EUPA - Interaction Design Document

Both App Design Summaries

App Idea 1

The EUPA app will allow users to indicate an electrical utility company for their individual needs. From there, users may review information about the utility company's endeavors in renewable energy, energy efficiency, and more. Users may also provide input regarding their desires for the utility company's investment in said endeavors.

App Idea 2

This application will be used for both education/information provision and for polling/data collection. This application will provide information for the partner utilities to inform future decision making. The development of this application will provide new information about how to most effectively transition to renewable energy and more efficient energy use for public utilities in Michigan.

In other words, this app will provide short descriptions of available utilities to customers based on their location. The app will use polling questions to collect data on households' current utilities and whether their current utilities will change based on new information.

Brief overview of the system, including the device and any other device used by the system.

Web application accessed on desktop computers, phones, tablets, etc.

Descriptions of important stakeholders, including users (From Matt).

- **Electricity Users (Customers):** They will be the ones using the polling feature of the app. The electricity users vary significantly in their abilities to use technology, but they are all attempting to achieve the exact same goal, which is to provide information in regards to what electrical programs they desire and to then learn about how their desires match with existing programs.
- **Social Scientist:** The social scientist is interested in how the data is received from the app. The goal is that they will receive data that will be used to run analysis to better understand the customer desires and then make suggestions to the electrical companies on which programs to provide.
- **Electrical companies:** Electrical companies are dependent on the app as a tool to gather data, but also dependent on the social scientist, as their goal is to provide valuable insights into which direction they should head with providing electrical programs.
- **Developers:** The app developers are the undergraduate students. Their goal is to provide an app that serves users.
- **UX Consultant:** The consultant is concerned with ensuring the app meets the demands of the users. The goal is to provide analysis of the app to provide improvement feedback to the developers.

Four user personas (See lecture notes)

Persona 1:
Name: Brenda Jefferson
Age: 42
Right handed

Brenda is smart and easy-going. She is a homeowner with a family of four in Traverse City. She is originally from the Grand Traverse area and therefore has strong ties to the local community.

Persona 2:
Name: John Butler
Age: 55
Left handed

John is straightforward and stubborn. He is a landlord and a homeowner in Petoskey who owns an apartment complex. He lives with his wife and dog and is originally from California but moved to Petoskey when he was 35.

Persona 3:
Name: Zeke Chan
Age: 31
Right handed

Zeke is practical and funny. He is a renter in the Charlevoix area and works remotely for a technology company. He was raised in southeast Michigan, went out of state for college, and recently returned to Michigan. He loves working from home.

Persona 4:
Name: Lucy Tompson
Age: 70
Left handed

Lucy is patient and welcoming. She is a homeowner in Boyne City and is retired. She loves when her grandchildren visit. She is originally from Green Bay, but moved to Boyne City to be closer to family.

Descriptions of the environment that users will be in while using the device and performing tasks

The information and questions asked on our app will be direct and short, the user has much freedom to where and when they explore the app. Since one of the main focuses of the app is to gather information of the users. The users will most likely be accessing the link when

they have time to dedicate to tasks on their device. This survey is also more directed to homeowners who have been in the area awhile. This environment is perceived as sitting in their home.

Scanned or transcribed notes from the interviews with the scientist and among yourselves

Interview 1 Notes:

- Public utilities can advertise app to “customers” - household residents
- Companies use information that comes from app
- Consumers are “Users” of the app
- Websites contain data
    - Web scraping
- Time of day pricing information displayed
    - On websites
- Incentives for renewable programs
    - On websites
- Cross-company programs not showed
    - Get utility provider and their specific programs
    - Users cannot change their utility provider
- Easy engagement - easy to use and quick to gather information
    - Surface level interesting information
- Survey includes closed ended questions - maybe a few open ended questions
    - Questions provided to use
- Users in “Grand Traverse Area”
    - Visuals incorporate “Grand Traverse”/ “Upper Michigan” vibes
    - Value access to **water**
- Platform: most people access information on phones - but both if possible
    - Really based on our requirements
    - Population is older
- Substantial Information getting to us early feb
    - Look at utility company websites for types of info
    - Working with public information
- Customers consume information, utilities supply information
    - Main user types
- Look at utility websites for company info
- Utility programs
    - Incentives for renewable usage
    - Time of usage pricing
- Utilities are looking to “decarbonize”
- No need to compare between utilities because their areas are disjoint
- Emphasis on concision and visualizations
    - Surface level information
- Form layout

    - Checkbox type of questions
    - Maybe some text entry
    - She will send questions
- Will be provided supplementary info after Feb 1
- App format
    - Choose area/provider, then
    - see information
    - answer questions
        - maybe interleaved?

Interview 2 Notes

- App gathers results, she aggregates and shares
- Companies do not have direct access
- Poll changes to accommodate utility provider
    - In addition to general questions
    - Company specific questions, general questions
- Homeowners are main users (poll respondents)
- How do utilities get the results?
    - App will gather results
    - Scientist will aggregate results
    - Utilities don't need direct access
- Part of app is based on specific utility provider
    - Info is relevant to utility
- Polling section has utility agnostic section
- Provide info after getting selected utility
- Someone can select to not have a utility and skip to utility-agnostic questions
- Info and questions are disjoint

At least 2 scenarios describing the nominal use of the application, drawing on your personas (See lecture notes and below)

Scenario 1:

John Butler is a citizen from Petoskey and is looking for ways they can cut down on his energy consumption. Information is not the easiest for them to find and the idea of spending hours trying to jump from website to website stops John from looking for options.

John is directed to the EUPA app. After a couple of questions to gather information on John, he is directed to information based on his location. John can then view short descriptions and links to different utility information in his area.

As John is reviewing the information, he answers survey questions pertaining to the actuality he will utilize the information provided. He checks boxes that state their eagerness to try the new tools that help eliminate their overall energy consumption.

John then is directed to survey questions that are used for all surveys. John is happy to learn about other options he has to cut his energy consumption that are not directed to his area. John likes the idea about using an electric car.

At the end of the survey John is able to review the information and then submit their answers. The last question is for John to add any other comments. John's comment is that he likes the idea of the electric car but due to his location in Petoskey he is unsure if the option is an easy transition for him. He states that the area lacks charging stations as well as many electric vehicles not being able to handle the harsh winter environment.

John submits his answers and now has appropriate information for his future energy consumption plans.

Scenario 2:

Brenda Jefferson in Traverse City is all about the best energy consumption plan for her and her family. This survey based app EUPA was offered as a resource for reviewing her options.

Brenda starts at the homepage where she inputs information about her location. She is directed to her unique location page that provides short descriptions on utility plans available to her. Brenda quickly reads the descriptions but is unsure whether she is likely to utilize those options. So she checks "unsure" to questions asked about her likeness to use the available resources. She also gives short unsure answers in her available descriptive responses.

Brenda appreciates the information and she submits her answers to aid in better helping the community.

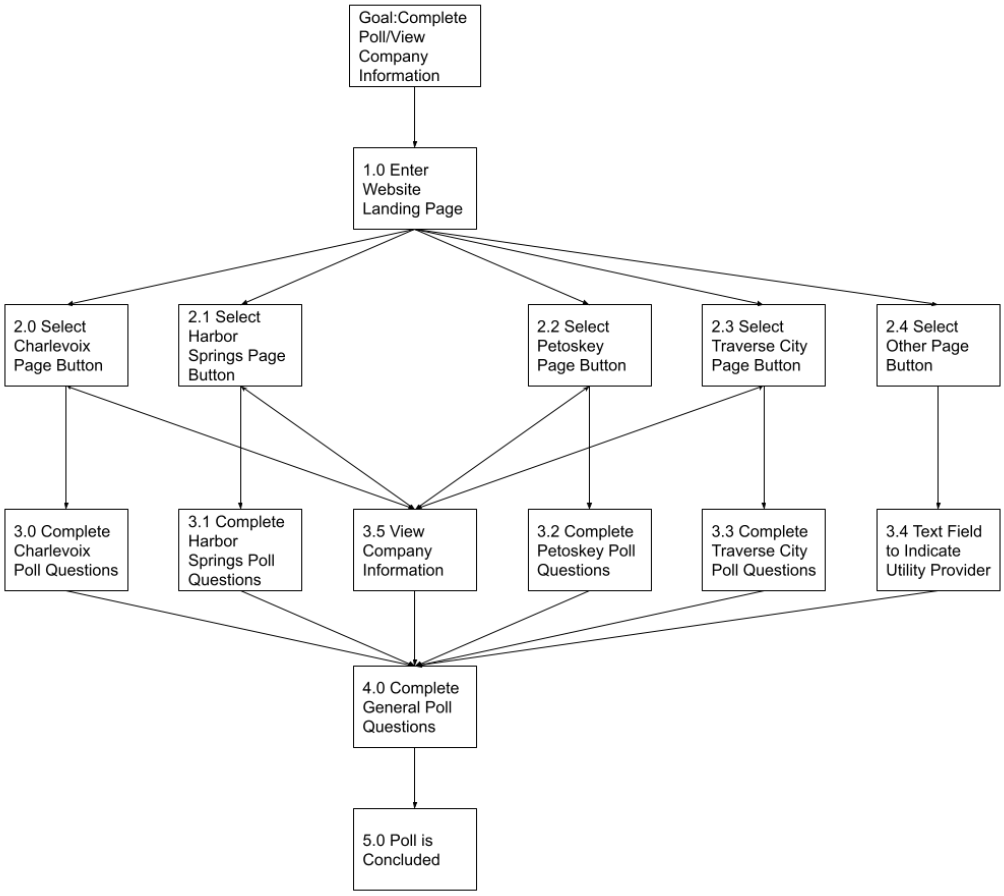
At least 1 scenario describing a user making an error using the app and the app behavior.

One of the main things that can be foreseen as a common error would be that users might select undesired responses to poll questions. For example, if the user selects the wrong utility company from the poll. This is undesirable of course because from here the company-specific polling questions will not be appropriate for the user, so the application should provide a way to return to previous questions so that they do not have to exit the application and restart in order to get back to the question they answered incorrectly. To get around this, the application should have a feature that allows them to go back to previous questions, whether that be through a button or simply scrolling back up towards the top of the page. Because it is the company-specific questions in this scenario, the responses should be removed from the "results" , but any responses to the general questions should remain as they were.

Lucy has been forgetful as of late and when she arrives at the application she cannot remember exactly what city line her new home is in. Lucy guesses that her home is located in Boyne Falls, instead of Boyne City. Lucy is then directed to information about Boyne Falls. Lucy reads all the information intently and tries her best to answer the survey questions realistically. So for some questions Lucy checks she is likely to use the resource and for other questions she states she is unlikely.

Lucy finishes the survey and submits. Later Lucy realizes that her house is not located in that area. Lucy ends up doing the survey again to get the correct information, but the old survey with false information was already recorded.

Simplified hierarchical task interaction design (See lecture notes and below)



A description of your database schema

List of Domain Classes:

- multipleChoice - list of poll questions that will be multiple choice answers (select one type)
- YN_Questions - list of poll questions that will be yes/no answers
- openEnded - list of text answers to generic open ended questions

Domain Class: multipleChoice

- companyName - String, name of company associated with the question
- question - String, description of the question being asked
- choices - List (undecided which type of list), contains the options available to the user

Domain Class: YN_Questions

- companyName - String, name of company associated with the question
- question - String, description of the question being asked
- choices - List/Boolean, contains the two options the users has to answer

Domain Class: openEnded

- question - String, description of the question being asked
- response - String, contains the response from the user to the questions (will have some kind of character limit)