# USER RESEARCH GUIDELINES

Exploring common methods design teams use to better understand their product's users.

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# INTRODUCTION

All teams designing and developing products desire a better understanding of the users that they're ultimately creating the product to serve. With the multitude of options available for learning about a particular set of users, determining the methods that should be employed to gain that understanding can be challenging.

Teams are also interested in maximizing the value of their time, and time spent on user research could alternatively be spent on designing or building instead. The following guidelines provide context for some of the most commonly used user research methods employed by design teams and user experience professionals around the world. The goal of this is to convince the reader — or help the reader convince their stakeholders — that the cost of conducting user research far outweighs the potential costs of not doing so.

## ANSWERS TO COMMON QUESTIONS

### What do you mean by user experience?
"User experience" (often abbreviated as UX) refers to the impressions and emotions created while a person interacts with a system. In this context, a "system" typically refers to a website or software application, although the principles of UX can be extrapolated to interaction with nearly any digital or physical product.

### What do you mean by discovery?
"Discovery" is an umbrella term that includes essentially any research methods or tactics that focus on understanding user behaviors, needs, preferences, or motivations through direct observation, surveying, or feedback gathering, including the documentation and analysis of results.

Discovery activities most often take place at the beginning of a project (sometimes referred to as the "Discovery Phase"), but they can be conducted any time during a project's lifecycle.

### What are the typical roles within UX teams?
No two teams are truly identical, and many UX teams operate with more/fewer/different roles. The most common roles you'll find within a typical UX team include:

**UX / Visual Designer**
Focuses on typography, layout, color, graphics, visual effects, imagery, texture, mood.

**Information Architect (IA)**
Focuses on tasks such as how to organize site content, how search should work, what labels to use on menus, etc.

**Front-End Developer (FED)**
Focuses on writing HTML, CSS, and JavaScript code to implement functionality and visual design.

# A/B TEST

## WHAT IS AN A/B TEST?

An A/B test is a method of comparing two versions of a webpage or app against each other to determine which one performs better. AB testing uses data and statistics to validate new design changes and improve conversion rates.

A/B testing allows individuals, teams, and companies to make careful changes to their user experiences while collecting data on the results. This allows them to construct hypotheses and to better learn why certain elements of their experiences impact user behavior.

### Investment ●●○○○○

An A/B test intentionally measures only a single change between two otherwise similar items. The change can be as simple as altering the copy on a button and measuring which is clicked more. Analytics software can be used to facilitate the recording and comparison process.

### Validity ●●●●●

Running an A/B test with a significant sample size returns quantitative results that are nearly impossible to argue with.

### Expertise ●●●○○

Implementing an A/B test can require some technical know-how depending on the process employed. A general understanding of statistics will help analyze results, but is not required.

## HOW TO CONDUCT AN A/B TEST:

A minimum of 20-25 users/interactions is recommended per iteration. The more the better!

If you are testing in person, prepare a script and always use the same script to keep the tests consistent. Test with one participant at a time to remove bias from questions and comparisons. Ask the participant to think out loud so you will better understand their thought process. Ask the participant why they selected a certain version.

You can also use a platform like Usability Hub to conduct A/B tests.

Compare qualitative and quantitative data to determine which version performs better, then use the results to iterate on your product.

**Related:**
» Usability Test

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# AFFINITY DIAGRAM

## WHAT IS AN AFFINITY DIAGRAM?

An affinity diagram is used to organize information into like groups/categories to identify common themes and patterns. The creation of affinity diagrams allows the team to quickly identify trends in the data to facilitate creating accurate business and user requirements.

**Investment**  ● ○ ○ ○ ○
Once an interview is complete, documenting the key responses is quick and easy.

**Validity**  ● ● ● ○ ○
Affinity diagrams can be somewhat subjective, as the creator makes determinations about what was important and how these items are grouped.

**Expertise**  ● ○ ○ ○ ○
Creating an affinity diagram requires no special tools or methods and can be done by anyone on the team with access to recordings of the interviews.

## HOW TO CREATE AN AFFINITY DIAGRAM:

Start by picking out key phrases, words, and other useful parts of the interview and then organize them into like groups by writing them on sticky notes. If you are part of a remote team, you could use a free online tool like Trello.

After the initial sticky note session is complete, organize the results into a report that can be shared. This can be done in Excel or Trello.

**Related:**
» Personas
» Empathy Mapping
» Interviews

# CARD SORT

## WHAT IS A CARD SORT?

A card sort is a way to organize items into groups and find logical divisions. Card sorts are useful in developing navigation, content organization, or menu structure based on real user feedback. Card sorts can be performed when designing a new site or a new section of a site or when redesigning a site.

There are three types of card sorts:

- Open Card Sort
- Closed Card Sort
- Reverse Card Sort / Tree Test

**Investment:** ●●○○○○
Card sorting requires a bit of preparation. Preparing the cards takes more than just writing a list of topics on index cards, as you need to be strategic in determining what topics you decide to ask participants to sort.

**Validity:** ●●●●○
While card sorts won't usually provide results that are directly actionable, they do provide quantitative data that can be directly attributed to specific participants. The results do not directly involve input from the facilitator, which removes bias.

**Expertise:** ●○○○○
Determining the topics for the cards and categories and facilitating the exercise can be done by anyone on the design team. Facilitating the exercise is easy and can be aided by online tools such as Trello.

## HOW TO PREPARE FOR A CARD SORT:

If you are performing card sorts in person, take a stack of index cards and write one topic per card. Remember to be selective on the topics you are asking participants to organize. Be sure to number the cards to keep track of them. If you are performing a closed cart sort, write your pre-defined categories on index cards as well. Keep a stack of blank cards handy to use during the session.

## HOW TO CONDUCT AN OPEN CARD SORT:

Ask participants to organize topics into groups that make sense to them. Then ask them to come up with a label/category for each group that they feel accurately describes the content. Ask the participant to think out loud as they make decisions.

### You can conduct an open card sort when:

- You want to get ideas for labels for the site
- You want to see how people understand information

## HOW TO CONDUCT A CLOSED CARD SORT:

Ask participants to organize topics into pre-defined categories. Ask the participant to think out loud as they make decisions.

### You can conduct a closed card sort when:

- You want to see how people think information fits within an established structure
- Validating results of an open card sort

## HOW TO CONDUCT A REVERSE CARD SORT / TREE TEST:

Participants are given tasks and asked to complete them by navigating a collection of cards. Ask the participant to think out loud as they make decisions. Each card contains the names of subcategories related to a category, and the participant should find the card most relevant to the given task starting from the main card with the top-level categories.

A reverse card sort validates the site flow and organization of content and can be helpful in matching the navigation to users' mental models.

### You can conduct a reverse card sort / tree test when:
• Refactoring is needed due to user feedback
• A site or section of a site is being redesigned
• Validating changes to web site navigation

## DOCUMENTING AND INTERPRETING CARD SORT RESULTS:

Document the results of each sort with a picture for future analysis. You could also quickly summarize the groupings made by participants using the numbers on the cards. If you used software, no need to worry about this step!

The easiest way to make sense of the data generated from card sorting is to put the data into a spreadsheet to identify patterns — in particular, you will be able to see which cards were grouped together most often and how often cards were grouped into certain categories.

Take comments participants made during the session into consideration as well. The more insights the better!

### Resources:
↗ Boxes and Arrows - Definitive Guide to Card Sorting
↗ Usability.Gov - Card Sorting
↗ UX Matters - Dancing with the Cards: Quick-and-Dirty Analysis of Card-Sorting Data
↗ UX Booth - Open Card Sort Analysis 101

# EMPATHY MAP

## WHAT IS AN EMPATHY MAP?

An empathy map is a visual and interactive method of understanding how a user or user group thinks and feels when working to achieve a goal. Empathy maps can be used by teams to acknowledge pain points in a process or system a user might be experiencing that wouldn't typically stand out.

**Investment:**  ●●○○○○

An understanding of common user journeys is needed before an effective empathy map can be created. Once this is obtained, a combination of assumptions and/or interviews can be used to quickly map emotions to specific points in the journey.

**Validity:**  ●●●○○○

Determining the emotions tied to specific points is relatively cut and dry (no one experiences positive emotions when waiting on hold for customer service, for example), but typically involves some subjectivity. The results of an empathy map can assist in creation of personas and other useful documentation, but are typically not actionable in and of themselves.

**Expertise:**  ●●○○○○

Mapping expected emotions to key subtasks in a user journey does not require any specific knowledge or tools.

**Resources:**
↗ Cooper - Persona Empathy Mapping
↗ Copy Blogger - Empathy Map
↗ LeanMonitor - Empathy Map: Step Into Your Client's Shoes
↗ Empathy Map Template

## HOW TO CREATE AN EMPATHY MAP:

Think in first person from the user's perspective. You can create an empathy map with real users if you have access to them, or do it with your project team going on assumptions.

Using this template, answer the following items from the perspective of your persona as they attempt to achieve their goal:

1. Think/Feel - what really counts, major preoccupations, worries/aspirations
2. See - what the personas perceives from the people and influences around them
3. Say/Do - what is the persona saying/doing; how they interact with others, appearance
4. Hear - what are coworkers saying, what are managers saying, what are clients saying, what are friends saying
5. Pain - what are the persona's obstacles, frustrations, fears
6. Gain - what are the persona's wants and needs, obstacles, metrics of success

## WHEN TO CREATE AN EMPATHY MAP?

You should start creating empathy maps at the beginning of any project or major iteration of a project.

## WHY CREATE AN EMPATHY MAP?

Empathy maps are valuable to teams in the early stages of a project by clearly depicting pain points in a process or system that currently exist and cause the user frustration. This allows the team to acknowledge those problems and create resolutions for them early in the project.

**Related:**
» Journey Maps
» Personas

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# FOCUS GROUP

## WHAT IS A FOCUS GROUP?

A moderated discussion with a group of users that allows you to learn about user attitudes, ideas, and desires. The discussion can be centered around a new process or an existing process, topic, idea, etc.

**Investment:** ●●●○○

Focus groups require a number of participants to be in the same space at the same time, so organizing them can take time and resources (compensation, obtaining a space, etc.). The research team also needs to create a number of topics for the participants to discuss, as well as determine goals for the session.

**Validity:** ●●○○○○

Focus groups can provide qualitative information, but the responses tend to be hypothetical. Asking someone what they think they would do vs actually watching them do something can return different results. Focus groups also have a tendency to introduce bias, as individual participants can sway the others within their group..

**Expertise:** ●●●●●

Coordinating a focus group has its complexities, but the real challenge is moderating the session. Learning how to deal with stronger or weaker personalities within a group is an art that benefits from practice. Synthesizing the results of a focus group requires finesse, as the conversations tend to include irrelevant "noise" more frequently than other research methods.

## HOW TO CONDUCT A FOCUS GROUP:

3-5 participants per session is recommended. Hold sessions until you've reached a good understanding of what users want. Focus groups should be conducted early in a project. A benefit to focus groups is that they don't require anything visual (mockup, prototype, etc.) for participants to respond to.

Prepare an agenda including a list of the top-level issues to be tackled and an introduction script explaining the purpose of the day and how the day will go. Be sure to always use a quiet room with few distractions and arrange people in a circle. Ask participants to introduce themselves. All questions you ask should be open and neutral and encourage free-flowing discussion around the relevant issue(s).

A summary document should be produced for each session and include relevant profile information about the people who attended the session but keep their names anonymous.

# INTERVIEW

## WHAT IS AN INTERVIEW?

An interview is a 1:1 discussion with a user or a business stakeholder to explore the problem(s) that you are trying to solve. Interviews are valuable because you need to have a solid understanding of how your project will impact the business and you need to understand your target users before design and development can start.

**Investment:** ● ○ ○ ○ ○

Interviews can be formal or informal. At the most basic level, you simply need a list of questions to ask, a way to record responses, and a venue for the conversation.

**Validity:** ● ● ● ○ ○

Results from a single interview can be limited in value since you're only being exposed to the perspective of a single stakeholder, though they are still valuable because they're directly from the source. When the feedback from multiple interviews is consolidated in a meaningful way, the results become much more useful.

**Expertise:** ● ○ ○ ○ ○

Anyone on the design team can ask questions of stakeholders and record responses. An interviews is one of the most straightforward user research methods.

### Related:

» Personas
» Empathy Map
» Card Sort

## HOW TO CONDUCT AN INTERVIEW:

Have 1:1 discussions with users and business stakeholders. Identify the different areas of the business the project will impact and reach out to them for individual conversations to understand what will be valuable to them. Identify your target audience segments and interview people from each segment.

General Guidelines:

- Create a welcoming atmosphere to make participants feel at ease if the interview is in-person.
- Start each interview by introducing yourself and your role
- Provide a general description of the goal, but don't provide a lot of detail that could skew the interview.
- Obtain consent for taking notes or any type of recording before the interview begins. Explain that the interview won't be shared with anyone or attributed to them directly.
- Always listen more than you speak.
- Consider including a note taker so you can focus on the interview.
- Take responsibility to accurately convey the thoughts and behaviors of the people you are studying.
- Avoid leading questions and closed yes/no questions. Ask follow-up questions.
- Don't be afraid to ask why to uncover key insights.
- Prepare an outline of key questions in advance, but don't be afraid to stray from it if something interesting comes up.

### When should I conduct interviews?

You should start conducting interviews at the beginning of a project once you understand the problems that you are trying to solve. This should be a part of your discovery phase.

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# JOURNEY MAP

## WHAT IS A JOURNEY MAP?

A journey map is a visual representation of a user's steps in accomplishing a goal. Journey maps show the user's context and help us explore questions that arise during research and conceptual design. A journey map can be used at any stage of the project when you need more information about the user's experience and behavior.

**Investment:**  ●●●●○

Creating a journey map requires a solid understanding of the various touch points an organization has with a user. In addition, the best journey maps are extremely detailed and often provide a visual representation of the journey along with descriptions of the specific activities a user completes.

**Validity:**  ●●●●●

A detailed and complete journey map can be one of the most powerful tools for understanding a user's journey.

**Expertise:**  ●●●●○

Effective mapping requires a full understanding of the user's journey as well as the ability to extrapolate thoughts and feelings based on individual tasks. Creating the final deliverable can be greatly assisted by design software that usually has a bit of a learning curve.

**Resources:**
↗ Journey Map Example

## HOW TO CREATE A JOURNEY MAP:

Establish a goal and have a clear understanding of the problem you are trying to solve. Once the goal is defined, choose the persona(s) that will be taking the journey. It is important to keep in mind that maps will be different each time you create one as the outcome is dependent on the particular scenario you are mapping. Gather relevant research such as interviews, analytics, and any other relevant research to prepare for the journey map. The more insights you have the better your map will be.

The initial map is created in a collaborative session using a whiteboard and sticky notes. The following elements should almost always be present in the map: the persona, timeline, emotions, touchpoints, pain points — again, it depends on the scenario you are mapping. If you need to do this work remotely, we recommend using RealtimeBoard.

As a team, create a timeline with touchpoints (interactions with the organization) for the scenario with the steps the user needs to take to complete the goal. Document pain points, emotions, thoughts, feelings, etc. of the user on sticky notes and place them appropriately in the timeline. Be sure to denote good touchpoints as well as bad touchpoints. When the whiteboard exercise is done, document it with pictures then convert the map into a deliverable that can be easily understood and shared.

# PARTICIPATORY DESIGN

## WHAT IS PARTICIPATORY DESIGN?

Participatory design research involves inviting users, developers, and stakeholders to play an active role during the design process. Participants bring their own views of the problem and may offer ideas or possibilities that were not evident.

**Investment:** ●●○○○○

Participatory design in the simplest form ask users and stakeholders to try their hand at designing an interface, website, etc. This can be facilitated by giving them a sheet of paper and a prompt.

**Validity:** ●●○○○○

By asking people who don't typically design things to design something, you may encounter obvious issues with the concept they create. That said, there can often be valuable insights hidden within.

**Expertise:** ●●●●○

Facilitating an effective participatory design session can be challenging, as you'll need to convey effectively what tasks need to be supported and assist participants with visualizing their ideas while avoiding priming them.

**Related:**

» Focus Group
» Card Sort

## HOW TO CONDUCT A PARTICIPATORY DESIGN SESSION:

Give the users a blank canvas to create a site that works for them and provide a list of known elements that will be on the page. Ask the user to prioritize where sections would go on a page, down to the detail of how a widget looks and what it contains. After the exercise is complete, ask the participants to explain why they envisioned the site the way they did.

A participatory design session is typically done prior to any design work. Organize a participatory design session when you want to better understand how people think about a given problem.

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# PERSONA

## WHAT IS AN PERSONA?

A persona is a fictional representation of a user/user group created from user research. Personas are used to help guide decisions about products, features, navigation, interactions, and visual design. The creation of personas allows the team to stay focused on what is important by recognizing the needs of the user.

Assumption Based Personas: These are a great way to start. These allow you to begin the process of understanding what you may think the user is wanting, frustrated with, and how what is being built will be used or interacted with.

User Based Personas: These are created from interviewing a series of real people and capturing descriptions about behavior patterns, goals, skills, attitudes, and environments that helps identify these users. This is the most accurate type of persona and brings the most value.

### Investment:
Creation of persona documents is fairly quick. Gathering a solid understanding of your end user is what takes time. Many other research methods can be utilized to gather information that ultimately ends up in a Persona.

### Validity:
The usefulness of personas is directly tied to the methods used to create them. If based primarily on assumptions, they can be lacking compared to those created based on results pulled directly from interactions with users. When done correctly, personas are powerful tools that are critical to content strategy and design.

### Expertise:
Nearly anyone with a solid understanding of users' activities, thoughts, and expectations can make a persona. Unum's persona generator makes persona creation even easier.

## HOW TO CREATE A PERSONA:
First, identify and interview your target users with relevant questions regarding your project. Then, analyze the results from your interviews and start mapping similarities.

Unum's Persona Generator can help you quickly and easily create professional personas.

## GENERAL PERSONA QUESTIONS YOU CAN ASK ARE:
Tell me about your department and your role in it.

1. Describe a typical work day.
2. What activities take up most of your time?
3. Do you have any impediments that hamper you from getting the work you value completed?
4. What would you say your goal is?
5. What are websites and apps you use for your job, externally and internally?
6. What devices do you use for work?
7. What would you change about your job/the tools you use?
8. What are the top 3 challenging or frustrating aspects of your job?
9. What are your expectations around new projects?
10. What are your metrics of success?

**Resources:**
↗ UX Booth – Creating Personas
↗ UX Booth – One Persona to Rule Them All
↗ Cintell – 15 Questions to Ask in Your Next Persona Interview
↗ Hubspot – 9 Questions to Ask When Developing Buyer Personas

**Related:**
» Interviews
» Empathy Mapping
» Affinity Diagrams
» User Centered Design
» Usability Testing

# USABILITY TESTING

## WHAT IS USABILITY TESTING?

Usability testing is the process of evaluating a product or service by testing it with users and observing their behavior. These tests can be performed with individuals or in a group and focus on user behavior. Participants will try to complete set tasks while observers watch, listen, and take notes. The results from the test are then used to make improvements to the product.

### Investment: ● ● ● ● ●
Usability testing involves a heavy investment compared to other user research methods. First, you need something to test -- prototypes, wireframes, designs, etc. -- which require effort and research to create themselves. You also need to recruit participants and compensate them in some way. Finally, the results of the test need to be documented in a way that is useful for the design team.

### Validity: ● ● ● ● ●
The results from usability testing are nearly irrefutable. When you ask a real user to use a real product and notice a trend that an element of that product is problematic, then that element is almost certainly problematic.

### Expertise: ● ● ● ● ●
There are many resources available to assist with facilitation of usability testing, and doing it right does require thoughtful pre-work. A key pitfall to be aware of is the potential for a facilitator to prime a participant, which can potentially invalidate results. Usability tests greatly benefit from a skilled hand.

## WHEN SHOULD I CONDUCT A USABILITY TEST?

Usability testing should be done iteratively throughout a project, starting with wireframes or prototypes. Design mockups can also be used for testing.

## WHY SHOULD I PERFORM A USABILITY TEST?

1. Usability tests help you identify problems early in the project when they're much easier to fix.
2. Collect data.
3. Determine the participant's satisfaction with the product.

## HOW TO CONDUCT A USABILITY TEST

Identify your target audience. If you're testing an existing site, you can leverage analytics to do this. Write a test plan including a script and the interactions/features to be tested, create and prioritize tasks that the user can complete during test – aim for 5-10 tasks for a 60 minute test. Make the tasks realistic, actionable, and avoid giving clues to the answers. Ideally a usability test should include a facilitator and a note taker. If a note taker is unavailable, the facilitator can take notes but they likely won't be as thorough.

Facilitator reads a participant one task at a time and allows the participant to complete the task without intervention until all tasks are complete. Be sure to take notes on the questions that are being asked. Ask the participant to talk through their task aloud to better understand their decision-making. Take note of the time it takes a user to complete each task. Take notes on what they say, areas they struggle in, and places where content may be unclear. We recommend testing with 3-5 participants per round of testing. Test one participant per session.

*cont' Usability Testing*

## Task Writing Tips:

- Make the task realistic
- Make the task actionable
- Avoid giving clues and describing the steps

## Test moderating tips:

- Don't lead the participant
- Don't interrupt at the wrong time
- Follow a script/checklist to prevent bias
- Observe and listen

## Resources:

↗ Rocket Surgery Made Easy by Steve Krug

↗ Nielsen Norman Group – Why You Only Need to Test with Five Users Blink UX - Sample Size Calculator

↗ Demystifying Usability - Latest Research

↗ UX Matters - Usability Testing Myths and Misconceptions

↗ UX Sisters - Usability Vs Beta Testing

## Related:

» A/B Testing