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CS 147 POV and Experience Prototype Report
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POV's:

Our problem domain was water usage in California. We started with these initial POV's:

We met Christa, a policy advocate. We were surprised to discover that she found it difficult to make certain sacrifices that affected her lifestyle.

It would be game changing to change the social stigmas surrounding the sacrifices made for a sustainable lifestyle

We met Kathleen, a row house cook.

We were surprised that she lacked the resources & info to make informed decisions

It would be game-changing to make information readily available at the point of purchase

We met Hannah, a Columbae cook:

It would be game-changing to change social stigmas surrounding the sustainable lifestyle. We were surprised by how much she is influenced by the actions of others.

It would be game-changing to mount peer pressure as encouragement for sustainable living.

Interviews

Based on the outcome of our interviews, and feedback from our TA, we went out and interviewed another two subjects: Falon, a Google employee who had just moved from Florida, and Mary, an admin assistant. Yet we discovered that both of them have come to believe strongly in sustainability. We did find it interesting to hear Falon's perspective on the difference in attitude between Florida and California, and her stated motivations were a contrast to our previous interviewees:

We met Falon, an account strategist at Google. We were surprised that she felt a sense of a responsibility to sustainability without necessarily feeling like her actions made an impact
It would be game-changing to anchor decisions to responsibility rather than impact.

We met Mary, an associate administrator at Precourt Energy Efficiency Center. We were surprised that she has been keeping sustainable habits(bike to work, always turn off the lights when she leaves, bring her own bags when she goes shopping) for more than 40 years. She was influenced by her father, who were greatly concerned about the environment. She proposed green actions in her office, but with little feedback. She thinks people are unlikely to change their behavior unless incentives are provided.

HMW's

We decided to focus on the perspectives from Christa, Hannah, and Falon, generated the following HMW's, and voted on them to filter out the most promising ones:

Falon:

- How might we create visual reminders of the severity of the drought?
- How might we provide real-time feedback for sustainable choices?*
- How might we create an individual sense of responsibility for the environment?*
- How might we create more incentives for companies to support sustainability?
- How might we promote a sense of ownership? ***
- How might we provide economic incentives to be sustainable?
- How might we shame people into feeling responsible?
- How might we create a collective sense of responsibility?
- How might we help motivated people make informed choices about water use?*
- How might we encourage unmotivated people to make good choices for the environment?

Hannah:

- How might we better organize people into a green movement?
- How might we crowdsource pressure groups?***
- How might we change social norms to save water?
- How might we turn saving water into a competition?*
- How might we use crowd pressure to change companies' behavior in regards to drought?
- How might we use crowds to get farmers to switch to water friendly crops?
- How might we let people know how much water they are using?
- How might we organize a mob to tar and feather those who have green lawns?
- How might we pair people up to motivate them to conserve water?
- How might we help make conserving water a group bonding activity?

Christa:

- How might we change the perception of sustainable choices?
- How might we make sustainable choices a default action rather than a conscious choice?
- How might we reward sustainable choices?*
- How might we shift the costs and benefits comparison of sustainable actions?
- How might we relieve individuals of the sacrifices associated with sustainable choices?
- How might we leverage social connections to reduce the perceived sacrifices of sustainable choices?
- How might we allow individuals to commit to sustainability goals they themselves set (in a less tired/stressed moment)?
- How might we allow people to see the impact of their sustainability choices?
- How might we gamify sustainability choices?****
- How might we quantify sustainability choices?*

We narrowed it down to the following HMW's and prototypes.

- We met Christa, a policy advocate. We were surprised to discover that she found it difficult to make certain sacrifices that affected her lifestyle.
- It would be game changing to change the social stigmas surrounding the sacrifices made for a sustainable lifestyle

- How might we gamify sustainability choices?
- Our favorite solution was to spark competition between groups (cities/neighborhoods/dorms/suites), to invoke peer pressure within social groups.
- We met Hannah, a Columbae resident:
 - It would be game-changing to change social stigmas surrounding the sustainable lifestyle. We were surprised by how much she is influenced by the actions of others.
 - It would be game-changing to mount peer pressure as encouragement for sustainable living.
 - How might we crowdsource pressure from social groups?
 - Our favorite solution was to share stories/stats between people, through a peer to peer matching system that would also setup a mini-contest.
- We met Falon, an account strategist at Google.
 - We were surprised that she felt a sense of a responsibility to sustainability without necessarily feeling like her actions made an impact
 - It would be game-changing to anchor decisions to responsibility rather than impact.
 - How might we provide a sense of ownership?
 - Our favorite solution was to provide information at the point of purchase. This also was an ideal solution to the POV we developed for Kathleen.

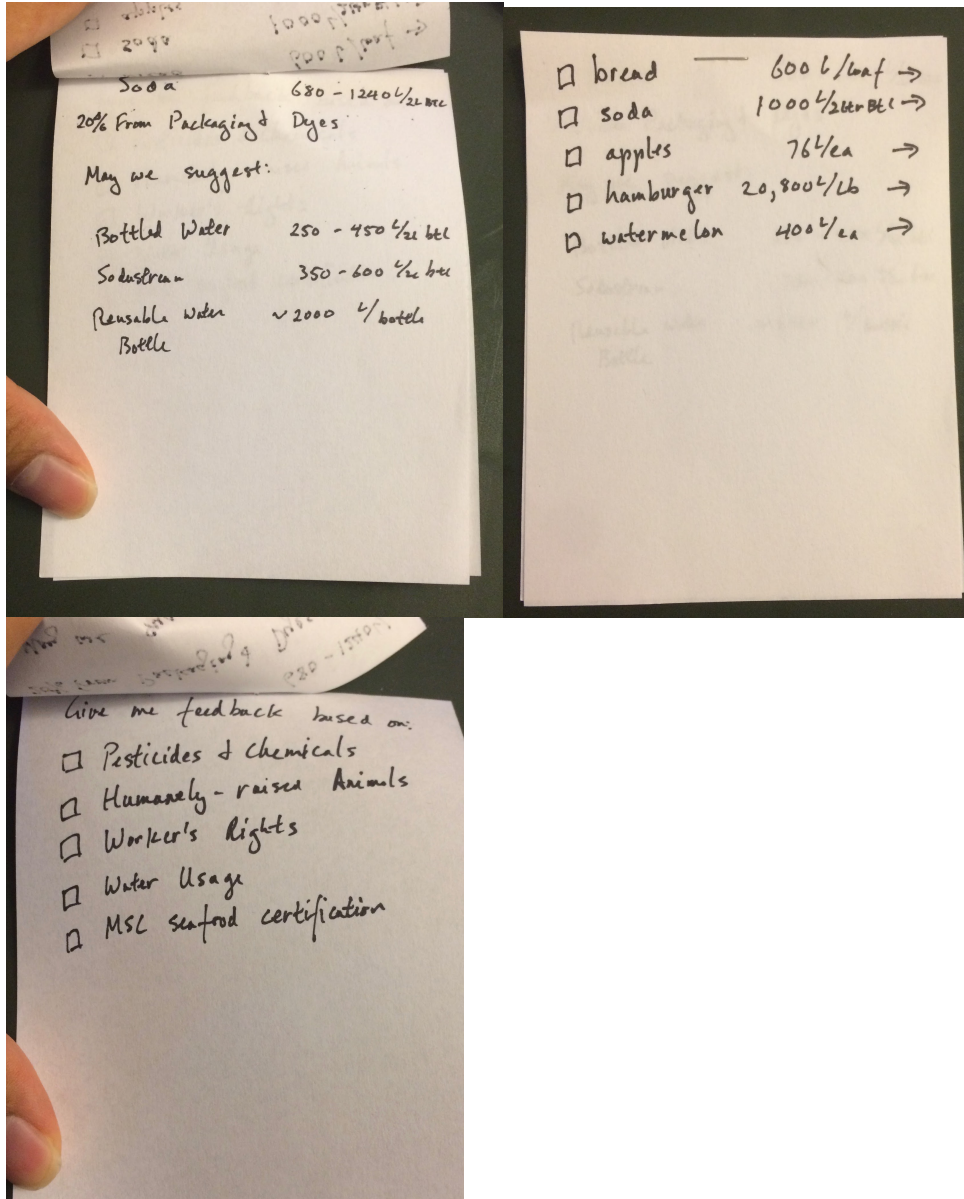
Solution 1

How might we provide information at the point of purchase?

Our favorite solution was to provide information at the point of purchase, so as to immediately tie actions to impacts. We tested this at Trader Joe's, acting as if the labels all had water usage info, and with a paper mockup of a grocery list app that showed water usage and suggested alternatives. We assumed that having information readily available would motivate behavioral change, and that people would want the information enough to use grocery list application that provided that info (if the store display didn't).

We constructed a prototype of the app on a paper flipbook, to represent the levels of navigation. We tested it at Trader Joe's, where we also acted as if the labels included similar information. One participant said that the store signs would influence her decision, but that she would be unlikely to use a grocery list app. She might look up the information once on the internet, but it wouldn't be part of her routine. A second participant thought it would be really helpful and would use the app, but pointed out that keeping track of yet another number is really difficult and standardizing the units would be important. Another participant thought he would not be influenced at all because he doesn't think saving water through food choices is the right strategy. The last participant has been a vegetarian because she thinks meat and dairy consumes a lot of water. She would definitely look at the water consumption information if it is provided through an app.

We found that it is important to get users' understanding of the basic motivating concepts. If the strategies we use to address the problem don't make sense to users, they won't use our product. Also, a better sense of the user's interests could allow us to convert people's occasional green behavior into green habits.



Pictures of the flipbook prototype

Solution 2

A different solution was to create a peer to peer competition to motivate people to save water. The idea is based on the idea that people like to play music when they shower, and that competition would allow people to frame their actions in the context of both a community average, and a specific competitor's behavior. The plan would be to pair people who are taking showers at the same time, and then when one of them finished we would let the other person

know by playing obnoxious noises. This audio cue would then prompt them to finish their shower faster than they otherwise would have done.

We went in assuming that people would be playing music in the shower and that they would be inspired by the feeling of competition to shorten their shower time. To test these assumptions we took charge of a speaker in the bathroom and played music for 3 min to people. We then turned on a WWII air raid siren. It was true that people took shorter showers, but they didn't feel the spirit of competition since the "theoretical" other person was on the other side of the world. Matthew especially, whom we interviewed, felt strongly that if he wanted to take a long shower he just wouldn't turn on the app. Another practical issue was that the entire dorm was woken up by a loud air raid siren at 2am. We learned that changing people's habits are hard and that most people care more about their comfort than the environment.



Solution 3:

Our third solution was based on attempting a group or communal competition between cohorts of people. This was based on the example of some neighbourhood power companies that let homeowners know how much power they consume compared to others in the vicinity. A similar idea could work for water.

To test out assumptions we interviewed various people and quoted them a few fake statistics on shower times at Stanford. We then asked if they would change their shower behavior based on the fact that they now know how far above/below average they are for people around them. Of the people we interviewed none of them seemed particularly interested. Samira S, a 21 year old conservative, was not surprised when we told her that Stanford students take longer showers than the national average and said she wouldn't change her shower habits. Nick was also fairly ambivalent saying "people are aware that they take long showers" and that "they'll just own it."

Overall it doesn't seem like people are interested in changing their showering habits. Maybe if we focused on something a little less personal, such as people's lawns, they would be more open to the idea of cutting water use.



Conclusions

Of the three prototypes, we felt providing information at the point of purchase was the most successful. While we focused all three prototypes on integrating into daily functions, people seemed more open (even with reservations) to changing their food preferences than their shower habits.