An introduction to

Human-Centered Design

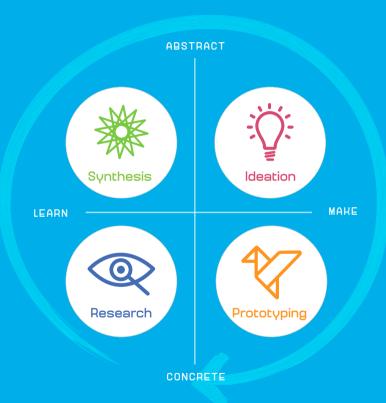




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Human-Centered Design - Approach



What is Human-Centered Design?

Human-Centered Design (HCD, also known as 'Design Thinking') is an approach to innovation that uses tools derived from the design world, among them qualitative user research, rapid prototyping and user testing. Over the past 15 years, HCD has become a widely used approach for innovation challenges that require a creative leap to create a completely new solution, rather than an incremental improvement of an existing one.

What are its main benefits?

Because Human-Centered Design is rooted in an iterative learning process, teams can confidently tackle challenges that at first might seem daunting, with no obvious solution to jump to. HCD teams focus on developing an empathic understanding of the user/stakeholder experience and they make their ideas tangible quickly in rough prototypes. This lets them move swiftly and confidently from theory to implementation.



Values of Human-Centered Design

Over the last years, designers have taken on more and more complex, influential challenges. We are now designing not just products and interactions, but entire services, systems and strategies. Along with this responsibility comes a lot of power. Power to make the world a better place, and also power over people, communities, outcomes!

We all know too well that power is easily abused, which often leads to oppressive situations. Therefore, it is crucial for us as designers to be enlightened about power dynamics we might become part of during a project and smart about how to share it along the way. In order to ensure that we are using that power wisely, we are proposing a few steps:

Status Quo?

As a first step towards ensuring that the outcome of our work has a positive effect on the communities we are designing for, we need to be aware of relevant power structures and of the biases and prejudices that have influenced them. Who has the power in the current system? Is it well-spread or concentrated in a few roles/individuals?

Self-awareness?

We should then ask ourselves the same question: In our role as designers in this project, what is the power we have? – And more importantly: What are our biases and prejudices? What about e.g. our upbringing, education and identity will potentially prevent us from really developing a deep empathic understanding for our communities?

Balancing power?

Given this self-awareness, let's think about how to share our power with others. How can we involve a broad range of relevant community members in the design process and ensure that we are not just designing for our communities, but actually with them? How can we design the decision-making process within our project such that community representatives will understand the project and can influence its outcomes in meaningful ways?

Unintended consequences?

Finally, let's make a conscious effort to evaluate the risks of unintended consequences. Not everyone is going to benefit from your solution. Who won't? Does anyone stand to lose something through the consequences of your actions? Can we avoid or compensate for this? Can we make people part of the solution who are at risk of losing out? Also, when thinking about technological solutions, be e.g. aware of which human interactions they might replace. What are 'softer' benefits that might get lost? How do we take that into account?

If you are interested in reading more, we recommend checking out:

http://www.creativereactionlab.com and

http://nationalequityproject.org







Values of Human-Centered Design

Here are some questions that we find useful for you to reflect on before or during a design project (source: "Liberatory Design Toolkit" by Tania Anaissie, Victor Cary, David Clifford, Tom Malarkey, Susie Wise):

- » Am I designing with the community being impacted by the project, or for the community?
- » What power and/or privilege do I hold over the community being impacted by the project?
- » Who has decision-making power in the project? Why? Do the people making decisions reflect the people in the community who are impacted by the design?
- » What assumptions am I making about the community being impacted by this project?
- » Remember empathy and humility as you acknowledge communities' experiences with power constructs.
- » Examine the history of oppression on your own and with others. Start conversations with friends, families, politicians, educators, and others that illuminate the negative effects of power constructs on marginalized communities.
- » Because we live in a system in which power is often abused, we can be prone to thinking that power is inherently negative, and that we should dissociate ourselves from power. However, it's important to acknowledge where we do have power, so that we can use it for good. If we try to deny the power we have, others can misuse our power.
- » Explore the power that you already have. Generate more of your own form of power through gaining knowledge.
- » Share your power with others to expand the impact of your work - and theirs.







1. Research



Empathy is the basis for the human-centered innovation process. The aim of doing research is to be inspired by people. It is important to take an empathic view to get to know different perspectives and the challenge at hand. For that, you need to adopt a mindset of openness and learning.

The aim of this phase is to understand rituals, behaviors, fears and desires, as well as expressed and latent needs of potential users or stakeholders by seeing the world through their eyes.

Whenever you are with the users:

- » Think about what they are going through now and treat them as good as you would like to be treated. Thank them for their time and introduce yourself.
- » Give them the opportunity to ask questions in advance.
- » Clarify formal things in advance (e.g., Is it OK to take some photos for internal use? Is it OK to record an audio of the conversation?).
- » Try conducting your activities without an audience and with the least amount of people possible - the presence of other people can sway what the interviewees say.
- » Don't use any clothes that may make you stand out or transmit a different status (the aim is to blend in).

It may not be obvious why someone who is already an expert in their area should go out to do research. Why should you go interview users and other stakeholders, who may have much less experience in using the product, service or system you are trying to develop? There are several good reasons to do user research:

Why Do Research

Develop user empathy

The first and foremost reason to research how users, community members, and other stakeholders interact with different services is that we need to learn how they perceive the offer. At the same time, they have backgrounds and experiences that are far removed from our own and we need to understand what exactly constitutes value for them and how one can best deliver it.

Live our values

Another reason is that we need to ensure that we are designing with – and not just for – our users, community members, and stakeholders. When designing new programs, services or products, we will make several implicit assumptions, based on our prejudices and background. We are also exerting power over communities by deciding how the service is going to be executed. Research is the most basic way to include others in the design process.

See with fresh eyes

In addition, we might not even be aware of how locked in our assumptions we are when thinking about how things 'ought to be'. When (re-)designing a certain aspect of our field of expertise, however, it is invaluable to look at it with fresh eyes and challenge our preconceptions. When looked at up close, things might be quite different after all. Be prepared to be surprised! Design research is a wonderful opportunity to learn new things about something that we thought we knew so well.



Methods and Tools

1. Interview

Qualitative interviews are about speaking with a few selected people individually and in context. The aim is to understand their needs, rituals, and opinions. It helps to write a brief discussion guide beforehand – this will help you to ask the right questions during the interview.

Write down all possible questions beforehand and cluster them into groups to make navigation easier during the conversation. Don't stick to it slavishly - it should rather serve as a rough framework and as a tool to steer a conversation back to the relevant topics if necessary. You can find some initial questions in the Cheat Sheet we will hand out.





Tips for conducting interviews

Interview setting

- » Try arranging to meet in the natural context of the interviewee
- » Maximum of three researchers one leading the chat, the others mainly taking notes (more than three people might intimidate)

Starting the Interview

- » Thank the interviewee for their time and introduce yourself
- » Give the interviewee the opportunity to ask questions in advance
- » Clarify formal things in advance (e.g., Is it OK to take some photos for internal use? Is it OK to record an audio of the conversation?)
- » Clarify that the interviewee does not need to answer questions he/ she doesn't feel comfortable about

Conversation principles (remember: It's not market research!)

- » Focus on active listening. Keep time spent talking to a minimum.
- » Keep the conversation broad at the beginning and direct it step by step to more specific topics.
- » Embrace silence deliberate periods of silence elicit thoughtful, accurate responses.
- » Ask why.
- » Ask only open questions (i.e, questions the user can't answer with 'yes' or 'no')
- » Ask for specific events in the past stories can lead to important findings.
- » In doubt, ask the same question from multiple angles, but don't try forcing the user to answer a specific question.

Gather additional information

- » Ask concrete anecdotes to highlight users' opinions
- » Ask them to not just explain, but also show you interesting processes, objects or tools.
- » Pay attention to facial expression, gestures and body language.
- » Take pictures of key aspects if it's OK with the user.
- » Look for inconsistencies.
- » Take a look around what does the environment tell you, what do you notice? What do you see that is unexpected?

Afterwards

- » Take the time to debrief (download) with the team, as soon as possible after the interview
- » Tell each other what you found interesting, what surprised you and speculate about the reasons behind what you observed
- » Put yourself in place of the user and try to understand their motives
- » Write down your observations on post-its/paper

Avoid:

- ★ Asking leading, directed or binary (yes/no) questions.
- x Interrupting when the user is talking go with the flow.
- x Using your phone or anything that might be distracting during an interview. That also can be disrespectful to the interviewee.
- Judging or correcting anything the user does or says during an interview.
- Letting one person speak for the whole group when interviewing multiple people at the same time.
- x Mentioning other users' experiences unless it's necessary.









Methods and Tools

2. Observations

Whereas interviews reveal what users think, observations reveal what they actually do. The aim is to uncover what people do within real context, understand workflows, possible needs, pains and delights not mentioned during interviews. Observe what happens in the real context without influencing it. Make notes about interesting and unclear aspects to ask the user later.

The What, How and Why technique from Stanford d.school can help you reflect on your observations:

- » What is the person you're observing doing in a particular situation? Note the obvious as well as the surprising.
- » How are they doing it? Does it require effort? Do they appear rushed? Pained? Happy? Is the activity impacting the user in either positive or negative way?
- why is the user doing that, in that specific way? This step usually requires that you make informed guesses regarding motivation and emotions. This step will reveal assumptions that you should ask users about, and often uncovers unexpected realizations.

These are some behavior principles for observations:

- » Try to be as inconspicuous as possible.
- » Clarify in advance where you are allowed to stay.
- » Arrange a subsequent discussion for asking questions.
- » Note down repetitive actions the user might do mind that the number of repetitions doesn't represent the importance of the task.

Avoid:

x Interfering with the actions the user is doing.

The technique in use, in an example provided by Stanford d.school (imagine you are doing research on an airport and find this man):



© flickr/@Saigon

What

- O Sitting at the edge of walkway looking down at laptop on lap
- Earphone in ears

How

- O Sitting cross-legged, back up against wall
- O Loose papers and electronics on the ground
- Bag right next to body
- Seems to be "in the zone" just concentrating and working

Why

- O Needs to finish some things before getting on flight
- Only available electrical outlet around, within earshot of gate
- O Want to relax on flight? Get this stuff done now.



Methods and Tools

3. Self-Immersion



With self-immersion, you slip into the role of the user yourself to understand the 'pros' and 'cons' of an experience first-hand. The aim is to create empathy and understand how they think and feel by putting yourself in their position. This can be done with or without their participation.

Unless you are doing it with the participation of users, keep the planning to minimal and go to action as soon as possible. The motto here is "Get up and do it". Try it - if you are working in the context of hospital

patients, walking through the experience. If you are creating a solution for children, imagine their limitations and how they perceive the world. How can you simulate that?

After the session, debrief having the following questions in mind:

- 1. What did you learn from the process?
- 2. What surprised you about going through the process?
- 3. What did you learn from doing this that you couldn't have learned any other way?

Consider the following points:

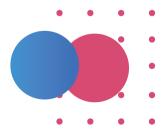
- » Experience it in the same environment as the user usually is if that's not possible, try to model as closely as you can.
- » Set yourself a task and work on it as realistically as possible.
- » Try different scenarios with different artificial conditions (time pressure, limited skills, language barriers, etc).
- » Make a note of all hurdles that complicate the experience as well as all aids that effectively support it.

Step I: Research



At the beginning of the project:

- » Write down what you already know about the challenge ahead, as well as the assumptions
- » Think about: Which relevant experience can you go through yourself? Which skills you would like to develop in this project? Make sure to go through it – even if it's outside your comfort zone
- » Note down: Who are the users and experts you should learn more about?
- » Reach out to 5-10 of them and ask each for a 1 hour interview.
- » Create a conversation guide with 10-20 relevant guestions to ask
- » Conduct your interviews and collect notes on post-its afterward
- » Have a colleague interview you about your experience
- » Reflect on what you saw, heard, felt along the way What does it mean for your project?













2. Synthesis



2. Synthesis



As a result of the Synthesis phase, we formulate hypotheses on innovation potentials. The importance of good framing and synthesis work is often underestimated. In fact, this phase is the pivotal point of a Design Thinking project.

During the Frame phase, we – figuratively speaking – transition from "looking back" to "looking forward". In other words: from observing the real world to abstractly describing future possibilities.

To do this, we have to generalize the insights from the research in a meaningful way by: First structuring, then prioritizing and finally capturing them within a simple framework to make it communicable and actionable.

Methods and Tools

1 Download

'Downloading' is what we call producing the first collection of notes for each research activity. The information is first captured in the form of text and images, e.g. on post-its, printed images or digitally in a Google Doc. Please note the following points:

- » Download immediately after each interview and discuss your impressions.
- » Have you noticed any workarounds (creative solutions to problems that should not exist)? Were there 'mistakes'?
- » Which stories were particularly fascinating or unexpected?

2. Pattern Search

Looking for patterns is a way to try to bring order and structure into the findings you have collected. This is often an iterative process where there is no 'right' or 'wrong' approach. Rely on your intuition.

We are still not necessarily looking for reliable facts, but for interesting starting points for our search for innovative solutions. Try this:

- » Sort your findings into categories or topic areas (we call them 'buckets')
- » Which topics are consistent? Where are contradictions?
- » Which topics are related and how?
- » Which emerge as the most interesting? Which are less important?

From patterns to insights

Patterns reveal hidden interactions and subtle connections between actors and objects of their environment. They are extremely useful for developing insights, that will be essential for the next step – Ideation.

- » Select a recurring or important observation and back it up with quotes or documented actions from the users
- » Reflect on the reasoning behind what was observed and write a headline in the form of a principle
- » Repeat. When you have enough insights, cluster them into themes.

Example - Research for a professional software tool:

Observation: Customers don't use the tool to the fullest.

Quotes: "To be honest, I never opened the manual", "I don't have time

to operate it, other tasks at the factory are priority"

Insight: Users don't have time and will to uncover the tool's potential.



Methods and Tools



3. Actionable Framework

It usually makes sense to further abstract, simplify and contextualize the most interesting topics. This helps to get a meaningful overview and to highlight opportunity areas for innovation.

The resulting framework makes insights communicable and actionable as they can help to present a story more easily. Moreover, the actionable framework is something that you can fall back on again and again over the course of the innovation process, if needed. Here are some examples of useful frameworks.

3.a. Observations

The Customer Journey is ideal for breaking down a certain process into steps and showing its chronological sequence at a glance. In addition, it helps to capture how different stakeholders interact with each other.

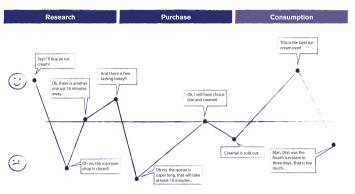
3.b. Venn Diagram

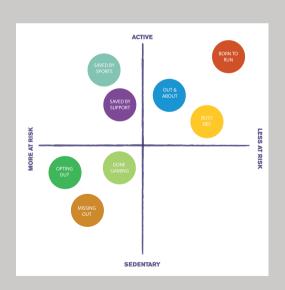
A Venn diagram can help you to narrow down important topics or areas and put them in relation to each other.

3.c. Two by Two

A "Two by Two" matrix, for example, is suitable for categorizing and correlating different behaviors of users.

Icecream Journey Map







Step 2: Synthesis



Take time to read through all research notes again.

- » What were the commonalities and differences?
- » What was surprising?
- » Cluster the post-its accordingly and label the clusters.
- » Speculate about: Why do these patterns exist?

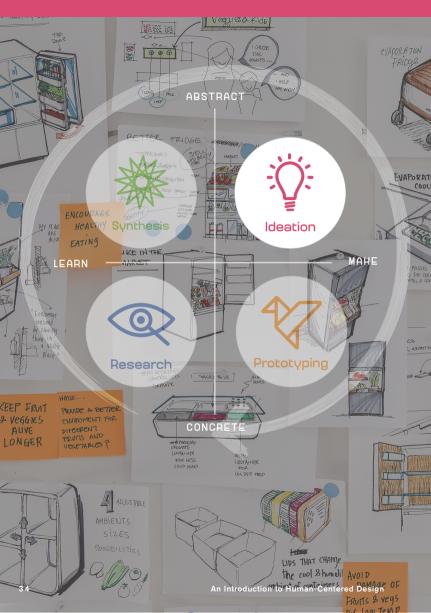
Then think about how to relate the clusters to each other:

- » Is a chronological journey helpful to understand causalities?
- » What is the relationship between the different stakeholders? Can we draw a map?
- » Write down your insights and hypotheses
- » Discuss: Which opportunities do the insights point to?



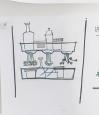


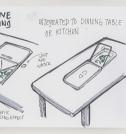






















BOARN



3. Ideation



When generating ideas, it is important to clearly separate two modes of thinking:

- » The creative mode (often referred to simply as 'brainstorming'), which is about letting the mind wander freely, producing as many potentially crazy ideas as possible
- » The analytic mode, which involves the evaluation and selection of the best ideas

Ideally, the synthesis phase should result in strategic areas of opportunity. A subsequent phase of Idea generation marks the point in the project where we return from abstraction and move on to developing concrete ideas.

First of all, we want to generate as many creative ideas as possible, which is why we deliberately refrain from an evaluation for the time being. As soon as a team member starts to question ideas in a creative session, he or she destroys all creativity immediately.



That doesn't mean that the evaluation is not important - on the contrary. In a second, subsequent (I) step, it is essential to screen out the best idea and link it intelligently with others.



Ol. "How Might We..." Questions

We translate the fields of possibility that have arisen from the synthesis phase into questions. With these, we speculate on how we can achieve certain strategic goals. Usually, we give the questions the form "How might we...?" (HMW). This form of the question makes it particularly useful, for example, as the basis for a brainstorm session.

HMW's that work particularly well as a basis for brainstorming are not too broad, not too narrow, and should be oriented on users needs.

Not too broad (so the topic is still manageable):

x How might we empower people to access their rights?

Not too narrow (so you can still discover areas of unexpected value):

× How might we accelerate the form filling process?

Oriented on users' needs:

V How might we make it easier for people to accelerate the progress of their birth certificate issuing process?





- Defer judgement
- Go for quantity
- Encourage wild ideas
- Build on the ideas of others
- Stay focused on topic
- One conversation at a time
- Be visual



02. Creative Idea Generation

The best way to have a good idea is to have lots of ideas. To achieve that, there are many 'creativity methods'. What they have in common is that they give team members the freedom to think about solutions freely and without fear of external judgment or self-censorship.

Brainstorming is a popular method. For this to be effective, however, some rules must be strictly observed (see left). Take one HMW question after the other and brainstorm ideas for solutions. Depending on the HMW's, this can take 20-60 minutes per question.

03. Selection

During the subsequent selection process, we select the few ideas that promise the greatest development potential, e.g. through voting on them. For now, the intuition of the team, sharpened by empathy with the user, is sufficient as an evaluation criterion. A more structured evaluation takes place at a later stage, after the team has had the opportunity to develop the idea a few steps further and, e.g., to make it 'more feasible' or 'more affordable' or 'more plausible'.

Let everyone in the team distribute e.g. 5 stickers to the most promising ideas. So you get a quick overview about the opinion of the whole team.



Step 3: Ideation



- » Write down a few questions about the biggest opportunities. Phrase them starting with "How might we...?"
- » Invite colleagues, users, experts to a diverse group
- » Agree on strictly separating idea generation from idea evaluation (e.g. brainstorm rules)
- » Hold a 45-60 minutes brainstorm on your top 3 HMW's, gathering as many diverse ideas as possible without judging them
- » Afterwards, select your favorites by voting within the group
- » Take a suitable combination of ideas and shape them into a concept, clearly describing the target user, main benefit, etc.









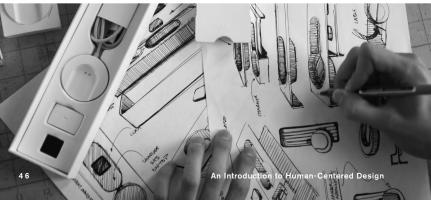


4. Prototyping

The aim of this phase is to visualize ideas or concepts using simple methods and to make them tangible. This allows early identification of potential hurdles in the process.

A prototype should be detailed enough for the core question to be answered by a user. Prototypes that are too sophisticated are often counterproductive: they can lead to feedback being given at the wrong level - much too detailed - even though the basic issues still need to be clarified. There is also the risk that your team will 'fall in love' prematurely with a prototype, which they have invested a lot of time and emotion into. This might cause them to lose their objectivity.

- » Remember what you are trying to achieve with your prototype.
- » When creating it: less talk, more action.
- » Avoid spending more time than needed refining it many changes will inevitably come.

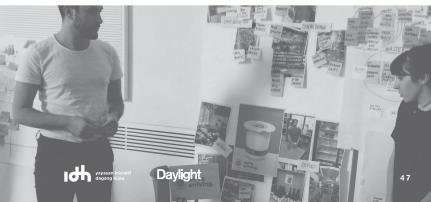


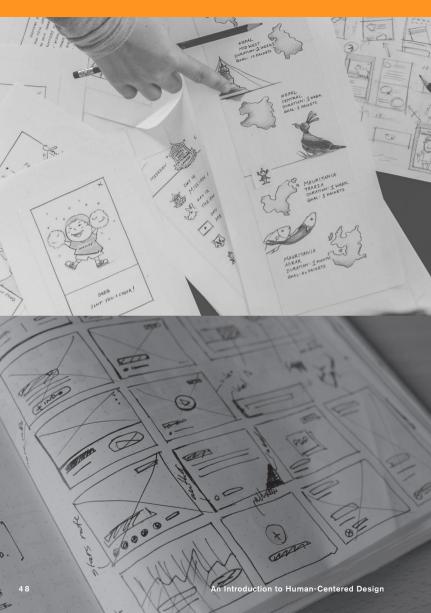
Ol. Storytelling

With the help of storytelling you can breathe life into your idea by telling a story about your product. Tell it from the user's point of view to make your idea credible. Pay attention to the following points:

- » Talk about benefits and user experience, not about features and technology.
- » Address both emotional and rational aspects.

Format: Lecture, fake advertising, mock YouTube user review, ...







02. User Experience Scenarios

A scenario can illustrate an idea by describing how the user experience unfolds over time. Make up a story along the journey (e.g. "This is John. John has long been annoyed by ..."). Stick figures are completely sufficient, a reduction can even be helpful to convey the essentials. Highlight important features to convey the key points of your idea. Pay attention to the following points:

- » Tell the story using a fictional user. Present this user as a human being, not as a target group ideally
- » Start with the description of the user's basic motivation to perceive a new offer
- » For example, work along the following adoption cycle: awareness, interest, trial, commitment, usage, renewal, recommending to others

Format: Comic strip, photo 'love-story', video scenario, role-playing game.

03. Paper Prototyping

You will often find a need for visual aids to better explain your concepts. This is inexpensive, fast, and allow for collaboration since others in the group can contribute by quickly adding to the prototype.

Format: storyboards, screens, fake advertising, flows























04. Digital Prototyping

Digital experiences can often be made tangible by simulating the frontend. In the simplest case, you can use PowerPoint. Pay attention to the following points:

- » Decide in advance what exactly you want to test General value proposition? Comprehensibility of the offer? Usability? ...
- » Focus on the aspects to be tested and keep the design simple
- » Break down complex interactions into small steps rather than presenting them all at once

Format: PPT or interactive mock-ups using prototyping software (e.g. Figma, InVision, Marvel, Atomic, Adobe XD, Flinto, etc.)

05. Physical Prototyping

It can be helpful to present a physical aspect of your concept. Physical prototyping methods range from cardboard models to 3D prints to Works-Like production-quality prototypes in a wide variety of formats. Pay attention to the following points:

- » If a prototype looks 'more finished' than the concept behind it, the tester may not dare to criticize the concept fundamentally
- » Formulate the questions to be answered explicitly in advance
- » Separate the aspects to be tested clearly from each other and ideally test each one with its own prototype
- » Keep the prototype as simple as possible

Format: Foam model, 3D printing, paper props, etc.





Step 4: Prototyping



- » Write down which aspects of the concept you should be testing, why and with whom
- » Then think about what the simplest way of conveying those aspects is
- » Create a very simple tangible representation of the key aspects
- » Define how you are going to present it (e.g. a stick figure scenario, a few key screens drawn on paper, a cardboard model, ...)
- » Try the prototype out on friends or colleagues. Is it working in clarifying your concept and triggering conversations? If not, then something is missing.









5. Test



Now that we have our idea communicated in the form of a prototype, we need to put it to test - ask users, experts and stakeholders what they think of it. Get them to user the prototype as they would in real life, as much as possible.

Mind that the prototype is still going to be full of naive ideas, false preconceptions and lack of understanding, despite our best efforts. The aim here is to refine your prototype and learn about your solution and your user.

Important:

- » Stay open! This is not the end-phase: you can still learn a lot from the user and iterate on the process.
- » Reach out to our target users and speak to them, however inconvenient it may feel.
- » Gather a diverse range of honest feedback.
- » Present your prototype neutrally don't defend or try to change it unless the users have misunderstood it.
- » Question users more deeply to understand their reactions.

After testing:

- » Analyze which of your previous assumptions have been confirmed and which ones disapproved.
- » Define how to improve on your concept based on the feedback.



Ol. Feedback Interview

Feedback sessions are targeted and short (30-45 minutes are usually enough). Create a conversation guide to ensure you will cover all necessary aspects of the concept:

- » Is the value proposition solid?
- » Do they understand when and how to interact with it?
- » Is the level of complexity adequate?
- » Have you made the right assumptions on how the user journey unfolds?

Briefly explain what the context and intended benefit of your concept is and then present your concept as neutrally as possible.







02. Compare and Contrast

As a general rule, users are not very good at describing their ideal future, but they can be surprisingly accurate and insightful when it comes to choosing between two possible futures. Therefore, it can be tremendously helpful to show users multiple solutions as prototypes rather than just one. Ask them to talk you through the perceived differences and what they see as pro's and con's of each solution.

Pay close attention to which aspects are the most important to them in comparing the prototypes. Are they the ones you would have guessed at?

03. User Role Play

After explaining to users what the intended use and benefit of a prototype is, it can be very insightful to let a group of users act out a scenario highlighting how they would use it. Chances are that they will point you to a few insights that you might have missed before. A few aspects can be clarified here:

- » Which context will it be used in?
- » Which features might be missing?
- » Who are they likely with when they use it?





Step 5: Test

Trγ this

- » Figure out who you want to get feedback on your idea from
- » Make a list of 5-10 diverse users and stakeholders to speak to
- » Reach out to them and meet with them for 30 minutes
- » Present your concept neutrally. Don't sell it!
- » Listen and watch carefully as they react to it
- » Don't try to change their opinion by further elaborating on your concept
- » Question more deeply to make sure you understand their reactions
- » Take notes
- » Analyze which of your previous assumptions have been confirmed and which ones disproved
- » Figure out how to improve on your concept based on the feedback







Thank you very much!

This workbook has been designed for the IDH Learning Launchpad 2019 in Bangka.

Should you have any questions or comments, please don't hesitate to reach out to us! We would be more than happy to hear from you and excited to continue our conversations.

Yours, Daylight Design Team

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