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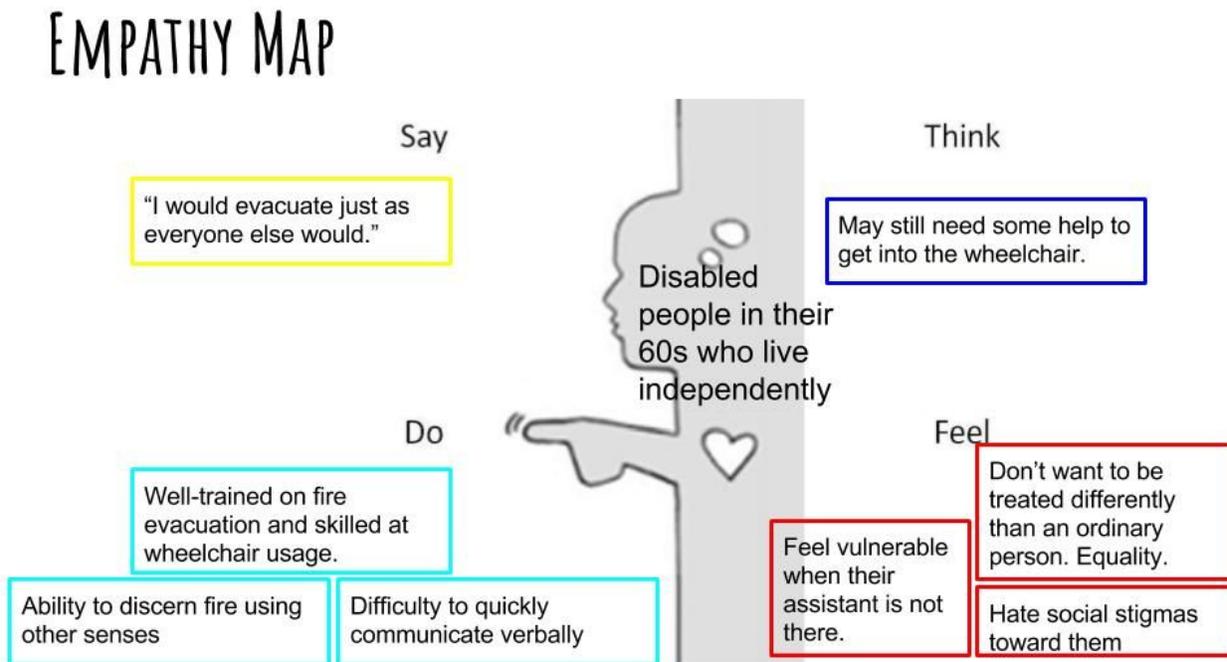
Empathy Maps, 2x2 Matrix, Why-How Laddering

This week, we focused on extracting the most useful information from our research using analysis methods that our group came to a consensus on. These three methods are the empathy map, the 2x2 matrix, and why-how laddering. Our project is progressing well as we are gaining valuable information from several sources and we have been able to find a real need for fire safety. We now need to put everything together and create ideas on how to proceed.

Empathy Maps

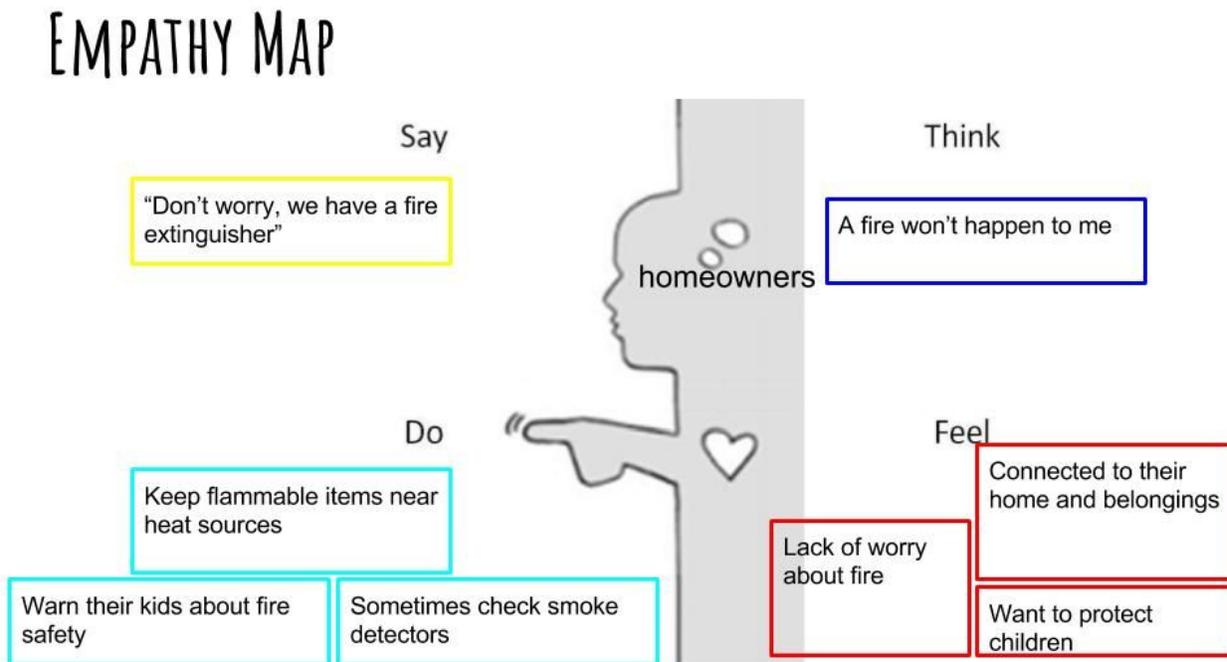
Empathy map for disabled people living independently

From our interviews with people with disabilities living independently, we discovered their inner thoughts and emotions regarding how their conditions of disability may impact their success of preventing and evacuating from a house fire. At first, they said that they would be fine during a house fire since they have motorized wheelchair, ramp, and the ability to discern fire using different senses. As we sympathized with them on their desire to be treated equally as everyone else, we began to discover their vulnerabilities. Deaf people tend to have difficulties to communicate. People with physical disabilities who live independently have difficulties of getting into their wheelchair, especially when their assistants are away. What is even worse is their vulnerable feelings in dramatic events like a fire disaster. With these insights in mind, we think that disabled people need to safely evacuate from fires using effective communication tools, while maintaining strong relationships with others for emotional support. The following is an empathy map for disabled people in their 60s and live independently.



Empathy map for homeowners

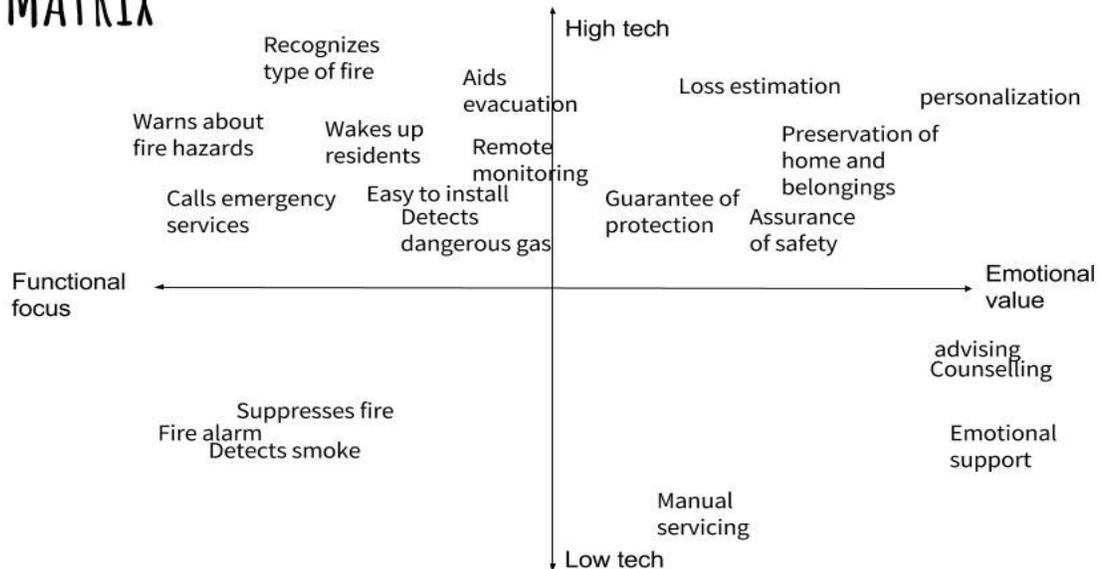
From our interviews with homeowners and apartment renters, we learned that they think very differently than someone designing for fire safety would. It became apparent to us that they do not worry much about fire safety as they consider it to be a rare thing that only happens to other people. They do however care about protecting their children and their things. This is evident in the fact that some of the people interviewed had expensive security systems but sometimes even took the batteries out of their smoke detector. Because of this, we think that they will be a more difficult market to sell to but it is still possible due to the amount of care they have for their family and their belongings. We learned this after creating the following empathy map for homeowners.



2x2 Matrix

After interviewing several homeowners about their definition of “home,” we realized that in their perspective “home” is not just a physical building. It is far more than a building because of their memories -- the good and bad times they had while living in the building. In fact, home carries sentimental values to the owner. Although the emotions for home may not be strong in everyday life, most people cannot resist to be a little emotional for home after a long family vacation, or a long period of separation from their homes. For many, home transcends the physical space or its monetary value. Home carries meaning, memories, and a sense of belonging. After discovering the emotional aspect of home, which is often ignored or overlooked, we realized that in the process of fire prevention and fire extinguishing our users have emotional needs. A fire prevention and extinguishing system that is centered around users’ emotional needs while providing functional values is much needed. The following is our 2x2 matrix that uses functional focus versus emotional value as the x-axis evaluation criteria, and high-level technology versus low-level technology as the y-axis criteria. We found strong needs in the “high tech - emotional value” quadrant have not yet met by current, mostly functionally focused, solutions. We would like to combine high tech with emotional value to not only effectively prevent and extinguishes house fire, but to also keep users’ emotional needs in mind, creating a more personalized experience.

2x2 MATRIX



Why How Laddering

Why do they need fire safety?

- To protect their own lives → the desire to live, and fear for death → want to have self-fulfilment by achieving life goals, and spend time with people they care
- To protect belongings → sentimental and monetary value → fear of losing
- To have a sense of safety and being in control → to decrease stress and helplessness in case of fire → to have a happy life, free of unnecessary worries or negative emotions

Why is heat detection needed?

- To discern and extinguish fires quickly → to minimize damage to belongings → to save money

We chose this method so that we could gain deep knowledge about our customer through logical reasoning. It complements the empathy map quite well as that works on a shallower level but is more broad. Putting these two together, we can gain almost a full understanding of our customer. We found that the main reasons people need fire safety is so that they can hold onto the people and things they have and not have to worry about losing them. Fire is scary; people don't tend to worry about it until it happens to them and then they feel helpless and don't know

what to do. We aim to fix this problem with our design.

Next Steps

Since we have just located the key needs that need to be addressed after our research and presentation, we now need to find ways to solve these issues. Our group will decide on ideation steps to use and then use those to brainstorm ideas to incorporate into our design.