Social Media's effect on Election Cycles

(STS Topic)

Revolutionizing Food Delivery Services with Home-Cooked Meals

(Technical Topic)

A Thesis Prospectus
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By

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On my honor as a University student, I have neither given nor received unauthorized aid on this assignment as defined by the Honor Guidelines for Thesis-Related Assignments.

Signed: _____Date: _____

Shivani Saboo

Approved: _____Date: _____

Michael Gorman, Science, Technology and Society

Approved: _____Date: _____

Ibrahim Ahmed, Computer Science

Peer/Instructor Feedback

Monday Final Exam Feedback
The feedback Professor Gorman gave me on the first Final Exam period was extremely valuable to me in revising and improving my paper. As such, I actually drove back to UVA from home to attend the Monday Final Exam period to get additional feedback from him.

First and foremost, I believe the last few weeks have taught me a lot about the *revision process* which has been invaluable to me and allowed me to grow as a writer and an engineer. During this period, Professor Gorman and I discussed clarifying and elaborating some of the points we had discussed on Friday. I talked more about how I want to research the IRB process next semester and design a survey, but not actually **execute** it for this class. I also discussed an example of how social media platforms can subtly integrate advertisements without users even knowing – this was done to strengthen my comparison of online news vs physical newspapers. All such edits were highlighted in blue, as such.

Friday Final Exam Feedback
During the Final Exam period, Professor Gorman gave me feedback in addition to the comments he wrote on my original submission. Professor Gorman talked to me about going through an IRB in order to survey my peers but also discussed alternative methods that would allow me to stick to the timeline required for the class. After we talked at length, we decided an alternative method of informally discussing with my classmates to get their thoughts used to format a *potential* data collection survey on this topic for future use would be the best way for me to proceed. I discuss our conversation and my conclusion below in the corresponding section. In addition, we talked about the comparison between news through social media and news from physical journals like newspapers. The comparison, I believe, highlights the dangers of political ads through social media in a very powerful way – I elaborate this in the corresponding section below as well. All changes have been highlighted in yellow below.

Prior to Dec 6th
I received a lot of excellent feedback from my peers – both in my STS class and outside of class. One of my friends, Habib Karaky (in a different STS section), helped me a lot in particular for my STS section. The issue of social media and elections is very, very important to me and something I frequently talk about with my friends. I was very passionate and heated when I first embarked on this project. Habib, however, helped me logically talk through the issue and break it down into a flow of ideas that rationally made sense. His advice allowed me to pull the emotion out of the subject and evaluate it objectively – this helped give me a stronger framework for the thesis and a better footing for how to conduct further research and data collection next year.

From my presentation in class I also got valuable feedback. First, it reinforced how important this topic is to peers my age. Second, my peers gave me guidance on how to frame my data collection next semester. As I elaborate on later, for part of my project I want to collect data from students at UVA to embellish my other research on how social media can affect political beliefs before important elections. During my presentation/class I got valuable feedback on areas to consider/focus on for this portion of my project. Though that feedback did not necessarily change anything in my current documentation, it was very valuable and is something I will account for when executing my project next semester. In addition to their feedback on data collection, Professor Gorman also discussed with me ways to pursue this. In our meeting, we discussed how IRB's work as well as how to do data collection without having to use them. Given the scope of this project, I won't be employing the IRB method for my data collection. Instead, I will be using an alternative method as Professor Gorman suggested – I will also be consulting some professors from the Batten school on the most effective and accurate way to go about for collecting data and surveying my peers that gives me meaningful and usable data for my research next semester.

Additionally, Professor Gorman, in his written feedback, mentioned using the Actor-Network theory as a connection between my STS and Technical thesis portions citing that both involve building networks. I thought for a long, long time about this comment and how I wanted to address it. Though I see how one could evaluate both as an ANT framework, I ultimately decided I did not whole-heartedly agree with this point. My technical thesis revolves around a home-food delivery app which I absolutely agree is an example of the Actor-Network theory. My STS thesis, however, I do not think necessarily revolves around building a network. There certainly are several actors that impact the complex issue of social media in politics/elections. That being said, after hours of thought and conversation, I believe the original framework I used for my STS thesis – Techno Politics – is a better fit. I believe the issue of social media in elections is generally standard of the complexity in general of technology in politics and government. Technology grows at a pace that is too quick for our government and bureaucratic law regulation methods to keep up with. This difference in pace has had a variety of complex and interesting on society – one of which, I chose to write about. For this reason, I believe my original STS framework is a better fit.

Finally, in general discussions with my peers and Professor Gorman the past few weeks I gained some clarity in the future direction of my project. After these discussions, I decided to clarify that my project this year is to find whether there is significant evidence to show that there does exist an impact from social media to election results. I do not aim to prove or show why that is or is not a good or moral impact or how to change the current system. I see this issue as two phased: the first phase is to show there is an impact (or not) and the second phase is to discuss the morality of it and whether the system should be changed. My project for my time at UVA will be the first phase but, as I care deeply about the issue, I fully intend on carrying out the second phase in the future outside of this class.

I.   Introduction

My STS thesis will be written on the impacts of social media on election cycles in America. Elections are one of the most sacred tools to a democracy and have the ability to completely transform our community. With the rise of social media, candidates and other major players in elections have been able to utilize this technology to their advantage while our government, unfortunately, has been unable to regulate such usage. The research on the intersection of the rise of this technology and the effect it has on politics and our community is extremely unique to this period in history and can completely change the course of our future.

My technical thesis, which is being done through my capstone class, involves building an application that facilitates the ordering and delivering of home-made food. The application, called *HomeEats*, mimics food delivery applications like *GrubHub* and *UberEats* substituting restaurant food for home-made food. Food delivery applications have grown very popular and people, especially millennials, have become increasingly dependent on these applications for meals that come directly to them and require no work in the kitchen on their part. My team's application allows these same people to expand their dining options to home-cooked meals – often a healthier alternative.

My STS and technical topics are unrelated. I chose my technical topic because I know how revolutionary the share-economy style applications have become in society today and I wanted the opportunity to build a similar application. I selected my STS topic because I believe elections and the ability for people to voice their opinion to their government is absolutely critical to any society. In recent years, social media has massively shaped elections and as a society we have been unable to regulate it at a fast-enough rate. I believe in order to manage such an important

part of society, we must be able to measure it first and, as such, I chose to pursue this topic for my research.

II.   Technical Topic

REVOLUTIONIZING FOOD DELIVERY SERVICES WITH HOME-COOKED MEALS

INTRODUCTION

For our Capstone project, we are not working for a pre-existing organization but rather for our Professor who is acting as our client while we work on the HomeEats initiative. The HomeEats initiative is the default project pre-approved for our class.

SYSTEM DESIGN

Our team will be developing a web application called HomeEats, which will serve as a food delivery service, similar to UberEats and Grubhub, but tailor made for home-cooked meals. HomeEats will allow consumers to finally have the ability to access fresh, home-cooked meals without having to go buy ingredients or prepare the dish themselves. Unlike other food delivery platforms, this convenience does not come at a sacrifice of food quality or fresh ingredients. To use the platform, consumers create an account on the site, enter their location and instantly view a large selection of dishes being cooked by amateur cooks in the area. They can view all the ingredients in the dish, the type of cuisine it originates from, estimated preparation time, and background on the chef, including reviews from previous customers. Once they select the dish they want, customers purchase the dish directly online, at which point the chef will be notified that an order has been placed and begin cooking. Home chefs will be able to specify when they are online and available to cook, how many orders they can take at a time, and in the case of a

bulk order being placed in advance, they will have a few hours to choose whether or not to accept the order.

This application will be built using primarily Django, which is a popular framework based in the Python programming language often used for web applications of this scale. Our application will also connect to a PostgreSQL Database which will store all the information on the site from cooks and customer user accounts to dishes, reviews, and purchases. In order for our team to simultaneously contribute to the project, all of our code will be hosted in Github, an online software development platform. The project will be completed over the course of the Fall and Spring semesters of the 2019-2020 school year through our CS Practicum class and our client is Ahmed Ibrahim, the course professor. This is not a project for an external company, it is an internal project not meant for profit.

Our team will meet with our client bi-weekly at the end of each sprint cycle. For our purpose, a sprint cycle is a two-week development period where each team member is tasked with a feature to implement or work on, which can be seen in Figure 1 below. The purpose of the sprint cycle is to allow for continuous planning, focused development, and short-term goals that the team can set and strive to reach. For example, a sample sprint goal may be implementing the customer landing page where they can browse through dishes. The following sprint goal may be adding filters to the dishes to allow for improved site navigation. These chronological short-term goals will lead up to the long-term goal of launching a fully functional site, allowing customers to order meals directly from cooks in their area, and give full administrative control to our client.

HomeEats fits into the health and social dimensions of the food delivery app market by providing the same convenience and ease of use without sacrificing food quality.

SYSTEM REQUIREMENTS

Gathering system requirements are very important because it provides a solid foundation
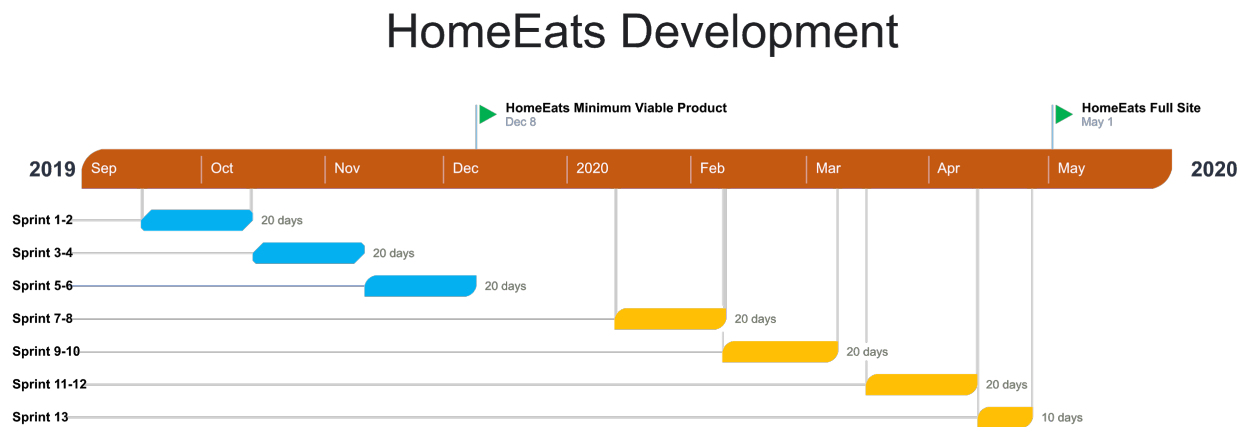
HomeEats Development

Figure 1: HomeEats Development Timeline (Created by Saboo, 2019)

for the system and gives the project team a clear roadmap of the development cycle and how to prioritize tasks based on time and importance. For our application there are three main user categories: the cook, the admin, and the customer. Below are our requirements split up by category as well as necessity.

Minimum Requirements

Admin Users.

- As an admin, I want to approve any cook account before it is created, so that I can guarantee the customers a reliable experience
- As an admin, I want to make sure any updates to a cook's personal account information are reviewed, to maintain their accuracy
- As an admin, I want to be able to review reports and reviews, and potentially ban users or cooks, to keep the site safe from bad actors
- As an admin, I want to be able to view the orders that a cook has received.
- As an admin, I want to be able to view all accepted orders with total amount paid including amount going to the cook and HomeEats.
- As an admin, I want to be able to view cooks' cancelled order history with reasons.
- As an admin, I want to be able to set which reasons a cook can give for cancelling an order.
- As a system administrator I want to ensure that a payment option is selected prior to an order being processed, so that I can ensure meals are paid for before a cook begins to prepare the dish.

Cook Users.

- As a cook, I should be able to apply as a cook with my First Name, Last Name, Address, and Kitchen License
- As a cook, I should not be able to login to my account unless my application has been approved

- As a cook, I should be able to set what plates are available as soon as I log in, so that I can quickly get online and start receiving orders

- As a cook, I should be required to enter/edit my name, email, phone and address, so that I can be contacted in many ways

- As a cook, I should be able to add a new dish to my list of available dishes

- As a cook, I should be able to set a picture, ingredients, price, time to deliver, name, and type of food

- As a cook, I should be able to set which dishes I'm willing to make, so that I don't have to make dishes that I don't have their ingredients.

- As a cook, I should be able to report customers and their reviews, in order to protect my reputation from unfounded criticism and ban disrespectful or malicious customers

- As a cook, I should be able to make a separate account if I want to order through the site, so that I don't get confused between things I've ordered and things I have to cook

- As a cook, I should be able to set my own delivery range centered at my address, so that I am not pressured to deliver outside of my comfort zone

- As a cook, I should be able to tag food as vegan, allergy, etc. so that customers can choose foods which are suitable for them

- As a cook, I should be able to set a certain mileage I'm willing to travel so that I can have quick and efficient delivery service

- As a cook, I should be able to set a limit on how many meals I can make in a specified time frame, so that I don't get overbooked

- As a cook, I should be able to set when I am open and closed, so that customers can't attempt to order food from me when I am not available

- As a cook, I should be able to accept or reject meal orders so that I have control over what meals and how many meals I am making
- As a cook, I should be able to set an estimated cooking and delivery time, so that customers are aware of an approximate waiting time

Customer/Diner Users.

- As a customer, I should be able to see the ingredients in the dishes I plan to order
- As a customer, I should be able to see a picture of the dish I plan to order
- As a customer, I should be able to see the cost of the dish I plan to order
- As a customer, I should be able to see the estimated time of cooking for the dish I plan to order
- As a customer, I should be able to view the type of food I plan to order (e.g. Chinese, Thai, Indian, Mexican, etc.)
- As a customer I should be able to sort the dishes by price
- As a customer I should be able to sort the dishes by rating
- As a customer I should be able to only see dishes from cooks who can deliver to me
- As a customer I should be able to sort the dishes by the type of food I plan to order (e.g. Chinese, Thai, Indian, Mexican, etc.)
- As a customer I should be able to rate the food I purchase on a scale of 0-5 stars
- As a customer, I should be able to favorite a cook or a dish, so that I can easily find the cook or dish again
- As a customer, I should be able to review the dishes that I order, so that other customers are aware of the quality of that dish

- As a customer, I should be able to see a delivery status that indicates started cooking, on the way, and delivered so that I know when to expect my food

- As a customer, I should be able to set multiple addresses so that my food can be delivered to a location, even if I am not yet there

- As a customer, I should be able to see an average rating for each dish if the data is available

- As a customer, I should be able to cancel an order that has not started cooking yet so that I don't waste food and money if I change my mind

- As a customer I want to be able to tip the chef preparing my dish so that I can reward and encourage my favorite chefs.

Desired Requirements

Admin Users.

- As an admin, I want to be able to view revenue reports that can be adjusted to a specific timeframe (week, month, quarter, semi-annual, annual, custom).
- As an admin, I want to be able to view cooks' online time and offline time per week. *Cook Users.*

- As a cook, I should be able to set a limit on how many meals I can make in a specified time frame, so that I don't get overbooked *Customer/Diner Users.*

- As a customer, I should be able to order at least 3 hours in advance

Optional Requirements

Customer/Diner Users.

- As a customer, I want to be personal information to be anonymous when messaging the cook, so that my information is kept private
- As a customer I want to be able to message my cook to be able to customize the order to my liking.

III.   STS Topic

For my STS topic, I will be discussing the impacts of social media on elections in America. There are many players in an election cycle from candidates, campaigns, sponsors, voters, the government, and more. The rise of social media has had massive impacts on each player's role in elections. This phenomenon has emerged at such a rapid pace that local governments have been unable to regulate social media usage in elections in order to maintain the integrity of each race. I find this issue to be a fascinating combination of two passions of mine – technology and politics. This is why I will be utilizing the techno-politics framework to further delve into this issue.

In the past decade, candidates have used social media to spread their message to a larger selection of their constituents and have effectively engaged younger voters in the process. Regular social media is a great way for candidates to advertise for free as opposed to more traditional advertisements such as billboards and on television which cause a great deal of money. Recently, however, large social media mammoths have allowed for paid ads – any entity can purchase space on the social media platform that boosts their message on the screen other users view. Candidates have been quick to utilize this system to their advantage with candidates

like Hillary Clinton and Donald Trump having spent over 81 million dollars in ads on Facebook alone during the 2016 Presidential Election (Halpern, 2019). Unlike traditional advertisements, paid advertisements on social media come with no fact-checking allowing candidates to sometimes spread false information about themselves, a policy, or another candidate. This can have grave impacts on public perception. About 68% of Americans get news via social media with 20% using it very often as their news source (Shearer, 2019). As a result, the increase of false information being sponsored on social media sites – especially when pertaining to elections, the building block of a democracy, is incredibly dangerous, having disproportional harm on less educated groups in society. Perhaps a greater issue, however, revolves around the algorithms social media platforms use in the spread of content. Sites like Facebook use "propriety algorithms that promote some content over others" based on categories they place each user (Halpern, 2019). It is common for them to place each user into basic groups by gender, race, age, and geographic location. Recently, however, Facebook has begun placing users into political lineation categories such as liberal, moderate, and conservative (with a suspected further subcategorization). They use these categories to help clients direct their paid advertisements to certain groups of users. In the framework of elections, this system automatically gears certain campaign information to categorized users. In other words, someone who has been labeled as conservative based on their social media usage (pages they frequently visit, content they engage with, etc), are much more likely to see conservative campaign ads and vice versa (Conger, 2019). Though this may make sense from a corporate standpoint, it completely disrupts the nature of a democracy. With this system, people with a certain political lineation only grow more and more in tune with that lineation. Nobody will see the diverse selection of candidates, policies, and perspectives available to them at any given election. As a result, people are not being shown an

accurate reflection of their democratic options in a fair, unbiased way. This is a fairly new problem. In the past, people mostly got their news from physical newspapers and journals such as the Washington Post or the New York Times mailed to them every morning. For the most part, these newspapers would show a wide selection of the news and a variety of political views. Especially in regard to elections, these physical papers would show information regarding several candidates across the political spectrum. In addition, everyday Americans would have to be subscribed to these newspapers, choose to pick it up, and _choose_ to read certain sections of the paper in order to get information pertinent to elections. Compare this to how current millennials get their news from social media: As we mentioned before, the algorithms used by these social media platforms prevent people from seeing information on all the candidates in each race. Perhaps worse, however, social media pushes out these political ads on everyone's newsfeed without our explicit permission. As an individual, I could be going to check my social media for pictures of a friend or to message family across the world and suddenly be hit with strong political ads. The point being, even when I am not trying to get political information on elections, several social media platforms will subtly integrate these paid ads into what I view – subconsciously reinforcing my suspected political beliefs. In newspapers, it is very clear by the headings, section title, and formatting what content is a paid advertisement and what is not. In social media platforms like Facebook, however, that clarity is deliberately withheld. Advertisements are formatted the same way content from Facebook Friends; this means if a user, like myself, is scrolling through my newsfeed it will **not** be immediately clear to me what is a paid advertisement and what is content endorsed by my friends. In this way, social media can very subtly integrate these advertisements, especially political ones, into the lives of users. Political ads have existed since the beginning of time, but this contrast between their appearance

in physical newspapers vs on social media shows the danger they can play in society. In this regard, social media networks unknowingly play a hand in how elections turn out. In a country with a two-party system, these effects go even further – they create an even more politically polarized society leading to more deadlock in our governmental bodies and hindering us from making substantial legal progress in any area of policy.

Given the nature of social media and technology, it has grown and integrated into areas of society much faster than our government can manage. In order to manage and regulate such a system, however, it is crucial to be able to measure the actual presence and degree of impact of this political bias. As such, I hope to further research the actual tangible impact of the social media political bias system in our society by measuring the volume of the impact. I will do this within the framework of the UVA community to see how it impacts a small, local society. I will start with more research taking a deeper delve into the algorithms social media platforms like Facebook use to deviate political advertisements. To complement this research, I wanted to do some field work surveying my peers in the UVA community. Doing this type of survey, however, usually requires going through an Institutional Review Board (IRB) to ensure ethical survey and research practices. Given the timeline I have for this project, going through an IRB may be out of scope. As such, I plan to host an informal discussion with my peers in my STS section about their personal experiences with social media, elections, and the intersection of the two. I hope to use the information I collect from my classmates to not only support my research but to design a proper survey and data collection system that could be used in the future. As I mentioned earlier, this topic is very important to me and I intend on continuing my research on the issue even post-graduation. For my project next semester, I would like to be able to design a more sophisticated data collection plan, based on the responses I get from my STS classmates,

that could then be used in the future when expanding upon this project. In addition, though I won't be using an IRB, next semester I intend on doing more research (with the help of Professor Gorman) on how exactly IRB's actually work and the steps required for them. I hope to learn more about the steps needed for this process and to design the survey - what questions work? which questions are effective? which ones tell me the most valuable information? - that can then be used beyond this class. Though an IRB is out of the scope and timeline of this class, by spending time next semester to design the process and going through all the preliminary research and laying out all the steps necessary, I believe I do a sufficient amount needed for my Thesis Research. Furthermore, I believe this makes it easy for myself (or anyone) to pick up this project and pursue it further beyond next semester to actually **execute** the survey I designed through an IRB and collect real data (a post-graduation dream of mine).

IV. Conclusion

Though my STS and Technical portions don't relate, they both allow me to explore relevant issues centered around the integration of technology into society. My research and work for both portions of my Thesis will allow me to find insights that can have a tangible impact in the everyday lives of me and my peers. To me, this is extremely important. I passionately believe in putting work into things that can have a tangible impact in my society and I believe both will allow me to do this.

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