Social Network Service for Rapidly Growing School Community

Publics and Participation in Social Media during COVID Pandemic

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Introduction

Vaccination has been the most reliable, effective method to prevent COVID-19 infection since the first FDA approval of the Pfizer-BioNTech COVID-19 vaccine. However, the initial response of the public to this approval was somewhat skeptical due to its unusually rapid approval timeline, and people were reluctant to be forerunners and risk the side effects. Such sentiments have posed serious concerns to multiple countries in curbing the rising infection cases and prompted finding ways to encourage the public's participation. Social media such as Facebook, WhatsApp, etc. played a significant role in promoting vaccine acceptance and had a long-lasting impact on shaping their users' perceptions and behaviors during the pandemic.

Utilizing the power of social media in sharing information and shaping members' behaviors of a large community, my technical project aims to build a social networking platform for my former high school to promote sharing college admission and professional career-related information between current students and recent alumni, and tightly connect the current, largely divided school community.

The technical aspect of the research paper has led to questioning the potential impact of social networking platforms in the community and eventually motivated the incorporation of the STS study into the research. Since the outbreak of COVID-19 in December 2019 and its official declaration as a global pandemic in March 2020, the world is in chaos, and people are desperately seeking information (World Health Organization, 2021). These needs have led social media to become a central communication tool where its users can freely share information and feel a sense of belonging. With an increase in social media usage during this time, the impact of social media has grown large to the point that it plays a crucial role in shaping users'

participation in vaccinations. The STS study in this research paper primarily focuses on how social media was used as a means of promoting a higher vaccination rate in Israel and how social groups on multiple social planforms were shaped by its users' active participation.

Technical Topic

Started with only 25 students in total, my former high school has dramatically grown up to 250 over the past 3 years. With a sudden change in its size, the school has struggled with assimilating different groups of new students into the community, and this has resulted in notable segregation between original and new members of the community. This not only limits the opportunity of sharing information with others but also disrupts maintaining a connection between the current students and recent alumni due to weakened community spirit. As a result, students, especially those who can not afford extra education outside the school and therefore only rely on school resources for gathering college admission and career-related information, are at a huge disadvantage.

To address the concern, one alumnus and I formed a team and decided to build a social network service dedicated to the community where the current students can freely share information by anonymously posting college admission-related questions, look up alumni who pursued the similar pathways, and even get in contact with alumni for further questions. Our team has taken a series of steps to achieve the goal of the project. We started by collecting requirements from the school and translating their plain text answers into technical specifications. After two weeks of extensively gathering requirements from various sources, two main features were prioritized in the first minimum viable product: "Alumni search directory"

and "Anonymous posting and answering questions". Also, additional yet minor requirements were 1) the service should be accessible in multiple browsers including Safari, Firefox, and Chrome 2) the service should authenticate users by their own unique school email address so people outside the community can not access their data.

Because it was our "personal" project, we didn't have any staff administration, so we decided to utilize a project management tool GitHub Actions to follow each other's progress and break down the development process into multiple tickets/tasks. We ordered these tasks by their significance and urgency and then began searching for the tools suitable for this project. We soon decided on using React for the client-side and Django for the server-side, jointly with the PostgreSQL database. I mostly worked as a backend engineer in this project, implementing the application's server API and database management. One of the contributions I made was writing a shell script to automate the conversion of text-based excel data into the appropriate Django models for students or alumni data tables. The script tremendously helped us save time in the long term when the number of users was drastically rising.

During the data collection, a few ethical issues related to personal privacy arose. Our team initially planned to collect the current student's data through various sources such as LinkedIn, Facebook, and the school's counselors but found out these methods are illegal without explicit consent. So, we contacted the school office and asked for help collecting the current students' information and admission results data with the legally documented consent of individuals.

The automation for managing data and the basic form of client interface supporting searching and posting questions features are fully implemented, but the data collection is

estimated to take 6 months, according to the school office, to produce legally valid and reasonable amounts to operate the platform. Thus, our current goal is to continuously engage with the members of the community to advertise the platform and encourage them to participate. Once more data is collected, the maintenance of the service will be our major focus, and we will continue collecting users' feedback to implement additional features into the service.

STS Topic

As of Jan 18, 2021, 95 million people have been infected with the virus worldwide, with about 2 million deaths (Tsao et al., 2021). With the introduction of vaccines, infection cases have gradually diminished, but skepticism around the vaccine's potential harm and its wasted surplus is still limiting its effectiveness. Israel is no exception, but its citizen has cleverly taken advantage of social media to form social groups on Facebook where the groups' members collect, verify, and disseminate information about vaccines in the country (Manor & Israeli, 2021). The STS study of this research paper aims to delve into what motivation has led the citizens of Israel to form social groups on social media and share vaccine information, and how their participation has shaped the platform and users' vaccine adoption.

Deriving from the public and participation perspective, the study first questions what motivated the citizens of Israel to voluntarily form social groups on Facebook and share vaccine information. Israeli society is known to embody a strong ideology that stresses collectivism and personal sacrifice (Manor & Israeli, 2021). The ideology has been weakened due to the liberalization movement in the 1980s but regained its strength with the emergence of social

media where users can belong to a tight circle of communities. Such an ingrained ideology in the community, in conjunction with its small size and the second-highest rate of smartphone ownership, explains the Israeli's active participation in social groups on Facebook and the voluntary movements of anonymous, ordinary citizens (Silver, 2019).

In addition to the Israeli's cultural aspect, the inherent human nature to seek information and take action during the chaos explains the high participation (Buchanan et al., 2021). Israelis were looking for ways to get vaccinated early, even though they can anyhow get vaccines on their designated schedule. This was because they were in panic after witnessing infection cases among their family members and social groups. Two members of the social group, Sheila, and Ilana, describe the panic, "I am afraid of getting sick, because someone in my family has already gotten sick." and "Two of my friends who were careful and wore face masks all the time got sick, so I'm afraid I'll get sick too." (Manor & Israeli, 2021, "The Panic and Motivation to Join the Groups" section).

Arab countries had a lower rate of vaccine uptake, so there existed lots of leftover vaccines. However, Israeli Health maintenance organizations (HMOs) were struggling to keep track of these surpluses and their locations due to heavy workloads. Noticing the gap in bringing vaccine surpluses to whom want it, a few ordinary citizens of Israeli voluntarily created social groups on multiple platforms including WhatsApp, Telegram, and Facebook. The groups soon attracted an unexpectedly high number of members, and they started sharing the vaccine's availabilities and their geographical locations (Manor & Israeli, 2021).

The size of one of the groups on Facebook, called "Vaccines Between Friends", has grown up to 63,000, and employers from the HMOs used the groups as a medium to report on vaccine surpluses (Manor & Israeli, 2021). Social media was the perfect cue to alleviate the HMOs' struggles because people can instantly share information, and one post can be publicly accessed by multiple people. The impact of the group was further amplified because users on social media prefer interactions with like-minded others, and this tendency generates an "echo chamber" phenomenon in which members of the group reinforce the need for vaccination and oppose any unverified conspiracy (Lang et al., 2021). Furthermore, according to social contagion theory, individuals tend to adopt the behaviors of others in the social network (Snow, 2013). With the far-reaching impact, the group even created a sense of social pressure in which users outside the group also feel that they need to get vaccinations like everyone else. This has led to more engagement in the group and facilitated sharing of vaccine information.

The members of the "Vaccines Between Friends" group tend to remain even after they get vaccinated to continue collecting information for their friends and families and benefiting other members in the group. The admins of the Israeli social groups noted that even though they were not sure the groups would be maintained after the end of the campaign, they hoped that the infrastructure created on these platforms could be used for future communication between public and state institutions (Manor & Israeli, 2021). It is evident that social media has served a crucial role in sharing timely information during the disordered time and helped health organizations to promote vaccine adoption in several countries. Often overlooked as a casual media consumption platform, social media has proven its usefulness in doing social good and will likely be considered one of the viable and effective options for communication by various organizations.

Next Steps

The COVID-19 pandemic is an ongoing disease, and our society is currently on the edge of transitioning our attitude from ending the disease to coexisting with it while keeping its spread under control using preventative public health policies and vaccinations. While skepticism around the transition is prevalent, social media will continue to function as the main source of sharing related information and hopefully change the opinions of skeptics. South Korea recently announced to join the transition labeled "With Corona" and some users expressed concerns that it's a risky, inconsiderate decision (Smith & An, 2021). Between the end of the Fall and early Spring semesters, I aim to collect and analyze users' responses to Instagram posts with the "With Corona" hashtag and Facebook posts with related news by comparing positive and negative keywords and drawing the trend of which attitude prevails. This approach will help me understand what kinds of engagements exist on social media to change users' perceptions.

Identifying the impact of social media in the current world has led me to view my technical project from an entirely different perspective. Before taking the STS research, I only focused on my engagement as an engineer in building the social network service, but now I am more aware of different groups of users including the current students, recent alumni, and schoolteachers who will amplify its impact on the community.

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