Team Food Waste

Grace W., Lewin C., Devangi V.
CS 147 | October 14, 2016

Our studio theme is food, and our problem domain is reducing food waste and food insecurity. This week, we explored solutions on both sides of the issue: helping food producers generate less waste and making food more accessible to the food insecure.

Initial POVs

Here are the five POV's we generated in section after our initial needfinding during Week 2 of the quarter:

1. We met Andy, a produce manager at Mollie Stone's. We were amazed to realize he had bad experiences with finding solutions to food waste, that he was almost apathetic to their bad experiences, and that there exists a tension between food banks and the donors. It would be game changing to build trust between food banks and donors.
2. We spoke with a Trader Joe's manager. We were amazed to realize Trader Joes's dedication to supporting the local community by donating food excess. It would be game changing to instill that ethos in other businesses.
3. We met Nancy, an employee at Food Runners. We were amazed to realize that there are reasons that prevent people from going to established food distribution sites. It would be game changing to make it less stigmatized/to access food.
4. We met Annie, a coordinator and volunteer from Stanford Spoon. We were amazed to realize that one of her favorite parts of serving food to the food insecure was getting to know her community better. It would be game changing to leverage and replicate that feeling of community to discourage wastage of food.
5. We met Kate Wilson, the director of Project Management at the Second Harvest Food Bank. We were amazed to realize that the donations received by food banks are often not of the type most needed by recipients, and that monetary contributions are strongly

preferred. It would be game changing to ensure that the type of donations given actually match the type of donations need.

Additional Needfinding Results

We took some time to conduct three more needfinding interviews this week. Read on to find out who we met and what we learned!

1.The story of end users of food distribution services...

One voice that had been missing from our needfinding from last week was that of the individuals who actually use services like food banks. In order to gain some insight into their needs, we interviewed Grace's grandparents, who receive food from the Salvation Army every 2 weeks. We interviewed them in particular because they regularly receive government assistance in obtaining food. The most interesting information we gleaned during the interview was that they found out about the Salvation Army program from their neighbors in the senior center. Another surprising fact was that they found the food pickup line to be very long; they said it could take more than 30 minutes and there is little parking space available. One experience that stuck out to them was regularly giving foods that didn't appeal to them (such as canned foods, sweet foods, and snacks) to others in line. Overall, from this interview we learned that many of the food insecure don't know about resources that are available to them and only discover them by chance. We also surprised to learn that there was a community aspect in accessing food resources in terms of exchanging with others receiving the same services.

2. The story of a food management expert...

Next, we spoke with **Chris Cuneo, the manager at Mayfield Bakery**, which is a cafe and bakery located in Palo Alto. As a manager, Chris has extensive knowledge about what goes on behind the scenes in terms of food management, preparation, and planning. We were interested in getting his perspective because, based on the insights from Nancy and Bruno, we had an inkling that giving food managers better resources to predict how much food they need in a variable environment might serve to reduce over-ordering and food excess in restaurants and cafeterias.

Chris described the tools used in food management and ordering, focusing on ProductMix, a desktop software with which he interacts every day. Chris uses ProductMix daily to examine what quantities of which menu items were sold over time and what the business analytics are for the day; he then passes on this information to accountants to draft a PNL (product and loss) system. He spoke very highly of the ProductMix software, saying that he could never recall a time when it had led him astray: "It's very intuitive and user friendly – I can't report to my bosses or my guys without it. Without it there's no way to even track how much food is being sold and what is going on with high volume of food we operate with. **I can't imagine running this business without ProductMix.**" In particular, he uses the software to pick up on "trending" menu items so that he can do better menu planning, and he also looks back at trends from previous years for the week at hand in order to predict sales and consumption. The tool is crucial here, he explained, because "the restaurant business changes based on season, weather, sporting events, and even the election." Combined with the rigorous inventory system (which is run the old-school way - physical counting and reports from each department every two days), we gleaned that Chris had a strong system in place to predict and analyze his food needs.

To delve further into the workings of this helpful tool, we asked him to walk us through the process. He explained: "We'll run a ProductMix weekly to see how things are trending and how everything is going. It's basically a spreadsheet broken into categories, food beverage, wine, liquor, beer – it's a very basic sheet. As far as the food cost goes, you have multiple elements of each menu item coming from different providers. I look at the ProductMix every day because if something is trending or spiking, **you want to know ahead of time.**" We were **surprised** to hear that such an excellent predictive tool already exists on the managerial side of food production, and so we inquired into the flip side: food waste. Chris explained that restaurants like his minimized food waste by **repurposing items**. For instance, they make all their French bread from baguettes that were not sold the day before, and Mayfield Bakery in particular also donates food to local distributors.

Looking back, it seems **contradictory** that such a "basic spreadsheet" is so "user-friendly" and helpful according to Chris. This suggests that the idea of user-friendliness to managers might not involve aggregated trends but might just present the raw data and allow them to conduct analysis. Although Chris also said that although ProductMix does not have a mobile interface, he uses other tools like the management app Ctuit to get insights on the go. He seemed to think that mobile apps could prove especially useful for higher-level management officials like Directors of Operation who can't benefit from onsite insights from ProductMix but want to check in with the business analytics in real time.

Finally, we inquired about **the balance of power and knowledge in the restaurant.** This proved to be the most insightful part of the interview, as Chris highlighted the dichotomy between the front house (management) and the back house (chefs and sous chefs). Although Chris had the insights, the chefs seemed to be the ones making the calls about quantities on the ground. At this point in the interview, Chris slowed down for the first time and **chuckled hesitantly as he recounted stories about how he has walked around yelling at the chefs** about why they are running out of pasta on a Friday night. He admitted that although he has weekly meetings with the staff, **"it's hard to communicate sometimes."** This led us to believe that Chris might feel a disconnect between the front house and back house, which makes it difficult for him to **translate his food insights into guidelines for the chefs.**

When asked about whether chefs could benefit from tools like his, he declared that "from my personal experience, chefs don't have the ability to run reports and do office type things." However, immediately, he added that "It's important to have good communication between the front house and the back house." This **contradictory** need for communication but unwillingness or inability to work closely with chefs suggests a strong area of need. **Maybe instead of helping chefs decide how many portions to cook, the real opportunity lies in leveraging the insights managers already have and bridging the front and back houses in restaurants.**

3. The story of a Menlo Park household...

Finally, we met with Menlo Park local Carol Elliot, who lives with her husband and three children and is the primary preparer of food in the household. While at this point our needfinding had extensively mapped out food waste and its various re-usage systems within the commercial space, it had failed at looking at sources of **food waste within the domestic system**. Carol's background as a household manager meant that she filled this hole in our current needfinding breadth perfectly.

Carol started the interview by confirming that the amount of **food wasted in the household was non-trivial**. Immediately she drew our attention to the fact that there are two different kinds of waste from the household: raw produce and leftover prepared meals, and that each kind would have to be handled differently. When talking about reusing leftover food Carol kept mentioning that only certain foods could be reused in certain situations, using the example of her son not being able to reuse soup at school because it was too messy. This drew links

between the **context that food is consumed in and whether the food is actually able to be reused**.

Furthermore, Carol's story about memories of huge amounts of food waste over Christmas time drew our attention to **seasonal fluctuations in food wastage amounts**. She stressed that there were very predictable times each year that waste could be guaranteed, often from large community gatherings on public holidays. It seems that communities in general are quite bad on all fronts of food waste: prediction of consumption amounts and reuse.

Revised POVs → HMWs

<u>POV 1: Food Distribution</u>
We spoke with Nancy, an employee at Food Runners and Bruno, the VP of Operations from the Second Harvest Food Bank, who need ways to combat the hesitance or incapability of food insecure people to go to established food distribution centers because of stigma, discomfort, and incapability. It would be game-changing to drive more people to distribution centers.

- HMW build a feeling of community in food distribution?
- HMW make it so that unsavory characters in line behave well?
- HMW make it more convenient for different demographics to access food distribution centers?
- HMW make waiting in line at food distribution centers more comfortable?
- HMW remove the line in food distribution centers?
- HMW separate unsavory characters (primarily a subset of homeless men) from others?
- HMW we reduce the feelings of shame involved in food insecurity?
- HMW divert different people to different centers?
- HMW make it less stigmatized to access food?
- HMW remove the need for food distribution centers?
- HMW better advise the food insecure on the abundance of different resources and help them devise customized plans?
- HMW make it easier for teens to discreetly get help when they are food insecure?
- HMW get resources to seniors who are immobile and food insecure?
- HMW provide more food resources to working parents whose schedules do not coincide with the established timings of most food distribution centers?
- HMW help the food insecure ask for help earlier in order to take advantage of resources?
- HMW make more flexible assignments people who contact the Food Bank
- HMW make food more accessible for the food insecure?

POV 2: Community Connection

We spoke with Kate, the Director of Project Management at the Second Harvest Food Bank. We were amazed to realize that the donations received by food banks are often not of the type most needed by recipients, and that monetary contributions are strongly preferred.

- HMW awaken more empathy in people who don't understand the needs of the food insecure?
- **HMW empower and encourage local communities to learn about, care about, and act upon the issue of hunger insecurity?**
- HMW encourage continued financial contributions to the Food Bank throughout the year (outside of the Holiday Food Drives)?
- HMW create regular donations of perishable high turnover goods?
- HMW incentivise people to donate items of the type needed by these institutions?
- HMW ensure that donors know the type of donations needed by food banks/insecure?
- HMW raise the percentage share of monetary donations?
- HMW eliminate the need for food banks?
- HMW make the donation process fun and clear instead of confusing?
- HMW arm empathetic, regular donors to educate their peers and encourage more donations.
- HMW educate households on how local resources and distribution centers in their area work and what they prefer?

POV 3: Food Excess

We spoke with Andy, a produce manager at the Mollie's Stones grocery store and Nancy, an employee at Food Runners. We were amazed to realize that the a significant percentage of food waste is derived from poor predictions of the expected consumption and/or purchase of food in the workplace and grocery stores. It would be game changing to be able end the trend of over-ordering and harboring food excess.

- HMW better predict the amount of food households need to avoid food waste?
- HMW better predict how much food will be bought at grocery stores to avoid over-ordering and food waste?
- HMW better predict food needs for consumers and producers?
- HMW better predict how much food will be consumed at businesses to prevent over-preparation?
- HMW track how many people will be eating at a certain place on a given day?
- HMW enable catering companies to reduce the time they need orders in advance?
- HMW encourage better consumer buying habits/encourage buying only what it is actually needed?
- HMW incentivize grocery stores to order as much as we need?
- HMW better proportion food to allow customers to eat what they need/want without waste?

- HMW incentivize individuals to do their share in reducing waste?
- HMW make grocery store's expense predictions like restaurant's predictions, which tend to be more accurate?
- HMW incentivize grocery stores to donate all food waste like Fra   nce?
- HMW end the mentality or fear of being a crumb underfed that leads to food excess?
- HMW make it less expensive to move food excess to a local charity than to dispose of it?

6. Present the selected 3 best HMW statements with the POVs they stem from
From POV 1: HMW make food more accessible for the food insecure?
From POV 2: HMW empower and encourage local communities to learn about, care about, and act upon the issue of hunger insecurity?
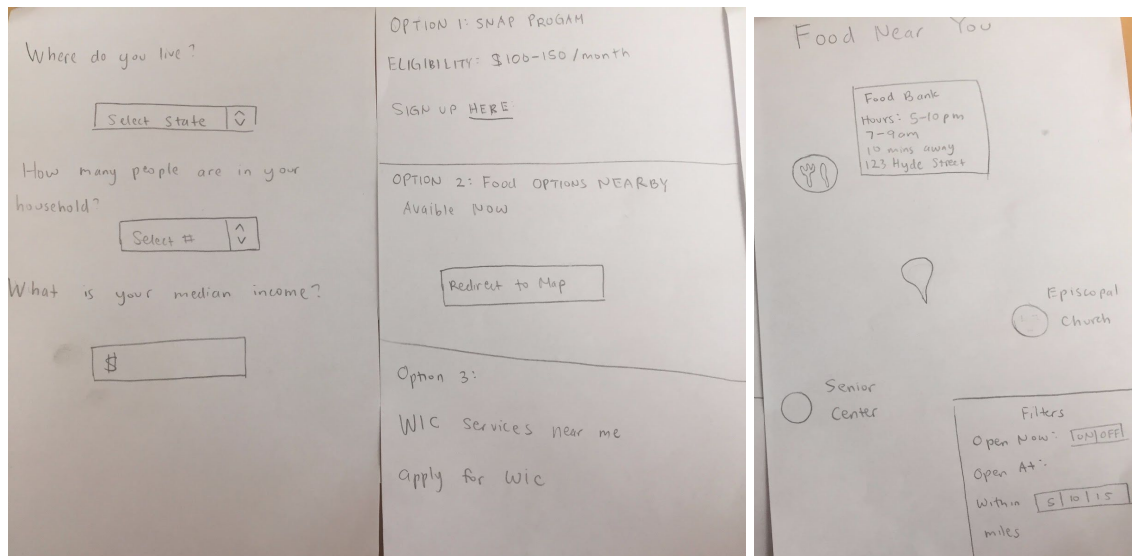From POV 3: HMW better predict food needs for consumers and producers?

7. Three Experience Prototypes:

a. Explain the assumptions you were making with each prototype.

b. How did you make the prototype? (include images)

Solution #1:
Making Food Accessible to the Food Insecure

        The assumption we made for this prototype was that there were too many options in terms of how the food insecure could access food. We assumed that they were confused by the numerous options available (from food banks to churches to federal entitlement programs. Therefore, we assumed that the food insecure wanted one app to consolidate all of this information. The app starts off with a survey and then shows the users all the options available to them. We made the prototype on sheets of paper that would simulate the flow of how the app

worked. We reached out to 5 different organizations to possibly get in contact with someone who is/has been food insecure in order to test our prototype on them. However, our search was fruitless so we tested our prototype on Brooks Hamby, a student at Stanford who has taken a class on the American welfare system and owns a family farm.


The prototype was easy to use and had a simple, easy to navigate UI. It was also much simpler than the online government forms. The available options were also presented in a comprehensive understandable way. What didn't work was that he was confused by the options available (SNAP, WIC, food banks) and wanted a summary on each of them and how long it would take to get food for each. We learned that we should have multiple languages for the app because many food insecure people are not fluent in English. We also learned that we should have separate sections for short and long term options since some people might need food immediately versus a sustained period of time. Our assumption that people wanted one app to show all the options was valid because the user was confused and overwhelmed by all the options available. A new assumption that emerged is that the food insecure may not all speak English.
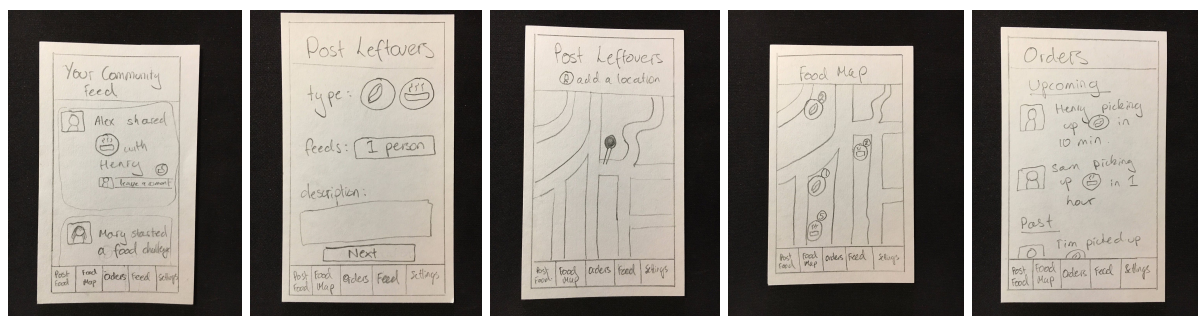
Solution #2:
Building Food Preparation Prediction Tools
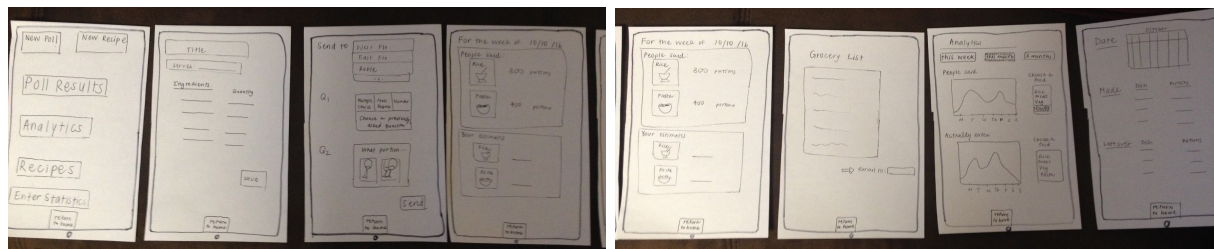
Solution #3:
Building a Local Food Community

This experience prototype was aimed at tackling the stigma around reusing leftovers, by seeking to build a community around food. We tested the prototype on Gail Blumberg, a Menlo Park local who lives in a domestic household that generates food waste.

Methodology:

The idea is that households that generate leftovers, either in the form of raw produce or leftover prepared food, can offer up those leftovers to the surrounding community. The donor will use the app to post available leftovers by selecting the type and how many people that food can feed. The food is then added by the location of the donor to a 'Food Map', where anyone within a neighbourhood can view and claim the food in the area, represented by little food icons on the map where food is available.

We tested the prototype by performing a trial run through of the posting to pickup process. Gail was asked to use the prototype to donate food, while Lewin acted as the claimer of the food.

Assumptions:

We used this prototype to test several assumptions, the foremost of these being that households would gladly reuse their waste if it were easy to do so. We also assumed that households generated enough waste to make this idea feasible, and that people would be willing to share food with strangers within their own neighbourhood. We also tested the assumption that competition between groups is an effective motivator.

For the most part, these assumptions were validated. We were told that this idea would work especially well for times when a person is travelling and has to throw away a lot of good food from their fridge and that the minimal requirements for posting available food made it very quick and easy to use. However, we were surprised to find that the participant was quite uneasy about sharing food with total strangers if they had to come and knock on the door and we were told that the social element of the prototype should be classified as opt-out.

c. How did you test the prototype? (include images)

d. What worked? What didn't? What did you learn?

e. Was the assumption valid? Why or why not? Any new assumptions that emerged?

8. Explain which prototype you found was the most successful in achieving a desired solution.

We found that local food community prototype was by most effective. The prototype attacked food waste on many need fronts: overcoming distribution inefficiencies, stigma, and household food waste. Our need finding revealed that while there are many established food resusage systems within the commercial space, domestic waste remains largely untapped.