

Sociotechnical Synthesis

STS 4600

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Introduction

As time progresses and technology continues to play an increasingly vital role in our everyday lives, we as users must consider the many factors at play in our use of technology. We become distracted by fancy designs and interesting features of new products without realizing that behind the scenes, each click of a button or tap on a screen sends personal data to these private companies, often without our knowledge. But what is this data used for? At face value, it is used to create individual profiles for each user so that companies and advertisement agencies can target and display ads and content that users are most likely to click on. However, there are darker and more sinister uses with our data than we may realize, and companies that collect our data may not be as secure as we would like. In my STS research, I analyze some of the pros and cons of mass data collection and surveillance in order to come to a conclusion on whether or not this practice is ultimately beneficial or detrimental to society. I also look at ways that we as a society can promote the beneficial values of data analysis while mitigating the risks. This research was especially pertinent to me in how it relates to my technical Capstone project. In my Capstone, I, along with my four teammates and faculty advisor, am working closely with a team at Facebook's live streaming division to provide support and strategic advice. Throughout this process, we have leveraged Facebook's vast collection of user data to analyze our findings. The findings from this data, along with other quantitative and qualitative analysis, is used to provide the team at Facebook Live with a series of recommendations as part of the three to five-year strategic plan.

Summary of STS Research

In my STS research, I looked at both the pros and cons of data collection and surveillance. The cons included the risk of data breaches and hacks, the potential for targeted

political advertisements that take advantage of users' preferences to sway elections, and the loss of social forgetfulness when data is not properly disposed. However, the benefits discovered included medical patients' health predictions, travel and transportation streamlining, and the timely provision of relevant and engaging entertainment. I also noted that the benefits of data collection are often overlooked because they are so engrained in our society. Under the premise that individuals understand and take steps to mitigate the risks of data surveillance, I concluded that the practice ultimately advances our society.

Summary of Technical Project

The technical portion of my project produced 4 primary workstreams with which we would conduct our analysis. Firstly, we noted that Facebook Live saw a large uptick in viewership since the beginning of the COVID-19 pandemic, so we looked for ways to extrapolate out past the end of the pandemic to find if the increased viewership would remain or diminish. We found that countries with advanced digital economies were likely to sustain their increased viewership, while countries with less advanced digital infrastructure might see some drop-off as lockdown restrictions are reduced. Next, we looked to find new content that Facebook Live could create or acquire to attract and hold new viewers. We identified education and fitness content as two primary untapped markets that Facebook Live could become a leader in, as well as joining the morning or evening variety show markets to establish habitual viewership. Lastly, we created and designed a comment feed summarization and visualization tool that allows viewers and content creators alike to view which topics are being discussed in the comment feed and the audience's emotions surrounding each topic. The tool utilized techniques such as Natural Language Processing and Latent Dirichlet Allocation to identify discussion topics and recognize the corresponding emotions surrounding each topic. This tool

aims to encourage viewers to watch and interact with more streams and give them a stronger sense of community within the comment section. We anticipate that with these changes and recommendations, Facebook Live will be able to increase their viewership and more closely live up to their mission statement in the coming years.

Conclusion

These projects helped me to fully comprehend both the benefits and detriments of online data collection. While entertainment products such as Facebook Live could not be made possible without the utilization of user data, it is vital to both understand and mitigate the risks surrounding its use. Ultimately, it is the responsibility of all of us to put pressure technology companies, governments, and each other to protect our data so that we may reap its rewards.

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