Personal information

Name:	Robert
Age:	43
Job:	Teacher
Location:	Ann Arbor
Vision:	Fully Blind
Commuting frequency:	Every weekday
Technical ability:	Average

Other applications used

Robert mainly uses Google Maps for transportation and commuting with assistance of his screen reader. Besides that he uses the app Blind Square and Over There for basic navigation as well as to figure out where he is on his bus route. He uses them now mainly from memory but has difficulties at times.

Goals & motivations

Robert's main goal is to be able to get around Ann Arbor, to the school that he teaches at and his home independently. His wife works a full time job so he is responsible for commuting back and forth alone. He wants to be able to do so seamlessly while also trying to cause the least amount of trouble to those around him. (ex. Having to ask the bus driver where they are and when he has to get off)

Frustrations

Most of his frustrations come with knowing where his bus is. Google Maps works off the bus schedule, but this is often wrong. This means that he often has to call the service to get the actual location of the bus. This is especially frustrating during the winter when he would like to wait inside for the bus. He also has trouble knowing where he should get off the bus. His current route involves the switching of buses so he has trouble being able to know when to get off and when to get onto his next bus.

Potential use of LookingBus

Robert would probably use LookingBus as an alternative to Google Maps. If it had the

functionality to track the actual buses and aid him in his transfers then it would be successful for him. He would probably use it mostly when he is already at the stop waiting and when he is on the bus to know where he is.

Personal information

Name: Ronnie Trower
Age: 32
Job: Automotive Engineer
Location: Auburn Hills, MI
Vision: Mostly blind. Sees stark color contrast, but everything is very fuzzy. No depth perception - uses a cane.
Commuting frequency: Three days per week
Technical ability: Very familiar with iOS systems. Uses iPhone heavily.

Other applications used

Uses iOS native screen reader. Will use Google Maps to find routes, but will not use Google Maps while actively commuting. When commuting, Ronnie calls The Ride to find and schedule pick up times. On his phone, Ronnie uses Seeing AI very frequently for reading text with the camera, and identifying people and currency.

Goals & motivations

Ronnie wants to be able to use the buses without becoming anxious or fearing that he will get lost. He would like to use the paratransit less and the actual buses more.

Frustrations

Like many other blind people he knows, Ronnie has a fear of not knowing where he is. If he isn't sure that he's standing in the correct spot waiting for the bus, he may get very anxious and scared. Ronnie also struggles knowing when to get off the bus, since he can't always rely on the driver to remind him when the bus has arrived at the stop where Ronnie needs to get off.

Current commuting habits

Ronnie mostly utilizes The Ride: Paratransit when going where the bus is not easily accessible, or if he has somewhere to be at a scheduled time and isn't familiar with the bus routes yet. His partner drives him to work every morning and he takes the bus back at the end of the day. Outside of this route, Ronnie struggles knowing which route to take.

Potential use of LookingBus

Ronnie's biggest benefit for LookingBus would be knowing when to get off the bus. This would alleviate his anxiety of not knowing where the bus is. He would also like a feature that lets him know that he is actually in proximity of the bus stop, rather than having to guess that he's there (especially when it's only maked by a sign and not a waiting booth).

Persona: Joan

Personal information

Name: Joan
Age: 22
Job: Student, part-time worker
Location: Ypsilanti

Vision:
Partially-/Legally-Blind, Can see within 30 ft, Smaller field of view
Commuting Frequency:
Minimum of thrice a week
Technical ability:
Reasonably Above Average

Other applications used

For bus and public transportation purposes, she uses the AATA mobile website for the most up-to-date information on her buses and routes. For walking and ride-hailing, she uses Google Maps and Lyft, respectively. Doesn't use screen reader often, but when she does, it's at around 50% faster reading speed (i.e. not a expert at using a screen reader).

Despite having blind spots and a limited field of vision, she has a relatively lower burden on her memory to use a mobile UI (as opposed to a fully-blind person) since she is still capable of seeing and manipulating the visual UI of her phone.

Goals & motivations

Since Joan has a part-time job in Ann Arbor, she is required to travel at least thrice a week from Ypsilanti. She primarily uses the bus system to make this trip, and she wishes to make this journey as hasslefree as possible. On occasion, she isn't sure where the buses are, whether the information is trustworthy, or even if the busdriver will wait for her given that she can be

relatively slower than the average passenger. On occasions like these, where she doesn't have enough information of and trust in the bus system, she decides to get a Lyft to her workplace.

Frustrations

She gets extremely frustrated when she might be running late to her office, but there is no way for her to get reliable information about the buses. Sometimes, the bus ETA is twenty minutes but it instead arrives in five, and sometimes, the bus ETA is stuck at ten minutes for what seems like a half hour. As such she isn't able to know whether to continue waiting for the bus or to simply call a Lyft (which can quickly become unsustainable).

It should be noted that Joan is of an interesting position: she uses both visual UIs and screen readers but is not an expert in either of them. This results in a unique frustration when she isn't able to use most apps with maximum efficiency when the app optimizes its workflows for visual UIs and/or screen readers.

Potential use of LookingBus

To Joan, the biggest benefit of LookingBus would be that of knowing and trusting that a busdriver would stop for them during their journey. This should ease up frustrations of untrustworthiness in the system. Furthermore, with accurate, reliable location information being readily available to Joan, she would be in a much better mental position to make a confident decision whether or not to wait for the bus.

User Journey for Joan

Situation: Joan is about to make her afternoon bus commute to work. This user journey covers details from leaving her home up until she enters the bus and sits down.

1. It's a cloudy fall day, and Joan is about to leave for her part-time job shift. She lives in Ypsilanti, and, with her job being in Ann Arbor, she has to use the bus system frequently. Last week, she heard about a mobile app called LookingBus, and so she decides to use it for the first time today.
    - **User Feeling:** Joan is a little stressed at the start of her work commutes. Being naturally anxious, she is always worried about being late, which generally occurs due to factors beyond her control.
    - **Benefit of LookingBus:** Nothing yet. She could use it to go to her bus stop, if she so wished, but she's well aware of the route by now.

2. She arrives at the bus stop and sits inside the bus stop shelter and waits. She decides to open up the LookingBus app. The app detects her location, and she inputs her final destination.
    - **User Feeling:** Generally, Joan uses the AATA website so she can get the most up-to-date information and is, thus, more comfortable with that. This time, she decides to use the LookingBus app. Prior to using the app, she is a little apprehensive about using something new for her journey, but upon looking around the LookingBus app for a few minutes, she finds herself comfortable with the interface.
    - **Effects of LookingBus:** LookingBus follows standard. It's interface is designed for BVI users and is designed with strong regard for screen readers, color contrasts, and other accessibility requirements. This means benefits to Joan in terms of, lower cognitive load, in line with existing user mental models. Easier efficiency and smoother workflows and lower threshold and hurdles to get what she wants.

3. She looks over the trip details. She sees that all the journey data is correct and so presses the "Reserve Trip" button. She gets a notification that her trip is confirmed and that the driver will be sure to take special note of her during pickup and the remainder of the trip. It also lets her know that the app will notify her when the bus is about to arrive and when the bus is outside.
    - **User Feeling:** She feels a sense of relief. For most trips, there is a lack of trust in the bus system. She doesn't know if the bus will really be on time, whether the driver will notice her, whether any of the bus ETA information is accurate enough to make any decision, et cetera.

- **Effects of LookingBus:** This foregrounding of information and confirmation that helps to both establish a trust in the system as well as eases her mental burden of decision paralysis.

4. The app says that the bus will arrive in ten minutes. She decides to sit in the shelter, since the app will notify her of anything noteworthy.
    - **User feeling:** Joan is really appreciative of this chance to rest and not be constantly paying attention. Normally, she would sit inside and constantly check the online bus schedule and also listen for bus sounds. When she believes her bus is near, she goes to stand outside the shelter, so that she can see the buses and so that bus drivers will notice her. Given her inclination to overthink, her busy schedule, and various other extraneous factors, she is grateful of a few minutes of respite.
    - **Effects of LookingBus:** Joan can offload the burden of constant vigilance (and the consequent mental stress) on to the app.

5. Only a few minutes have passed, and she get a notification: “Your bus is early! It’ll be outside soon. Please make your way to the bus stop.” Joan is surprised and thinks to herself, “It’s early? Huh. Never expected that.”
    - **User feelings:** Despite still being struck with the oddity that is early public transportation, Joan is quite glad with LookingBus. Generally when this happens, it’s a moment of stress and bafflement, and often she simply misses the bus, causing a sizeable disruption in her schedule.
    - **Effects of LookingBus**: By foregrounding particular information to both the driver and passenger, the app thus greatly reduces the chances of her missing her bus in such a situation and also greatly reduces the chances of the potential intense frustration.

6. She leaves the shelter and can vaguely see a bus just arriving. She waits for some passengers to exit the bus, and as she makes her way in, the bus driver checks in and confirms her name and destination.
    - **User feelings:** She is extremely glad that, one, her bus is actually early, and two, she didn’t miss it as she normally would. She also feels very comfortable knowing that the driver checked on her for the journey. She is relieved to have not faced the terror that is almost missing her bus.
    - **Effects of LookingBus:** By coordinating information and assign meaningful action, the app is able to efficiently optimize people's time and journeys as well as reduce occurrences of stress and worry.

7. Joan enters the bus and sits down. She receives a notification saying, “You’re on your way. We’ll let you know when you’re almost at your next/final stop.” Reading this, Joan is a little more calm and confident that her journey will be hasslefree.

- **User feelings:** She is soothed by the fact she doesn't have to constantly check the schedule or ask people for help. The mental unburdening is palpable, and it frees her mind to think and feel other more important things. As a result, she feels embers of empowerment. She glances past the large bus window, and, for the first time in quite a while, she looks forward to her commute.
- **Effects of LookingBus**: It sets up a system of timely and useful information, and it leads to actionable trust and confidence in public transport. And, perhaps most importantly, it results in greater efficiency and freedom of one's time and mind.