

# Sociotechnical Synthesis


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## Sociotechnical Synthesis

Quality of life is a critical factor when considering equality. Without the freedom or ability to do as one desires, such as someone with a disability or during a medical crisis, there is an inherent disadvantage when compared to the rest of the world. These problems can be incredibly expensive to assuage or improve. As a result of this financial barrier, those of a lower socioeconomic status are even more unfairly disadvantaged. Both my technical project and STS research paper exist in the medical realm. My STS research paper focuses on the fiscal impact of medical care. My technical project entailed creating a wearable with the goal of improving the quality of life for the visually impaired.

In my STS research, I considered the fiscal impact of the burden of medical care. It delves into the topic from several perspectives - those who pay for the medical care, those who receive it, and those who administer it. Of the competing interests between these groups, the greatest among them is misconception. The technical portion of my thesis involved designing a new wearable to improve the quality of life for the visually impaired. Using sensors and feedback components, the wearable can detect and notify the user of nearby obstructions. The key objective was to design a self-contained device that offered both the feedback necessary to keep the wearer safe, while also being a more discreet and complete option than modern devices currently available for the visually impaired.

The combined knowledge from my technical and research projects allowed for a more complete understanding of the intricacies of this system. Rather than approaching the problem purely from the perspective of someone patronizing the system, I was able to perceive the issue from the opposite side, as someone who had to spend the money to create the product. As my

research and project evolved, it was easier to understand the origins of the high prices rather than purely viewing the high costs as a negative. While everyone deserves to have access to the care they need to have an equal quality of life, those who administer medicine and those who develop the new technologies also deserve to be paid for their efforts. There must be some balance between the contrasting sides, but there needs to be transparency. Hypothetical financial ramifications should not be a barrier to procuring medical attention.

I would like to thank Dr. Richard Jacques and Professor Peter Norton for advising me in the writing of my sociotechnical research paper and prospectus, respectively. I would also like to thank Dr. Harry Powell and Professor Todd Delong for aiding in the completion of the technical project. Finally, I would like to thank my team, Hafsah Shamsie, Mary DeSimone, and Ricky Morales for working with me on the technical capstone project.

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