

Sociotechnical Synthesis

My technical project is titled “Developing a Multimodal Entertainment Tool with Intuitive Navigation, Hands-Free Control, and Avatar Features, to Increase User Interactivity” This project was completed with a large entertainment company. The objective of this project was to create a novel entertainment experience that fosters high user interactivity. My STS research paper focuses on the how technology has removed normal physical activity from daily activities. The main goals of this study were to explore the rise in these technologies using the SCOT framework. The perspectives of for-profit companies, parents & teachers, and government institutions were compared and contrasted. The technical project focused on fostering user interactivity beyond the couch within an entertainment & video streaming company. Thus, I wanted to focus my STS research topic around similar technologies that have contributed to a culture sedentarism in the US.

The technical portion of my project produced a prototype of a novel multimodal cooking application. This prototype includes an interactive tree-like recipe map, a hands-free voice command mode, and avatars that enhance the entertainment aspect. To develop this prototype, we chose a use case that would naturally be conducive to physical activity and had high potential for a hands-free mode. Thus, we chose cooking. Next, we iterated on various designs especially focusing on making the multimodal map structure more user intuitive as it was the most novel aspect. Feedback from the client’s product and UX design team was given on a biweekly basis. Usability evaluations in a kitchen setting where ingredients were provided for the user were conducted. The prototype was refined based on user feedback. The project was presented at the 2022 IEEE Systems and Information Engineering Design Symposium.

The STS portion of my project allowed me to learn more about the negative impacts the

rise in technology has inadvertently had on health in the US. While poor food choices has often been thought of as the main culprit for America's obesity epidemic, physical activity has also played an important role. Through the increased efficiency provided by recent technological advancements like transportation, communication, and entertainment the average person is now burning less calories from their daily activities. With only 45.5% of Americans reaching sufficient activity levels and a 42% and rising obesity rate it is fair to say the culture of sedentarism and its relationship with obesity is an imperative issue. In addition, I evaluate the feasibility of introducing physical activity into various sectors using their respective product success metrics. Focusing on the entertainment industry, I explore health-forward directions entertainment companies can take.

During my technical project, I was able to develop fluency in Figma, design reviews, and conducting usability tests. Key human-computer interaction principles I focused on within ideation and user testing included efficiency, intuitive design, natural mapping. However, we didn't explicitly focus on the level of physical activity that the structure of our application fosters. My STS research paper informed me that having high intensity physical activity within certain applications can actually have a reverse effect due to unforeseen consequences like increased appetite. Thus, just engaging users off the couch was an effective step towards slowly but surely breaking our culture of sedentarism. Overall, researching my STS topic brought new light to this relevant and imperative topic.

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