**Customer Needs:**

Initial Question, Posted on the Facebook group, “Blind and visually impaired support group.”:

“I am not visually impaired myself, but I joined this group to learn more about some of the trouble people who are visually impaired go through. I am a part of an Engineering project at Florida State University who’s goal is to help people who are visually impaired navigate around public spaces. I was wondering if anybody had ideas on what this could be or any input that could help us narrow down a product that could be helpful. Any information or help is appreciated!”

* Customer Statement: “RFID beacons in stores, let people know what isle they’re in. Same for schools etc. “
  + Interpreted Need: The design needs to help the customer know their specific location within larger locations.
* Customer Statement: “Google Blind Architect.You will find an article relating to an architect who went blind and continued in his field using techniques for buildings (and I believe a transit system) that incorporate systems to make travel and locatation more safe for blind/VI.”
  + Interpreted Need: The design needs to be able to help the customer be able to work despite being visually impaired. They also want to have a way to maintain an occupation they used had before being visually impaired.
* Customer Statement: “Idk but we need a legit work from home jobs that we can do using our smartphones (different accessibility) thank you. I live in west Pasco co”
  + Interpreted Need: The customer wants to have a larger range of incomes. Design used on work-situations
* Customer Statement: “I would like more audible crosswalk signals, announcing the street you are about to cross, wait, walk, ect. Also accessability tools need to be more affordable. A small device like the Orcam is $3,000 and beyond the reach of most people”
  + Interpreted Need: The customer wants affordability within the product. There is also a need for transportation type products, specifically ones that are audible.
* Customer Statement: “I really would like to see more exploration of sonar technology. I have a sunu band and it works well, but has limits.”
  + Interpreted Need: The design needs to have the same capabilities of sonar technology.
* Customer Statement: “Volunteer with Be My Eyes - An app that allows visually impaired individuals to call in and speak with sighted individuals to complete tasks. I’m sure your questions would be answered while also providing a beneficial service to the visually impaired community. I Will help where I can, but volunteering with this service will allow you to make observations and get a clearer picture of what you are wanting to research.”
  + Interpreted Need: The customer needs to be able to contact sighted individuals.
* Customer Statement: “Good evening from Indiana, I think this is a tough one. There r so many things on the market today from the basic cane most of us use to a more high end one with a talking like g p s. I think most of us can agree, if your team is exploring some sort of mobility tool, hopefully, it is some thing affordable because a lot of the tools geared towards us can b so over priced, that it will more than likely sit on the shelf. Honestly, I can not even begin to say, but, if u r on campus, I think it is always better to talk to people in person. Have u tried contacting the office of disability resources on your campus? If u search u tube, there r many who speak of the different tools we r using and r on the market. From mobility tools to apps that helps or assist us with reading print and actually reading hand writing including identifying money, bills at least because coins we can identify r selves. But, good for u and your team keeping us in mind, there r apps available that calls live operators that can assist with when to cross a street, they tell u when the light is green or red and the list goes on and on and on. R biggest complaint is most times we r not included in creating some thing that we can use and that usually it is over priced. Good luck, hope u and your team can create some thing. There r even robotic dogs being worked on to use as guide dogs, they r not on the market yet.”
  + Interpreted Need: The customer wants to ensure that the product is affordable making it accessible. Making apps that are easy to learn and are not time-consuming.
* Customer Statement: “An app that can identify the store, classroom, building, etc. Theoretically, an app that communicates with an external device could be utilized anywhere that the external device is placed.”
  + Interpreted Need: Device identifies precise location and communicates it to user.
* Customer Statement: “I’m not sure how much the class discusses blindness, but it occurs on a spectrum from totally black to extremely poor/low vision. Im totally black sight in the left and poor on the right. For me personally, increased contrast would make a huge difference. For instance, the small wheelchair ramps to cross streets have large bump dots on them but they are are dull washed out muddy color. If they were high contrast and slightly reflective (like brighter not mirror) it would help. The same goes for signs. I’m sure that you’ve noticed that some signs stand out more than others, or that some street lanes are marked with a much better paint. As someone said above, if the street signs announced which street it was would be great. And if my phone could tell me where it is when I can’t find it!”
  + Interpreted Need: The design needs to improve the contrast between colors of objects such as street signs and other objects the partially impaired may interact with.
* Customer Statement: “I'm sighted. I care for my Aunt who just recently went blind due to a stroke. My grandmother was blind from age 7 (horse kicked her). But I am just at a loss at the lack of things that have not been done to help the blind. Yes there are a few more new gadgets...very expensive ones...but there is nothing new. Nothing that really helps. And the employment? It's so bad. Why isn't there a company out there that REALLY works to help them obtain employment? It's crazy!”
  + “Sorry to hear of your aunts situation, definitely, tough. There r more things on the market now that r a little lower priced and there r more free apps available that might assist her with regaining her independence. If she uses an i phone, u can visit [applevis.com](http://applevis.com/?fbclid=IwAR3iNIZmncia19exMbgO7mzHquzGg0fQkl69krKdLn-fGNuZjb041lHWzn8) and that is a website that u can find apps for the i phone either free or at a price, good luck and hope your aunt has a healthy and quick recovery.”
  + Interpreted Need: Design must be accessible financially. Design assists people in work tasks.
* Customer Statement: “I don’t know if there’s a product that can help us navigate. It would be interesting. I depended on my guide dog and made sure to remember my skills I learned from orientation and mobility.

I’m sorry people aren’t happy about your research. Not all of us are the same. When there are dozens of doctors that evaluate me on my rare condition, I let people ask questions or look. So that doctors can be as educated as possible.

There are visually impaired and blind people that feel like test subjects. They want to be understood, but don’t want to be questioned. Which is ironic. But, everyone is different.

I hope your research goes well.”

* + Interpreted Need: Design allows navigation compared to guide dogs and skills that were learned prior.
* Customer Statement: “As someone who lives in a big city, I think a proximity function to other people would be extremely useful, as it would help me in socially distancing myself from others, especially while on the subway. In addition, any way a blind person can identify if someone near them is wearing a mask would be great”
  + Interpreted Need: device senses proximity and relays information to user. Senses physical features of objects as well.
* Customer Statement: “hello, Madison,

i am a structural engineer,but i started losong vision 5 uears ago.now i am legally blind. i jave been thinking about this isuue a lot. being an engineer,i always want to make things better.

project is fascinating.message me,we can collaborate.i could be the ‘guinea pig’ to try things out.i love in crescent city, fl”

* + Interpreted Need: Device allows user to perform work tasks.
* Customer Statement: “I think one problem with a lot of new blind technology, is there is a lot of overlap. There are actually already some interior navigation applications. I think one is called the Beacon and it lets you leave indoor markers so you can navigate better. There are already products like the WeWALK smart cane, Sunu band, Orcam et Cetra. And there are applications like be my eyes and Ira, which can help navigate also. Maybe you could create A Bluetooth camera that pairs with iPhones and fits on a pair of sunglasses. This way blind people could have both of their hands free, will the head camera sends all the information they need to the iPhone. Good luck.”
  + Interpreted Need: Device is hands-free and identifies objects, then relays information to mobile device.
* Customer Statement: “I am an orientation and Mobility specialist working on solutions for folks using wheel chairs with VI or blindness”
  + Interpreted Need: Device is accessible to people in wheelchairs.

**Explanation of Results:**

The customer statements were gathered by putting out a post in Facebook support group for the blind and visually impaired. The consensus is that the customers need a product that can enhance mobility and independence, improve potential to obtain or maintain employment, and to have a reasonable cost.