Sociotechnical Synthesis

Gartner Hype Cycle, AI and Accessibility

According to the Gartner hype cycle, there exists a very formulaic curve for the adoption of new technologies. Whether it was cellular, mobile phones, or even cloud infrastructure, the expectations for new technology always exceeds its capabilities at the time. Only after the initial hype blows over does real development happen. My technical project is the development of generative-AI interfaces and their ability to increase productivity. The AI space is currently experiencing a Gartner hype cycle and we are beginning to see the slow adoption of these technologies into the workplace. My STS research was focused on analyzing the economic and political incentives that drove the adoption of new technologies, particularly with respects to technologies enabling disability. I chose to understand the motivations behind the adoption of technology because it seemed evident that it would help inform more inclusive and intuitive design practices.

In the technical portion of my thesis, my research consisted on transforming unstructured data (such as text in PDFs or articles on the internet) and displaying them using structured generative interfaces. One example of this type of technology in practice is Google's implementation of a weather dashboard to see the weather for the day. My research chose to develop a more simple set of software interface primitives that would help guide the user through their work using this design. The development of this software was published as an open source library. This library was used in an implementation to create a more intuitive web-based text editor which was able to quickly gain 200 active users who found that the generative interface made them more productive and focused. Increasing the individual

productivity of workers online will be an extremely important goal as the number of knowledge workers continues to climb in the coming years.

My STS research looked at technology adoption not from an individual standpoint but from the collective. Looking at case studies about government intervention in promoting accessible technologies, I was able to uncover the contributing factors behind both successful and unsuccessful technological disruption. What was most disturbing was how little incentive needed to be provided by the government in order to promote massive amounts of change. In some situations, a nominal monetary incentive was enough to radically shift the industry's efficiency and adoption curve. By breaking down these factors and analyzing the potential upsides of small government intervention, we can better inform resource allocation to producing favorable technological adoption within the private sector.

Between my technical report and STS research, I have discovered that my default perspective towards technology has always been as a tool to create change. More and more, I am finding that the technology almost seems to bend and adapt to the will of the people. Therefore, the relationship is not a one-way cause and effect but more of a conversation between the technological constraints and the desire and lives of people. When designing my library of primitive software components, I found that my inferences on how I could change user behavior using technology were preceded by the actual desires and user behavior. Therefore, I found myself adopting a feedback loop that looked a lot more reactive than proactive throughout my design. This was very similar to how my STS research paper went where I found myself shifting away from the technology to a more reactive approach towards understanding. Adopting this experimental approach of testing hypotheses seems counterintuitive to most innovations. I think my initial thoughts on my tech heroes like Steve Jobs were grounded in the belief that I set out to introduce technology that would change the way people worked. But really, that methodology is what sparks the initial false expectations mentioned earlier in the Gartner Hype Cycle. Its the

unrealistic expectations that people will immediately gravitate towards the "best", most efficient option. While this may be the case over longer time-horizons, I've grown to understand that society doesn't reflect the gravitation towards optimal solutions in the same way I've seen the engineering community. Understanding this was particular relevant to my STS research, as I focused specifically on exploring methods to incentivize better solutions for those with disabilities. The technology necessary to actually create large-scale change is still in that push-and-pull of tech capabilities and the need of the community. However, I was able to uncover small ways that government intervention could drastically expedite the design and features of many widespread technologies of the past. By harmonizing the implications of human-centered design with the benefits of intentional government intervention, I have found myself to be much more cognizant of the impacts that society and culture has on technology. Additionally, I believe my library of primitives could evolve into efficient methods of delivering accessible interfaces for many impacted by disabilities.