Method Cards

beta deck

18F Design Method Cards

Why method cards?

- To add rigor and structure to agile development.
- To build a shared vocabulary for each method among 18F staff and our partner agencies.
- To give less experienced or new researchers a gateway into well-documented and proven research methods, supported by other 18F team members.

We've grouped these methods into four phases

DISCOVER Learn as much as you can about the project and people involved.

DECIDE Use what you've learned to start focusing your research on specific areas and groups of people.

MAKE Move toward a final product that's ready to be released and tested.

VALIDATE Test your research, design, and product.

We've called out specifics about doing this work in government

For the most part, the processes are the same as anywhere. However, to stay on the happy side of the law, take a look at the cards for Recruiting, Incentives, Informed consent, Privacy, and the Paperwork Reduction Act (PRA). No matter which methods we work with, these are the fundamentals of our design research.

Want to learn more about design methods used at 18F?

More resources, references, and details at methods.18f.gov

About 18F

Built in the spirit of America's top tech startups, 18F is a digital consultancy transforming the government from the inside out, creating cultural change by working with teams inside federal agencies that want to provide great services for the American people.

18f.gsa.gov

Feature dot voting

A simple voting exercise to identify a group's collective priorities for potential features or user stories.

Reasons to use it

To build group consensus quickly from the priorities of individual in the group.

PHASE

DISCOVER

TIME REQUIRED

SMALL

Feature dot voting

How to do it

1. Bring plenty of Post-It notes and "glue dots" to the meeting.
2. Gather all people on the product team and anyone with a stake in the product's features.
3. Quickly review the project's goals and conclusions of any prior user research.
4. Ask team members to take five minutes to write important features or user needs on sticky notes. (One feature per sticky note.)
5. After five minutes, ask participants to put their stickies on a board. If there are many sticky notes, ask participants to put their features next to similar ones. Remove exact duplicates.
6. Give participants three to five glue dots and instruct them to place their dots on features they feel are most important to meeting project goals and user needs.
7. Identify the features with the largest number of votes.

Applied in government research

No PRA implications: Feature dot voting falls under "direct observation," which is explicitly exempt from the PRA, 5 CFR 1320(h)3. See the cards for Recruiting and Privacy for more tips on taking input from the public.

KJ method

A facilitated exercise in which participants list their individual priorities onto cards, collect them as a group, organize them by relationship, and establish group priorities through individual voting.

Reasons to use it

To reach a consensus on priorities of subjective, qualitative data with a group of people. This is especially helpful with large groups of stakeholders and groups with high risk of disagreement.

PHASE

DISCOVER

TIME REQUIRED

SMALL

KJ method

How to do it

1. Gather at least four participants for 90 minutes. Provide Post-It notes and markers.
2. Determine a focus question and assign a facilitator.
3. Give participants five minutes to write at least three responses to the focus question, each on its own note.
4. Give participants 15 minutes to put their answers on the wall and read everyone's contributions. Additions are welcome. Have participants cluster similar answers together without discussion.
5. Ask participants to write a name for each cluster on their own. Each participant must give each cluster a name. They may also split clusters.
6. Put every single name on the wall with its cluster. Exclude only word-for-word duplicates.
7. Remind participants of the original question. Instruct each person to rank their three most important clusters. Visually tally points.
8. Combine duplicate areas and their points if the group unanimously agrees they are identical. At the end, three or four groups usually rank much higher than the rest. Make these the top priorities for the focus question.

Applied in government research

Likely no PRA implications: generally any given session is likely to have nine or fewer users. 5 CFR 1320.5(c)4. See the cards for Recruiting and Privacy for more tips on taking input from the public.

Metrics definition

A collaborative effort to define problems through a focus on goals and the criteria by which a team will measure a solution's impact on those problems.

Reasons to use it

To keep the team vigilant about the user's perspective and to establish a user-centered framework for passively measuring over time. Research keeps us vigilant about building metrics that emphasize the user's perspective rather than metrics that make us appear good at our jobs.

PHASE

DISCOVER

TIME REQUIRED

SMALL

Metrics definition

How to do it

1. Describe the existing situation to the team, including who the stakeholders are and what their stake is.
2. Use personas to identify users' skills, practices, and behaviors. Decide which you want to promote (and how you would measure that). Next, look at personas' pain points and consider how you would alleviate them (and how you would measure that).
3. Anonymously collect the team's greatest hopes and fears. Print these out, group them by topic, and discuss. Think about how you can measure throughout the project whether it is aligning with your collective hopes or deviating toward your collective fears.
4. Craft a problem statement:
   We have observed that [product/service/organization] isn't meeting [these goals/needs], which is causing [this adverse effect]. How might we improve so that our team/organization is more successful based on [these measurable criteria]?

Applied in government research

No PRA implications. No information is collected from members of the public.

Design studio

An illustration-based way to facilitate communication (and brainstorming) between a project team and stakeholders.

Reasons to use it

To create a shared understanding and appreciation of design problems confronting the project team.

PHASE

DISCOVER

TIME REQUIRED

SMALL

Design studio

How to do it

1. Invite between six and 12 participants: stakeholders, users, and team members who need to build a shared understanding. Provide the design prompt for the session ahead of time. Share applicable research already conducted. Unless users will be present, share personas summarizing what users are trying to do and why.
2. Bring drawing materials. At the start of the meeting, review the design prompt and research you shared.
3. Distribute drawing materials. Ask participants to individually sketch concepts that address the prompt. Remind them that anyone can draw and artistic accuracy is not the goal of the exercise. 15–20 minutes.
4. Have participants present their ideas to one another in groups of three and solicit critiques.
5. Ask the groups to create a design that combines the best aspects of members' individual contributions.
6. Regroup as a whole. Have each group of three present their ideas to everyone. Discuss.
7. After the meeting, note areas of consistent agreement or disagreement. Incorporate areas of consensus into design recommendations and areas of contention into a research plan.

Applied in government research

No PRA implications. If conducted with nine or fewer members of the public, the PRA does not apply, 5 CFR 1320.5(c)4. If participants are employees, the PRA does not apply.

Learn more: methods.18f.gov

Bodystorming

An improvisational brainstorm based on interaction and movement with the body.

Reasons to use it

To create participants that interactions are human and physical, to teach stake-holders empathy for users, and to get away from our computers.

PHASE

DISCOVER

TIME REQUIRED

SMALL

Bodystorming

How to do it

1. Gather three to six members of the project team who are ready to think on their feet. If possible, identify a few users who can play along.
2. Bring the project team to the user's environment. If that's not practical, model the user's environment in a conference room.
3. Assign each member of the project team to a role, interface, or "touchpoint" that you have identified in a journey map. If users are present, ask them to pretend to accomplish their goals as usual. Otherwise, assign a persona to each member of the product team who isn't serving as a touchpoint. If you anticipate discomfort, assign roles in advance and start with a basic script.
4. Use props to role play how users accomplish their goals. "Speak the interface" to one another. For example, one of the touchpoints might say "Submit all of your required forms," and the user might respond "Arg! I don't know what forms are required!"
5. Review the exercise as a team and document the opportunities/challenges that this exercise suggests.

Applied in government research

No PRA implications. Even when users are present, the PRA explicitly exempts direct observation and non-standardized conversation, 5 CFR 1320.5(h)3. If you are not working with government employees, you will need to observe standard precautions for archiving personally identifiable information.

Learn more: methods.18f.gov

Cognitive walkthrough

An evaluation method in which evaluators or potential users who are unfamiliar with a design work through a set of representative tasks and ask questions about the task as they go.

Reasons to use it

To understand whether a design solution is easy for a new or infrequent user to learn, and why it is or isn't easy.

PHASE

DISCOVER

TIME REQUIRED

MEDIUM

Cognitive walkthrough

How to do it

1. Identify specific traits for new users or infrequent users of a design solution.
2. Develop a set of representative tasks that emphasize new use or infrequent use.
3. Recruit three to five users for each of the traits you've identified to participate in a moderated usability testing session. (The traits can overlap.)
4. Ask the user to accomplish their goal using a printed or interactive design. As they go, ask what they would attempt to do next or how they would learn.
    - Don't lead the user through the task, but encourage them to stay focused on what they're trying to accomplish.
    - Pay attention to expected outcomes and how quickly/easily participants are able to pick up a task.
5. Analyze the walkthrough results to highlight what users learned easily and what needs improvement.

Applied in government research

No PRA implications. The PRA explicitly exempts direct observation and non-standardized conversation (e.g., not a survey) that a cognitive walkthrough entails, 5 CFR 1320.5(h)3.

If you are not working with government employees, you will need to observe standard precautions for archiving personally identifiable information.

Contextual inquiry

The product team unobtrusively observes participants at work, with their permission, then asks questions.

Reasons to use it

To learn how and why users do what they do; to discover needs and attitudes that might not emerge in an interview; to map how tools, digital and otherwise, interact during complex activities.

PHASE

DISCOVER

TIME REQUIRED

MEDIUM

Contextual inquiry

How to do it

1. With permission from a supervisor and from the participant, schedule a time to watch a typical work activity and record data.
2. While observing, ask the participant to act normally. Pretend you're a student learning how to do the job. Ask questions to help you understand what the person is doing and why.
3. At the end of the session, explain what you have learned and check for errors.
4. Immediately after, write up your notes.

Applied in government research

No PRA implications, if done properly. Contextual interviews should be non-standardized, conversational, and based on observation. The PRA explicitly exempts direct observation and non-standardized conversation, 5 CFR 1320.5(h)3. See the cards for Recruiting and Privacy for more tips on taking input from the public.

For internal folks, get permission from the right level of management. If participants could be under union agreements, contact the agency's labor relations team.

Heuristic analysis

A quick way to find common, large usability problems on a website.

Reasons to use it

To quickly identify common design problems that make websites hard to use without conducting more involved user research.

PHASE

DISCOVER

TIME REQUIRED

SMALL

Heuristic analysis

How to do it

1. Recruit a group of three to five "evaluators." These people are not necessarily designers, but are familiar with common usability best practices. They are usually not users.
2. Ask each evaluator to individually use a list of "heuristics" or general usability best practices to generate a list of possible problems with the website. For examples of common heuristics review this card on the web.
3. After individual evaluations, gather evaluators to discuss and prioritize potential problems.

Applied in government research

No PRA Implications, as heuristic evaluations usually include a small number of evaluators. If conducted with nine or fewer members of the public, the PRA does not apply, 5 CFR 1320.5(c)4. If participants are employees, the PRA does not apply. See the cards for Recruiting and Privacy for more tips on taking input from the public.

Stakeholder and user interviews

A wide-spanning set of semi-structured interviews with anyone who has an interest in a project's success, including users.

Reasons to use it

To build consensus about the problem statement and research objectives.

PHASE

DISCOVER

TIME REQUIRED

MEDIUM

Stakeholder and user interviews

How to do it

1. Come to the interview with a guide for yourself of some areas you'd like to ask about, and some specific questions as a back up. Questions will often concern the individual's role, the organization, the individuals' needs, and metrics for success of the project. Possible starters:
   - "What did you do yesterday?"
   - Ask lots of "why is that" and "how do you do that" questions.
   - If there are other products they use or your product doesn't have constraints imposed by prior work, observe the stakeholders using a competing product.
2. Sit down one-on-one with the participant, or two-on-one with a note-taker or joint interviewer, in a focused environment. Introduce yourself. Explain the premise for the interview as far as you can without biasing their responses.
3. Follow the conversation where the stakeholder takes it. They will focus on their priorities and interests. Be comfortable with silences, which allow the stakeholder to elaborate. To keep from getting entirely off course, use your interview guide to make sure you cover what you need to.

Applied in government research

No PRA implications. The PRA explicitly exempts direct observation and non-standardized conversation, 5 CFR 1320.5(h)3. See the cards for Recruiting and Privacy for more tips on taking input from the public.

Comparative analysis

A detailed review of existing experiences provided either by direct competitors or by related agencies or services.

Reasons to use it

To identify competitors' solutions that excel, are lacking, or are missing critical design elements. Comparative analysis can give new solutions a competitive edge by identifying areas of opportunity, gaps in experience offerings, and potential design patterns to adopt or avoid.

PHASE

DECIDE

TIME REQUIRED

MEDIUM

Comparative analysis

How to do it

1. Identify a list of services or agencies that would be either direct or related competitors to the service or client agency. Pare the list down to four or five.
2. Establish which heuristics you will use to evaluate each service or agency offering.
3. Break down the analysis of each selected competitor into specific focal areas for evaluation. For example, how relevant are search results?
4. Use a spreadsheet to capture the evaluation and determine how the targeted services and agencies perform based on the identified heuristics.
5. Present the analysis, which should showcase areas of opportunities that you can take advantage of and design patterns you might adopt or avoid.

Applied in government research

No PRA implications. No information is collected from members of the public.

Content audit

A listing and analysis of all the content on an existing website (including pages, files, videos, audio or other data) that your users might reasonably encounter.

Reasons to use it

To identify content that needs to be revised in new versions of a website. Content audits can also help you identify who is responsible for content, how often it should be updated, and what role a particular piece of content plays for users.

PHASE

DECIDE

TIME REQUIRED

MEDIUM

Content audit

How to do it

1. Start with an inventory. Navigate through the site from the home page and note the following about every piece of content that has a unique and specific role.
   - Title used in the site's navigation for that page
   - Title displayed on the page or item itself
   - URL
   - Parent page
2. Identify the main entry points for the user need you're addressing. This could be external marketing, the homepage, a microsite, or another page. (If you're auditing a full website instead of specific needs, you may be able to skip this step and step 3.)
3. From each entry point, trace the tasks a user moves through until they address their need.
4. For every piece of content they might come across on that task flow, note:
   - Author(s): who wrote or created the page
   - Content owner(s): who ensures its credibility
   - Updated date
   - Update frequency
   - Comments: qualitative assessment of what to change

Applied in government research

No PRA implications. No information is collected from members of the public.

Design principles

Written statements, generally in the form of imperatives like “Earn people’s trust,” that serve as guiding lights during decision-making.

Reasons to use it

To give the team and the stakeholders a shared point of reference when negotiating next steps. Good design principles are specific to the project, not general truths, and should help teams say “no” to otherwise interesting proposals, or generate ideas when they are stuck.

PHASE

DECIDE

TIME REQUIRED

LARGE

Design principles

How to do it

1. From internal documents and kickoff activities, gather terms or concepts that seem significant to project goals and organizational culture.
2. From observational and desk research, synthesize terms or concepts that seem particularly important to customers or user groups.
3. Cluster those terms and concepts on a whiteboard or other writing space open to everyone in the project. Name the clusters.
4. Ask the team and stakeholders if they would like to add, change, or edit any concepts or groups.
5. Synthesize three to five final principles from what's on the board. What evidence from partner or user research supports each? Using that evidence, write one to two sentences in support of each principle.
6. Share the principles in a place accessible to the team throughout the project, and refer to them often while making decisions.

Applied in government research

No PRA implications. Generally, no information is collected from members of the public. Even when stakeholders are members of the public, the PRA explicitly exempts direct observation and non-standardized conversation (e.g., not a survey), 5 CFR 1320.5(h)3. See the cards for Recruiting and Privacy for more tips on taking input from the public.

Task flow analysis

A step-by-step analysis of a common task a user must perform that diagrams the various touch points and decision points a user goes through to accomplish the task. The touch points should be represented as steps taken by the user, as well as steps taken by the system.

Reasons to use it

To illustrate in a solution-agnostic way the overall flow that a user progresses through to accomplish a single task. Task flow analysis also demonstrates the relationship between tasks, and how they interconnect across a site.

PHASE

DECIDE

TIME REQUIRED

MEDIUM

Task flow analysis

How to do it

1. Identify the task(s) that need to be analyzed.
2. Break each high-level task down into the subtasks and decisions that the user or system must perform. Specify the subtask in terms of objectives. Across all subtasks, you should cover the whole area of interest. Don't make assumptions about which steps are understood.
3. Produce a layered task diagram of each subtask and decision point. The diagram must cover each step or decision necessary to accomplish the task.
4. Annotate the layered task diagram to pinpoint areas of interest, risk, or potential frustration.
5. Present the analysis to a potential user or stakeholder who was not involved in creating the diagram(s) but who knows the task(s) well enough to check for consistency and accuracy.

Applied in government research

No PRA implications. No information is collected from members of the public.

User scenarios

Stories and context — focused on identifying the what, who, how, and why — behind why a specific user or user group comes to your site.

Reasons to use it

To remind a team, during both the design and validation phases, of the overarching goal(s) that users have when interacting with a solution. Scenarios help the team consider the design of the solution as a whole rather than getting caught up by specific pages, elements, or interactions. They note questions and goals and sometimes define the possibilities of how the user(s) can achieve them.

PHASE

DECIDE

TIME REQUIRED

SMALL

User scenarios

How to do it

1. Identify the target user group and any common user goals and scenarios that a person must go through when interacting with a solution.
2. Decide which type of scenario you're going to write.
   - Goal or task-based: Short and specific, focus on the core aspects of the goal or task.
   - Elaborate: Provide additional details about the environment and context.
   - Full scale: Include various steps a user needs to take as well as their environment and context.
3. Describe why it's important for a user to be able to accomplish their goal or complete the scenario.
4. Share with the full team for feedback and refinement.
5. If you want to use the scenarios for usability testing, write them so they do not lead the participant to the correct outcome.

Applied in government research

No PRA implications. No information is collected from members of the public.

Site mapping

A comprehensive rendering of how a website's pages relate to one another.

Reasons to use it

To audit an existing website by assessing its structure and content. Site maps also help you plan and organize the contents of a new website prior to wireframing and building it.

PHASE

DECIDE

TIME REQUIRED

SMALL

Site mapping

How to do it

1. List each page of a website or section.
2. Visually represent each page as a single thumbnail.
3. Arrange the page thumbnails into a hierarchical diagram. Focus on the logical relationships between pages. If you are evaluating an existing website, focus more on these relationships than on the URL structure. If some pages function as sub-pages to another, the site map should reflect that.
4. Use the diagram to guide choices about things like information architecture and URL structures.

Applied in government research

No PRA implications. No information is collected from members of the public.

Affinity diagramming

A way of finding themes in collections of ideas, quotes, or observations.

Reasons to use it

To draw out insights from qualitative data quickly and collaboratively.

PHASE

DECIDE

TIME REQUIRED

SMALL

Affinity diagramming

How to do it

1. Record ideas, quotes, or observations from interviews, contextual inquiry, or other sources of research on Post-It notes.
2. Place the Post-It notes on a white board (in no particular arrangement). Move the Post-It notes into related groups.
3. Use larger Post-It notes (or white board markers, if you are using a white board), to write titles or catch phrases for each group.

Applied in government research

No PRA implications. This method may use data gathered from members of the public, but does not require their involvement.

Journey mapping

A visualization of the major interactions shaping a user's experience of a product or service.

Reasons to use it

To provide design teams with a bird's-eye view of a design system, helping them see the order, complexity, successes, pain points, and interactions that make up a user's experience.

PHASE

DECIDE

TIME REQUIRED

MEDIUM

Journey mapping

How to do it

1. Document the elements of the project's design context.
   - People involved and their related goals
   - Their behaviors in pursuit of their goals
   - Information, devices, and services that support their behaviors
   - Discrete moments or major decisions they make
   - The emotions associated with these moments or decisions
2. Visualize the order in which people exhibit behaviors, use information, make decisions, and feel emotions. Group elements into a table of "phases" related to the personal narrative of each persona. Identify where personas share contextual components.
3. Discuss the map with stakeholders. Point out insights it offers. Use these insights to establish design principles. Think about how to collapse or accelerate a customer's journey through the various phases. Incorporate this information into the project's scope.
4. You can also map user journeys as part of a workshop with stakeholders, similar to a design studio.

Applied in government research

No PRA implications. The PRA explicitly exempts direct observation and non-standardized conversation, 5 CFR 1320.5(h)3. See the cards for Recruiting and Privacy for more tips on taking input from the public.

Mental modeling

A simple reference model that correlates existing and potential interfaces with user behaviors.

Reasons to use it

To help designers anticipate how design decisions might facilitate future behaviors.

PHASE

DECIDE

TIME REQUIRED

SMALL

Mental modeling

How to do it

1. Create one three-columned table per persona. Label the columns “Past,” “Present Behavior,” and “Future.”
2. In the middle column (“Present Behavior”), list current user behaviors and pain points broadly related to the project, one per row.
3. In the left-hand column (“Past”), list the products, services, features, and/or interfaces that the user encounters as they go about what’s listed in the present behaviors column.
4. In the right-hand column (“Future”), list possible products, services, features, and/or interface elements that might changes behaviors and pain points in the “present behavior” column in the future.

Applied in government research

No PRA implications. No information is collected from members of the public.

Personas

User archetypes based on conversations with real people.

Reasons to use it

To ground design in reality by forcing us to consider the goals, behaviors, and pain points of the people affected by our design decisions. Unlike marketing personas based on demographics or marketability, design personas describe how someone accomplishes goals.

PHASE

DECIDE

TIME REQUIRED

SMALL

Personas

How to do it

1. Gather research from earlier activities like contextual inquiry or stakeholder interviews in a way that's easy to review. You can create placeholder personas without research to teach user-centered thinking about users. But because they are effectively stereotypes, avoid using them for implementable design decisions.
2. Create a set of user archetypes based on how you believe people will use your solution. These typically get titles (for example, "data administrators" rather than "those who submit data").
3. Analyze your records for patterns as they relate to user archetypes. Specifically note frequently observed goals/motivations, behaviors, and pain points.
4. Pair recurring goals, behaviors, and pain points with archetypes. Give each archetype a name and a fictional account of their day. Add a photo of someone who fits the description, but ideally not an image of someone you've actually interviewed and who may be recognized.
5. Link your personas to the research that inspired them. This is useful when researchers are interested in challenging the way a persona stereotypes a user.

Applied in government research

No PRA implications. No information is collected from members of the public.

Storyboarding

A visual sequence of a specific use case or scenario, coupled with a narrative.

Reasons to use it

To visualize interactions and relationships that might exist between a user and a solution in the context of the user's full experience.

PHASE

DECIDE

TIME REQUIRED

MEDIUM

Storyboarding

How to do it

1. Gather any documents that describe the different use cases or scenarios in which users will interact with the solution.
2. Sketch scenes that visually depict a user interacting with a solution, including as much context as possible. For example: Are they on the move? Where are they? What else is in their environment?
3. Annotate each scene with a description of what the user is attempting to do. Describe what general feeling or experience the team wants the user to have.
4. Review the storyboard with the product team and stakeholders for feedback. Iterate until the storyboard represents a shared vision of the scenario/progression of scenes.
5. Document the work with a high fidelity version of the storyboard if you plan to use the storyboard for separate future work or in other external contexts.

Applied in government research

No PRA implications. No information is collected from members of the public.

Style tiles

A design document that contains various fonts, colors, and UI elements that communicate the visual brand direction for a website or application.

Reasons to use it

To establish a common visual language between the design team and stakeholders. It also acts as a collaboration artifact that both the design team and stakeholders can use to contribute to the final design direction.

PHASE

DECIDE

TIME REQUIRED

MEDIUM

Style tiles

How to do it

1. Gather all the feedback and information that was provided during the initial kickoff of the project.
2. Distill the information into different directions a solution could take. Label these directions based on what kinds of interactions and brand identity they represent.
3. Create the appropriate number of style tiles based on the defined directions, which establish the specific visual language for the different directions.
4. Gather stakeholder feedback. Iterate on the style tiles, eventually getting down to a single style tile which will be the established visual language for the project going forward.

Applied in government research

No PRA implications. No information is collected from members of the public.

Protosketching

A prototype built in fewer than three hours to focus the scope of a project.

Reasons to use it

To stimulate stakeholder imaginations and focus discussion on issues about data, design, and functionality.

PHASE

MAKE

TIME REQUIRED

SMALL

Protosketching

How to do it

1. Gather project stakeholders and, most importantly, a small number of end users. This should be few enough that all participants can contribute individually.
2. While one team member leads a discussion on project goals and possible solutions, another starts "proto-sketching," or building a very basic version of an app or a website.
3. As the protosketch acquires enough features to be usable, share it with the meeting attendees. If possible, let them access it on their own devices.
4. Use the prototype to elicit discussion of features and data. As the discussion continues, the proto-sketcher continues to (roughly) integrate some suggested features.
5. As the meeting closes, emphasize that the protosketch isn't necessarily the start of production-ready soft-ware, but a way to improve discussion about project requirements.

Applied in government research

No PRA implications. The PRA explicitly exempts direct observation and non-standardized conversation, 5 CFR 1320.5(h)3.

Wireframing

A lightweight schematic visual representation of a product or service interface.

Reasons to use it

To prioritize information (substance and relationships) over decoration (style) as you begin defining the solution by keeping the design light. Wireframing also gives designers a great opportunity to start asking developers early questions about feasibility and structure.

PHASE

MAKE

TIME REQUIRED

SMALL

Wireframing

How to do it

1. Build preliminary blueprints that show structure, placement, and hierarchy for your product. Steer clear of font choices, color, or other stylized elements that would distract both the researcher and the reviewer. Lightweight designs are conceptually easier to reconfigure. A few helpful tools for building wireframes are OmniGraffle and Balsamiq, which purposefully keep the wireframe looking like rough sketches.
2. Use this opportunity to start listing what UX/UI patterns you will need.
3. Review your wireframes with specific user scenarios and personas in mind. Can users accomplish their task with the wireframe you are sketching out?
4. Use the wireframes to get the team's feedback on feasibility and structure.

Applied in government research

No PRA implications. No information is collected from members of the public.

Design pattern library

A collection of UI elements used frequently across a design system, consisting of the base patterns and helpful information about how to use them.

Reasons to use it

To aid in designing a solution that uses UI elements consistently. Maintaining a set of approved, reusable patterns makes it easier to produce new features or make updates to the current solution.

PHASE

MAKE

TIME REQUIRED

LARGE

Design pattern library

How to do it

1. Start identifying common components as early as possible, ideally while you and the team are creating new design elements. These common pieces form the patterns that you will create guidelines for. Specify the components that make up each UI pattern and note possible constraints or restrictions.
2. Describe or visualize how someone will use the pattern and how it should respond to the user. (For example: how a button renders on load, hover, and click.) Provide any data as to why it is good for the end user.
3. Include any code or snippets that front end developers can use to implement the pattern.
4. Show examples of how the same pattern could work in different solutions.
5. Publish the design pattern library in an open, accessible space where the product team can use and extend it. (Common implementations of a design pattern library are in a wiki or brand style guide.)

Applied in government research

No PRA implications. No information is collected from members of the public.

Prototyping

A rudimentary version, either static or functional, of something that exhibits both realistic form and function.

Reasons to use it

To enable direct examination of a design concept's viability with a number of other methods such as usability testing or a cognitive walkthrough. Static prototypes (often paper) are helpful for gaining feedback on users' intentions and various design elements. Functional prototypes (often coded) are helpful for observing how users interact with the product.

PHASE

MAKE

TIME REQUIRED

MEDIUM

Prototyping

How to do it

1. Create a rudimentary version of your product. It can be static or functional. Think in the same way you would about a wireframe: demonstrate structure and relationships among different elements, but don't worry about stylized elements.
2. Give the prototype to the user and observe their interactions without instruction.
3. After this observation, ask them to perform a specific task.
4. Ask clarifying questions about why they do what they do. Let the user's behavior guide the questions you ask. It can be helpful to have them narrate their thought process as they go along.
5. Iterate! Prototypes should be quick and painless to create, and even more quick and painless to discard.

Applied in government research

No PRA implications. The PRA explicitly exempts direct observation and non-standardized conversation, 5 CFR 1320.5(h)3. See the cards for Recruiting and Privacy for more tips on taking input from the public.

Card sorting

A categorization exercise in which participants divide concepts into different groups based on their understanding of those concepts.

Reasons to use it

To create content structures that are user-informed and intuitive.

PHASE

VALIDATE

TIME REQUIRED

MEDIUM

Card sorting

How to do it

There are two types of card sorting: open and closed. Most card sorts are performed with one user at a time, but you can also do the exercise with groups of two to three people.

Open card sort

1. Give users a collection of content represented on cards.
2. Ask users to separate the cards into whatever categories make sense to them.
3. Ask users to label those categories.
4. Ask users to tell you why they grouped the cards and labeled the categories as they did.

Closed card sort

1. Give users a collection of content represented on cards.
2. Ask users to parse the content into a list of categories you have predefined.
3. Ask users to tell you why they assigned cards to the categories they did.

Applied in government research

No PRA implications. The PRA explicitly exempts direct observation and non-standardized conversation, 5 CFR 1320.5(h)3. It also explicitly excludes tests of knowledge or aptitude, 5 CFR 1320.5(h)7, which is essentially what a card sort tests (though in our case, a poor result is our fault).

Multivariate testing

A test of variations to multiple sections or features of a page to see which combination of variants has the greatest effect. Different from an A/B test, which tests variation to just one section or feature.

Reasons to use it

To incorporate different contexts, channels, or user types into addressing a user need. Situating a call to action, content section, or feature set differently can help you build a more effective whole solution from a set of partial solutions.

PHASE

VALIDATE

TIME REQUIRED

LARGE

Multivariate testing

How to do it

1. Identify the call to action, content section, or feature that needs to be improved to increase conversion rates or user engagement.
2. Develop a list of possible issues that may be hurting conversion rates or engagement. Specify in advance what you are optimizing for (possibly through metrics definition).
3. Design several solutions that aim to address the issues listed. Each solution should attempt to address every issue by using a unique combination of variants so each solution can be compared fairly.
4. Use a web analytics tool that supports multivariate testing, such as Google Website Optimizer or Visual Website Optimizer, to set up the testing environment. Conduct the test for long enough to produce statistically significant results.
5. Analyze the testing results to determine which solution produced the best conversion or engagement rates. Review the other solutions, as well, to see if there is information worth examining in with future studies.

Applied in government research

No PRA implications. No one asks the users questions, so the PRA does not apply. See the cards for Recruiting and Privacy for more tips on taking input from the public.

Usability testing

Observation of people attempting to use a product.

Reasons to use it

To learn a given design's challenges, opportunities, and successes.

PHASE

VALIDATE

TIME REQUIRED

MEDIUM

Usability testing

How to do it

1. Create a prototype that sufficiently conveys the team's hypothesis based on research. In the absence of a prototype, consider testing a competitor's product.
2. Stage a scenario in which someone who would actually use your product tries to employ the prototype for their own ends. Record their attempt. Optionally:
   - Ask users to think out loud as they try.
   - Compensate the participant for their time.
3. Avoid asking participants to perform tasks far outside their normal context. This will lead them to reflect on the design rather than their ability to accomplish their goals. (For example, to test a new layout for a "user account" section on a voter registration website, recruit only people who already register to vote online.)
4. Analyze the user's attempt to employ your prototype, looking especially for areas where they struggled or questions they asked to inform design changes.

Applied in government research

No PRA implications. First, any given usability test should involve nine or fewer users. Additionally, the PRA explicitly exempts direct observation and non-standardized conversation, 5 CFR 1320.5(h)3. It also specifically excludes tests of knowledge or aptitude, 5 CFR 1320.5(h)7, which is essentially what a usability test tests. See the cards for Recruiting and Privacy for more tips on taking input from the public.

Visual preference testing

A method that allows potential users to review and provide feedback on a solution's ultimate visual direction.

Reasons to use it

To align the established branding guidelines and attributes of a solution with the way end users view the overall brand and emotional feel.

PHASE

VALIDATE

TIME REQUIRED

MEDIUM

Visual preference testing

How to do it

1. Create iterations of a mood board or style tile that represent directions a final visual design may follow. If branding guidelines or attributes don't exist, establish them with stakeholders beforehand.
2. Ask questions as objectively as possible. Align questions with the branding guidelines and attributes your project must incorporate.
3. As far as possible, allow participants to provide their feedback unmoderated or at the end of a research study.
4. Compare the results with the published branding guidelines and attributes that an agency has already put in place.
5. Publish the results to the complete product team and decide which direction will guide future design efforts.

Applied in government research

No PRA implications. The PRA explicitly exempts direct observation and non-standardized conversation, 5 CFR 1320.5(h)3. See the cards for Recruiting and Privacy for more tips on taking input from the public.

Incentives

Offering research participants gifts to encourage participation and to thank them for their time.

Why it is important

Incentives often result in a more diverse, representative set of participants. Without incentives, you often end up recruiting people with a strong intrinsic interest in your website. These people may not have the same needs and experiences as a less interested but larger pool of users. With incentives, you can encourage less interested, more representative people to participate.

Incentives

How to do it

1. *Identify an appropriate incentive.*
   The best incentives are large enough to encourage participation, but not so large that they seem inappropriate. In industry, cash incentives are usually comparable to the hourly rate of the people recruited. Incentives in government research are legal but need to comply with an agency's own policies. Contractors and recruiting services can help you get an effective research pool.
2. *Clearly communicate when and how participants will receive incentives.*
   In the emails, postings or other materials you use to recruit your participants, describe the incentive and how participants will receive it (via mail, pick up at an office, etc.). This is particularly important for "remote" research.
3. *Distribute incentives to participants who show up.*
   Give incentives to any participant who arrives for the study. If they arrive but choose not to participate after learning more about your study, they should still receive an incentive. Otherwise, your incentive could coerce participants uncomfortable with the research to participate.

Informed consent

Making sure research participants understand what research activities will require, getting explicit confirmation that they agree to it, and giving them the right to withdraw consent (and hence participation) at any point, without penalty.

Why it is important

Informed consent is the cornerstone of ethical research practice. Always. If you plan to share any data publicly, especially personally identifiable information (often called PII), you must get participants' express permission to do so — no exceptions.

Time required

5 minutes per participant

FUNDAMENTALS

Informed consent

How to do it

1. *Explain to potential participants what the research will entail.*
   Why are you doing it? What will they do? How long will it take? What kind of data will you collect? With whom, and how, do you want to share that data?
2. *Ask them directly to say yes or no.*
   This usually happens in writing, but it can happen in conversation if the participant is illiterate or if the interaction is so lightweight/quick that getting full, written consent would take longer than the activity itself.
3. *Respect any request to withdraw.*
4. *Waive their right to compensation.*
   Beyond incentives, participants need to acknowledge that their participation is a gratuitous contribution.

Applied in government research

No PRA implications. The PRA specifically exempts consents, 5 CFR 1320.3(h)1.

Paperwork Reduction Act

A common, but misguided, rationale for avoiding certain design research methods. Full name: The Paperwork Reduction Act of 1980. The intent of the PRA is to prevent government paperwork from overburdening the public. By empowering the Office of Management and Budget to review how agencies collect standardized information, it also improves government statistics. Because it focuses on burden and statistics, you can set up most activities in ways that do not require review.

Paperwork Reduction Act

Why it doesn't stand in your way

1. *None of the methods we've described in this set require PRA approval.*
   The PRA requires special approval for agencies asking identical questions to ten or more users (5 CFR 1320.3c). If conducted as described here, none of these methods require PRA clearance. They either do not require asking identical questions of more than nine participants or don't require asking identical questions.
2. *Only a small set of research methods requires PRA approval.*
   Large surveys as well as highly structured focus groups or interviews all will ask identical questions to more than nine people and thus require approval.
3. *Even research that involves asking many people identical questions may not require approval.*
   The following activities are explicitly excluded from the PRA (5 CFR 1320.3h):
   - Research conducted by certain agencies including the Federal Election Commission, General Accounting Office or government-owned, contractor-run facilities (like national laboratories).
   - Requests for general feedback (e.g. a survey that asks a question like "What do you think?" instead of asking more specific questions).
   - Research designed to be tests of "aptitude or abilities," not gather facts or opinions (e.g. an online quiz to test knowledge about a certain agency)
   - Information obtained at public meetings.

Privacy

Our obligation to keep data about research participants secure. Covered by laws like the Privacy Act, Federal Information Security Management Act and eGovernment Act.

Why it is important

You have a moral, legal, and ethical obligation to protect people's privacy. Also, if people do not believe you will protect their privacy, they will be unlikely to participate in your research.

Privacy

How to do it

1. *Wherever possible, avoid collecting personally identifiable information (PII).*
   Avoid collecting or storing information, like names, addresses or phone numbers, that could be used to connect a particular person to your research. Consider making your research notes anonymous and minimizing the amount of personally identifiable information you record about people during scheduling.
2. *When you store personally identifiable information, comply with all the legal requirements.*
   For PII obtained by government employees, these requirements include:
   - Limiting access to the information to people who need to use it.
   - Encrypting the information, especially when it's stored on mobile devices
   - Keep the PII on government systems and avoid storing it in insecure locations. For instance, avoid using USB thumb drives.
3. *Clear new systems that collect participant information for privacy implications.*
   Information systems that hold information about members of the public or employees likely need to go through your agency's privacy impact processes. For more on the privacy process, please see OPM's Privacy Impact Assessment (or that of your agency).

Recruiting

Identifying and gathering people to interview or who will test your product.

Why it is important

Time spent with the right people using the wrong methods is better than time spent with people who aren't your core users but follow the right methods. Recruiting people who represent your core user group is a critical and oft-overlooked part of research.

Time required

1–2 weeks for 5–10 participants from mailing lists or community organizations

Recruiting

Seek out people who:

- Are trying to use the thing you are working on right at that very moment.
- Recently tried to use the thing you are working on.
- Used the thing you are working on less recently.
- Have used something like what you are working on, and are likely to use what you are working on.

Reach them through:

- Relevant community organizations.
- Impromptu requests in or near the relevant environment.
- Your personal and professional network.
- The new or existing website.
- Existing mailing lists.

Applied in government research

If you recruit users who participate for free and aren't government employees, the Anti-Deficiency Act requires you to either:

- Give all members of the public an opportunity to participate (by posting the opportunity somewhere everyone can see it, like your website or Github), or
- Get participants to agree, in writing, to the statement: "I understand that I will receive no compensation and waive all claims for compensation from the U.S. government in exchange for my participation in this research."

If you do not ask potential participants to respond to a "screener survey," the PRA doesn't apply to your recruiting.