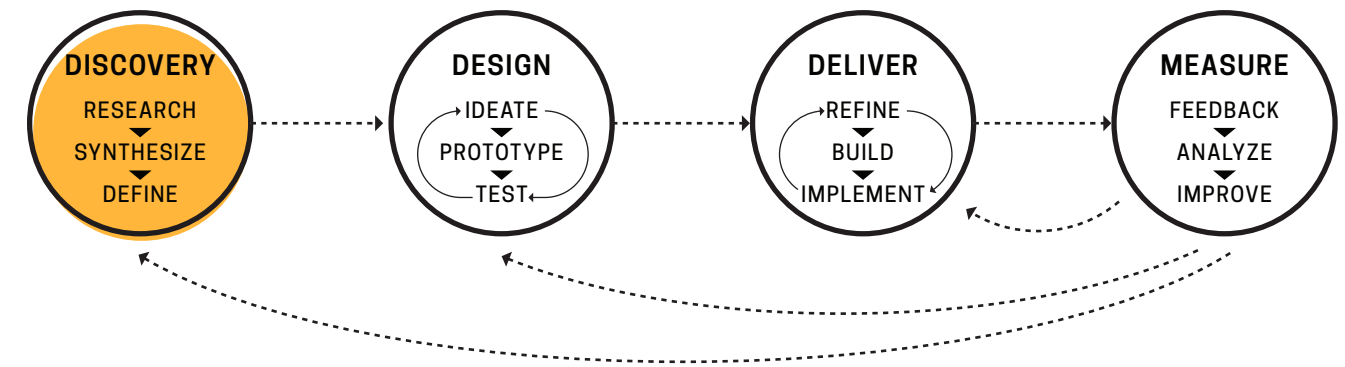
	LEAN	HCD
EASE	High	High
EFFECTIVENESS	High	High
EMOTION	Low	High

“What people say, and what people do, and what people say they do are entirely different things.”

-Dr. Margaret Mead, Anthropologist

Human-Centered Design and other qualitative research methodologies investigate and help sort out the root causes of conflicts like the one above by Dr. Margaret Mead.

LEAN and other quantitative methodologies allow for the understanding of current system states and the rational correction of mechanical and nonhuman inefficiencies in systems.



HCD Process

HCD is a cyclical process that moves from the discovery phase, through a detailed design phase, flows into the deliver phase for evaluation and iteration before finally entering the measurement phase. It begins with empathetic or sympathetic engagement and research. We hear from people in their own words, so we may gain an understanding of what they want and need from the agency.

By using HCD in our work to improve agency services for our customers, we can identify innovations or solutions that are desirable, feasible, and viable. Then, we design the solution, launch it, and measure its effectiveness against our initial goals. If the solution falls short of those goals, we make revisions based on further feedback from users and test it again. This dynamism is inherent to the HCD process. HCD solutions are for people and situations who are dynamic and changing, so the solutions are also dynamic and changing.

Discovery

In the first phase, **the focus of this guide**, you will become an expert in the context for your design project. You will build a problem frame. You will observe situations and talk to people. You will challenge your assumptions and bias by going to the source and being open to what you see and hear.

Design

With your insights gathered and opportunities defined, you will start to build prototypes and work through design ideas. You won't try to perfect these too soon. Instead, you will prioritize iteration, testing with customers, and making incremental refinements. Build, test and repeat.

Deliver

After prototyping and testing, you'll be ready to finalize your design, bring it to life, and share it out into the world. You will work with stakeholders to plan the logistics around the launch. You'll also set goals and expectations for the design.

Measure

In the Measure phase you will learn about how your design solution is performing. You will get quantitative and qualitative feedback to learn if you are meeting your goals and expectations. You will also be able to improve your design.

Discovery Cycle

Step 1: Project Brief

The project brief is the initial ask, expressed interest, or situation to study. This can come from leadership, one of your partners, or from your own experience or inquiry. Read more about Project Briefs on pages 10-11.

Step 2: Create a frame of inquiry

A frame of inquiry, or the "How Might We" question, identifies and frames the issue or the situation you are exploring. Use the "How Might We..." prompt to frame your area of inquiry. Read more about framing and HMW questions on pages 10-11.

Step 3: Recruit research participants

Work within your network (both inside and outside of your agency) to find participants who meet your criteria. Look closely for participants whose life circumstances and experiences align with your frame of inquiry. Read more about recruiting on pages 10-11.

Step 4: Plan your research logistics

With your participants lined up, plan out the rest of the research logistics. Reserve a space, gather the tools, draft questions, and establish roles for the team. Read more about planning on pages 10-11 and 14-15.

Step 5: Do the research

As the participants move through your frame of inquiry in their own way, remember that their perceptions and approaches are valid reflections of their reality. That is what you want to understand. Read more about doing the research on pages 16-19.

Step 6: Synthesis

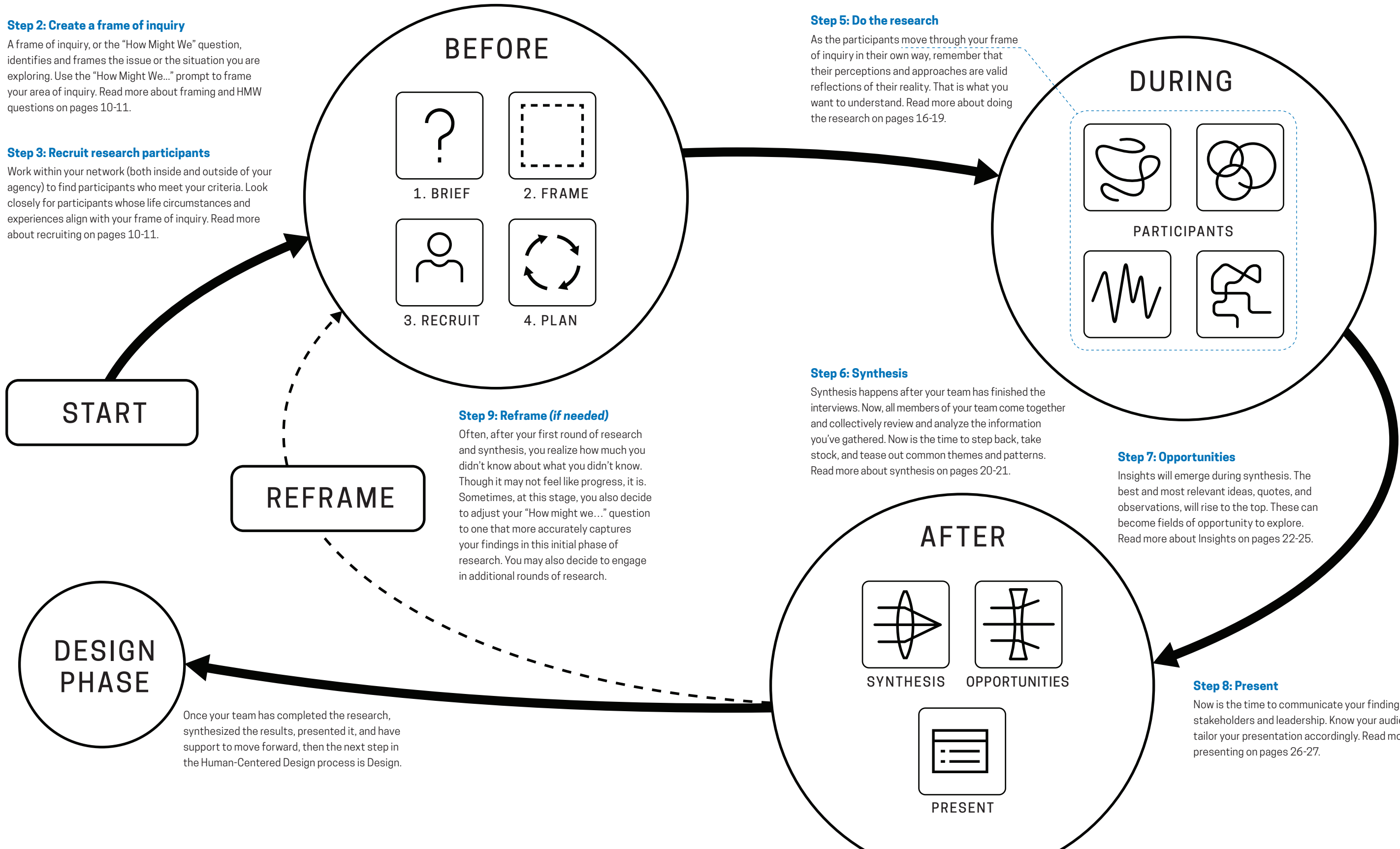
Synthesis happens after your team has finished the interviews. Now, all members of your team come together and collectively review and analyze the information you've gathered. Now is the time to step back, take stock, and tease out common themes and patterns. Read more about synthesis on pages 20-21.

Step 7: Opportunities

Insights will emerge during synthesis. The best and most relevant ideas, quotes, and observations, will rise to the top. These can become fields of opportunity to explore. Read more about Insights on pages 22-25.

Step 8: Present

Now is the time to communicate your findings to stakeholders and leadership. Know your audience and tailor your presentation accordingly. Read more about presenting on pages 26-27.



Once your team has completed the research, synthesized the results, presented it, and have support to move forward, then the next step in the Human-Centered Design process is Design.

How Might We...

PURPOSE

This section helps you begin research. It provides details about how to frame your inquiry and how to tend to logistics.

Checklist

- Secure a private meeting space and meet with your team.
- Review your project brief as a team.
- Brainstorm and generate a list of "How might we..." (HMW) questions that provide a frame of inquiry.
- Test each HMW question, or proposed frame of inquiry, against what you want to learn. Does the HMW question strongly align?
As a team, select the HMW that will now guide your research.
- Ensure your HMW question is open enough that it can accommodate a variety of solutions.

REFERENCES

What is a "How Might We" question?

For this method of discovery, a "How Might We" (HMW) question serves two purposes. First, it is the frame of inquiry of the research. And second, a HMW question should spur and inspire the team. The words have meaning. Might is open, something to play with. Compare this to the word 'should' which puts undue pressure and narrowing on the research from the start.

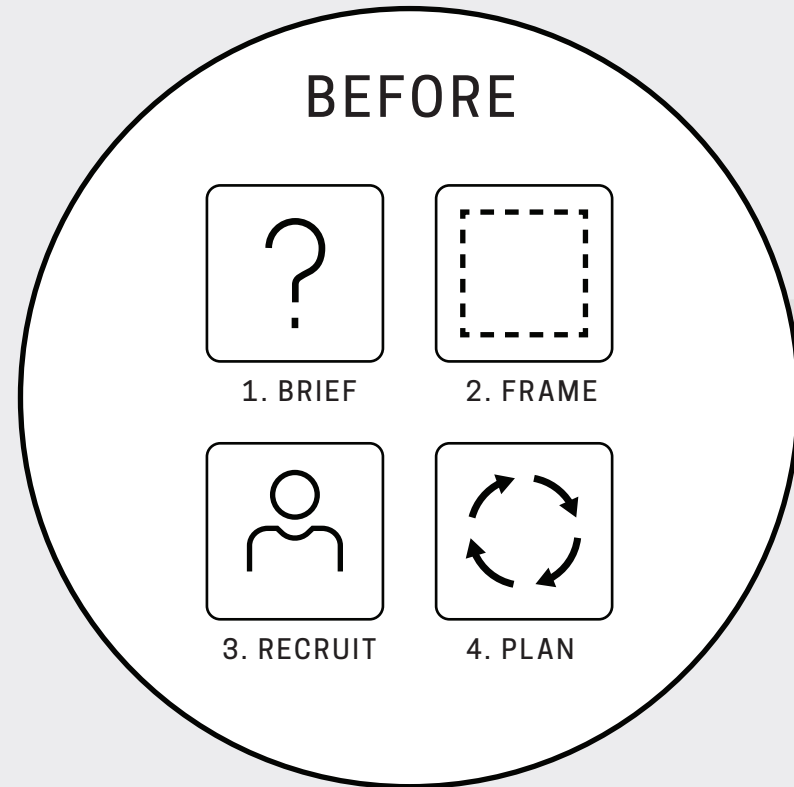
Examples of HMW questions from VA:

How might the Veterans Experience Office (VEO) help district team members to best serve and support local Veteran communities?

How might the Veterans Health Administration (VHA) better understand what Veterans expect and need from primary care?

VA CENTER FOR INNOVATION HCD TOOLKIT

“Tighter framing directly correlates with a more meaningful, targeted solution.”



Introduction

Preparing for a successful discovery research effort takes time and step by step planning. You'll want to have a few key things lined up before you begin. Doing so helps pave the way for a smooth start.

Get Organized as a Team

Assign roles and responsibilities of team members. Key roles for HCD discovery include:

- Project Managers recruit, schedule interviews, confirm interviews, gather/store consent forms, gather/store raw and synthesized data, communicate with stakeholders
- Design Researchers select research strategies for gathering qualitative data, conduct interviews, lead synthesis, and facilitate efforts to identify the most relevant design opportunities.
- Research Assistants takes photographs and gathers audio recordings of the interviews.

Select Your Research Strategy

Discuss and select your methods for gathering qualitative data. The key method that discovery research requires is in-depth interviewing. Ideally, you are interviewing participants for an hour or more (if time allows) in their homes, workplaces, or other sites where they feel comfortable (such as in a coffee shop). Consider using additional research strategies to supplement in-depth interviews, such as spending time observing people in their world.

Frame Your Inquiry

Take time to frame a guiding question that will become the foundation of your research. When the FDA sought to align their testing standard for facemasks with testing standards for the same product managed by another federal agency, the problem was initially framed as a technical negotiation between scientists. However, during a co-design session it became clear that comfort was a critical factor that was missing from both testing standards and needed to be included in the problem frame. This recognition of what was missing led a family of problem frames that would take the effort in new directions.

- How might we reduce redundancy between agencies that regulate the same product?
- How might we incorporate comfort into the testing process for manufacturers?
- How might we understand the broader experience of using facemasks?

Select a question that is broad enough to encompass the full shape of the issue you want to research but defined enough to keep your research focused and on-track.

Secure Allies

Enlist supporters after your team has selected a guiding question. Align with your allies before you recruit participants. Secure allies by reaching out to people in your network (in and out of your agency) who could have an interest in this research. By making others aware of the work ahead, your team helps build consensus and goodwill around the project. This goodwill is key to moving the project forwards in a smooth and successful manner.

Recruitment

PURPOSE

Smart recruitment will determine the legitimacy of your research and, by extension, the success of your project. This section provides tips for smart recruitment.

Checklist

- ❑ Involve your allies and supporters. They can be key to finding participants who are the best match for your research project.
- ❑ Inform your participants at the point of recruitment that they have the right to withdraw from participation at any time for any reason.
- ❑ Guard against recruitment that results in participants who all sound the same or bring to the table the same perspective. Course-correct and ask those doing recruitment to widen their search.

REFERENCES

Health and Human Services Example

A grant program that provides education and training for low income individuals in the healthcare field was seeking ways to improve collaboration between instructors and the local grant programs that are funding student education in hopes to encourage student persistence.

Types of people interviewed:

- Program Participants (students)
- Job developers
- Case managers
- Program Directors
- Instructors
- Representatives from partner organizations (workforce boards, social service agencies, non-profits, etc who provide other supports to students)

Principles

Finding and Recruiting

The focus of your research project determines who you recruit and how many people you recruit. Additionally, your recruitment effort should aim to capture a wide net of perspectives on the issue that is the focus of your discovery research. Consider recruiting people of different service branches, ages, ethnicities, genders, and life circumstances so as to capture a breadth of experience and perspectives

Partnerships

Partner with the facility, union(s), and/or organization you're studying. Find a point of contact who can help you recruit research participants. Be clear with them about your needs. Communicate with your partners consistently to ensure that they understand who you're researching and what you need to complete your research.

Qualitative Research and HCD

People familiar with quantitative research look for statistical significance. Qualitative research is different. Acknowledge this difference with any quantitatively-based partners. Discuss with them how usable insights from the qualitative side give color and human insight to the quantitative data to which they have access. While quantitative data informs service effectiveness quite well, qualitative data leads to services that are easy, effective, and emotionally resonant and can come from any individual. We don't need huge sample sizes to find usable insights.

Small sample, big opportunity

Proctor & Gamble's Swiffer product was the result of design researchers observing a cleaning workaround done by one woman in her home—she wrapped paper towels around a broom. Observation of even one person can lead to a product or service that resonates with millions.

Methods

Screening Candidates

One way to discern whether an individual is a match for your research topic is to have a short conversation with them. Ask them to tell you their story. Use open ended questions, like, "Can you tell me a time when..." or simply, "Tell me about a day in the life at your agency."

This also gets directly into the touchpoints or pain points you may want to study. Questions like this ensure that you identify participants whose experience is pertinent to your work. It's fine if the individual is not a strong match. It saves your time and the individual's time. Thank them for their interest in the project and for sharing their story, and ask if they are open to you contacting them in the future for other research projects.



Identifying Participants

Give those who are doing the recruitment a clear picture of the kinds of participants you are looking for. For example, if your research topic involves geriatric care from VA, you are recruiting participants who receive this care.

Scheduling Interviews

Once participants have been screened and selected, it is important to keep them informed about their participation at key touchpoints in the interviewing process. If possible use their preferred method of receiving communication (be it a phone call, email, or text) to contact them when the interview date is set, and also give them a courtesy reminder a day in advance of the interview.

Problem	Research Participants
Improve the application process for Federal job candidates	Job candidates, HR professionals, hiring managers, agency program leads, college career offices, agency heads, policy specialists, back-end system administrators
Simplify the process for small businesses selling goods and services to the Federal government	Small business owners, business development professionals, contracting officers, program managers, agency contract/schedule leads

Plan the Interview

PURPOSE

This section outlines what you'll need to do immediately before you conduct an interview. By tending to these logistics in advance of the interview date, you free up more time to focus on your research method and approach.

Checklist

- Try to meet with participants at their home, work, or a place where they feel most themselves, such as their local library or coffee shop.
- Pack bottled water for you, your participant, and your teammate(s).
- Have at the ready multiple copies of the Informed Consent Form.
- Review your participant information one more time.
- Take a moment for yourself, whether in the hallway, or interview space to clear your mind and focus on the interview ahead.
- Arrive early to the interview site.

REFERENCES

Below are a few examples of currently used research methods that seek to understand people in their contexts and elicit their experiences, wants, and needs.

Design Ethnography

Helsinki Design Lab's field guide to ethnographic research: <http://www.helsinki.designlab.org/pages/ethnography-fieldguide>

Intercepts

Behavioral scientist and researcher, Stephanie Habif, wrote a brief guide to Intercept interviews: <https://medium.com/behavior-design/using-intercepts-to-know-your-humans-9cddf24037ff#.mjp45212o>

Prepare Research

Review Materials

Prior to the research session, review your project brief and “How Might We” question. Review participants names, titles, and any background information you may have.

Ensure Informed Consent

All participants must be given the opportunity to provide their official consent-to-participate in the research project. They also must be given the opportunity to withdraw from the study. Different kinds of research may require different kinds of information disclosure and participant consent. Standard consent forms are one to two pages. Page one will cover project details. Page two will cover permissions to document the interview and participant signature. A blank copy of a ‘page 2’ can be found on page 33 of this guide. You can create your own or use this one.

Mentally Prepare

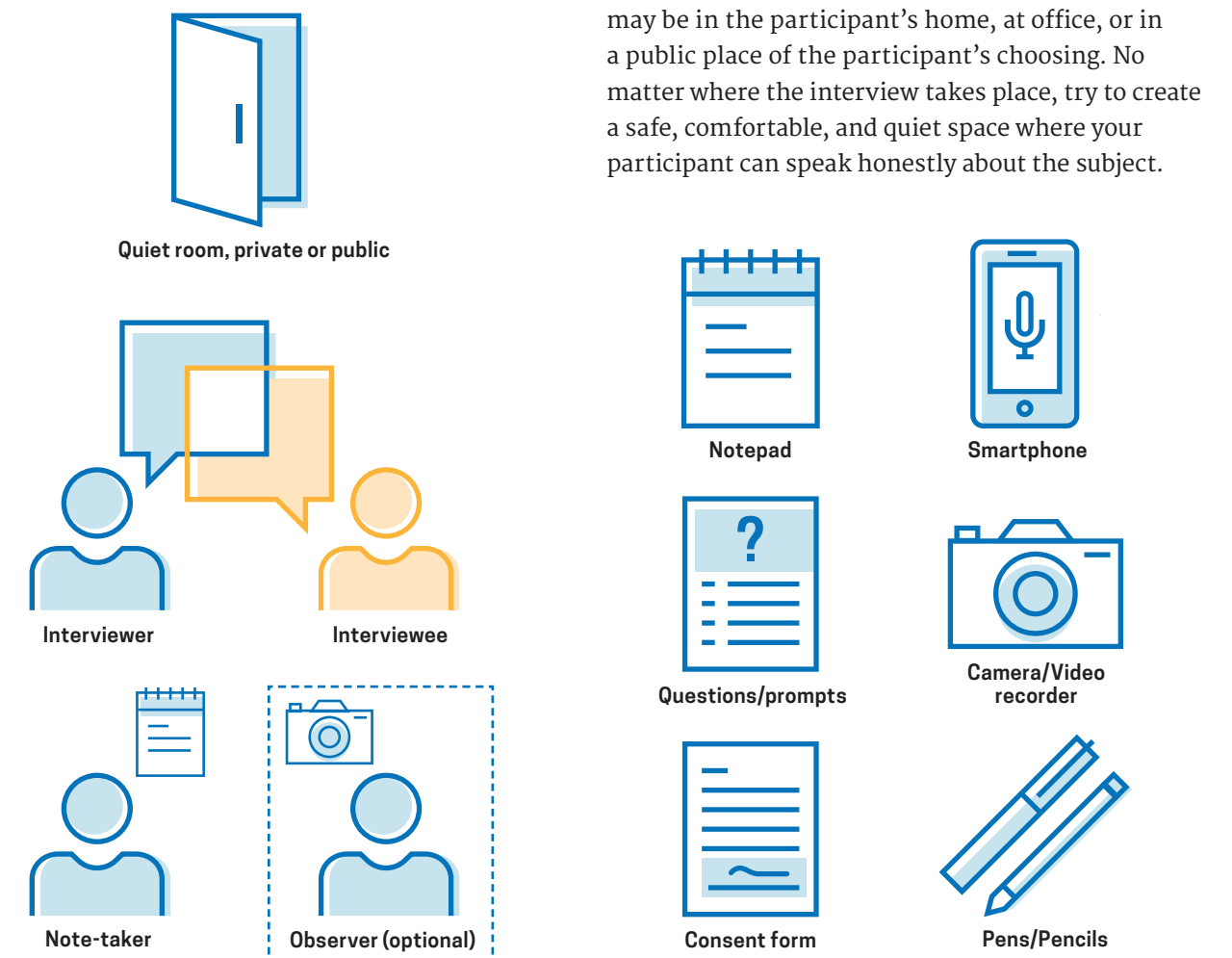
Reflect on the following key HCD beliefs before you begin the interviews:

1. The participant is the expert in their own experience. We want to observe and listen to them so as to understand their experience.
2. The insights of participant are facts as they believe them to be. There are no wrong answers in the interview.
3. We approach the participant ready to hear their story and their perspective. Before the interview, we check at the door our own assumptions and internal biases.
4. We are mentally present and focused in the moment and on the participant.

Conduct Research

Pair Up

Conduct your research in pairs. Identify the person who will ask questions and the person who will take notes. The interviewer should focus on the interviewee and the notetaker is there to support and document the interview. Introduce yourselves, explain the consent form, and ask the participant to sign it. The notetaker can secure the signed form.



Equipment

The equipment for this kind of research is simple and low-tech. Don't bring your laptop into an interview unless absolutely necessary. And do not use it to take notes. Instead, notes should be hand-written. If you have received consent to capture audio, use a recording device, such as a smartphone. Reserve a quiet, private room or wherever your participant feels comfortable. This may be in the participant's home, at office, or in a public place of the participant's choosing. No matter where the interview takes place, try to create a safe, comfortable, and quiet space where your participant can speak honestly about the subject.

Visualizing the Interview

PURPOSE

This diagram is a visual representation of the path of a typical HCD discovery interview. We invite you to use it as a guide for your own interviews, if you find it helpful.

Checklist

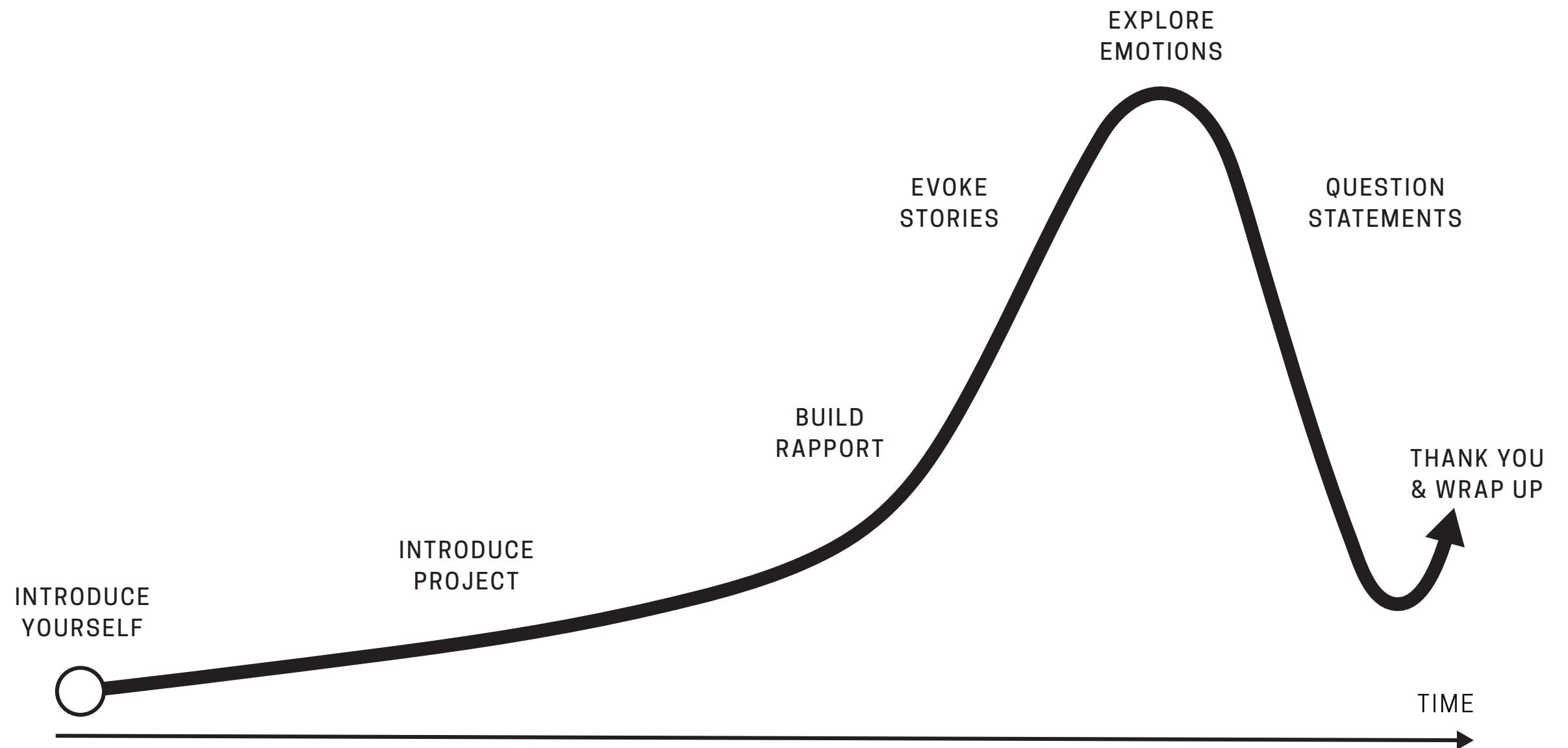
- Give introductions enough time and breathing room. Participants may want to spend some time getting to know you before they open up to you.
- Share the purpose of the interview with your participant.
- Confirm that they understand the purpose.
- Tell them to let you know if you ask a question they don't understand.
- Smile and make eye contact.
- Be silent if the participant seems to be thinking or mulling something over. Allow them time to think. Get comfortable with long pauses.
- Be mindful of the participant's comfort level. Pull back when necessary and go in deeper when possible.

REFERENCES

Stanford d.School

The diagram to the right, adapted from Stanford's d.School, represents a path you may follow when conducting an interview. If you'd like to learn more, please find additional information on this model at: <https://dschool.stanford.edu/wp-content/themes/dschool/method-cards/interview-for-empathy.pdf>

REMEMBER: You represent your agency and you are there to listen and document the participant's experience. You have an opportunity to make the participant feel heard and understood by your agency, which will go a long way. During the interview, be present and stay focused on the participant and their story. Remember to "Own the Moment". That is most important.



During the Interview

PURPOSE

This section explains how you, as the interviewer, will ask questions that help guide and ground the conversation and that help reveal the participant's viewpoint on the research topic at hand.

Checklist

- ❑ With pen and notepad in hand, jot down interesting words, phrases, or metaphors. (Interviewer)
- ❑ Position yourself at an angle to the participant, so you're not facing them straight on. (Interviewer)
- ❑ Speak slowly so as to give yourself time to think. This also helps put your participant at ease. (Interviewer)
- ❑ If you hear an interesting word used, ask about it, even if you're not sure where it will lead you. (Interviewer)
- ❑ Be aware of your interviewee's tone and body language. Read the signs and pivot if you notice discomfort.
- ❑ Listen intently, and transcribe the interviewee's answers verbatim (as possible). Do not paraphrase. Listen for strong or interesting quotes. Mark them for later (Notetaker).

REFERENCES

Additional Research Methods

There are several other strategies for gathering qualitative data. They include, but are not limited to, the following:

- **Shadowing:** The researcher acts like a "fly on the wall" quietly observing the participant as they move through their day.
- **Guided Tour:** The researcher arranges for the participant to walk and talk them through a tour of the their workplace, home, or daily activities. Learn more through this link: [http:// www.designkit.org/ methods](http://www.designkit.org/methods)

Be Fluid

Interviews should be planned and questions scripted. During the interview itself, consider your interview script as a compass that guides you. Feel free to go "off script" or change the order of questions if you feel that will benefit the conversation and research.

Ask Open-ended Questions

Allow participants to answer in their own unique way by asking them easy to follow, open-ended (as opposed to yes-or-no) questions.

Use The 5 Whys

Use the 5 Whys strategy to help clarify the conversation during those moments when your interviewee speaks in generalities or uses ambiguous words like "fine". The 5 Whys strategy is simply this: ask your interviewee "Why do you say that?" or "What does "fine" mean to you?." Do this 5 times in a row, building off each of their answers.

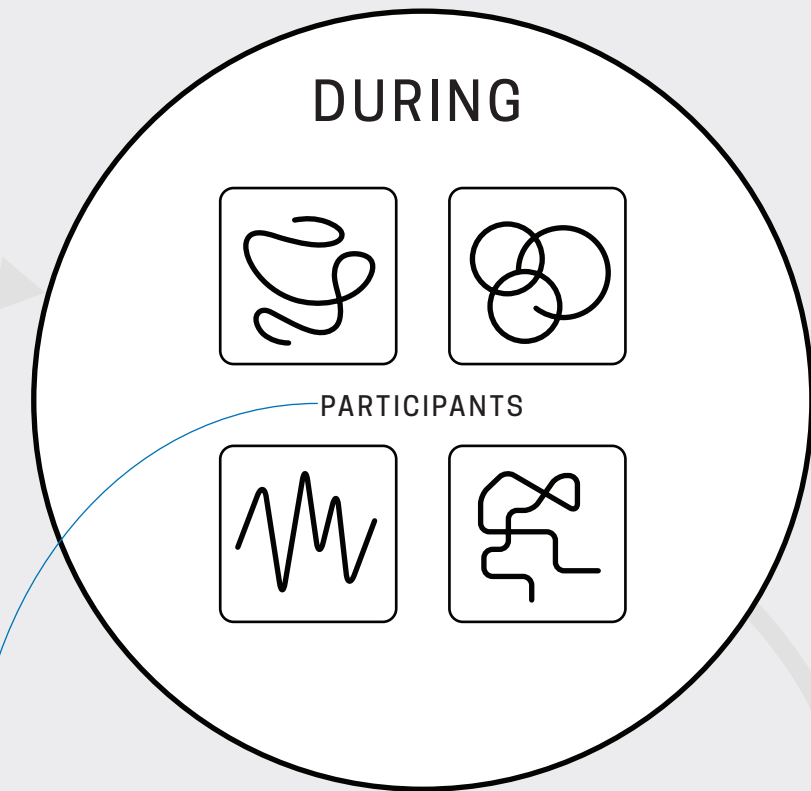
Know When to Pivot

Stay mindful of the situation and purpose. Use what your participant says as direction on where to go in the interview. Ask yourself: Is this part of the conversation informing the challenge or HMW question? Can it inform the question if I continue this line of conversation further or should I redirect my approach? If a participant embarks on an interesting tangent, use your best judgment to surface insights that might inform your research.

Close the Interview at the Right Time

How long is enough? Tough question. The answer is that you'll get a better sense for this with practice. You need enough time build rapport and allow the participant to open up and share their story.

Good interviews can be draining for the participant and for the interview team. It's important to respect people's time and wind down the interview in a timely manner. Don't go over the planned time frame. If an interviewee seems tapped out before the scheduled end, gently close out early. Always thank the person for their time. Provide follow up information as necessary, such as contact details.



Sample Questions

Additional ways to get at The 5 Whys:

What experiences motivated you to take part in this project?

How do you feel about that? (Listen for feelings, versus thoughts)

What do you think about that?

Tell me about that.

That's an interesting thought; can you help me understand what you mean by that?

Why do you think that?

Why do you think it's like that?

Synthesis

PURPOSE

This section helps you prepare for synthesis and provides guidelines for doing synthesis. For a visual representation of synthesis, see the graphic to your right.

Checklist

- Secure a conference room to work.
- Have sticky notes and markers.
- Assemble the research team.
- Review your Project brief.
- Have copies of all raw notes.
- De-brief with your partner immediately after the interview if you're able to.
- Have scrap paper or sticky notes to jot down a few quotes from your subject that really caught your ear.
- Have a camera or smartphone with camera. You'll need to take photos of your stickies and analysis before you take them down from the walls.
- De-brief with your larger design team nightly when you're on the road for research, if possible, while the interviews are fresh in your mind.

REFERENCES

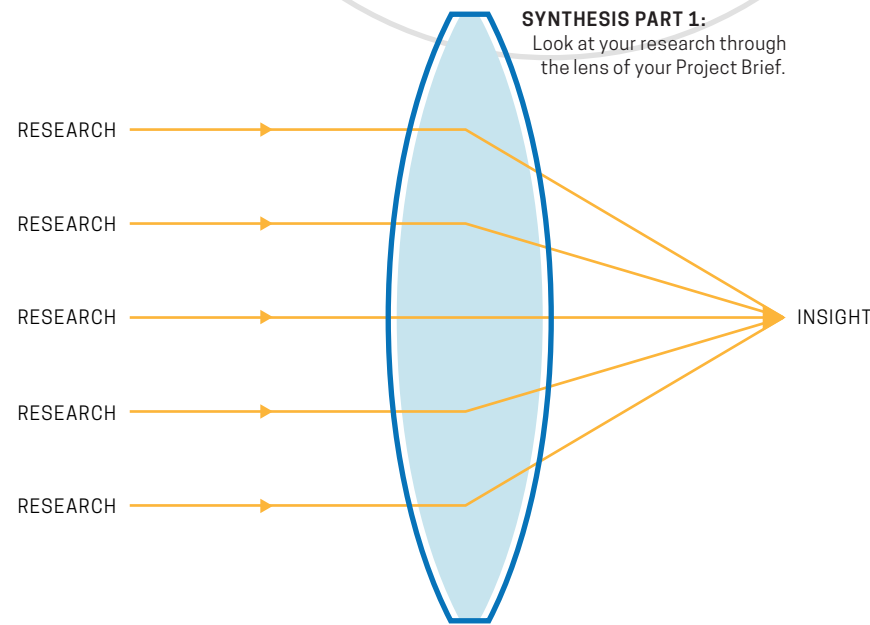
Example from VA

Sometimes in-depth synthesis is needed to narrow to the core insights. And sometimes a key insight can surface quickly. For example, qualitative research on the MyVA-311 support line revealed the insight that Veterans who call the 311 line in a time of distress will more likely hang up if told to call a separate number. That insight prompted a change: now Veterans who call the 311 line during a time of distress are automatically routed to the support they need.

Introduction

Synthesis is when the team of researchers comes together, brings to the table all of the interviews and qualitative research they've gathered, and looks for patterns and themes across the research. In some situations, you will be doing synthesis in your research pairs, while in other situations, you will bring your synthesized research to a larger group for further, cross-group synthesis.

Think of synthesis as a group effort to filter all of your field data through the lens of the Project Brief. See the model below for a visualization. We take the individual interview or workshop or observation, and during synthesis, we look at them through the single, project brief lens, in order to focus the research together according to patterns, similarities, or dissimilarities.



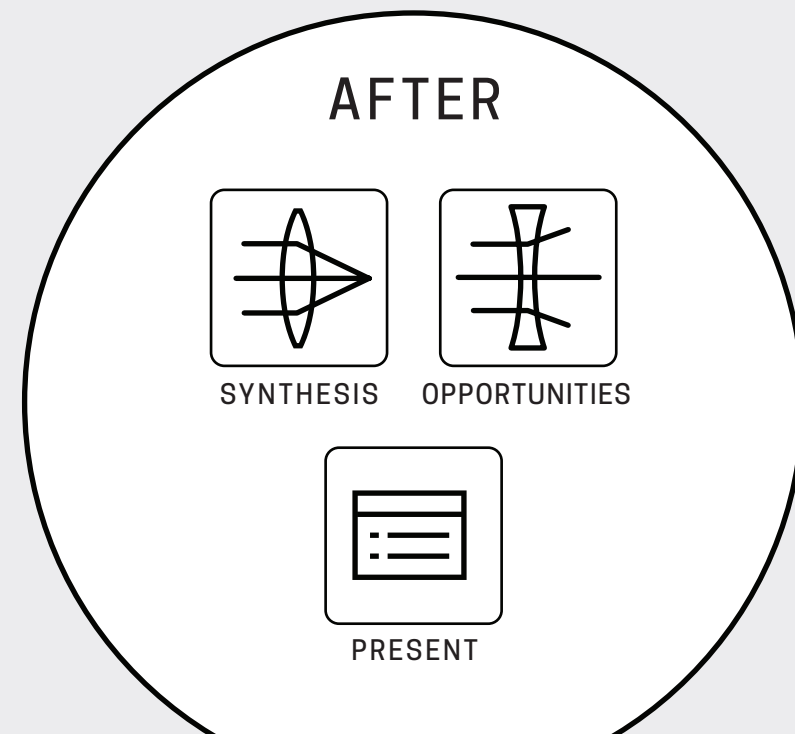
We take the interviews, findings, and qualitative research data collected, and we filter them through the Project Brief lens, in order to identify data that is most relevant to the research topic. Then, we reflect on the relevant data and work to identify common patterns or trends.

Goals

Find Root Causes

As our Guiding Principles (p. 5) state, finding the root causes of attitudes, feelings, or behaviors are some of the key insights we drive towards in HCD discovery. If your research has been directionalized to understand why something is the way it is, then the root cause, or the reason why, will be discovered during this synthesis phase.

Synthesis refers to analysis and interpretation in HCD research.



On Collaboration

You do synthesis with other people. It could be one other person or many people.

Synthesis is not brainstorming but the two can look and feel similar. Synthesis is always guided by a larger research question or topic. You collaborate, process information, document, and some cases generate ideas. The following guidelines from Ideo.org's *Design Kit*, are useful to keep in mind during synthesis.

Defer judgment: Be open to any and all observations and ideas from anyone. Resist the urge to judge or edit others or yourself.

Build on the ideas of others: Listen and encourage others. Think of how you can add to others' ideas and support them.

Stay focused on the topic: Keep the greater purpose in mind. Know the scope of the synthesis and stay in bounds.

One conversation at a time: Be present in the moment. Give your full attention to the person speaking and listen first.

Go for quantity: This applies when you are either transcribing things you learned or when you're generating ideas. You can edit later.

Finding Insights

PURPOSE

This section provides methods for finding insights. We recommend that you use at least two methods to parse your research in order to see multiple patterns and themes.

Checklist

- Select at least two methods that are most applicable to your research and use those to parse your research.
- Invite each person in the room to contribute, especially if one or two people seem to be dominating the conversation.

THE SET UP

Environment and Materials

Find a quiet space where you and your team can talk and interact over the course of a half-day or day. Make sure this space has tables or desks, adequate lighting, and, ideally, clear window and wall spaces.

Have on hand the following supplies: pens, paper, and tape. Also helpful to have are sticky notes, markers, and presentation-style paper tablets or rolls. The visual aids you make with these materials will help you sort, arrange, and rearrange your research findings so as to find patterns and trends.

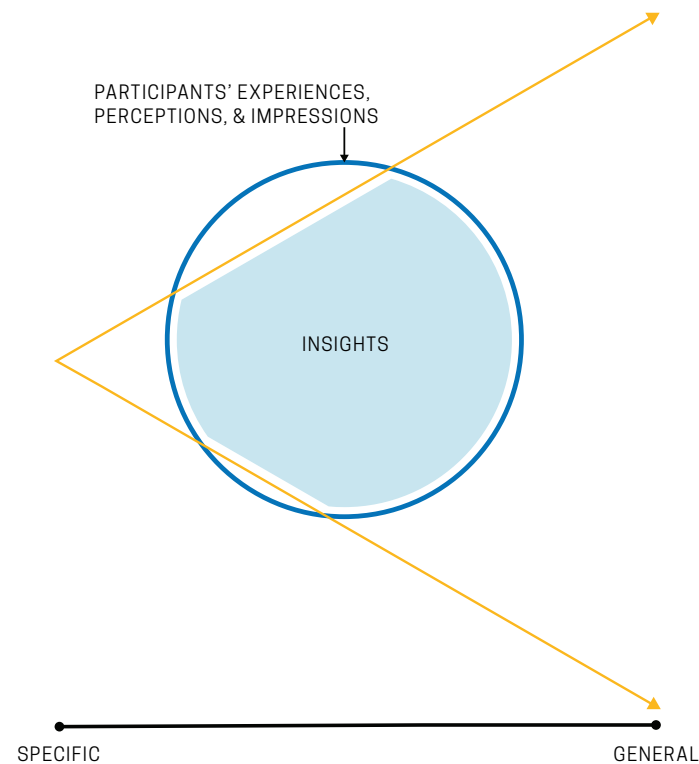
Having Trouble Getting Started?

Use the Rapid Fire Recall method. Using only single words or short phrases (no long sentences), quickly write down everything you can remember about the interviews and other data gathering efforts. These can be words, phrases, gestures, or movements.

What's an Insight?

“Insight” is how we refer to a theme or pattern across research in the HCD process. Identifying these takes time, reflection, and patience.

You may ask yourself, “Is this an insight?” or “Is what I’m saying too small to be an insight?” or “Is what I’m saying too general?” No matter. Contribute your thought to the conversation and see where it goes. This is not the time to hold back. This is the time to put all reflections and wonderings out on the table for the group to explore.



Insights live right in the middle of the experiences, perceptions, or impressions you heard from your participants.

The sweet spot is where the participant experiences, perceptions, and impressions are neither too specific nor too general. Generalities are often already known, while unique experiences, perceptions, or impressions might not have resonance across your agency’s customers.

How to Find Insights?

Process 1: Sorting by Action

- Make quadrants on a wall or window in your work space.
- Sort the words and phrases from your research into what participants are Doing, Saying, Feeling, Thinking. This method highlights different relationships between the research terms than is possible through the earlier methods.
- Step back and see if you can glean any additional insights from this new way of looking at your research.

DOING	SAYING
FEELING	THINKING

Process 2: Clustering

- Write words and phrases that resonate from the interviews onto pieces of paper or sticky notes.
- Cluster the notes that seem somehow similar on a wall or window so you can step back and look at them in groups.
- Name the clusters according to how you and the team have naturally started to refer to them in your conversation.
- Identify quotes that support each theme.

Process 3: Concept Mapping

- Write key words and phrases from interviews on a whiteboard or large piece of paper.
- Draw lines or connect related concepts, processes, and/or behaviors and describe the nature of the relationship.
- Use arrows to start mapping the relationships to flow between those concepts, processes or behaviors. For example “when this happens, then this happens.” Remember this is according to what your research tells you *not* according to what you think is right or best.

Insights to Opportunities

PURPOSE

This section introduces you to the concept of harvesting opportunities from insights. We visualize opportunities using the lens metaphor once again (see diagram on opposing page).

Checklist

- Have a snack and a break between uncovering insights and defining opportunities
- Remember: it's okay to feel tired. This is mentally exhausting work.
- Invite each person in the room to contribute, especially if one or two people seem to be dominating the conversation.
- Build off of each other's ideas. Even if an idea seems off at first, play it out; it could lead to an important point or opportunity. The ugly duckling could, through group synthesis, transform into a swan.

REFERENCES

Example from VA

During the 2016 HCD Discovery Sprint, we found the insight that VA Medical Centers (VAMC) are separated and siloed. In response, we found that the opportunity for the Veterans Experience Office (VEO) in this instance to be a continued evolution of and emphasis on the Community Veteran Engagement Board (CVEB) network. In this, we can best use VEO's enterprise level reach while at the same time strengthening local networks and, eventually, alleviating siloing between VAMCs.

Identifying Opportunities

“Opportunity” is the term we use in HCD to refer to areas of need in our service offerings.

You find opportunities by viewing your insights through the lens of HCD. See the model to the right for a visualization.

Why Find Opportunities?

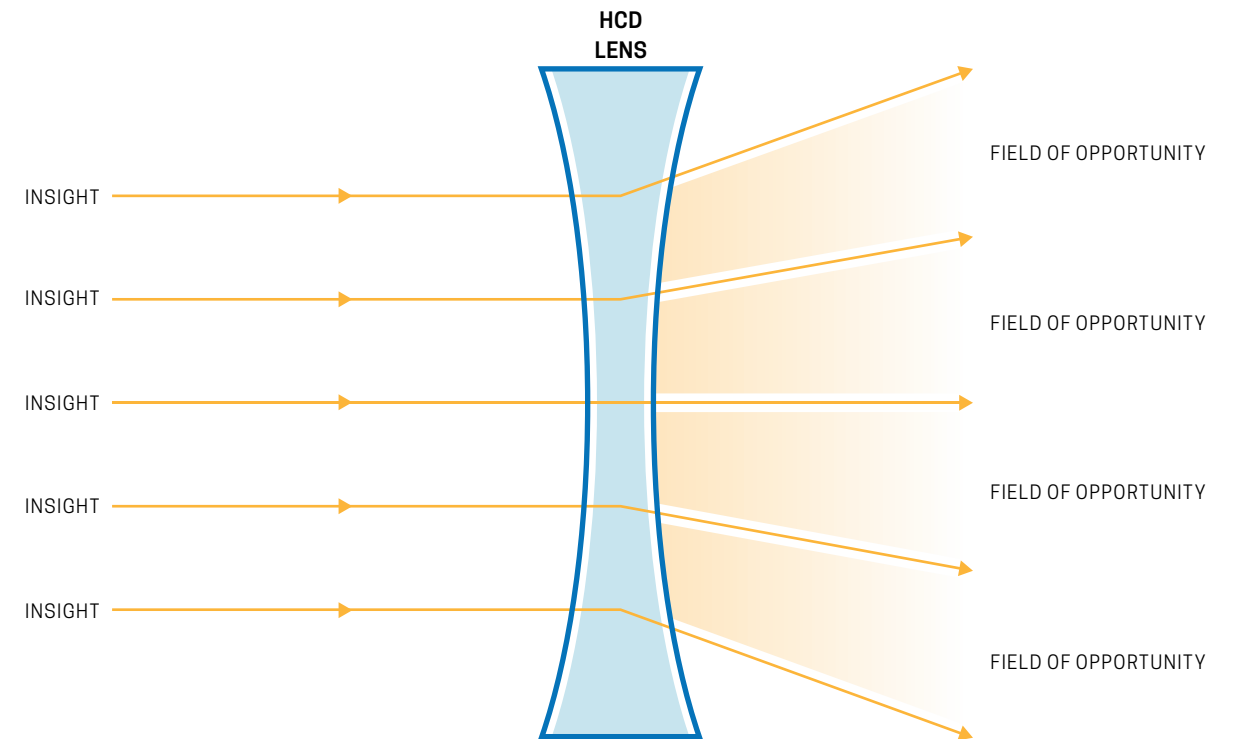
We work to identify opportunities because they reveal real needs that we heard expressed by participants during the research phase.

Let's be clear. Opportunities are not solutions. Opportunities pave the way towards solutions. Opportunities identify an area within a service system that needs to be addressed and made better. Opportunities identify the exact problem we're trying to solve.

Once an opportunity is identified, we can either extend the team's support to address that opportunity or we can share recommendations for addressing the matter with our internal and external partners. By identifying and pursuing opportunities, your agency can apply energy and resources to those areas with the highest need and/or to those areas that could have the maximum positive impact on the lives of your customers.

Insights and Opportunity for VHA

Researching the patient experience within VA's healthcare system yielded insight into a service expectation gap between patients and physicians. Rather than thinking of doctors by their specialty, patients considered the doctor they saw most often to be their primary care physician. As an illustration, this disconnect created frustration when a patient could not get information from a podiatrist they saw monthly that was held by a general practitioner they saw annually, and pointed to opportunities to make medical information more universally accessible.



Opportunities Can Look Like:

- **Touchpoints:** This is where the research team maps specific points wherein the customer or employee interacts with the agency.
- **Root Issues:** This is where the research team identifies the root cause of complicated challenges, even if the root cause is multifaceted and complex.
- **Important Moments:** This is where the research team identifies those *moments that matter* most to customers as they interact with the agency.
- **Best Practices:** This is where the research team identifies where in the agency people are doing it right, towards the goal of spreading these best practices more broadly.
- **Pain Points:** This is where the research team identifies where the customer or employee experiences a problem in the system.
- **End-to-End Experience Mapping:** This is where the research team maps out the end-to-end customer or employee experience journey.

Present Opportunities

PURPOSE

The section details how the research team can effectively communicate their research findings to key audiences and explain how the research findings lead to opportunities.

Checklist

- Review your Project Brief and frame of inquiry.
- Determine whether this project is of interest to local or enterprise level leaders and tailor your message to that audience.
- Practice your presentation in advance.

REFERENCES

Example from GSA

Through interviewing multiple business owners who supply goods and services to the federal government, GSA's Office of Customer Experience mapped out the supplier journey and identified opportunities for improvement, such as clarifying the end-to-end process, improving communication, and promoting existing tools and resources at appropriate points within the journey. The team presented these findings to executives across the agency, who then created an initiative to make it easier for suppliers to get on schedule. The opportunity resulted in process improvements such as developing a clarifying roadmap and creating a fast lane for IT service providers to sell to the government.

Introduction

When preparing your opportunities presentation to your key audience, remember that you are taking them on a short guide through your research effort. Be sequential in your presentation and help your audience connect the dots. This method of presenting to the group keeps the presentation clear and it validates the opportunities.

Storytelling

Your presentation is simple and brief— and also make sure that it is warm and reflects the human face of the research topic. Enliven and color the story by weaving in photos, quotes, or other human-centered elements. This allows you to portray the research in a way that a report or a white paper cannot.

Seek Consensus

Use your insights as a means to engage your agency partners in a broader discussion about potential improvements to customer service. Seek consensus, where possible, across the many stakeholders who have an interest in your research project.



Communication

Presentation

Lead your audience through the discovery work. First, take them briefly through the research process. Next, walk them through the synthesis and the insights gleaned there. After that, explain how the group filtered all the insights through the project brief to uncover opportunities.

Your project brief — the focus and purpose of the research — is usually part of a greater initiative or administrative venture. Bring this to the attention of your audience as it helps to show that agency leaders are invested in this research topic.

Present your materials in a polished yet warm manner. To ensure this, practice your pitch in advance, refine your content, and use quality presentation materials, such as an agency approved PowerPoint template.

A Format

Communicate your findings clearly and concisely by listing the insights you found and the opportunities that came from them.

Consider using the model below as one way to share your findings to the audience. By deciding upon a standard communication method at the outset of your project, you help ensure that members of the research team, and later your audience, are speaking the same language and on the same page.

Insight

Opportunity 1

Opportunity 2

Opportunity 3

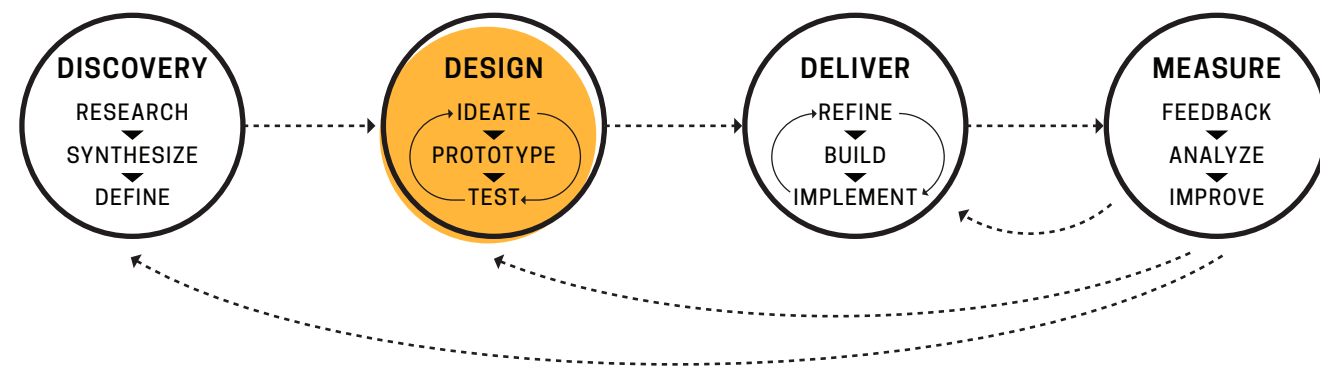
What's Next

Design Phase

You've presented the opportunities to your key audience and gained consensus about which set of opportunities to address. Now you are ready to move to Design: the HCD phase wherein you partner with designers to prototype products, services or systems that address the opportunities.

If, on the other hand, you have come this far and have not gained consensus, don't despair. If you have come this far and feel your research has not been fruitful, *don't despair*. Your effort is not wasted. You can always reframe and begin research again. It is far better to learn something is not working early on than to invest time and resources into the *wrong* design. A reframe, in this case, is a win.

Whether your next step is to move into Design, or whether it is reframe and do a second round of research, the most important thing is to keep your agency customers' interests in mind and to use that north star to guide your continued efforts.



Thank You!

Contact Information

Please send questions or comments.
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 The Lab at OPM: LAB@opm.gov

Thanks and Acknowledgment

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Veterans Experience Office at VA
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 The Lab at OPM

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Glossary

3 Es

Effectiveness, Ease, and Emotion are the 3 core qualities that VE measures across the enterprise. These are based on a Forrester Research Inc. pyramid model of customer experience.

5 Whys, aka, Laddering

A method by which an interviewer derives additional detail and undercurrents from an interviewee. Typically characterized by the interviewer asking "why" in regards to a qualified or abstract word or phrase used during the an answer to questions. A common metric is for the interviewer to do this five times in a line of question.

Accessibility

The extent to which content is available, understandable, and usable by all audiences, regardless of sensory, physical, cognitive, intellectual, or situational disabilities or impairments.

Best Practice

Procedures or approaches that are accepted or prescribed as being correct or most effective.

Clustering

A research analysis method characterized by the grouping of words or phrases that have a single or set of commonalities. In Design Research, this is often enacted physically by the assembly of words or phrases written on single pieces of paper into a, proximate group.

Concept/Context mapping

An ethnographic research technique, concept/context mapping is a process that tries to understand the environment in which the behavior under study takes place.

Customer Experience (CX)

Customer experience (CX) is the product of an interaction between an organization and a customer. This interaction includes a customer's attraction, awareness, discovery, cultivation, advocacy and purchase and use of a service. It is measured by the individual's experience against the individual's expectations.

Decode

To understand. To analyze in order to find meaning.

Empathy

The action of understanding, being aware of, being sensitive to, and vicariously experiencing the feelings, thoughts, and experience of another through a shared experience.

Ethnographic research

Ethnographic research tries to understand how people live their lives. Unlike traditional research, who ask specific, highly practical questions, ethnographers may visit homes or offices to observe and listen in a non-directed way. While this observational method may appear inefficient, it enlightens us about the context in which customers see their own environment.

'Fail early, fail fast, fail small'

A Design Research principle expressing the ethos that, through quickly making and testing small, unsuccessful solutions to big problems in quick succession, drawing lessons in terms of what works and does not work from those tests and revising the next solution accordingly, more effective and successful end solutions can be reached than if a single large solution was launched once and without testing.

Front Stage / Back Stage

Parts of services that are visible to the service user are called front stage. Part of services not visible to the service user but are interacted with by the service provider are called back stage.

Guided Tour

A research methodology during which a participant shows researcher(s) their physical space, collections, or other assets so that the researcher(s) understand the participant's context and reality through the participant's point of view.

How Might We Question

A "How Might We" (HMW) question serves two purposes. First, it is the frame of inquiry, or the area of research. And second, a HMW question should spur and inspire the research team. A good HMW research question will focus but also leave room for exploration.

Human-Centered Design

Human-centered design (HCD) is a design and management framework that develops solutions to problems by involving the human perspective in all steps of the problem-solving process. Human involvement typically takes place in observing the problem within context, brainstorming, conceptualizing, developing, and implementing the solution.

Ideate

To form an idea of; imagine or conceive. In Design Thinking, this refers to imagining or conceiving of multiple ideas for solutions to problems, usually in succession and building off each idea.

Innovation

A new idea, method, or device. In Design Thinking, usually characterized by a break from traditional or institutionalized methods, production methods, or products .

Intercepts

Intercepts (intercept interviews) are conducted on site with Veterans while they are interacting with services at the research site.

Internal bias

A universal situation in which humans feel or show inclination or prejudice for or against someone or something. In Design Thinking, the inherency of internal bias is accepted, and we correct for these biases is through awareness and acknowledgment of them.

LEAN (process)

An approach that focuses on people, process and purpose and the alignment between the three.

'No wrong ideas'

In Design Thinking, the principle that, in order to forward innovative thinking, the group or individual performing the thinking session must accept and consider all ideas as possible solutions.

Pain Points

In experience design, pain points are real or perceived problems experienced by customers within a system.

Problem frames

The area of research in regards to a particular problem.

Qualitative research

Primarily exploratory research. It is used to gain an understanding of underlying reasons, opinions, and motivations. It provides insights into the problem or helps to develop ideas or hypotheses for potential quantitative research.

ROI

Acronym for: Return on Investment.

Root cause

The fundamental reason for the occurrence of a problem.

Shadowing

A research methodology during which the researcher follows the participant through the participant's activities. These activities show the researcher the participant's physical context as well as their interaction within that context.

Sensemaking

To make sense of; to understand.

Snapshots

A representative sample of research. In design-oriented presentations, this refers to a collection of photographs, quotations, and synthesized research that is formatted to tell the story of the research endeavor.

Stakeholders

Persons, groups or organizations that have direct or indirect stake in an organization because it can affect or be affected by the organization's actions, objectives and policies.

Sympathy

The action of understanding, being aware of, being sensitive to, and vicariously experiencing the feelings, thoughts, and experience of thorough emotional and intellectual understanding of another's experience. Contrasts with empathy in that it does not include a shared experience.

Synthesis/synthesizing

To combine (a number of things) into a coherent whole. In Design Thinking, this refers to the collection and integration of the substance of the research instances into a logical and meaningful collection.

Touchpoints

Any point of contact between a customer and a service or service provider. This could be the design of a receipt, the comfort of a waiting room or the usability of a web page.

Yes, And

In Design Thinking, the logical opposition to the statement, "No, But..." Meant to set up acceptance and integration, this form of reply to statements can allow for expansive conversation instead of a negation of opinions and options.



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