Thesis Portfolio

Development of a University of Virginia Library Accessibility Chrome Extension

(Technical Report)

Social Media as a tool of Resistance and Control in the People's Republic of China

(STS Research Paper)

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Sociotechnical Synthesis

Free access to information online is critical to improvements in education, to society, and our understanding of the world. In the People's Republic of China, protest groups and the leaders of the Chinese Communist Party engage in discourse through social media with a variety of tactics that encourage or discourage the free spread of information to citizens in China and abroad. Similarly, large corporations like Amazon and Barnes and Noble control the flow of information in the United States, charging money for freely available academic resources from libraries. Building a Google Chrome extension to encourage the usage of University of Virginia resources and the analysis of current strategies used by conflicting groups online in China both assist in the freedom of information online through new tools and research on strategies used to resist government censorship. The free and equal usage of digital information is important in that it allows people a wider view of the world in which they live in. Whether by providing the citizens of China with information about the actions of their government or by providing easier access academic resources to disadvantaged students in America, the spread of accessible digital information is a worthy goal to strive for.

The development of a Google Chrome extension for the University of Virginia (UVA) library system will allow academic content to be free and easily accessible to users on the internet. Companies like Amazon and Barnes and Noble have made it incredibly easy for users to purchase content from their devices whereas accessing the exact same content from the UVA library is far less intuitive. By creating a Google Chrome extension that automatically appears whenever related UVA library content is searched for on sites like Amazon and Barnes and Noble, users are encouraged to use the libraries free resources instead of making a purchase on Amazon or Barnes and Noble. This creation is significant because it allows users who may not

have been willing or able to pay for academic content able to access this content easily. The free access of academic resources digitally contributes to the education of greater society as a whole. The extension will benefit many types of users by improving the ability for researchers to research by reducing research access costs, allowing casual users to more easily discover library resources, and by providing a more accessible way to access digital content rather than directly through the library website. Similarly, the censorship that has led to the lack of accessibility to unrestricted social media and academic information in modern China is an ongoing political issue.

Social media in the People's Republic of China has been used by both the leadership of the Communist Party of China (CPC) and protest groups to assist them in achieving their political goals. What strategies have these groups employed and how affective have they been? Given that these groups rapidly employ new strategies on rapidly developing social media platforms, the theory of co-production is employed in this paper to analyze the back-and-forth between these groups. The theory of co-production is characterized as the rapid influence that technology and society have on each other to develop in novel ways. It is expected that the protest groups will use strategies like using diaspora connections, expression of cultural identity, memes and online humor, and elicitation of foreign support. The CPC is expected to use strategies like censorship, "positive propaganda," and the physical crackdowns on protest movements. The government's strategies have arguably been effective within most of mainland China with the exception of Hong Kong where protestors have been able to use social media more effectively due to the fact that the "Great Firewall" is not in place. This research is significant because it addresses the technology at the heart of some the greatest conflicts in the most populous country on earth.

By working on both an analysis of Social Media in China and a Google Chrome extension for the UVA library, more was discovered regarding the freedom of digital information and important ethical questions could be brought into consideration. By working on these two projects at the same time, the author found that problems related to internet and information access were global rather than just being relegated to certain political and economic systems. People everywhere use the internet to access information and the validity, availability, and cost of that information varies significantly based upon where you live. Improving accessibility is a global issue because through greater accessibility people everywhere can improve their education and their lives. The role of the engineer exists as one who understands the problems of others and develops valuable solutions to those problems such as accessibility.