Revolutionizing Food Delivery Services with Home Cooked Meals

Impact of Food Delivery Apps to Local Restaurants' Profits

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By
Guillermo Saavedra-Diaz

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Technical Project Team Members

Habib Karaky, Isabel Kershner, Steven Morrison, Shivani Saboo, Jack Short, Ankith Yennu

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: 12/12/2019

Approved: Catherine D. Baritaud Date: 12/13/2019

Catherine D. Baritaud, STS Division, Department of Engineering and Society

Approved: Ahmed Ibrahim Date: 11/25/2019

Ahmed Ibrahim, Department of Computer Science

Online food delivery has been fueled by mobile apps like UberEats which allow users to get instant access to hundreds of restaurants nearby. Online food delivery apps currently give users access only to restaurants and the home-cooked meal market has been ignored. The technical project will serve as an online platform where users can buy home-cooked meals and have the food be delivered to them within a timely manner. The STS topic has been tightly coupled with the technical project by investigating the impact that food delivery apps are having on small local restaurants' profits. Both the technical project and food delivery apps share similar functionalities, but the distinction can be seen in the actors that play a role in the process.

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. 8

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.

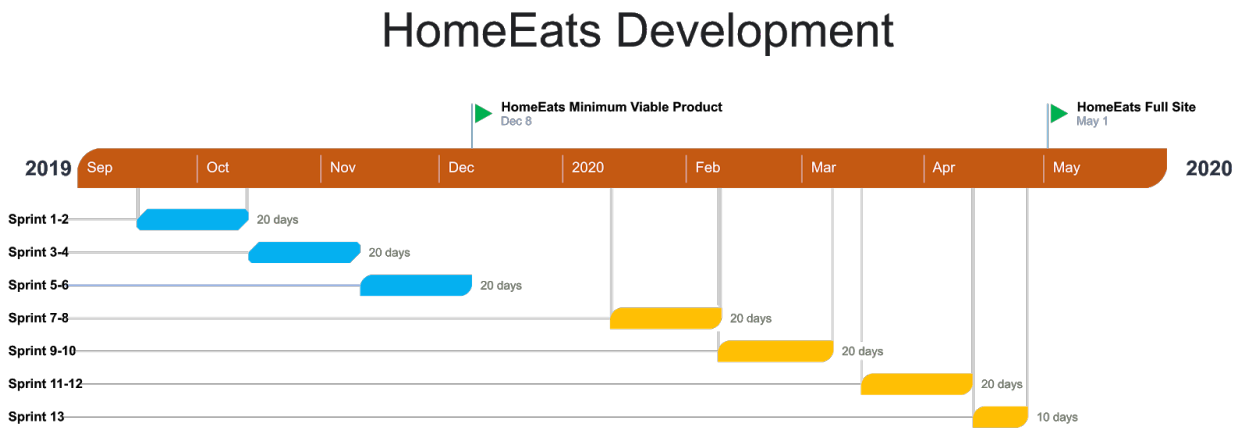

Figure 1: HomeEats Development Timeline (Created by Saboo, 2019)

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.

FOOD DELIVERY APPS AFFECT LOCAL RESTAURANT'S PROFITS

Food delivery apps that exist today revolve around a two-sided market which involves customers and restaurants. The technical project shares many functional similarities with popular food delivery apps where a customer orders a meal online and it gets deliver to their location. This enables tight coupling with the technical project which purpose is to allow people to sell homemade food and delivery it to customers. This type of business model might make sense for families looking to make an extra income with food and ingredients around their homes but can negatively affect small local restaurant who do not have the infrastructure to support the demand that popular food delivery apps are creating. The main distinction between food delivery apps and the technical project is the actor who produces the food which in the case of the technical project is families in the United States.

Large restaurant chains have quickly partnered with food delivery apps and have been thriving but for small local restaurants, the story is not the same. The Science, Technology and Society topic is looking to investigate how food delivery apps are affecting the profits of small local restaurants and how it dose not fit their business structure. The rising adoption of food delivery apps has forced many local restaurants to adopt a business model that might not fit with their financial goals. In order to keep up with the competition, local restaurants are paying commission that can "run as high as 30% per order, on top of the various fees they charge customers." (Schweitzer 2019).

Local restaurants are not well positioned to serve a large scale of customers like other large food chain restaurants which have already partnered with food delivery apps. The increase in food delivery apps has increased the demand at local restaurants which do not have the manpower for it and often are left to hire extra workers to keep up with food delivery app orders (Akhtar 2019). This STS topic aims to investigate the different ways that food delivery apps are decreasing local restaurants' profits. Setting a delivery system for local restaurants is nearly impossible as they would have to hire a permanent delivery person which they cannot afford. This has left many local restaurants to depend on food delivery apps in order to get some exposure to a larger market.

COMPILATION

The current point of view of food delivery apps is that it is allowing restaurants to increase their profits by taking more orders from customers who do not normally eat at restaurants. Large food chain restaurants who use food delivery apps operate completely different than small local restaurants who have been forced to join the movement in hopes of keeping up with the changing food industry market. The percent of people who order food online is increasing through out years and there is not much insight on how this is going to affect small local restaurants who cannot meet this demand and afford the high cost fees that are being charged by the food delivery apps company. The main focus currently is how convenient it is to order food that comes to your location and the wide range of options that customers now have but not too much focus has been put on the side of restaurants, especially small local restaurants. Figure 2 displays the increasing precent of growth that online food delivery is having. This

display shows how rapidly people are adapting to the new technology but not much research has been done on the effects on small local restaurants. As the growth continues, research needs to be done now to see if small local restaurants are well positioned to integrate food deliver apps into their business model. Food delivery mobile apps should also take into account small local restaurants by lowering their fees or providing a different service that better fits their needs.

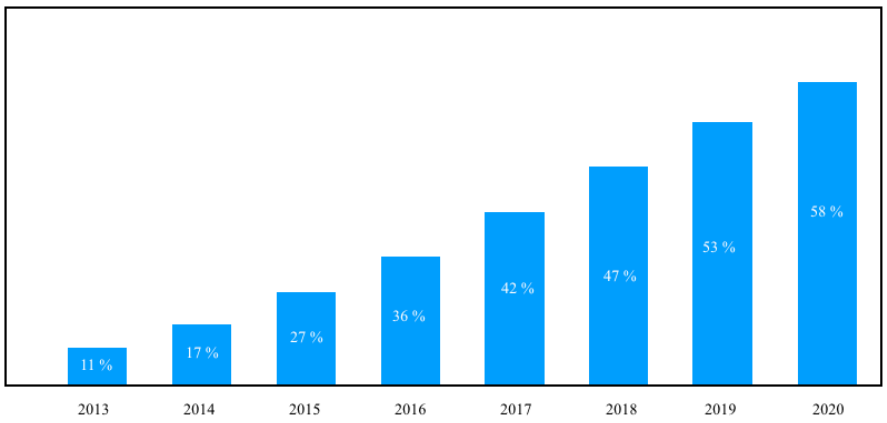

Figure 2: Online Food Delivery Growth Projection Over The Years: The increasing percent of people to use online food ordering can be seen in the graph and is expected to jump to 58% by 2020. (Adapted by Guillermo Saavedra-Diaz from A. Dobrilla, 2019).

OBJECTIVE

STS topic aims to investigate the different ways that food delivery apps are decreasing local restaurants' profits. Setting a delivery system for local restaurants is nearly impossible as they would have to hire a permanent delivery person which they cannot afford. This has left many local restaurants to depend on food delivery apps in order to get some exposure to a larger market. The hope of small local restaurants is that customers who order from food delivery apps will eventually convert to dine-in customers but food delivery apps are instead replacing the core business instead of complementing it (Dunn 2018).

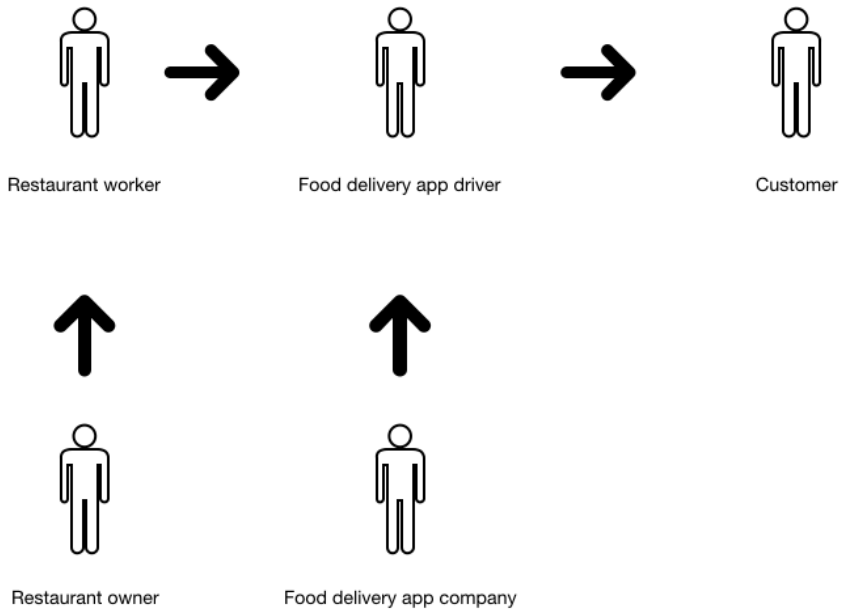

Figure 3: Actors in Food Delivery App Process: The Actor Network Theory diagram specifies all the actors involved in the Food Delivery App Process. This involves restaurant owners, restaurant workers, food delivery app driver, food delivery app company, and customer. (Adapted by Guillermo Saavedra-Diaz from Latour, Callon, and Law 1986)

APPROACH

Since the STS research topic revolves around a new technology that is currently influencing the food industry, it is important to investigate the topic carefully and make sure the data collected applies to the topic discussed. The framework that will be used to investigate the STS topic will be the Actor Network Theory adapted from Latour, Callon, and Law. The reason this framework is chosen is due to the actors that are involved in the food delivery app process that takes place. As we can see in Figure 3 on page 6, the actors involved in this process are the restaurant owners, restaurant workers, food delivery app drivers, food delivery app companies,

and the customers. The restaurant owner and the food delivery company never directly interact but are still involved in the network by overlooking different actors who do interact in the process. The process starts when the restaurants worker starts preparing the food and ends when the customer receives the food. All these actors play a very important role in the process and it is important to investigate each one individual to learn more about how they are contributing to the end goal.

Overall, the technical project and STS research topic are tightly couple by discussing technologies that have very similar functionalities and end goals. The difference comes from the actors that are involved in the process, the technical projects in replacing the restaurant owner, restaurant worker, food delivery app company, food delivery app driver with the families that will be cooking and delivery the foods. The STS research topic will focus on researching the effects of food delivery apps on small local restaurants' profits and how their structure is not suitable for such a business model. The high cost fees that food delivery apps are charging is making it very hard for small local restaurant to profit from such platform and the only advantage they are gaining is that they are being exposed to a large customer base. This is not always a positive thing since small local restaurants do not always have the capacity to meet the large demand that food delivery apps are creating.

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