

In developing this prototype, Cambria utilized a comprehensive Human Centered Design (HCD) process working from the inspiration phase, to the ideation phase, through the implementation, and then iterating the entire process; creating a continual and user-centric approach to design. In particular the Cambria team used the following human-centered design techniques: 1) User Stories, 2) Personas, 3) User Interviews, 4) User Evaluations, 5) Rapid Prototyping using Wireframes, 6) Screen Design Sketches, and 7) Usability Testing.

INSPIRATION

Who Is the User and what does He/ She care about?

1. Seek Collective Inspiration



- Discuss and determine target audience
- Brainstorm freely
- Explore and research relevant trends
- Track themes and begin prioritizing

Cambria's Human Centered Design (HCD) team and analysts began the inspiration phase with round table session. The team gathered in a collective conference room to first get acquainted with the need and the purpose of the solution. Through our respective roles team members dived into brainstorming to plan user research processes, develop personas, and begin to define user stories; all with a deep awareness of user needs and distinct actions to include real users in the design process.

The team determined the best product could only be developed by knowing, empathizing with, and understanding the user; therefore we primarily focused our time on defining our target audience, identity needs of likely users, and immersing ourselves in the collective knowledge of the child care system.

We did this by sharing with one another what we already knew from personal experience and what we had begun to discover through research and interviewing potential users. Additional background research provided information relevant to the project. The team also interviewed two Mississippi users - a parent and a case worker; hearing their stories, their frustrations, their needs, and their desires. Notes from these interviews can be found [here \(https://github.com/CambriaSolutions/MSRFP-3717/tree/master/artifacts/User-Research/Semi-Formal-Interviews\)](https://github.com/CambriaSolutions/MSRFP-3717/tree/master/artifacts/User-Research/Semi-Formal-Interviews).

Through these processes, Cambria team identified themes, bundled ideas, and prioritized key concepts to begin shape personas and user stories.

IDEATION

Semi-structured Interviews, Personas, and User Stories

**2. People first
and foremost**



- Learn, understand, and know the user
- Keep in mind the user's holistic experience
- Default to human-centered design
- Simplicity is key

Cambria's HCD team collected all of the notes, ideas, white boarding conclusions, research, and experience; and put together a collection of personas to be used to inform user stories. Four of these personas were drawn directly from interviewed users, and the others represent realistic experiences for potential users of the solution. Both of the users we interviewed had experience as both caseworkers and as foster parents.

Hannah M. had experience as a private caseworker in addition to having been a foster parent. Hannah is a single woman in her early thirties who has recently gone back to school for counseling. She has a B.A. in psychology, and is now pursuing a Masters in child psychology. Hannah initially became involved in the foster system in her work as a counselor. After seeing the need for parents, Hannah decided to serve as a foster parent as well. She was a foster parent for a young boy from the age of 2 until the age of 4. The situation was extremely challenging, as he had experienced significant trauma prior to being placed with Hannah and needed a lot of additional care and treatment by specialists for behavioral issues. She experienced the difficulties of fostering as a single mom and is passionate about seeing the system improved, support given to families, and having easier access to resources. She was part of a church-wide movement to get involved in the foster system and has been actively involved in the foster care community over the past years. She is still active in the foster care system, but does not currently have a child in the home.

Anna L. is a married woman in her 40's who has served as a caseworker for the state of Mississippi and as a foster parent. Over the years, she had several foster children, including several with special needs. The children in Anna's care were often in difficult situations. Anna is particularly passionate about helping caseworkers to be better equipped to deal with heavy caseloads and difficult situations. Her hope is that better technology would help with the attrition rate for caseworkers—she noted that caseworkers would on average work for around two years before leaving the system because of challenges they were facing related to workloads. She found herself facing burnout after two years, and took a break from her career as a caseworker to focus on raising her children. She is still active in the system as a foster parent, and intends on returning to her role as a caseworker soon.

From our interviews, we were able to directly create four personas based on biographical information, motivations, goals, frustrations, tools utilized and accessibility of Hannah M. as a foster parent and private contractor caseworker, and Anna L. as a foster parent and state caseworker. Both Hannah M. and Anna L. indicated they were not typical foster parents, but provided information on the makeup and motivations of more typical foster families. Using this information as well as user research and feedback from our California Agile Development Pre-Qualification Vendor Pool prototype, we were able to craft personas more in line with the average foster family. Our personas are more than their job title or role—we wanted to capture what they truly care about and what drives their decision making. These personas can be found [here \(https://github.com/CambriaSolutions/MSRFP-3717/blob/master/artifacts/Human-Centered-Design-Artifacts/User%20Personas.pdf\)](https://github.com/CambriaSolutions/MSRFP-3717/blob/master/artifacts/Human-Centered-Design-Artifacts/User%20Personas.pdf).



The Cambria team discussing who our users are and developing personas.

After this initial discussion and collaboration, we were off to a good start for understanding key components for our user personas but we still had more discussing and fleshing out to do to come up with poignant yet simple user stories. Over the next 24 hours, through small group discussions and follow-up research, the team iteratively defined the users we were targeting by developing the personas and then drilling down on the user stories. From the personas we crafted, we distilled our user stories, brief narratives of how a typical user might interact with our prototype. We followed the pattern of: As a....I want to....So that.....

ID #	As a... (Persona)	I want to... (Do something)	So that... (I can derive a benefit)	Full Story in One Cell
1	Caseworker or Parent	<i>I would like to search for childcare providers in my vicinity</i>	<i>so that I can choose the best provider for a child.</i>	<i>As a Caseworker or Parent, I would like to search for childcare providers in my vicinity so that I can choose the best provider for a child.</i>
2	Parent	I want to have a list of accredited childcare facilities that accept the Mississippi Childcare Payment System subsidies	so that I can use my Mississippi Childcare Payment System subsidy and save time by only looking at qualifying facilities/providers.	As a Parent, I want to have a list of accredited childcare facilities that accept the Mississippi Childcare Payment System subsidies so that I can use my Mississippi Childcare Payment System subsidy and save time by only looking at qualifying facilities/providers.
3	Parent	I want to do a radius search from my home or office for childcare options	so that I can find a location convenient for me.	As a Parent, I want to do a radius search from my home or office for childcare options so that I can find a location convenient for me.
4	Parent	I want to know if a childcare service has availability for my child/children's age and needs	so that I don't waste time exploring options that cannot take on any more children.	As a Parent, I want to know if a childcare service has availability for my child/children's age and needs so that I don't waste time exploring options that cannot take on any more children.
5	Parent	I want to search for locations along my route from home to work	so that I can save time on my commute.	As a Parent, I want to search for locations along my route from home to work so that I can save time on my commute.
6	Parent	I want to know more information about different childcare options like certifications or licensing	so that I can find the best fit for my son.	As a Parent, I want to know more information about different childcare options like certifications or licensing so that I can find the best fit for my son.
7	Parent	I want to know how much my co-pay would be for a given childcare facility	so that I can easily make an informed decision	As a Parent, I want to know how much my co-pay would be for a given childcare facility so that I can easily make an informed decision
8	Parent	I want to be able to organize all of the different childcare options I have	so that I more easily compare different options and services.	As a Parent, I want to be able to organize all of the different childcare options I have so that I more easily compare different options and

Our initial user story worksheet

We wanted our user stories to be comprehensive of the different needs and wants of our users. In order to do this, we thought through from start to finish what each user would do in order to solve our initial problem statement: finding child care in a particular area. Then, using details from our interview, we thought about what kinds of features would make the lives of our users easier. From our initial personas and research, we were able to create around 17 user stories covering our basic functionality and more detailed design solutions. This formed the basis of our wireframe creation, design and technical development. The full list of these user stories can be found [here \(https://github.com/CambriaSolutions/MSRFP-3717/blob/master/artifacts/User%20Stories.pdf\)](https://github.com/CambriaSolutions/MSRFP-3717/blob/master/artifacts/User%20Stories.pdf).

IMPLEMENTATION

Wireframes and Screen Design Sketching

3. Find the Heart of the Matter



- Sketch, edit, and storyboard
- Generate multiple and varied designs
- Settle on the right technology stack
- Determine direction through consensus and build

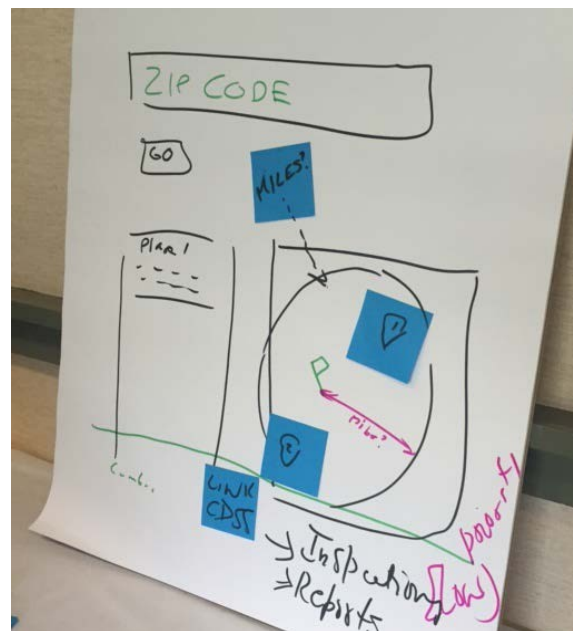
Once we had a handle on the personas/target audience and the user stories we would build around, the HCD team began to draft series of wireframes that would respond most effectively to the users' needs.

When designing our initial wireframes, we made sure to consider the technology available to our users, the kind of language they would be familiar with, and their fluency in navigating websites and mobile apps. We wanted to make an application that was simple and easy to use. We wanted the user to be able to access the application and begin using it without needing to click to navigate to a useful page; as well as an intuitive application that does not require instructions on how to use.

We also wanted to make sure our prototype was Americans with Disabilities Act (ADA) compliant and accessible to users who may speak languages other than English. We included Spanish and Vietnamese translations, as these were the languages most in use other than English.



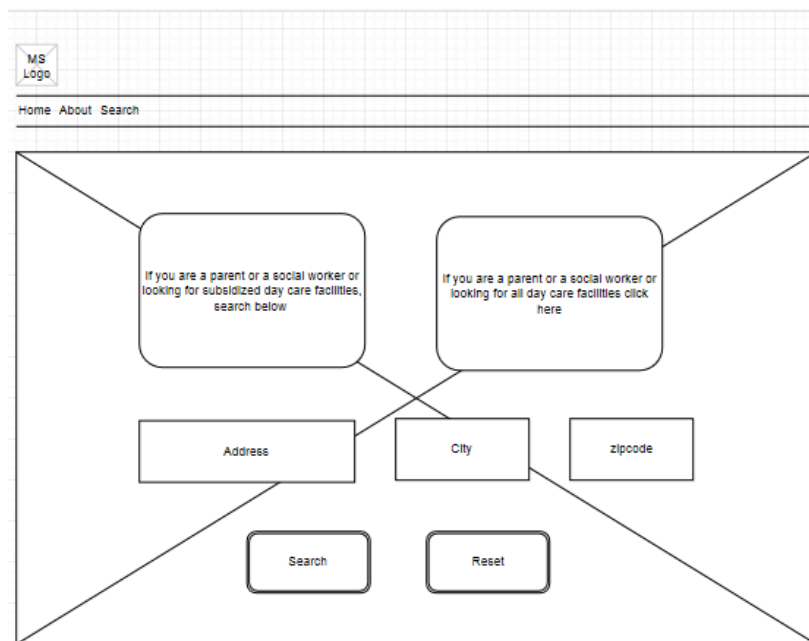
User design session



Wireframe sketch



Discussing design sketches with the users and editing.

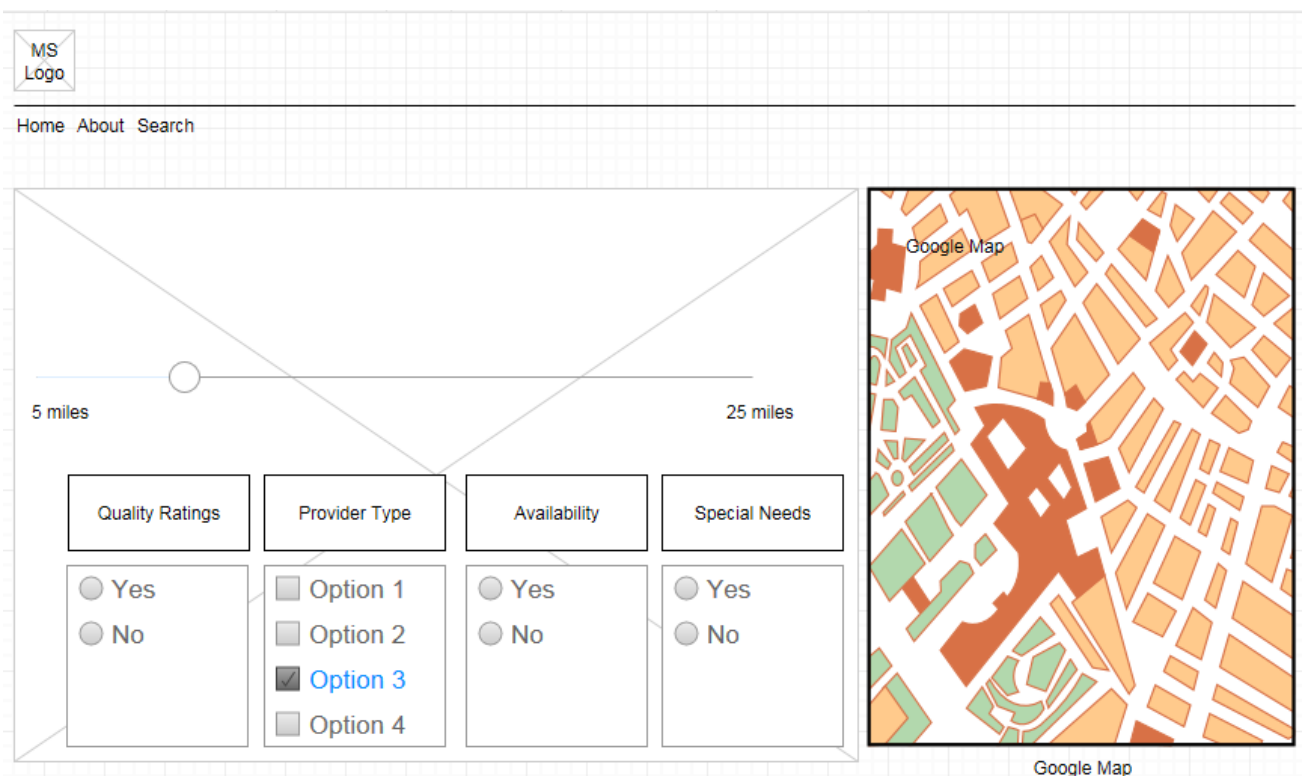


Initial Wire Frames

Visual Design and Style Guide

The HCD team also worked to rapidly prototype through iterations of the wireframes based on what would most suit the experience of our identified users. The team crafted the look and feel of the application, which included creating the style guide. Our creative process included defining user flow, producing content strategy, user testing throughout, designing visual wireframes, and establishing a digital art direction.

We drafted ideas through envisioning the user and how he or she might interact with the application, and then sketched screen designs that would appropriately speak to his or her expectations.



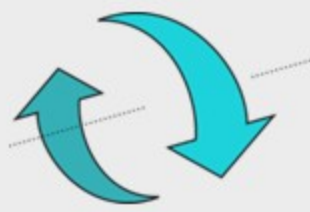
Provider Name	Address 1	Address2	City	Phone	Provider Type	Quality Rating	Special Needs	Availability
XXX								
YYY								
ZZZ								

Search screen wireframe

ITERATING

Usability Testing and User Feedback

4. Keep Iterating to Innovate



- Prioritize based on value and importance
- Emphasize short release cycles
- Innovate throughout
- Continuous testing (with users and across code)

Our usability testing focused on feedback from the users. With this core perspective, we continuously integrated the users' responses and feedback to innovate and prioritize with each iteration.

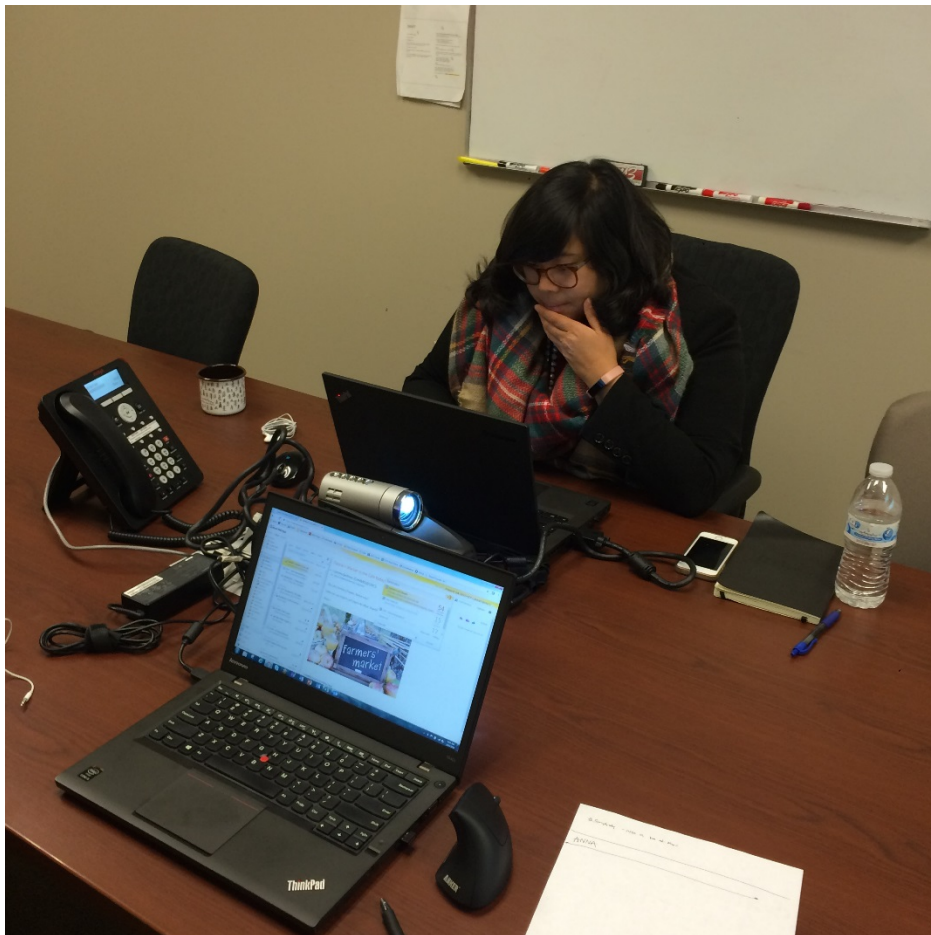
Our representative users, who were located in different geographical areas, became our testers and utilized a variety of devices and platforms. Based on their feedback, we noted enhancements as issues for every sprint, and used the information collected to evaluate the usability of the application and recommended improvements with each successive sprint. The users began testing in sprint 2 and continued throughout all subsequent sprints. We organized our testing such that we would re-test previously closed out issues and enhancements to ensure these were still working.

With our prototype farther along, we contacted our users, Hannah M. and Anna L. again to look at our work during sprint 3. Our user feedback sessions were designed to be more organic to allow our users to feel through how they would use the prototype without guidance. Both of our users immediately gravitated to the search bar and began looking up their own addresses and exploring the features.

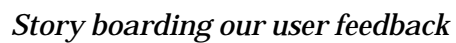
Anna L. had actually just completed searching for child care for her own child a week prior, so the experience was fresh in her mind.

After some initial exploration into the prototype, we prompted our users to think about what they liked and did not like, and provide suggestions. We received comments to emphasize or deemphasize different features on the prototype. They came back to us with feedback for the visuals, the information they wanted to see, and how we could make our language and design even more accessible.

Using this feedback, we logged enhancements and bugs into GitHub. While some of the requests were outside of the scope of this project, or not feasible for the next few sprints, we added these suggestions to our product backlog that may be addressed in future sprints.



Conducting user feedback sessions over the phone



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