

Revolutionizing Food Delivery Services with Home Cooked Meals
(Technical Topic)

The Impact of Social Norms and Government Regulation on the Rise and Fall of Vaping
(STS Topic)

A Thesis Prospectus In STS 4500 Presented to The Faculty of the School of Engineering and
Applied Science University of Virginia In Partial Fulfillment of the Requirements for the Degree
Bachelor of Science, School of Engineering

Technical Project Team Members

Guillermo Saavedra

Shivani Saboo

Ankith Yennu

Habib Karaky

Isabel Kershner

Jack Short

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.

Signature: _____ Date: _____
_____ Steven Morrison

Approved: _____ Date: _____
Michael Gorman, Science, Technology and Society

Approved: _____ Date: _____
Ahmed Ibrahim, Computer Science

TECHNICAL PROSPECTUS

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 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.

STS PROSPECTUS

The Impact of Social Norms and Government Regulation on the Rise and Fall of Vaping

Introduction

Vaping products have been around for decades, but only recently were they brought to mainstream attention. The first emergence of vapes was in 1927, when Joseph Robinson filed a patent for an Electric vaporizer device.¹ Tobacco products such as cigarettes would continue to be prevalent throughout the United States and the world, but vapes gained little popularity. Within the last decade, however, the use of vaping products has grown exponentially. Once just a niche product with a social stigma against it, vaping products became fashionable to own and use. The widespread use among children is especially concerning. The CDC reports that e-cigarette use by middle and high school students tripled just from 2013 to 2014.² Although these products are thought to be healthier than cigarettes, long term health effects are still unknown and further scientific studies are required.³ Also, the recent outbreak of vaping-related illnesses have an unknown cause, although it is unlikely that the big vaping companies such as Juul are to blame. A possible cause of these illnesses relates to some vape products containing THC, especially ones that are bought illegally and therefore without regulation. This is a different topic entirely because government regulation does not cover these products, however, a legalization of marijuana could promote legal purchases and therefore regulation. Social trends contribute largely as vaping marijuana has also grown exponentially compared to traditional means of smoking. Of equal concern, Juul is accused of selling over one million contaminated pods and not informing the public even though they were fully aware of the contamination.⁴ American consumers can generally feel that the products they consume are safe, largely because of government agencies like the FDA. The extent to which the FDA can regulate vaping products has been a large area of debate. The FDA has played a large role in cracking down on Juul for targeting youth.⁵ But if Juul is able to distribute a million contaminated pods without the FDA or public aware, the function of the FDA seems to have failed. A complex network of actors exists which includes vape users, the general public, lobbyists, lawmakers, vape manufacturers, businesses, news organizations, doctors, and scientists. The actors are coupled with the relationships in the network, and thus all of their actions are interactions which broadly affect the other actors within the network. The interplay of social norms and legislation affects all actors within the vaping network and no single part can exist in isolation. Because of this, the actor network theory explains this complex system of entities very well and can be applied to analyze potential outcomes.

Social Norms

The issue of vaping is a great case study into the power of social norms and trends. Juul emerged onto the vaping scene in 2015 and by 2018 it controlled over 70% of the e-cigarette market.⁶ The Juul was not necessarily better than other vaping products, but its sleek design and tasty flavors gained liking from many users, especially youth. Millions of users began taking daily puffs from their Juul, and schools were overwhelmed with the outbreak of teen vaping. Vape confiscations became commonplace in schools, even as young as middle schoolers.⁷ Despite the legal age to purchase tobacco products becoming 21 in many states, the epidemic did not stop. Teens found ways to circumvent the law and get their hands on vaping products. The small and discreet nature of vapes such as Juul makes them easy to hide and hard to detect. One thing that could affect the underaged use of vapes, however, is a social trend that suggests so. A huge motivator to youth is social pressure telling them to or not to do something. A trend is often more powerful at influencing than a parent or principal would ever be. Recent news beginning in August of this year about the dangers of vaping kickstarted a viral movement to quit vaping products such as JUUL.⁸ NY Times published an article on August 31 detailing the over 215 patients suffering from vaping-related illnesses, and within 24 hours Twitter began trending with videos of Juuls being thrown away and destroyed.⁹ The speed in which public opinion can shift is astonishing. The once hip and cool trend of Juuling suddenly started to fade and once again became marked with stigma. In this era of social media, the success of a product often hinges on gaining popularity and appearing cool. Juul capitalized on this quickly by appealing to younger users and therefore prioritizing profit over the safety of children. In the same way that Juul rose with exponential growth, social norms may also become their downfall.

Government Regulations

The fight over vaping legislation is a microcosm of the larger problems our government has relating to lobbying. Similar to the gun control and climate change debates, lobbyists have tremendous power over the legislation that gets passed on vaping products. Like the gun control issue, vaping is an epidemic which is affecting the safety of children across the country. Like the climate change debate, the regulation of vaping can have negative consequences for the current state of our economy. Matters such as these should not be decided simply by who has the most money. Companies such as Altria, who acquired a large stake in Juul, have the resources to significantly alter regulations through lobbying. However, it seems that Juul has given in to at least some of the pressure put on them by the FDA. Certain Juul flavors which appeal more to younger users such as mango and fruit have been removed from Juul's online store.¹⁰ Purposely targeting children with advertisements for tobacco products is not good public relations, so Juul

has been making deliberate action to undo anything that could be seen in that manner. Some local governments have been more decisive and none more so than San Francisco. The San Francisco Board of Supervisors unanimously voted to ban all sales and distribution of vaping products, largely because of the epidemic of underage vaping.¹¹ As with all legislation, this ban has many unintended consequences. Many vaping products including Juul have marketed themselves as an alternative to smoking, or even as a way to quit smoking. Smoking cigarettes still remains legal in San Francisco even though few would argue that smoking is healthier than vaping. This means that adults who transitioned to vaping as a “healthier” alternative to smoking will no longer have this option. Also, many small businesses have begun to flourish as a result of huge profits from vape sales. So a simple question emerges: should governments neglect adult smokers and small businesses in order to minimize the number of youth who use vaping products? The answer is far from simple and once again relies on a complex network of factors where a win for one actor is a loss for another. The lines have blurred between the opinions of political parties and traditional interest groups. Republicans (often thought of as more anti-drug) and Democrats alike have voiced both support for and against such vaping regulations. When the safety of the country’s children is called into question, there can be little room to debate the economic or fringe benefits given to others.

Conclusion

Both social norms and government regulations can play a major role in the fluctuations of the popularity of vaping products. However, these two factors do not exist in isolation and are constantly affecting each other. Government regulations often mirror the current views of society. As medical studies come out which reveal negative health effects from vaping, public opinion will decline which makes government regulation more likely. After all, a core tenet of our democracy is that the government represents the views of its constituents. Doctors diagnose illnesses which get reported by news organizations, and the news is consumed by the public which affects our society’s opinions and therefore affects regulations. Whether these factors will ultimately lead to vaping’s demise is still unknown, but they certainly are instrumental in shaping the way that we think about vaping, positive or negative. The current generation of instant gratification and trend seeking is a perfect fit for the rise of the vape. The question remains whether health and safety will take priority over economic opportunity.

WORKS CITED

1. "US1775947A - Electric Vaporizer." Google Patents, Google, patents.google.com/patent/US1775947A/en.
2. "E-Cigarette Use Triples among Middle and High School Students in Just One Year." Centers for Disease Control and Prevention, Centers for Disease Control and Prevention, 16 Apr. 2015, www.cdc.gov/media/releases/2015/p0416-e-cigarette-use.html.
3. Hajek, Peter. "Electronic cigarettes: Review of use, content, safety, effects on smokers, and potential for harm and benefit." PubMed Central, November 2014, <http://europepmc.org/backend/ptpmcrender.fcgi?accid=PMC4487785&blobtype=pdf>
4. Telford, Taylor. "Juul Put 1 Million Tainted Pods into the Market, Former Executive Alleges in Lawsuit." The Washington Post, WP Company, 30 Oct. 2019, www.washingtonpost.com/business/2019/10/30/juul-put-million-tainted-pods-into-market-former-executive-alleges-lawsuit/.
5. Commissioner, Office of the. "FDA Warns JUUL Labs for Marketing Unauthorized Modified Risk Tobacco Products, Including in Outreach to Youth." U.S. Food and Drug Administration, FDA, www.fda.gov/news-events/press-announcements/fda-warns-juul-labs-marketing-unauthorized-modified-risk-tobacco-products-including-outreach-youth.

6. Craver, Richard. "Juul Expands e-Cig Market Share Gap with Reynolds' Vuse." Winston-Salem Journal, 25 Aug. 2018,
www.journalnow.com/business/juul-expands-e-cig-market-share-gap-with-reynolds-vuse/article_0bb4d442-fc0f-5c00-8b05-29bbf95dc985.html.
7. Chaker, Anne Marie. "Schools and Parents Fight a Juul E-Cigarette Epidemic." The Wall Street Journal, Dow Jones & Company, 4 Apr. 2018,
www.wsj.com/articles/schools-parents-fight-a-juul-e-cigarette-epidemic-1522677246.
8. Richtel, Matt, and Sheila Kaplan. "The Mysterious Vaping Illness That's 'Becoming an Epidemic'." The New York Times, The New York Times, 31 Aug. 2019,
www.nytimes.com/2019/08/31/health/vaping-marijuana-ecigarettes-sickness.html.
9. Carman, Ashley. "People Are Throwing Their Juuls out Windows and Drenching Them in Water Just to Quit." The Verge, The Verge, 11 Sept. 2019,
www.theverge.com/2019/9/11/20859645/juul-quit-vaping-cdc-fda-flavor-pod-ban-death.
10. Nedelman, Michael. "Juul to Stop Selling Several Flavored Products in the United States." CNN, Cable News Network, 17 Oct. 2019,
www.cnn.com/2019/10/17/health/juul-stop-selling-flavor-bn/index.html.

11. Klivans, Laura. "San Francisco Bans Sales Of E-Cigarettes." NPR, NPR, 25 June 2019, www.npr.org/sections/health-shots/2019/06/25/735714009/san-francisco-poised-to-ban-sales-of-e-cigarettes.