Real Time Farms - Final Report
Team Wii Work Hard
SI 422 - Winter 2012

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Executive Summary

This report documents the efforts of team Wii Work Hard, a usability testing group from the Winter 2012 class SI 422 at the University of Michigan in Ann Arbor, Michigan. Our team has been tasked with the analysis and evaluation of the Real Time Farms website (www.realtimefarms.com). Our efforts include manually evaluating individual site features, as well as conducting usability tests with test subjects.

Real Time Farms is devoted to the collaborative efforts between restaurants, farmers markets, farmers, and consumers to post information about food and ingredients online. The Real Time Farms website consists of 3 major pages: food, farmers markets, and eateries. Each of these options can be accessed via a menu bar at the top of the site or the map interface on the home page. Within these pages, visitors to the site can find food, farms, markets, and restaurants located anywhere in the world, though a majority of establishments are located in the United States. The website also includes features that enable site visitors to search for individual farms, markets and restaurants, and which ingredients these establishments use and where they have come from.

As it stands, the Real Time Farms website appears fresh and innovative, but ultimately fails to achieve its greatest potential. Several design flaws violate heuristic standards and degrade the overall quality of the site. Our team has recognized these violations and detailed them in the body of our report. Our results have been confirmed through the use of test subjects. We have recruited 3 participants to execute a variety of tasks to test the Real Time Farms site, and have detailed the results in the body of our report.

In light of our results, our team has identified several recommendations (both long- and short-term) that we urge Real Time Farms to consider. The most urgent recommendations include fixing and re-labelling hyperlinks, and redesigning the map interface on the homepage. It is imperative that Real Time Farms take our recommendations into account for future use of the site. We guarantee that our findings will not only improve the visitor's experience, but the overall usability of the site as well.

Introduction

The Real Time Farms website is an online food guide which allows users to find out where their food is coming from. Real Time Farms is a collaborative effort between restaurants, markets, farmers, and consumers in which any of the above parties can submit photographs or information about food – how and where it's grown, sold, and served. Restaurants can also submit their menus to list where their different ingredients come from. The audience of the site is a mix of restaurant owners, farmers market owners, farm owners, and consumers, all of whom work together to make the site the best it can be, with the most information possible. This audience can be split into two groups – (1) owners of restaurants, farmers markets, and farms who use the site to post information about their products, and (2) consumers who use the site to learn about participating restaurants, markets and farms.

This report will examine how user-friendly the Real Time Farms website is, in addition to how easy it is to interact with. Our team will examine how users utilize the site to find the information they are looking for, and how long it takes them to find this information. Based off of these user interactions and our observations, we will present our recommendations to improve the site in order to make it easier to use.

Methods

Purpose, goals & objectives

What is the project? What are you testing?
How users navigate and use the Real Time Farms website. Real Time Farms' usability.

Why are you doing it? What concerns, questions, and goals is the test focusing on?
To identify obstacles in accessing information on the site and to provide feedback to the Real Time Farms company on its usability.

Why are you designing it the way you are?
To best be able to test how users interact with the site.

Why is usability testing needed?
We would like to determine how easy the site is to use for new users; and how quickly and with how much effort can they find the information they are looking for.

Research Questions

What is the particular issue/problem your product is designed to address? What are the particular questions you hope to answer?
How easily do users understand how to use the maps and profile pages to locate food establishments and find connections between farms, farmers markets, food artisans, and restaurants?

How easily and successfully do users submit information about and photographs of food establishments to the website?

How well does the site support the goals of consumers, farm owners, and restaurant owners?

Profile Of The "User" To Be Tested

Who are they? What do they know and do related to the activity you are designing your guide for? What is their "situation of use?" What are their needs? Motives?
A variety of users who encompass those who we believe would use the site - participant choices will be based on our Personas. These are ideally people who are health-conscious (and thus food-conscious) and restaurant and farm owners.

Test Design, Scenario, Task List

Entrance Questions: Questions that will determine whether users are part of our target population

1. Do you have any disabilities? If yes, briefly explain your disability and how it may
2. Affect your use of Real Time Farms?
3. How long have you been using technology?
4. How would you rate your skill with technology? (1-5) 5 being the best
5. What kinds of foods do you buy? From Where?
6. How often do you purchase produce?
7. Do you ever research food before purchasing it, and why?
8. Have you ever heard of Real Time Farms?
9. Would you be able to come to our testing facility? (2230 USB)

Scenarios/Task Based Questions: Users will be asked to complete tasks on the site. These are tasks directed to users who are potential customers to various restaurants, farms, and farmers markets.

1. Explore the site
   a. Please get familiar with the site
   b. Click around various options to get a feel for the site
   c. Notify the Test Administrator when you are ready
2. Searching for food
   a. Find ingredients that are available in the Ann Arbor area, list them.
3. Search for multiple items
   a. Please use the site to find two farms that produce cattle/beef
   b. Please use the site to find two farms that produce chicken eggs
   c. Next, try to find a farm that produces cattle/beef and chicken eggs
4. Finding local produce
   a. Please find a farmers market where you would be able to buy eggplant and squash
5. Finding out how establishments are connected to each other
   a. Please find the page for Zingerman's Roadhouse, and list a few farms, artisans, and distributors Zingerman's Roadhouse gets their ingredients from.
   b. Please use Zingerman's Roadhouse menu to find where they get...
      1. The goat cheese for their Macaroni & Three Peppercorn Goat Cheese
      2. The Chicken for their Buttermilk-Fried Chicken
      3. The apricot preserves for their Rigo Jansci, a dessert item

Exit Questions: Questions about general thoughts on the site and how user-friendly it was.

1. Rate how useful the site information was (Likert Scale). Why or why not?
2. Overall, the site was easy to use (Likert Scale). Why or why not?
3. The user would expect to be able to do everything as expected from an online food guide (Likert Scale).
4. What task or aspect of a task was most frustrating for you?
5. What task or aspect of a task was easiest for you?
6. What did you like about the site?
7. What is missing from the site that you would've liked to have seen?
8. How would you describe what Real Time Farms entails?
9. Would you use this site to get information about local farms and farmers markets?
10. Would you use this site to look at a restaurant menu before visiting?
11. Do you have any other comments about Real Time Farms?

Description of the Test Environment and Equipment

When and where did the tests take place?
Testing took place in a neutral area where the consumer could feel comfortable and could behave normally. Consumers chose the best time that he/she was able to meet for the allotted amount of time.
Two tests were conducted in the Undergraduate Sciences Building, room 2230. The other tests were conducted elsewhere in an empty classroom in Mason Hall.

What system will you be using for testing?
Scenario testing - Consumer uses the product while the tester observes and takes notes.

Will you be capturing video/audio?
Yes, we will capture video and audio as well as tracking the mouse.

Will you be using a specific technology to capture data?
We will be using Silverback App and Debut software for capturing our participant's actions as they work on their given tasks. Both pieces of software will capture video screenshots as well as audio and video of the user.

Roles in the Group

Facilitator: Chad
- Provides overview of study to participants
- Defines usability and purpose of usability testing to participants
- Assists in conduct of participant and observer debriefing sessions
- Responds to requests from participants

Data Loggers: Kristen, Sharon, Winnie
- Records participant's actions and comments

Test Observers: David, Winnie
- Silent observers
- Assists the data logger in identifying problems, concerns, coding bugs, and procedural errors
- Serve as note takers

Evaluation Measures

What are the data that you are going to be collecting? These should include quantitative and qualitative measures: that is, you try to measure some things that you can count and things you can not count (opinion, impressions)

Qualitative
- How users interact with the site
- What things users are able to easily do
- What things cause frustration
- What they like about the site
- What they dislike

Quantitative
- Time it takes to complete tasks and parts of tasks
- User opinion on site's informativeness and ease of use (Likert scale)

Results

Heuristic Violations

Our team has determined Real Time Farms has violated several heuristic standards:

Match Between System and the Real World: *Site Description*
One problem on the homepage of the site is the site's description:

> Know Where Your Food Comes From. Whether you are looking to eat out or eat in, Real Time Farms allows you to see your food, learn how it was grown and visualize the journey it took to reach your table!

While this description does make sense for a user already aware of what Real Time Farms is, it would be more useful to have a more detailed description of the site's features for users who are unfamiliar with the site. Without a clear sense of the site's purpose, users are less likely to explore or continue using the site. By scrolling down to the bottom of the homepage and clicking on the "About" link, users learn that Real Time Farms is a "crowdsourced online food guide" that provides "one location where you can learn about where your food comes from." This description lets the user know that this guide is, in fact, built by the users; it more clearly indicates to users what the exact purpose of Real Time Farms is. This description of the site's purpose should be placed in a more visibly prominent area [see Appendix A.1-3].

Consistency and Standards: *Inconsistent Labeling*
Another problem present on the homepage is the discrepancy between the tabs above the map and the navigation bar in the site header. Above the map, there are three tabs that read: "Food & Farms," "Farmers Markets," and "Eateries," while the links at the top of the screen read: "Farms," "Food Artisans," "Farmers Markets," and "Where to Eat." Since the links in each of these places take the user to the same page (i.e. the "Farmers Market" tab above the map leads to the same page as the "Farmers Market" tab on the top of the page), it would be much clearer if the tabs were labeled consistently. As is, the "Farmers Markets" tab and link take the user to the heat map for farmers markets, the "Food & Farms" link and the "Farms" tab take the user to the farm heat map, the "Food Artisans" tab takes the user to the food artisan heat map, and the "Eateries" tab and "Where to Eat" link take the user to the eateries heat map [see Appendix A.4].

Consistency and Standards: *Getting Help*
Finally, the Real Time Farms site makes it more difficult for people who are not registered users to get help with the site – their "Contact Us" page, which can be used to send in questions or comments about the site, is labeled as "Get Help" only to users who have a registered account – casual users who use the site without an account access this page through the "Contact Us" link (registered users can also access the page via this link). This means that casual users will find it more difficult to recognize this page as somewhere to go to get help with the site [see Appendix A.5-6].

Aesthetic and Minimalist Design: *Pages Without Information*
Another issue with the site is that, in some cases, it contains links to pages that don't have information. Each farm, farmers market, artisan, and eatery page has links to pages labeled "What's Fresh", "People", and "Our Story". However, some establishments don't have this information posted yet, meaning that the user is led to a page that simply says there isn't any information, and asks them to contribute [see Appendix A.7].

Usability Tests

Usability Issue #1 - Map Interface
Description
The map interface located on Real Time Farms' homepage is poorly designed and prevents users from accessing its content quickly and efficiently. The large "circle-style" heat map (see Figure 1) is confusing and obtrusive, especially to new users. The large circles seem to be a creative implementation, but they ultimately fail in their design. These circles do not display an accurate reading of establishments located on the map due to their large size, and since the circles remain as the user zooms in on the map, they continue to obstruct the view of the map. Moreover, at different levels of magnification, the position, size, number, and sometimes the color of the circles change, but the map does not explicitly indicate what any of these differences mean (e.g., the range of distance covered by a circle at any given level). This can make it difficult for users to find specific information that they are looking for. [see Appendix A.8]

Evidence
Based on our test subject studies, our team discovered that a majority of users (both new and returning) spend a significant amount of time using this interface. One user commented that the site was difficult to use because "the map was bad". Ideally, Real Time Farms should minimize the time users take to search for farms, farmers markets and restaurants in order to allow users to spend more time viewing their profile pages. Because the map is one of the primary ways for users to obtain information from the site, it is important that users gain information from it easily.

Recommendation
In order to address this issue, we recommend that the map feature be replaced by a simpler, more modest map. This replacement map can still retain the previous location markers as the previous design, but the circle-style heat map should be removed. A viable replacement map to consider is a "density" map that displays gradual changes in color according to the number of establishments found in that area (e.g., yellow for 10-20, red for 20+). This would still allow the map to mark areas that have a high concentration of farms, farmers markets, and restaurants without obscuring the map or making it difficult for users to gain information from it.

Usability Issue #2 - Homepage Links

Description

The Real Time Farms homepage has a bar across the top of the screen with links to "Farms," "Food Artisans," "Farmers Markets," and "Where to Eat" (see Figure 2). However, when these links are clicked, rather than taking the user to a new page, they simply pull up the corresponding map on the homepage. This is confusing to new and returning users because it is not obvious that clicking the link has done anything. It takes further investigation on the part of the user to realize that the map on the homepage has changed to display the heat map corresponding to the respective link that was clicked. While these links may have been added to be visually appealing and increase interest in the homepage, they ultimately create confusion for users. Additionally, these links are unnecessary for experienced users who are aware that the map contains tabs that provide an easier way to switch between the different map modes [see Appendix A.4].

Evidence

Based on our test subject studies, our team discovered that new users to the site struggled to determine what using these links did. They often spent a significant amount of time clicking between the links in an attempt to figure out what was happening when each was selected. Furthermore, the map is only partially visible when all of these links are visible (see Figure 2); this makes it even more difficult for users to realize changes were being made when they clicked a link, especially first-time users who were unfamiliar with the layout of the site.

Recommendation

In order to address this issue, we recommend that these links be removed from the page. There are tabs already located directly above the map that the user can utilize to change between maps; these additional links are unnecessary. Alternatively, the website can retain these navigational links but instead have them point to pages that make it very obvious the user has moved away from the homepage. One way to do this is by including large header text with the category name at the top of the page where "Know Where Your Food Comes From" appears now.

Usability Issue #3 - Map Search Bars
Description
In the maps on the homepage, the farm map allows users to search by location, name, or ingredient, but the map for farmers markets only allows users to search by location and name, not by food. This can make it difficult for users to find a farmers market with a specific ingredient that they want. Each search bar also only takes in one search term at a time, which prevents users from searching for multiple ingredients at once. Moreover, the location search bar is separated from the other search boxes by a strip of photographs.

Evidence
Based on our test subject studies, our team discovered that users were confused by why the search bars on the maps were inconsistent. Additionally, because there was no option to search for more than one ingredient at once, users struggled in our usability tasks that involved searching for an establishment that produced or distributed two types of produce. To accomplish this task, they had to first search by one ingredient and then check farms at random to see if their profile page listed the other ingredient as well. One user commented in their exit survey that "it was hard to find ingredients at farmers markets... I didn't know how to search for multiple items."

Recommendation
In order to address this issue, we recommend that the search bars be changed to match each other on all of the maps. This would alleviate confusion due to inconsistent search bars, and would make it easier for users to search for what they want to find. The functionality of the search should also be improved to allow users to search by multiple items.

Usability Highlight #1 - Menu Feature
Description
Eatery pages contain menus for the restaurant. On these menus, all ingredients which have source information are highlighted in green, allowing the user to easily see which things have information. In order to find out where these ingredients are from, the users need only roll their mouse over the highlighted ingredient, and a small window pops up listing where the ingredient is sourced from [see Appendix A.9].

Evidence
Our test subjects commonly listed that our test involving the menu was the easiest and most straightforward - they liked that a simple rollover of a link could provide them information about where ingredients came from.

Recommendation
Continue to add menus to the eatery pages, in which ingredients with information are highlighted, and rolling the mouse over the ingredient tells where the eatery gets it from.

Usability Highlight #2 - Show Pins

Description

Using the map on the homepage, users have the ability to, once they find a farm, farmers market or eatery, click the "show pins" link, which brings up points on the map for all of the other establishments that the chosen establishment interacts with. This provides a way for users to visualize exactly where, and how far, ingredients travel [see Appendix A.10].

Evidence

Our test subjects seemed to like the ability to view the ways that establishments were connected on a map, rather than simply seeing a list of establishments that participate with each other. One user commented that something they liked about the site was the "connections on the site (e.g. 'Show pins')".

Recommendation

Even if the map is changed, continue to allow users to see connections between establishments using the "show pins" feature, or a similar feature.

Recommendations

Short-term Recommendations

Focus first on fixing the map and the links at the top of the homepage and the map, since these are the most severe usability problems.

Long-term Recommendations

Fix remaining heuristic problems, including inconsistent search features. In making these changes be sure to leave aspects that users liked/found helpful, including the "show pins" feature on the map.

Future Research

Future research in testing any areas of the site which are changed would be helpful to determine if the changes do, in fact, make the site easier to navigate and use. A/B tests between the old and new changes would provide great feedback.

Criteria

Our recommendations were chosen by evaluating what things our test participants struggled with, as well as which things we struggled with when getting acquainted with the site, and things that we felt could be more aesthetically designed. Ultimately, we went through and chose what we thought would bring the most benefit to the site and its users. This would help Real Time Farms gain and retain users. The only potential challenges or disadvantages to this would be that current users would have to refamiliarize themselves with the new site.
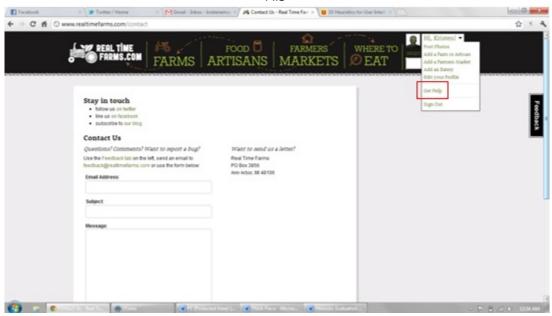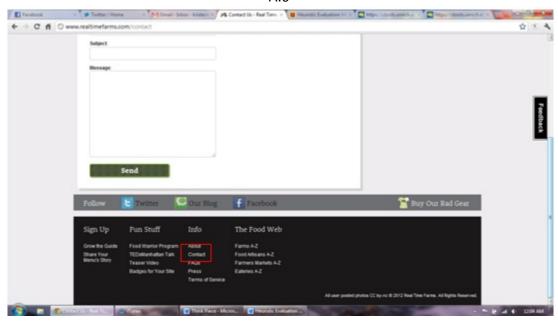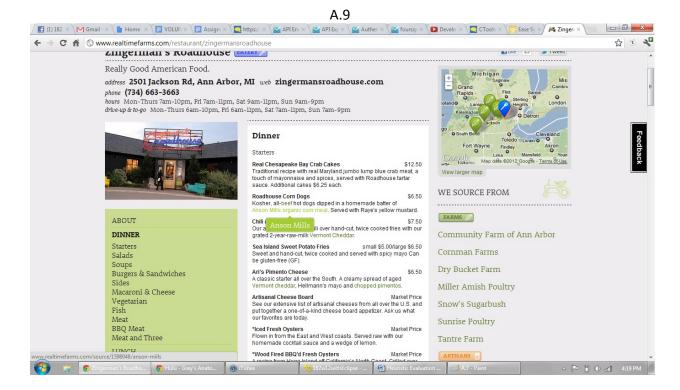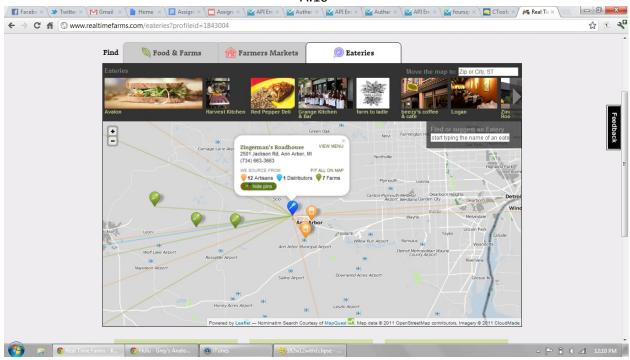
Appendix A: Screenshots

A.1

A.2

A.3

A.4

A.5

A.6

A.7

Appendix B: Questionnaire Results

Test Subject #1
Note: This participant was given our initial set of exit questions, before it had been finalized for future participants.

1. I thought the information I got from this website was useful.
   "Agree"
2. Why or why not?
   ---
3. Overall, the site was easy to use
   "Neither agree nor disagree"
4. Why or why not?
   "It was hard to find ingredients at farmers markets."
5. I can do everything I would expect to be able to do on a food guide website.
   ---
6. What is missing from the site that you would've liked to have seen?
   "I don't know how to search for multiple ingredients."

Test Subject #2

1. I thought the information I got from this website was useful.
   "Neither agree nor disagree"
2. Why or why not?
   "Not useful for me personally, but I could see others using it."
3. Overall, the site was easy to use
   "Disagree"
4. Why or why not?
   "Back button was broken, map was bad."
5. I can do everything I would expect to be able to do on a food guide website.
   "Agree"
6. What task or aspect of a task was most frustrating for you?
   "Using Safari, and the back button was broken."
7. What task or aspect of a task was easiest for you?
   "Ingredient finding"
8. What did you like about the site?
   "Connections on the site, e.g. "Show pins""
9. What is missing from the site that you would've liked to have seen?
   "Linking ingredients to farmers markets or eateries."
10. How would you describe what Real Time Farms entails?
    "Shows you where restaurants and markets get their food."
11. Would you use this site to get information about local farms and farmers markets?
    "No"

12. Would you use this site to look at a restaurant menu before visiting?
    "No"
13. Do you have any other comments about Real Time Farms?
    "Nope"

Test Subject #3

1. I thought the information I got from this website was useful.
   "Agree"
2. Why or why not?
   ---
3. Overall, the site was easy to use
   "Neither agree nor disagree"
4. Why or why not?
   "Not uniform search options. Keys not clearly labeled"
5. I can do everything I would expect to be able to do on a food guide website.
   ---
6. What task or aspect of a task was most frustrating for you?
   "Searching for items across various tabs."
7. What task or aspect of a task was easiest for you?
   "Understanding context of information, browsing menus of restaurants."
8. What did you like about the site?
   "Information provided was relevant to my interests in eating locally."
9. What is missing from the site that you would've liked to have seen?
   "Search option for farmers' markets by ingredient, as with farms."
10. How would you describe what Real Time Farms entails?
    "A site that allows individuals to see where food comes from or to seek out local food options."
11. Would you use this site to get information about local farms and farmers markets?
    "Yes"
12. Would you use this site to look at a restaurant menu before visiting?
    "Yes."
13. Do you have any other comments about Real Time Farms?
    "Nice to visualize on a map relative distance to food."