

foodshed

Creating consumers-supplier relationships by centralizing information about food in order to facilitate sustainable behavior

Members + Titles:

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Introduction and Mission Statement

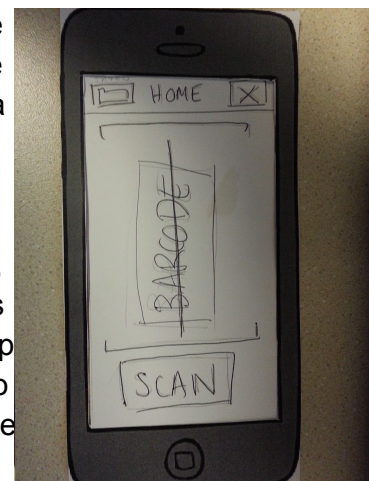
foodshed is a mobile application designed to facilitate sustainable thinking and behavior in consumers. By making information about the sustainability of food easier to access, the barriers into entry for sustainability will be lowered. Our methodology was designed to test people's reactions to having this information made available to them, specifically testing how it made them feel and their reactions to our aggregate food score. Our mission statement is: *Creating consumers-supplier relationships by centralizing information about food in order to facilitate sustainable behavior.*

Prototype

Our prototype has the cutout of a mobile phone with a scrolling paper screen that mimics the user interface that we have in mind. The customer will be able to a) gather information about a food item; b) see the comparison between items; and, c) leave reviews about food items. Additionally, the customer will have exposure to our composite food score. The lo-Fi prototype is designed to respond to touch input in order to move through screens and also uses the camera on the phone in order to scan barcodes into the system. When the customer taps on a button or swipes on the paper screen, the 'Computer', who is the team member doing the testing, moves to a new paper screen accordingly.

The home screen, the first seen by the customer, is the 'Scan' page, which shows the barcode scanner and a sample barcode, with a button to scan the item in the scanning frame, as well as buttons at the top to go to saved product pages and to exit the app (Figure 1). Upon scanning the barcode, the customer is taken to the 'Product Info' page, which is a long page containing all of the

Figure 1. 'Scan' page



information about the product, including a 'Photo/Score' section containing a photo of the product

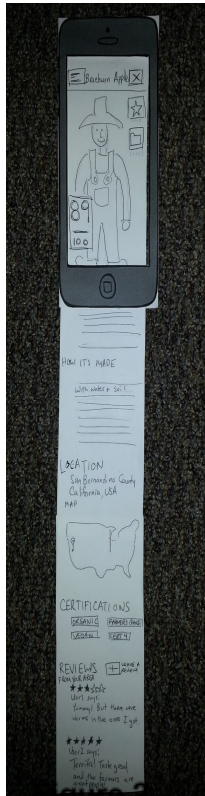


Figure 2. 'Product Info' page

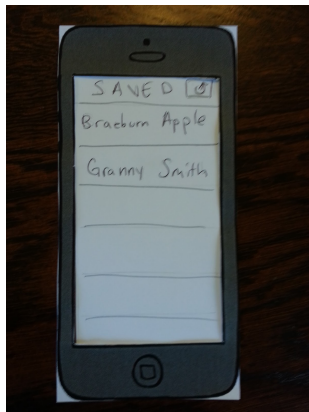


Figure 5. 'Saved' page

producer, a composite score for sustainability, 'About Us' and 'How It's Made' description sections, a 'Location' section to show the locality of the product, a list of certifications the product has earned, and the 'Reviews' section (Figure 2). Each section is reachable by scrolling down the page using a single-finger vertical swipe action (Video Link 1 - Appendix). The sections can also be reached by opening the 'Menu' button at the top left of the page and tapping on the relevant section (Figure 3). A breakdown of the sustainability score into its various contributing components can be reached by tapping the score itself (Figure 4).

Other buttons, seen in Figure 3, on the 'Product Info' page are the 'Exit' button in the top right, which takes the customer back to the 'Scan' page, and a star icon 'Save' button on the right side of the 'Photo/Score' section which allows the customer to save a product for comparison or to review later. The 'Saved' button underneath the 'Save' button takes the customer to the 'Saved' page, which shows a list of all the items which have been saved (Figure 5). The customer can then tap on the items in the list to get to the 'Product Info' pages for the items. With saved items, the customer can swipe horizontally left and right to switch between different products for comparison (Video Link 2 - Appendix).

In order to allow customers to build a community, there is also functionality to leave reviews for products. Upon reaching the 'Reviews' section of the 'Product Info' page, there is a '+' button, which takes the customer to the 'Leave a Review' page (Figure 6). This page allows customers to select the

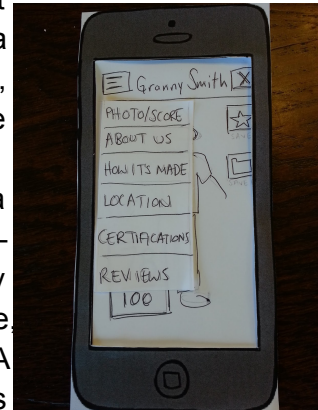


Figure 3. 'Product Info' page with menu open

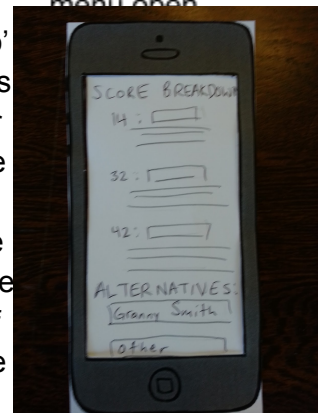


Figure 4. 'Score breakdown' page



Figure 6. 'Leave a Review' page

Method

Our participants were selected Stanford students, who were uncompensated for their prototyping, though they received our gratitude. We chose the students because they are within our goal audience; the app is intended to be used by anybody who eats, and everybody eats. Participant 01 is a standard undergraduate student at Stanford, with no existing special interest in sustainability or eating locally/organically, but with some interest in making sure their food is not bad for the environment (Figure 7). Participant 02 is a graduate student with extreme interest in sustainable food, who has extensive experience in evaluating the sustainability and locality of food (Figure 8). Participant 03 is an undergrad student not as into sustainability but still interested



Figure 8. Participant 02

in knowing information about their food (Figure 9). This participant is also a design expert (Head of Design For America at Stanford), and so was able to provide expert feedback. By testing our prototype on a cross-section of students, from those interested in sustainability to those interested in design, we were able to gauge the impact our app has on a variety of audiences.

Figure 7. Participant 01

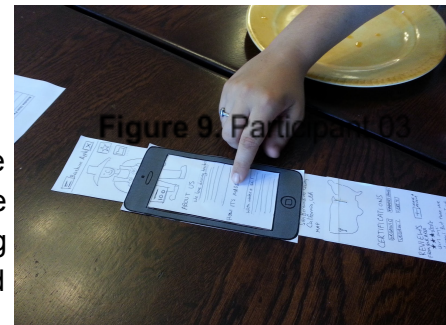


Figure 9. Participant 03

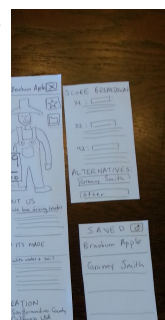
Testing was done in student residences, with other students coming in and out of the testing area, in order to be as close to the actual usage environment of the app as possible. For the testing procedure, the interface was presented to the customer and its usage was demonstrated by a team member using a script (Script - Appendix). Then, the customer was asked to carry out three different tasks, with two 'Product Info' pages available for the comparison task.

The prototype was set up on a table for all three participants. Shalom and Raymond served as the computers, and Vincent and Nathan served as the facilitators. An image of all of the pieces of the prototype laid out on the table along with the mobile phone cutout used to show the current screen can be seen in Figure 10. Non-active pages were kept out of the field of view of the participant, so that they only focused on the page displayed by the phone.

Task 1: Getting information

The customer is presented with the 'Scan' page, and must find the 'Product Info' page for the product, then access all of the information on the page by scrolling. Special attention was paid as to whether the scrolling action to access the full information is intuitive.

Figure 10. All parts of the prototype laid out



Task 2: Comparing Options

The customer was then asked to save the product, scan another, and compare the two. This was intended to be done by saving the current product, returning to the 'Scan' page, scanning another product, saving that product, then visiting the 'Saved' page, opening an item, and swiping horizontally to compare. Special attention was paid as to whether the process could be figured out without help and whether the horizontal swiping was intuitive.

Task 3: Leaving a Review

Finally, the customer was asked to contribute to the community by leaving a review about one of the items, which they could accomplish by scrolling to the 'Review' section of the 'Product Info' page, opening the 'Leave a Review' page, and posting the review. Special attention was paid as to whether the review process was natural and whether the customer could remember how to access the 'Review' section.

Results

The results of our study were mostly positive, with all three customers expressing that they thought the idea for the app was good. For all three customers, scrolling vertically to access all of the information on the 'Product Info' page was intuitive. In addition, all three customers reported that the review system was effective, useful, and very easy to use. Much of this is because the review system, with its pop-up keyboard and star rating system, is standard and familiar.

Task 1: Getting Information

There were some usability issues having to do with navigating the app. Participant 02 thought the scanning would be automatic when the barcode appeared in the frame. In addition, participant 02 couldn't quite figure out how to get to the score breakdown (tapping on the score), and thought the score should be made more prominent. A usability catastrophe here was that we had neglected to include a way to exit the 'Score breakdown' page. All three participants thought having the sustainability score was neat, but initially didn't know what it meant and were confused about who was coming up with the score. Participant 03 did not understand at first that the image on the 'Product Info' page was of the producer, and wanted to learn more about the certifications by tapping them.

Task 2: Comparing Options

All participants became very confused by the horizontal swiping to compare. That action was not intuitive, which was a usability catastrophe, because comparing products is such an integral part of the app. In addition, participants 01 and 02 thought the 'back' button on the 'Saved' page was a reload button due to the icon design. Participants 01 and 02 also thought the horizontal swiping was neat, but would have liked to have a single page with comparisons between the two products. Participant 01 was also confused by how to compare the products using the 'saved' button.

Task 3: Leaving a Review

All participants intuitively grasped all parts of the task. There were no difficulties or confusion when completing this task.

Discussion

The results showed us where the app had usability issues and needed to be revamped, and what parts were working well. The reviews clearly worked very well; all the participants had no problems using the review system, and commented that it was familiar. However, for the tasks of gathering information and comparing products, some things about the interface will need to be changed.

Task 1: Getting Information

The sustainability score was revealed as a weak point in the app. The participants were first confused by what the score was, and were then confused about how to access the breakdown. We will need to add a label to the score identifying it as such, and may want to make a logo for the score so that it is clear who compiles it (e.g. foodshed SustainaScore). We will also need to make it clear that there is a score breakdown identifying the contributing factors to the score, as currently, there is no way for the customer to know that the score is clickable. We may also consider adding a quick info blurb that comes up the first time the customer opens the app, letting them know the purpose of the app and labeling the information they can find on the 'Product Info' page (e.g. "An image of the producer of your food item will be the background when you reach the Product Info page.").

Task 2: Comparing Options

Much about the comparison function of the app will need to be changed. One thing that is very clear is that we will need to either remove the horizontal swiping or make explicitly clear that the customer swipes sideways to compare two items. Based on comments from participants 01 and 02, we will add a 'Product Comparison' page that is reached by checking boxes next to two items on the 'Saved' page, and which will on a single page display information from both products, allowing the customer to easily and simply make important comparisons. Because the comparison function of the 'Saved' page was not immediately understandable to participant 01, we may want to rename that page to 'Saved/Compare' or something that conveys that the customer can compare their saved products. If we keep the ability to compare two products on different pages, we may add a floating arrow button on the sides of the 'Product Info' pages being compared to let the customer know how to access other pages.

Task 3: Leaving a Review

The testing showed that the current interface and action sequence was adequate and allowed customers to easily and intuitively leave a review. We will not change that functionality.

Conclusion

The testing on our lo-fi prototype revealed some fundamental flaws with our interface and the way that we planned to have customers use it, which will help us make adjustments moving forwards. We also were able to see which parts of our interface were good and should be kept. Unfortunately, this customer testing is unable to show us whether or not people will be motivated to actually use the app in the store, and whether or not food producers would be willing to contribute to the information database for the app.

Appendix A: Consent Form

The foodshed application is being produced as part of the coursework for Computer Science course CS 147 at Stanford University. Participants in experimental evaluation of the application provide data that is used to evaluate and modify the interface of foodshed. Data will be collected by interview, observation and questionnaire.

Participation in this experiment is voluntary. Participants may withdraw themselves and their data at any time without fear of consequences. Concerns about the experiment may be

discussed with the researchers Raymond Yuwen Lin, Shalom Rottman-Yang, Nathan Tindall, Vincent Becerra or with Professor James Landay, the instructor of CS 147:

James A. Landay
CS Department
Stanford University
650-498-8215
landay at cs.stanford.edu

Participant anonymity will be provided by the separate storage of names from data. Data will only be identified by participant number. No identifying information about the participants will be available to anyone except the student researchers and their supervisors/teaching staff.

I hereby acknowledge that I have been given an opportunity to ask questions about the nature of the experiment and my participation in it. I give my consent to have data collected on my behavior and opinions in relation to the foodshed experiment. I also give permission for images/video of me using the application to be used in presentations or publications as long as I am not personally identifiable in the images/video. I understand I may withdraw my permission at any time

Name _____

Participant Number _____

Date _____

Signature _____

Witness name _____

Witness signature _____

Appendix B: Experimental Script

Hello, thank you for participating in our experiment today. We are designing a user interface with the purpose of making information about food sourcing and sustainability readily available. Our application allows users to scan in barcode items in grocery stores and review the information about the food item in their mobile application. What do you think about this idea? **USER RESPONSE**

That's great. Now, we'll give you our prototype, which features a paper reproduction of the interface. Here is a general overview of how it works - you scan the item, then you look at the product information here. (*brief demo of app*) You should feel free to explore the interface as you please. (*after a minute*) What do you understand about the application? **USER RESPONSE**

What are you confused about? **USER RESPONSE**

We'd now like to have you complete three tasks. First, could you scan this item and pull up the product information? Please go through all of the information available. (*complete task*) What did you think about that task? **USER RESPONSE**

Now, we'd like you to perform your second task: compare the item you have just scanned with another item, which you will also scan. *Wait for them to do the task, and explain how to do this if they are confused.* Feel free to explore this interface. (*after a minute*) How do you feel about this? **USER RESPONSE**

Are there any problems with this interface? Do you find it easy to compare items? **USER RESPONSE**

Okay, time for the final task. The core goal of our application is to create a community centered around the app that helps people find food items that are well-received in their area. To do this, users can leave a review for each food item. Pick one of the apples, and leave a review. (*after completion*) Would you be interested in knowing more about what local, sustainable ingredients others in your region have enjoyed? **USER RESPONSE**

Do you have any final comments about the interface? **USER RESPONSE**

Okay, I think that about wraps it up. Thanks again!

Appendix C: User Feedback Points

ID	Comment	Rating
1	Scanning function is very intuitive, large "Scan" button	0
1	User had trouble finding and using the save functionality	3
1	After exposed to it, user found left and right swiping to be intuitive	1

1	Thought back button was a refresh button	1
1	How to handle things that don't have a barcode?	3
2	"Oh, I have to press the scan button"	2
2	How to get to the score breakdown wasn't clear (have to click on the score)	3
2	Scrolling was intuitive	0
2	Who makes the sustainability score? (Question of the ethos of our app)	2
2	Stuck on the score breakdown screen - there was no way back!	4
2	Thought back button was a refresh button	1
2	Thought sideways scrolling was confusing	4
2	Expected check boxes on the saved screen, so that user could check the products to compare and then see the comparison on the same screen	3
2	"It all makes sense, but I think having the comparison like that could be cumbersome, to do all that swiping back and forth"	3
2	"Maybe the "Saved" button on the info page shouldn't appear unless the "Save" button has been pressed.	1
3	"I don't know what that means" referring to sustainability score	3
3	"Why is there a person there?" (didn't realize the image is the product producer)	3
3	"Could I learn more about a certification by clicking on it?"	2
3	Could not figure out swiping to compare products	4
3	Thought the actions need to be clearer - some are not intuitive	3
3	"Maybe you should include the name of the person in the photo and their job description to make it clearer. Also, the score is confusing... who decides it?"	3

Appendix D: Video Links

Video Link 1 (Task 1): <http://bit.ly/1wvRvLL>

Video Link 2 (Task 2): <http://bit.ly/1sk7WGI>

Video Link 3 (Task 3): <http://bit.ly/1DKp5lx>