

Problem Domain:

Following our initial brainstorming session in week 2, our team settled on the idea of relocating and moving from one home to another. We find the particular problem compelling as while not everyone gets to travel for leisure during their lifetime, the vast majority of people go through a relocation at some point in their life. This move could be local, changing apartments within the same region, international, or intranational. As students, we have all experienced at least one move (some of us, Austin and Alexei, have experienced multiple), and thus find this problem domain not only significant, but relatable to our personal experiences.

Initial POVs and needfinding results:

After our initial interviews, we settled as a group on pursuing the following viewpoints:

1. David Serpa
 - a. A successful realtor from Southern California.
 - b. He thinks buyers are misinformed through websites such as Zillow. He feels the actual cost of buying a home is often falsely represented, and realtors have a bad reputation.
 - c. **Insights:** Buyers' current research tools are not accurate.
 - d. **Surprises:** Prevalent real estate research tools include inaccurate payment calculators.
2. Matt Chiswell
 - a. A recent college graduate that is currently living at home, but will move out in the coming months.
 - b. He is hesitant to begin the home-seeking process, because he might be relocated for work before he has to move out.
 - c. Matt is unfamiliar with the entire moving process, which also makes him reluctant to begin.
 - d. **Insights:** Young individuals that move as part of a decision by parents often are not involved in relocation process.
 - e. **Surprises:** There are many reasons people can or will put off finding a new home.

Additional POVs and needfinding results:

Having discarded one POV and eager to get a broader set of needs, we decided to expand beyond people in our individual social networks and reach out to strangers. On Monday October 5th, 2015 we went to University Ave in downtown Palo Alto to interview additional individuals. We met Lane Wilson, a physicist that works for the Department of Energy in Maryland, and Jay P, a former business owner. We were very pleasantly surprised with the insights we gained from our two new interviewees.

3. Lane Wilson

- a. Former Stanford PhD student now working in Maryland.
- b. He feels the number one issue with moving is superfluous stuff (he has too much junk he doesn't need, and keeping track of it during a move is too hard).
- c. Realtors often don't really know what they are talking about. He wants access to realtor's tools without having to deal with any realtors.
- d. He also feels that current interactive tools for exploring properties are unsatisfactory, suggesting that digital tours and photos are no replacement for actual open houses or property walkthroughs.
- e. **Insights:** Lane feels that realtors are only required due to easy access to information. The packing/unpacking process is tedious and often times leads to lost items.
- f. **Surprises:** Realtors have access to government data but misinterpret it (Lane told a story when a realtor listed a lot as being completely covered with flood plains, but upon checking for himself with government topographical data on GIS, he discovered only 20% of the lot had flood-plains and was able to buy it for a bargain price).

4. Jay P (preferred not to disclose his last name)

- a. French immigrant that has lived in Bay Area for 20 years, formerly a home and business owner (beauty salon), but lost both his business and home five years ago. This event ruined his credit rating and he now has to rent an apartment. While searching for apartments, he relied heavily on craigslist.
- b. He thinks housing prices are exorbitant and feels lucky to have found an affordable apartment.
- c. He has had to keep roughly half of his things in storage for five years since he does not have the room to fit it.
- d. **Insights:** Bad credit can make the relocating process excessively difficult--particularly in high rent price areas. Finding affordable, long-term housing on short notice can be near impossible.
- e. **Surprises:** Jay noted that he is scared to ask his landlord to repair anything in his apartment due to valid concern (stemming from an experience where he asked to have the floor repaired) that his rent will be increased.

How Might Wes:

With our broader set of POVs in hand, we sought out to draw upon our insights and the ways in which they surprised us in order to generate our 'How Might We...' statements. We noticed there was some overlap with the experiences that were shared with us and such approached the following 'game-changing prompts.' Below the prompts are a small sampling of our HMWs. Bolded are the HMWs we deemed best.

Individuals interviewed noted that moving involves sorting/discarding/losing many household goods. It would be game-changing if we could remove the complexity of packing/unpacking and reduce the propensity to lose items during a move.

How might we...

1. Decide what items are valuable and not so he doesn't have to do it.
- 2. Streamline process of categorizing his goods.**
3. Make it so people don't need as much stuff.
4. Convince him to throw away his old stuff and buy new stuff.
- 5. Label containers to accurately/easily reflect what is inside them.**
6. Make use of all the stuff that gets discarded in the moving process.

Individuals interviewed noted that information is a huge problem in the relocation process. It would be game changing if we could break down walls between realtors and buyers, and improve the availability of information.

How might we...

- 1. Compare the information that realtors have to what is listed by sellers.**
2. Encourage realtors to be more open with information they have.
3. Get rid of realtors.
4. Encourage people to sell their homes in blind auctions.
- 5. Put together all the government/realtor/seller information into a readily accessible/interactive tool.**

Lane noted that current virtual tours are unsatisfactory. It would be game changing if we could provide a remote way of exploring a property without having to visit it.

How might we...

- 1. Create an interactive experience that is better than a slideshow.**
2. Allow him to experience living in the home.
- 3. Create a way for him to get a feel for the spatial restrictions of the home.**
- 4. Allow him to see how his furniture would fit in the home.**
5. Let him view the home as if he were there, remotely.

Solutions

From our HMWs, we honed in on a set of solutions to flesh out into experience prototypes. The solutions we chose from our HMWs were as follows:

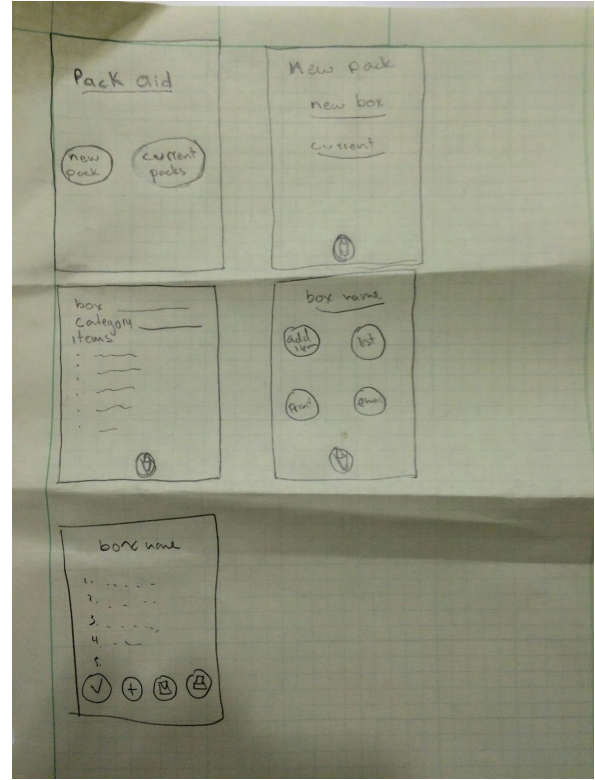
1. App for cataloguing boxes. With barcoded boxes--scanned through phone for contents. App records data through voice input/text entry.
2. Easy to access, Interactive floor-plan to replace virtual tours.
3. Searchable database showing all relevant information--zoning codes, property tax, renovations of the home.

Experience Prototypes

We tested our experience prototypes amongst ourselves and with Emily Christensen. Emily is an accountant that works in San Jose. She recently moved to the area from Orange County, CA.

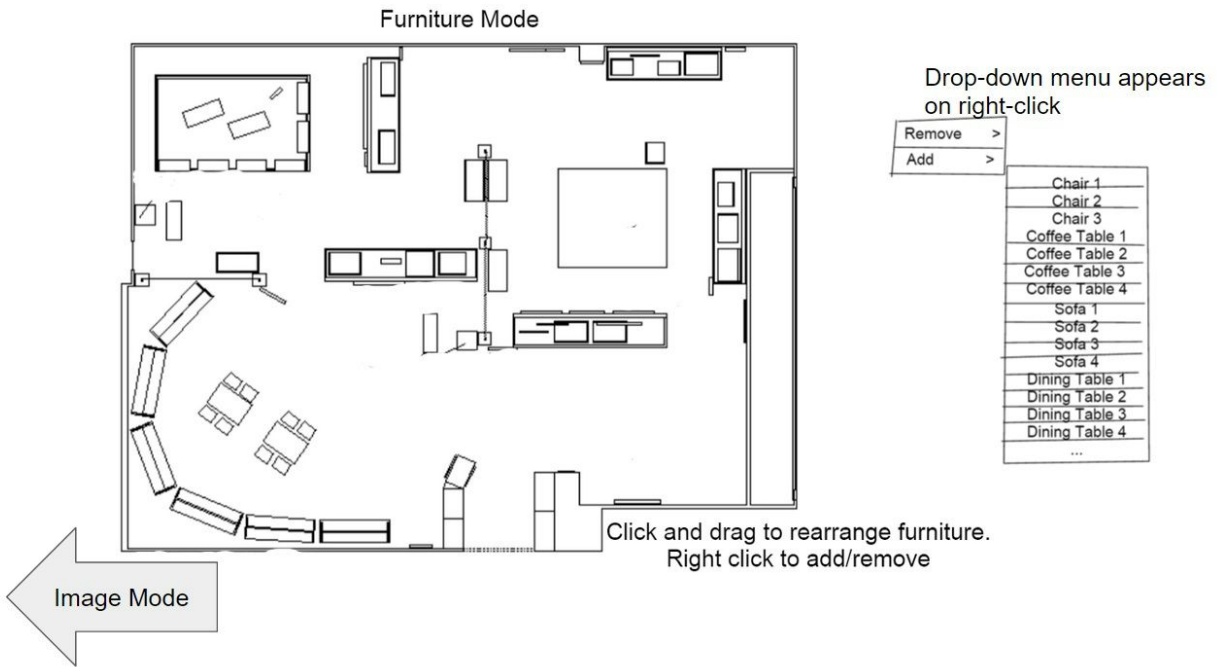
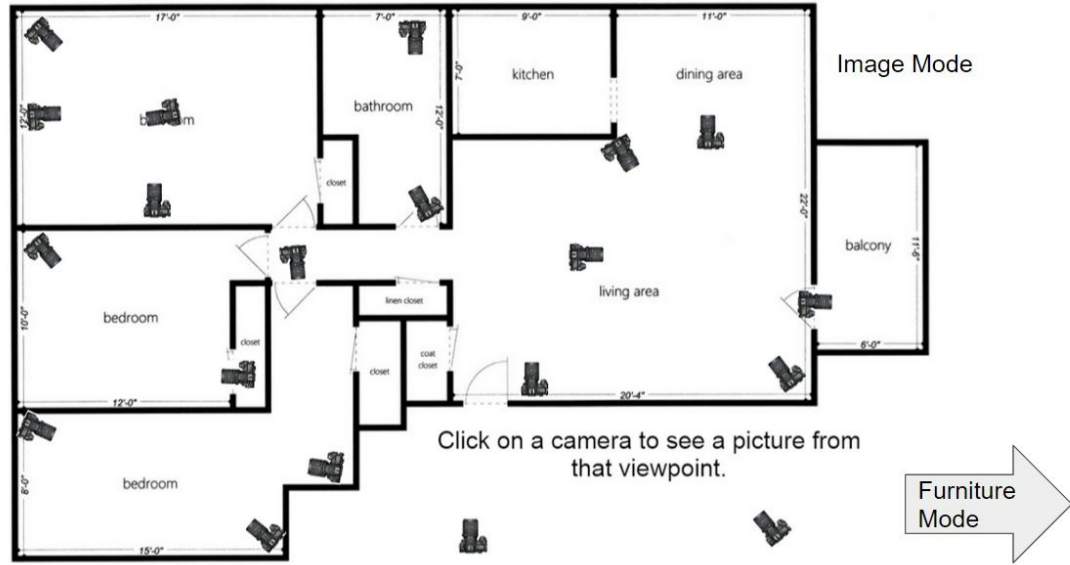


Our first prototype was a sketched out mock up of our mobile app to assist with packing. We assumed our tester would be familiar with a touch based interface, as well as with communicating with a device using her voice. We sought to focus more on interacting with the device through speech to test if the packing process would be hindered by it. We performed the testing by having our tester go through the motions of packing a box, and using her voice to interact with the app. We had her ask the app to 'print' the barcode with her list information, and go through the motions of scanning the code when unpacking.



Emily felt that the interface was intuitive, and in particular liked being able to interact with voice. We were surprised to hear that her biggest concern was not knowing which specific commands one would use with a speech based interface. We had made the assumption that this would be intuitive but were wrong as she had to ask about it.

Our second prototype was a digital mock up of a web-based app that would show an interactive floorplan.



We simulated interacting with this on a laptop. Emily felt that the layout was intuitive; however, she was confused as to how the pictures would be different from traditional virtual tours and was concerned that they would have a fishbowl type filter to them. She said that if the photographs mimicked the experience of walking through the house, it would be better. While playing with the

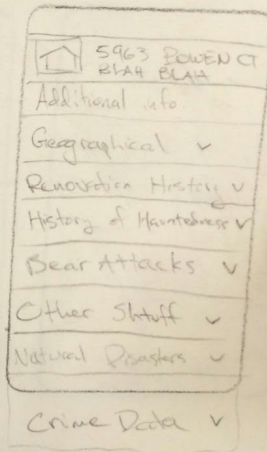
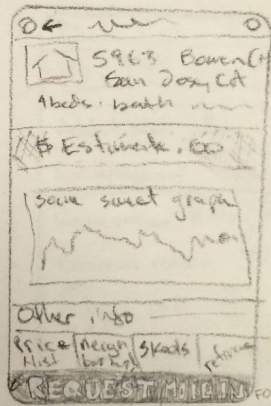
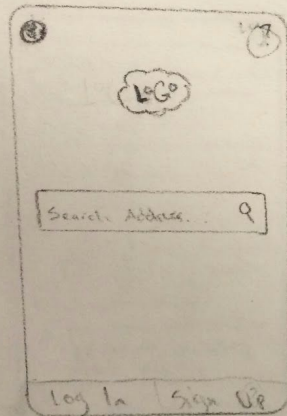
furniture layout mode, she also suggested adding in a feature to let you know if objects were too near one another--potentially blocking a door or limiting walking space. She also wanted to know how furniture items would be added to the interface. Overall this test was extremely helpful as Emily brought up multiple points of friction we had not considered.



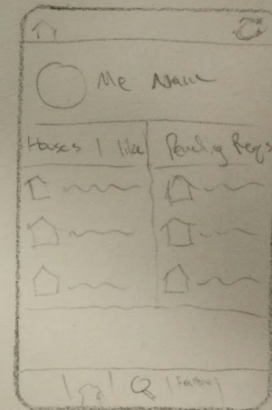
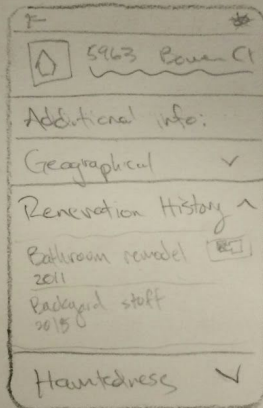
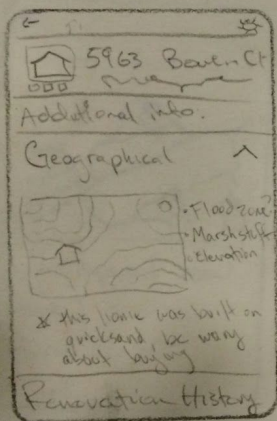
Our last experience prototype was a mock-up of a mobile app to interact with a home-reporting database. The app could be used to generate a report on potential issues for the home: crime rates, natural hazards, wildfires, etc. We led with the assumption that Emily had already found a home she was interested in and was using the app to explore potential areas of concern. We were surprised to find out that she felt integrating searching for available homes along with the reporting would be more intuitive.

Home Screen

Address Info



very basic, usable
by anyone





We were surprised to discover that the interface did not seem intuitive to her. She felt it was too cluttered--particularly for a phone. She noted on a tablet or laptop it might work better. Overall, however, she felt the service provided would be extremely beneficial to the home-buying process, especially if integrated with a home search.

Prototype Insights

While our initial UI elements might not have been ideal, we were surprised to find that according to Emily, all three of our ideas would greatly improve the experience of searching for a home. Despite similarities to current products, she noted that the added layer of convenience and information available would lead her to utilize these products. In particular, we had our greatest success with the reporting application. Despite UI flaws, Emily felt it would contribute the most to the home-buying experience as it provides information that is not easily attainable.