

CS5760: Evaluation Assignment 4  
Design Support Documents

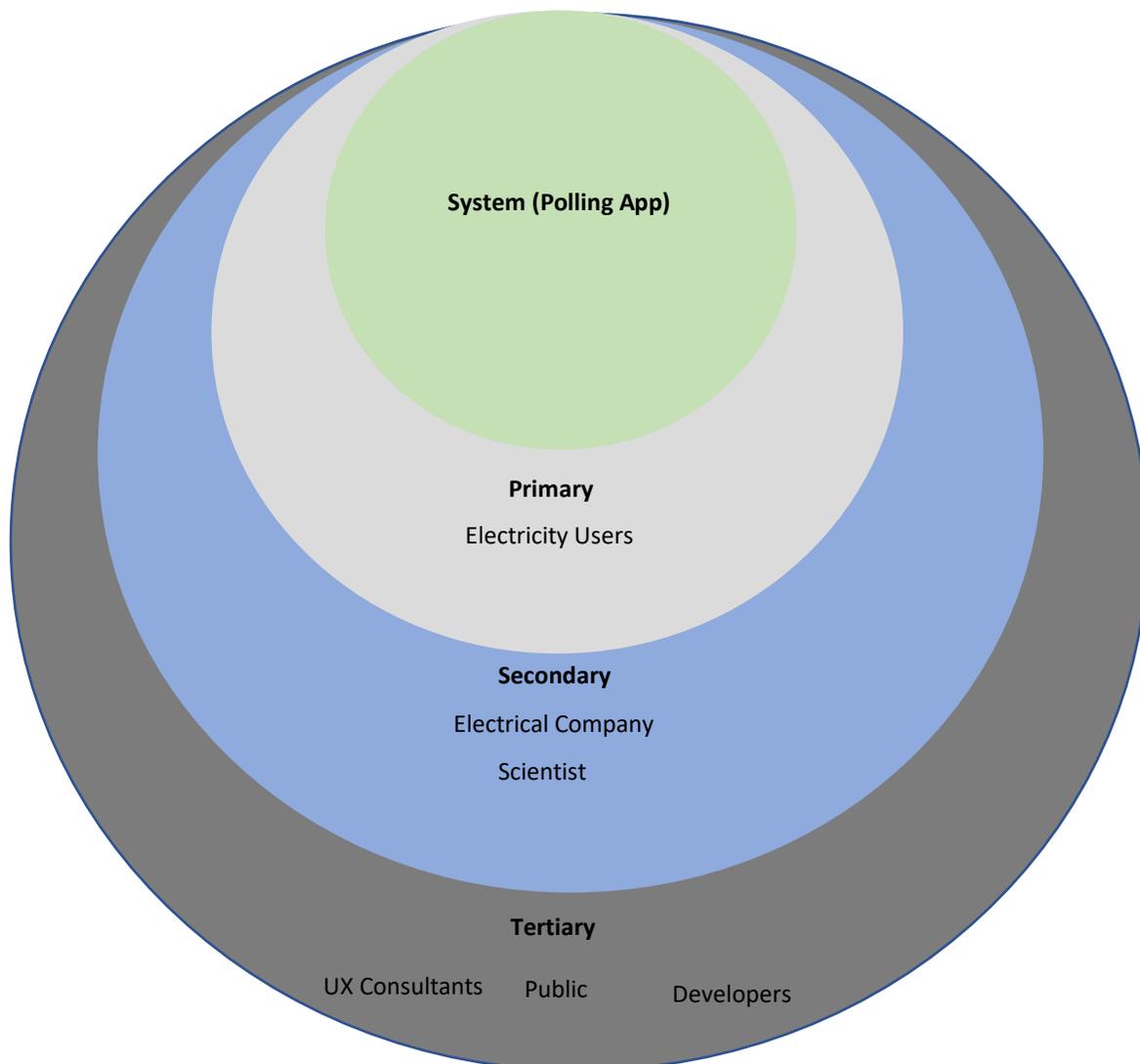
Team 4: EUPA  
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## App Description:

The app aims to solve the problem of underutilized electrical utility programs. The app surveys customers to understand their preferences in regard to utilities, and then helps to inform customers on existing programs that best match their preferences. Additionally, the app will have a reporting function where the scientist can analyze the results to provide recommendations to electrical companies on where to steer their programs to meet the requests of customers. The overarching goal of the app is to work toward better alignment of customer/electrical providers goals to maximize benefits that work toward solving problems like underutilized renewable energy usage.

## Stakeholder Analysis

Onion model of stakeholder



## Stakeholder Descriptions

- **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 learn 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 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 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.

## Stakeholders' goal-influence table

<b>Users</b>	<b>Goals</b>	<b>Influences: Contributing</b>	<b>Influences: Constraining</b>
Electrical Users (customers)	<ul style="list-style-type: none"> <li>• Provide their preferences to inform electrical companies on programs the wish to see</li> <li>• Receive recommendations for existing programs based on their preferences</li> </ul>	<ul style="list-style-type: none"> <li>• Ability to provide data</li> <li>• Ability to perceive recommendations from the app</li> </ul>	<ul style="list-style-type: none"> <li>• Knowledge of technology</li> <li>• Motivation to interact with app</li> <li>• Time limitations</li> <li>•</li> </ul>
Electrical Companies	<ul style="list-style-type: none"> <li>• To receive feedback on what programs customers are interested in- eventually implementing them</li> <li>• Inform users on what programs currently exist to increase enrollment</li> </ul>	<ul style="list-style-type: none"> <li>• Provide questions that customers will answer</li> <li>• Information about existing programs</li> </ul>	<ul style="list-style-type: none"> <li>• Limited ability to interact directly</li> <li>• Perceptions from customers</li> </ul>
Social Scientist	<ul style="list-style-type: none"> <li>• To gain valuable user preference data to interpret and present to the electrical companies</li> </ul>	<ul style="list-style-type: none"> <li>• Provide app requirements</li> </ul>	<ul style="list-style-type: none"> <li>• Inexperience with development</li> </ul>

Developers	<ul style="list-style-type: none"> <li>• Develop app to meet user's goals</li> </ul>	<ul style="list-style-type: none"> <li>• Ability to develop the app</li> </ul>	<ul style="list-style-type: none"> <li>• Resources such as time, experience, and tech</li> </ul>
Consultant	<ul style="list-style-type: none"> <li>• To provide design/usability assistance to developers to better meet users needs</li> </ul>	<ul style="list-style-type: none"> <li>• Conducting analysis on the usability of the app</li> </ul>	<ul style="list-style-type: none"> <li>• Restrictions in talking directly with users</li> </ul>

*Goal Influence Table Description*

There are several goals for the app to satisfy all stakeholders. Firstly, if there were not electrical consumers (customers), there would be no need for this project. The app is customer facing as they will be the only one interacting directly with the user interface. For these reasons, the customers are the primary stakeholders set out to satisfy. The customers need to be able to access and interact with the app to provide their preferences and to engage with current utility programs, which ultimately is the goal of the app.

Without electrical companies, customers would not be able to access utilities. To ensure the app can achieve the main goal of creating information alignment between customers and electrical companies, there is a need for a social scientist, developers, and UX consultants. Each stakeholder has aspects that contributes and/or constrains to the goals, and these aspects may interfere with other stakeholder's abilities to achieve their goals.

The social scientist in this instance is the bridge between the electrical companies to communicate app requirements. Additionally, the scientist is a post-project completion stakeholder as they will be a user of the app data in an on-going effort to support the electrical companies' decision making. Developers of the app have the goal of developing an app that meets the requirement of all mentioned stakeholders, while UX consultants provide continuous feedback on the usability of the app as they relate to creating a better and more effective experience for all stakeholders.

# Personas

## Primary Users

### *User 1: Beth, 35 years of age, affluent*

Beth is a resident of Traverse City, MI. Beth works in finance at a local start-up but also has two kids. To keep up, Beth uses an iPhone for organization, communication, and occasionally for leisure activities such as reading the news or scrolling Facebook. Her electricity usage is high since there are so many active people in the house using appliances for many hours of the day. However, she is so busy she hardly pays attention to electricity usage and programs and just pays the bills blindly.

### *User 2: Frank, 71 years of age, lives on a farm*

Frank is a retired farmer that lives alone on the outskirts of Petoskey. His children who moved away bought him a smart phone to stay in contact. Frank only uses his phone for calling, messaging, checking the weather, and google searches. He can figure out technology if needed, but it's not his first choice. As a result, Frank pays bills in paper format and is careful about spending money, and is always looking to find ways to save more money to make his retirement fund last longer. Sometimes he reads "junk mail" to pass the time but often throws it away. Frank is home most of the day, but heats with wood and is good about turning lights off when leaving the room.

## Secondary Users

### *User 3: Stacey, 45 years of age, works from home*

Stacey lives very close to an electrical company's power plant and is a climate change activist. There is a lot of noise induced by the power plant and she wishes that people were more aware of the programs available to start investing in alternative energy.

### *User 4: John, utility program manager at Charlevoix electrical company*

John works at Charlevoix electrical company as the utility program manager. He earned his position as manager through his success as an electrical engineer helping to develop suitable energy at the company. He knows the company's capabilities like the back of his hand. However, he is a technical engineer, and does not know how to reach out to customers to communicate the programs available.

## Hierarchical Task Analysis

### Intro screen

- Message stating the purpose of the app and how to use it

### Homepage (Gain customer preferences, inform customers of existing programs, analysts view results)

#### Polling page

- Enter user information
- Select electrical provider
- Answer list of questions about preferences

#### Utility Program page

- Learn about utility programs
  - System matches customer preferences to related current programs
  - Display utility programs to customer
- Additional info/enroll
  - Provide links and contact info to learn more and enroll

#### Results page

- Share button
  - Send preference list to contact
  - Send program(s) to contact

#### Login Page for analysts

- Edit polling questions
- Data Reporting
  - View visuals of collective polls
  - Manipulate visuals to analyze results in a unique way
- Export results

### Contact page

- Utility company contact information
- Other resources

### *Hierarchical Task Analysis Summary*

The hierarchical task analysis has three main features to allow users to reach their goals. They can all be accessed from the home page. The first is for the customers to input their preferences for what they would like to see from utility companies in terms of programs offered and other choices they have in personalizing utilities. Based on the customer preferences, the app will generate a list of programs that may match their interests. If the customer is in fact interested in a program, they will have the ability to learn more about it through external links or through provided contact information and can choose to enroll as well. Since many customers have others living with them, they will have the ability to share the available programs and other information with others.

On the reporting side, there will be a login page for analysts or other qualified people to enter the system and see several visuals representing the polling data. The raw data will also be exportable. In addition, people with access will be able to edit the polling information and other aspects of the app.

## Appendix

### CS 576a Notes

Don't know what customers want

- have net metering policy for reduction on solar

1) which utility provides <sup>you</sup> elect?

2) provide program info based on provider?

3) would you participate in program?

- info comes back to social scientist to review

- helps to know why they are not using programs

what kind of renewables do you want? want it on land, water, etc  
do you care who owns it/benefits from it?

electrical company: wants to learn about customers without doing the work  
social scientist: provide data for research needs raw data for reporting  
customers:

organization

groundwork: outreach on implementing tool

promotes

are we doing research methods and study  
design work or just UI?

goal: simple - not nested data

- if someone only completes one part we want to keep the  
partial data

Viewing Survey Results - app could display results  
- visualizations

• may be a education component to educate people on which  
program they may be interested in based on polling  
preferences