The Problem & Proposed Solution

Farmers who supply large grocery stores often speed up and artificially enhance the production of their produce in ways that can lead to harmful side effects including cancer [1]. However, local organic food is a great way to get fresh fruits and vegetables that have not been genetically modified in dangerous and unnatural ways while also contributing to your local economy. Unfortunately, many organic food growers do not have storefronts; they sell through online orders and grow in popularity through word of mouth. Other organic growers only have roadside stands and have no online presence at all. In order to promote local organic produce, we propose a website on which local organic farmers can create an online presence for themselves and their produce. Our website will allow farmers to sell their produce online while enabling consumers to buy, view and rate local organic produce in their area. In addition to this, our website will also contain community information, such as local farmers markets, which can be uploaded by both local farmers and consumers. Our goal is to make the buying and selling of organic produce more transparent while still providing useful functionality to the user.

Related Work

Organic foods are becoming a booming business. In 2009 alone they accounted for almost four percent of all food sales and continue to grow every year [3]. Because of this, many applications have been created to help facilitate the locating, buying and selling of local organic food. After doing some research, we found that the two most popular application were Locavore and LocalHarvest. Locavore is an app available to both the iPhone and android devices whose goal is to allow users to locate local organic farms and provide information on where local organic produce can be bought [2] (for images see Appendix A). However, one important thing that this app is missing is the ability to buy local organic food online. This app merely provides information to the consumer while our application will enable consumers to buy the actual produce online. Our application will also provide them with information about local organic farms and farmers markets as well.

Another useful application is the LocalHarvest website. This site provides many of the functionalities that our application will provide such as locating organic farms, allowing consumers to buy online and providing community information (for image see Appendix B). However, there are still issues with this site as well. For instance, because of the way the site is layed out, it is somewhat overwhelming to use [4]. It is also apparent that this site is not meant for the average user but for someone who only buys organic produce and considers themselves a true “locavore”. Also, although the site allows consumers to buy organic food online, their focus is not on providing local organic food. Instead, their focus appears to be organic farmers who produce the most of a specific item (such as oranges, limes etc). Our
application will focus on allowing consumers to buy locally grown organic food online, which will in turn help to stimulate the local economy.

Contextual Inquiry Participants

The first person that we interviewed and observed using the contextual inquiry method will be called James. James was just an average consumer who has been buying organic food and locally grown organic food for many years. We observed and interviewed him at MOM’s organic market while he was shopping for organic produce. Although James had not bought organic produce online before, he had used numerous websites to try and find organic markets both within Maryland and outside of the state as well. We chose to interview James because we felt it would help our project if we gained insights from an everyday consumer of organic food. In this case, our role as the apprentice was merely watching and learning about James’ current buying practices involving local organic food.

The second person that we interviewed and observed will be called Tom. Tom is the produce manager at MOM’s organic market in Jessup, Maryland and is in charge of ordering and stocking the organic produce in the store. We chose to interview Tom because we felt that it would be helpful to interview someone who orders organic food online on a regular basis. Also, because Tom has to buy organic produce often, he would have more information on possible interface issues on already existing websites.

The third person that was interviewed was a 21 year old University of Maryland student who frequently shops at local farms and farmers markets in the DC area. We will refer to this participant as John. John’s favorite farmers markets include the Dupont Circle Farmers Market and the Silver Spring Farmers Market. John found both of those farmers market online by searching for “farmers markets near washington dc” which brought him to http://freshfarmmarkets.org/. John had never actually purchased any organic food online, but would consider doing so if there was some guarantee that the produce was reputable. For instance, if he had bought produce from the specific farmer before. We felt that interviewing John would be useful because he was a frequent purchaser of local organic food and would have more insight on current problems relating to the accessibility of local organic food.

Our final contextual inquiry participant, who we will call Jim, was a business man who had an organic food market in a small parking lot near the University of Maryland. Jim would buy organic produce not only from the tri-state DMV area but also all along the entire east coast in order to find the best tasting products. He would sell the produce for cheaper than the grocery stores by cutting his profit by 50 percent. His business environment included a truck loaded with produce and the market displayed various different items, with one person loading and restocking items and another person collecting money. When a new customer would come to check out the produce, free samples of fruits were given out. We found the environment very community friendly as most customers seemed to know each other.

Contextual Inquiry Results

Although most of our contextual inquiry participants were from different backgrounds, all of them had at least some overlapping themes during their interviews. One important theme was the idea of trying to find the best tasting or freshest organic produce available. However, because there are no current websites which offer ratings of organic produce our participants had to either learn about produce from word of mouth or, like Jim, by tasting produce from many different farms. James also referenced this task of finding the best tasting produce in his
interview. He stated that he would often go out of his way to find a specific type of produce from a specific organic farm due to the difference in taste.

Another common theme among the participants was the ability to find produce online for a specific local organic farm. For instance, in John's interview he mentioned that he would consider buying organic produce online from a farmer that he had already bought produce from in person. Tom also referenced this theme in his interview when he discussed his buying practices for MOM's organic market. He stated that he would often buy his local organic produce from the same local organic farms on a regular basis. However, often times the farmers wouldn't have an online presence and he would be forced to go through a pdf file or an excel file to determine what products he wanted to buy and then email the farmer his order. Therefore, the ability to easily search for one specific local organic farm and to be able to buy their products online is a task that both John and Tom would like to be able to perform.

One final theme which the participants had in common was necessity for a simple and easy to use interface. Both James and Jim were not very technical users and felt that if consumers were going to use our application then it would need to be straightforward and easy to use. Jim also felt that the interface for the farmers to use would need to be very simple as well. For instance, if farmers were to use our application to sell their produce, it would need to be easy to create their account and to add or delete products which they are selling within the site.

Task Analysis

Due to the independent and non-technical nature of local farmers, e-commerce has not become widespread in the industry. Regardless, these farms' customers have still expressed a desire to be able to search for and purchase particular produce online, especially with the support of freshness ratings and reviews. Currently, these tasks (looking for and buying produce) require physical presence at a farm. The three tasks below show three use cases for our proposed web application supported by details in our contextual inquiries.

Task #1 - Search (Easy)

An easy task that our web application will support is basic search. From our contextual inquiries, we learned that neither farmers nor consumers are the most tech-savvy demographic. Therefore, the cluttered search that LocalHarvest.org provides has far too many options for a basic search feature as you can see from the image below.

Although LocalHarvest.org brands itself as a localized farming community, it is clear by the search choices above that they cater to a much wider demographic; the radio buttons include restaurants, meat processors, wholesalers and others that don’t fit into the main theme of the site. While the default option is “All” -- this choice results in hundreds of results with no way to
narrow results by distance. While these features might be beneficial in an advanced search feature, they seem excessive for a basic search.

Our basic search feature will be a way to find both types of produce and farms based on a keyword. The user will enter either the name of a produce (e.g. apple or watermelon) or the name of a farm (e.g. Joe’s Orchard) into the search box on the homepage of our site. After clicking Go, the results page will show produce and farms matching the search query, sorted by the user’s current location. The user will not be required to enter his or her zip code, because modern browsers and the HTML5 specification support geolocation triangulation.

This task is a new solution to an old problem: finding specific produce or farms in your local area. Based on our contextual inquiries and our own research, we learned that our users (local produce consumers) would benefit greatly from a quick and easy search for particular types of produce from local farmers.

Task #2 - Entering a Farm’s Details (Moderate)

A moderately challenging task that our website will enable is the data entry process for a new or unlisted farm. Existing websites that currently index local farms, such as LocalHarvest.org are moderated solely by the website owner or moderator. Before we conducted our contextual inquiries, we were convinced that farmers and farmers’ market owners should be actively updating their own profile pages to include news and an updated list of the produce that is currently in season at their location. After conducting our contextual inquiries, however, we learned that many of these owners do not frequently use a computer, nor do they want to put in the effort to maintain their page’s details. This led us to brainstorm ways to reduce the effort required to enter a new farm’s details such that both a non-technical farm owner and a customer could enter details about a farm. This crowd-sourcing method would offload the farmer’s burden should they be unable or unwilling to add their details to our site.

This task will require entering the name of a farm, entering its address, and selecting the produce that it sells from a pre-populated list. A user could also optionally enter the details of a particular farm’s produce, such as weight per pound. By visiting the farm’s profile page, a user could return to a similar form to update the farm’s information. We think that this method of data entry will make it easy for users of the community to keep a farm’s details up-to-date, much like the users of Yelp or Foursquare.

Task #3 - Advanced Search (Difficult)

For our first (easy) task we discussed basic search. A more complicated feature, however, is advanced search. Advanced search will allow a user to set additional parameters for their search to help narrow down or find more specific search results. These parameters include limiting results by a particular radius and sorting by farm or produce rating.

Our third task includes a combination of using the advanced search feature and readying an item for purchase. Specifically, a user will have to find the best apples within a 10-mile radius, and add one pound to his or her online shopping cart. This task involves entering the name of a type of produce or farm into the search box, entering “10” in the “radius” box, and clicking “Add to Shopping Cart” after the results are displayed.

This task demonstrates an ideal use case that combines several features of our site into a real-world task. Our contextual inquiry participant “John” indicated that while he hasn’t previously purchased produce online, he would do so if he could find the exact produce that he had purchased in person before. Furthermore, our contextual inquiry participant “Jim” indicated
that his farm is located in a very multicultural neighborhood in which he has noticed patterns emerge; certain demographics frequently purchase the same items. For customers like these with specific items in mind from specific farms, the advanced search feature will help them achieve their goal quickly and easily.
Sketches (3)

1. 3 basic options: general search for anyone who would use regex or identifiers to breakdown the search (numbers, zipcodes).
   - Users must sign in if they want to rate or share a form that they've been to.
   - Farmers must sign in to add information about their own farm.

2. "Hover" over links gives basic information.
   - These farmers sell sweet corn:
     - Rebecca's Farm
     - Roadside Stand #1
   - Note: All searches will by default be ordered by distance.

3. These farmers sell sweet corn:
   - Rebecca's Farm
   - Marketplace Farm
   - Roadside Stand #1
   - However, "heard of" a place (though they can use the search bar for)

Additional comments:
- Items will have pictures or descriptions of things being sold, including any upcoming events being hosted.
- Roadside Stand #1
- Rebecca's Farm
- Marketplace Farm
- Roadside Stand #1
- Description here.
- Add to Cart
- 2 qty.
References


Appendix A