1. Title

Project Harmony

2. Meet the Team

David Mailhot – Team Manager

Jennifer Apacible – Design

Eric Oltean – Development

Eve Zhao – User Testing

Shared - Documentation

3. Problem & Approach

If people were more empathetic, would the world be a better place?

Not everyone has the critical social skill to successfully read other people's emotions. Unfortunately, being ignorant of the emotions of others can lead to damaging and even dangerous social situations. We have designed a product that will analyze and display the current emotions of others in real time. Our product will provide the option of giving advice to the customer on how to react to someone exhibiting a certain emotion.

4. Contextual Inquiry Subjects

4.1 The Faithful Father

To explore the tasks in a general socializing context, we recruited someone at a community social function. The subject was a 40-year old father who sings in a church choir and works as a software engineer. He is dedicated to his career and maintains an extensive professional network. Currently, he devotes himself to a local startup while still finding the time to take care of his two daughters. Every other week he attends church, where he sings in the choir during service.

The nature of the inquiry skewed the type of social interactions we witnessed. Since the event was among the church community, the subject was naturally friendly and relaxed toward other people. The type of interaction that we examined the most was the exchange of playful banter and jokes around a table of good-humored acquaintances.

4.2 The "Awkward" (Geographical) Transplant

Another person we recruited is a recent transplant to the Western Washington area from New York. He is a 22 year old software engineer at one of the major tech companies in the area. Although he aims to meet many new people to build a network of friends and professionals in the area, he is not satisfied with his current local network. He believes that he has not connected with many locals solely because of his "awkward" approach to others.

This contextual inquiry took place in the University District and downtown Seattle, where there are many types people that this subject would encounter when he goes out on the weekends. He expressed his thoughts by speaking out loud for us to get a better sense of his thinking process as he decides on the best way to interact with the

people around him. We encountered several social situations - some staged and some natural - in places such as the bus, shopping malls, and street corners.

4.3 The Boeing Engineer

Our third subject is an industrial engineer at Boeing who considers herself a socially average individual. She currently attends the University of Washington and is pursuing a degree in industrial engineering. She is a perfect neutral subject since she considers herself neither a social expert nor novice, which fits into the demographic of the average person.

This contextual inquiry took place on the University of Washington campus, allowing us to observe her everyday interactions with others. She explained how she dealt with different social situations and problems that arise daily.

4.4 International Students and Researchers

It is common for ideas or emotions to be lost in translation when dealing with cross culture interactions. We recruited seven international and four American graduate students and researchers at the University of Washington who work together. They are likely to encounter misinterpretations caused by the culture and language discrepancy in their working environment. Some of them have traveled abroad to attend international conferences and build international networks. All of these people have diverse social characteristics, from the social butterfly to the more quiet and secluded individual.

This contextual inquiry took place at an Electrical Engineering social, where a variety of electrical engineering majors with various backgrounds were able to interact. We observed how each of these subjects reacted to a variety of people who share a common major.

5. Contextual Inquiry Results

5.1 Possible customer audience

Through our contextual inquiries, we have found a wider range of target customers. Combining these findings with our original target audience, we now include: people who have difficulty reading the emotions of others, those who are less socially adept than the average person, those who are having trouble in getting foreigner's emotions or body signals, and those who want to affirm their ability to "read" others' physical signals.

5.2 Reading people is essential for everyday social situations

There are many situations where customers will need to understand other people. Not everyone has tact, but there is a limit on an individual's level of tact. If everyone were to be perfectly tactful, then nobody would say what they were really thinking for fear of hurting others' feelings.

It is common to determine friends' moods by reading their body language and facial expressions. To keep friendships strong, it is important to notice slight changes in others' behaviors and moods. If a friend's mood suddenly becomes serious, it is optimal to inquire about the situation to provide support. People who are not as socially graceful as others may also have trouble showing that they care for their friends.

5.3 Social rules limit the usefulness of knowing the hidden emotions of others

Social interactions span a wide range of actions; this can involve behaving in a "playfully mean" manner, including making jokes or being sarcastic. The power of these behaviors is that other people can never be exactly sure whether the perpetrator is being serious or not.

Our subjects reported that there is an unspoken "social contract" when interacting with friends or acquaintances: "what is said in public is public and what is unsaid should be left for interpretation." In other words, there is a certain expectation of privacy or simple uncertainty regarding emotions or attitudes that others want to remain hidden. For example, if a person immensely dislikes another person but wants to avoid drama, he may attempt to hide their feelings behind a pleasant façade.

Many customers reported that they were concerned that others may be able to recognize that they were using a tool to learn more about emotions than normally possible.

5.4 Cultural differences present unique difficulties when trying to read emotions

If anyone walks on the streets of their hometown, they probably would not have any trouble understanding body language or cutes of the people they grew up with. Most people find that they have no trouble in interpreting others' emotions by observing facial expressions, tone, eyes and body language in a place familiar to them.

However, they may need help when they travel abroad or communicate with others who grew up in a completely different culture. Foreign accents can also be difficult for people to understand. Some of our subjects with foreign upbringing reported that they were often uncertain about a foreigner's emotions based on their voice. Different cultures may use different tones to represent completely different underlying meanings. In a situation where a tourist is attempting to get help from a native, it may be hard to tell if the native is fully trying to be helpful or is in fact, annoyed.

5.5 Social media is a poor source of emotional information

Although social media has become an integral part of many people's lives, we must remember that the content is selective. Those who use sites, such as facebook, will only post content they want others to see. Most material posted is trivial or otherwise emotionally skewed; people overwhelmingly post things that are exciting over things that are depressing.

6. Analysis of Tasks

6.1 Reading emotions for people who are bad at reading emotions

One of our target customers are those who are less socially adept - specifically, people who have trouble reading other people in social situations. For example, say someone finds a perfectly clean slice of cake. As a rational person, he understands that the only logical thing to do with 'found cake' is to eat it. Naturally, they consume the cake, finding to their pleasure that, in fact, the cake is no lie. However, they suddenly find themselves face to face with a rather agitated person. Being bad at reading emotions, our hapless hero may not recognize that the person in front of them is "Angry". In his ignorance our hero may decide to react with "Lecture on the Need to be Happier in Everyday Life", thereby possibly leading to a physical confrontation. In this way, this person's lack of social grace can actually lead them into potentially harmful situations.

If this same person were provided informed advice on how to react to this "Angry" person, the situation would most likely resolve to everyone's benefit. For instance, if they were advised to react with "Keep Calm," "Apologize Profusely," or "Run Away," then the situation would more likely than not result in the scheduling of a cake-baking date.

6.2 Avoid dangerous or creepy people in public spaces

A common task for public transportation commuters is choosing whom to sit next to on the bus, subway, or other desired mode of transportation. At times, this dictates how someone's commute goes; sitting next to a loud, angry, and disgruntled person leaves much to be desired. For example, someone who cannot read body language well boards an almost full bus. They notice that there are only three seats left; which seat should they take? In other words, which seat-companion seems the least disagreeable to sit next to?

This is not a decision to be taken lightly: picking poorly could realistically lead to a traumatizing experience for this person, doubly so if the person is a woman. Physical and sexual harassment in public is an unacknowledged epidemic that any city-living woman would gladly educate the curious about. Thus, deciding who to sit next to on the bus is an incredibly important decision to get right in the interest of physical and mental safety.

6.3 Determine who has positive/negative attitudes towards oneself

One thing that every normal person constantly stresses over is how other people feel about them. These thoughts typically begin in the early teen years of each person's life, but ultimately becomes an issue of confidence.

A possible scenario is an employee trying to determine if his boss is happy with his performance; is it a good time to ask for a promotion? This task may not happen for some people, but it is important to avoid embarrassment and social awkwardness in the workplace.

6.4 Determine who is sexually attracted to another

An age-old problem dating back to the time of childhood is the common issue of finding out who has feelings for whom. We want to help those trying to figure out if another person feels the same way. Subtle body languages, tone of voice, or soft facial expressions are cues that someone may feel more than "just friends."

6.5 Following the social mannerisms of people who are of a different culture

Cultures differ in innumerable ways, including when it comes to social mannerisms. When a traveler visits a foreign country, plenty of misunderstandings can occur due to differences in social rules and expectations. By avoiding culture clashes, we can promote a more peaceful environment.

Shaking hands, greeting hugs, hand waving, and other body language signals is something the Western society may take for granted. In other cultures, it may be impolite to touch someone else, especially between men and women. Some hand gestures mean completely different things in various parts of the world.

7. Three Supported Tasks

7.1 "Which seat can I take?" - Rebecca Black

Our application will allow customers to get a quick, analyzed look at their surroundings and determine the best place to sit for their commute. Based on body language, posture, and facial expressions, our product will suggest whom to avoid and whom it may be safer to sit next to. Thus, Miss Rebecca's issue is resolved.

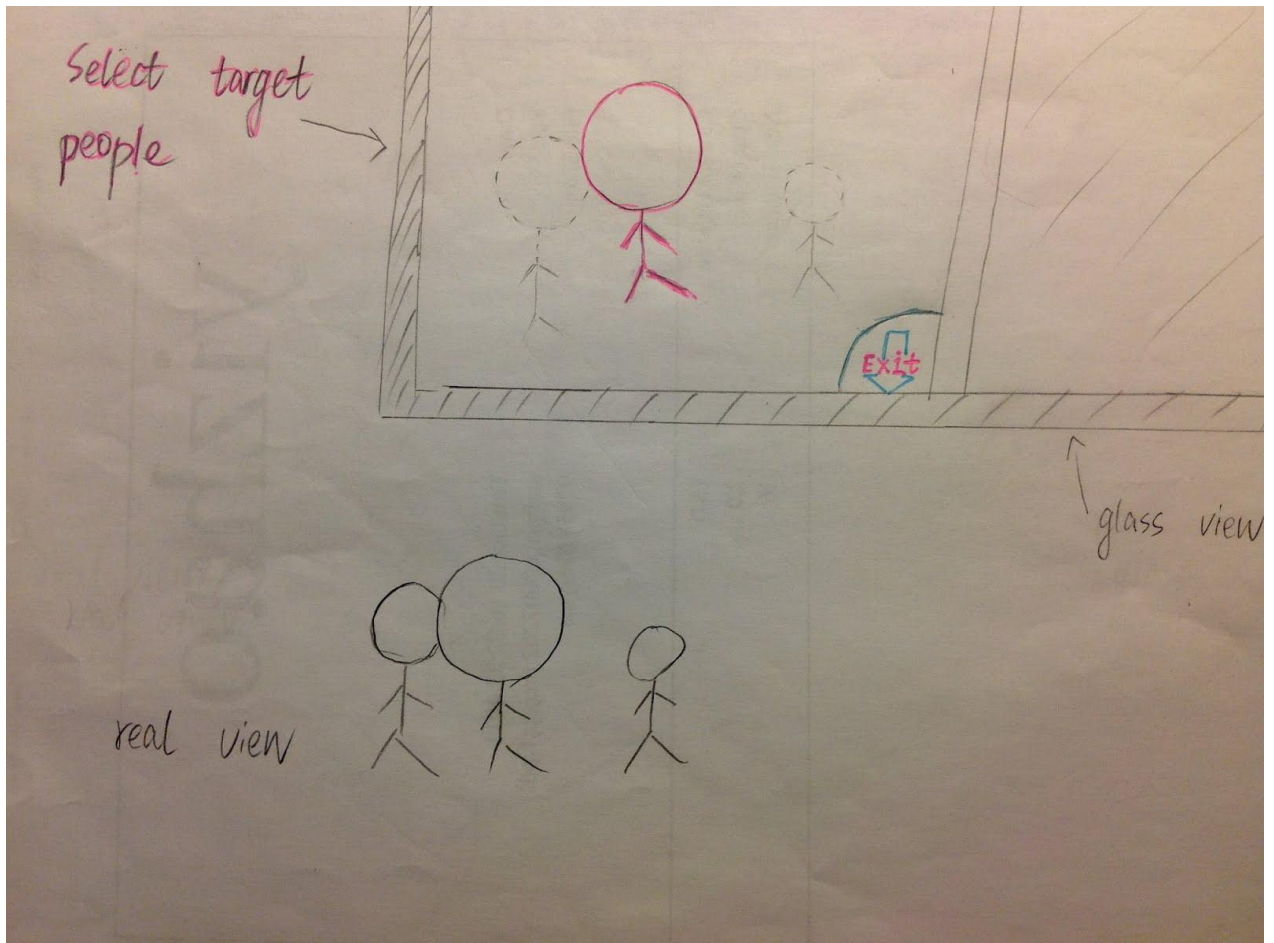### 7.2 Mood Ring … sans ring

An important functionality of our application will be to help determine the attitudes others feel towards the customer. That is, identifying the feelings other people have for the customer: like, dislike, or somewhere in between.

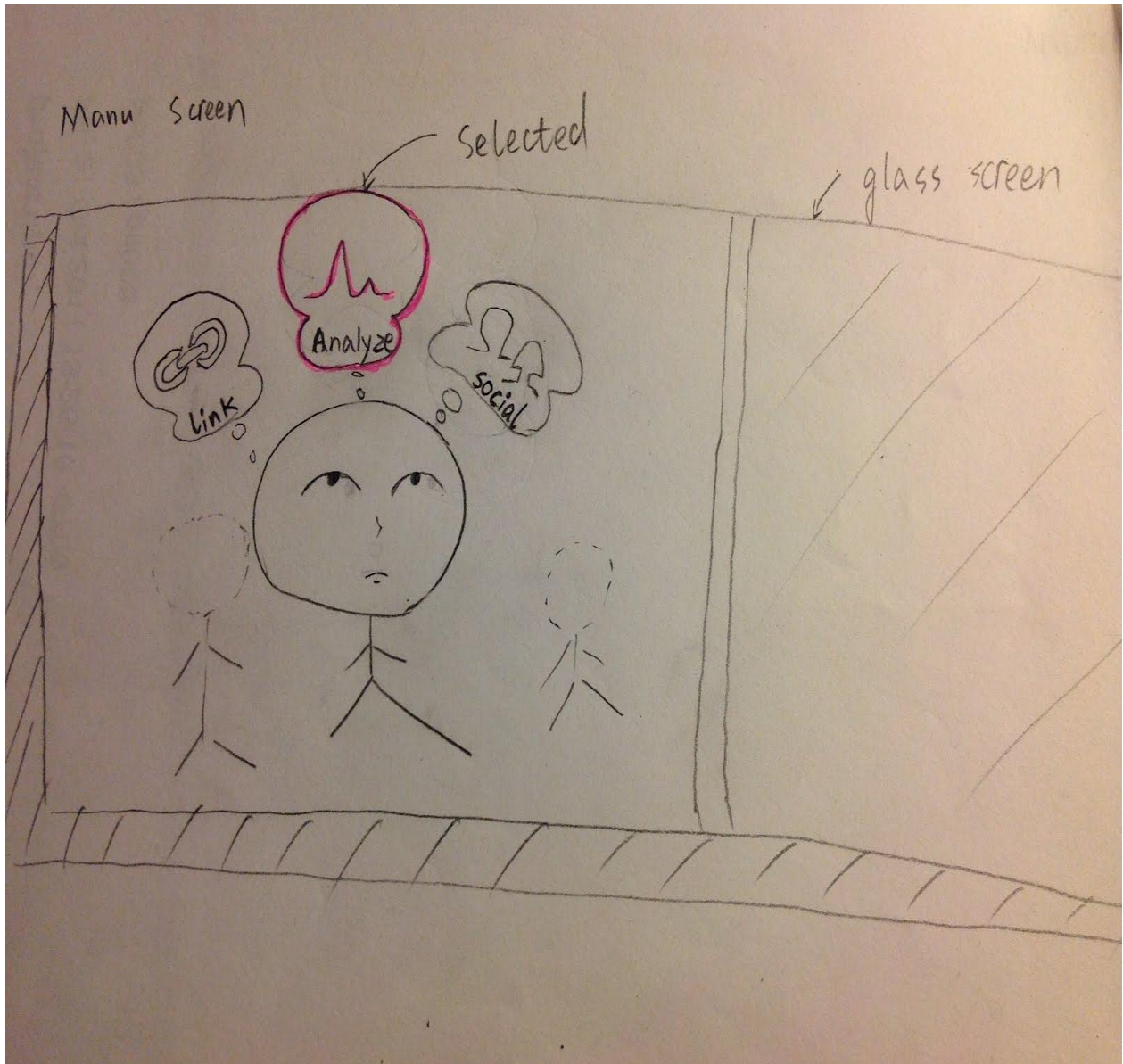### 7.3 The Young Grasshopper and Social-sensei

Our product will give customers real time advice on how to react with someone exhibiting a certain emotion. Based on the emotions detected, the device will then communicate to the customer several possible responses.
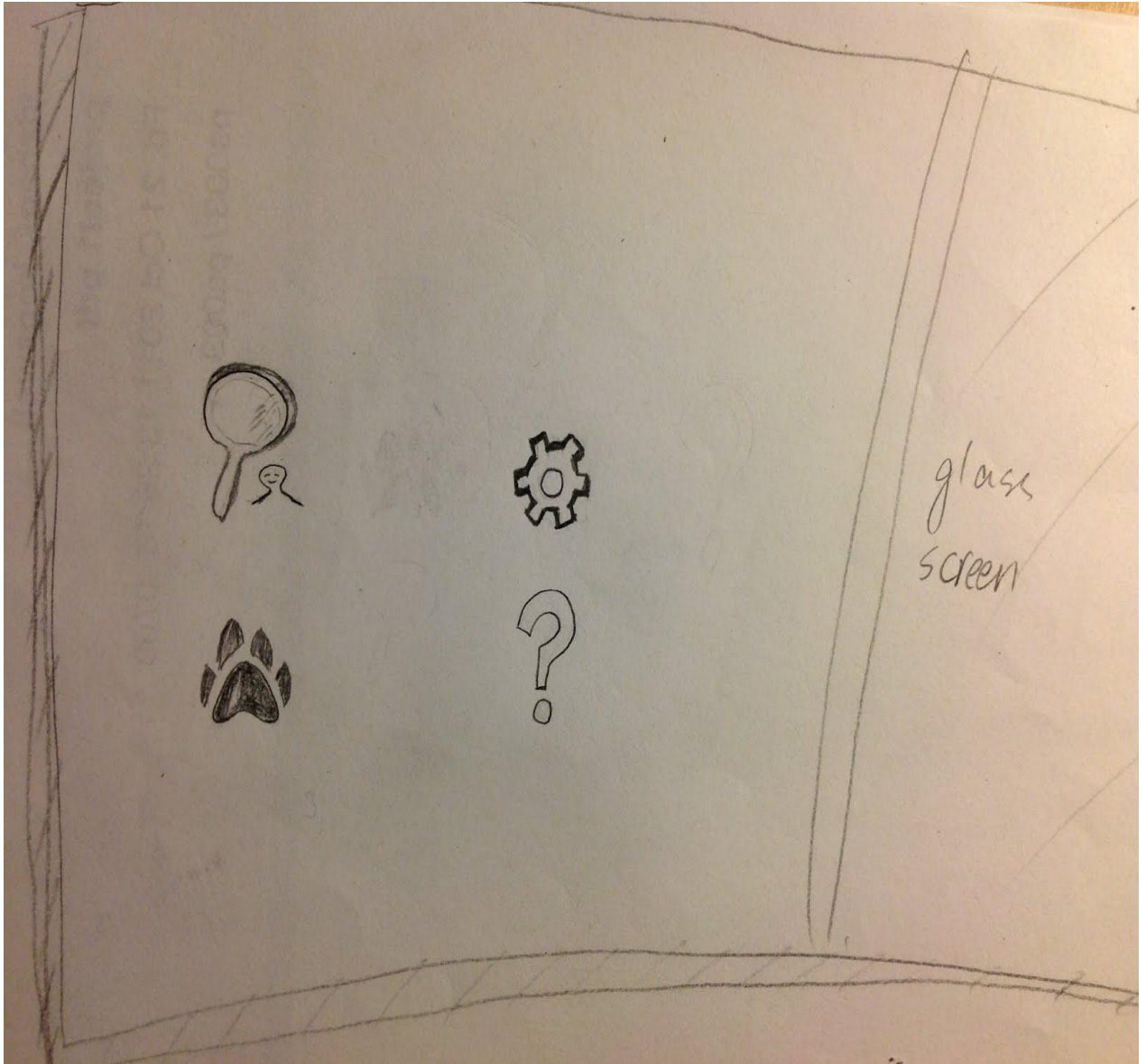
8. Sketches of Important Screens

8.1 Indicate focus on someone

8.2 Options for selected subject

8.3 Menu screen

8.4 Guidance Screen

Guidance result →

Angry

keep quit

keep smile

Go away

Exit

glass view

real view →