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Sutardja Center
for Entrepreneurship & Technology
Berkeley Engineering

UCook

Home cooked Food at your Fingertips

Abstract

Life is becoming more busy, people are overall more health-conscious. Given this there is an interest in home-cooked food, specifically if we can decrease the overall work of its preparation time.The combination of widespread availability of mobile technology to everyone paired with applications like Uber we expect that the concept of home cooked food at your fingertips is gaining momentum.

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Sutardja Center for Entrepreneurship & Technology Technical Report

1. Introduction & Overview

1.1. What is Home Cooked Food

When think of home cooked food, we often picture the images of family sitting at the table eating freshly prepared healthy and delicious food. Restaurant food is cooked very differently due to the constraints of restaurant business. Home cooked food is what most people think as normal cooking.

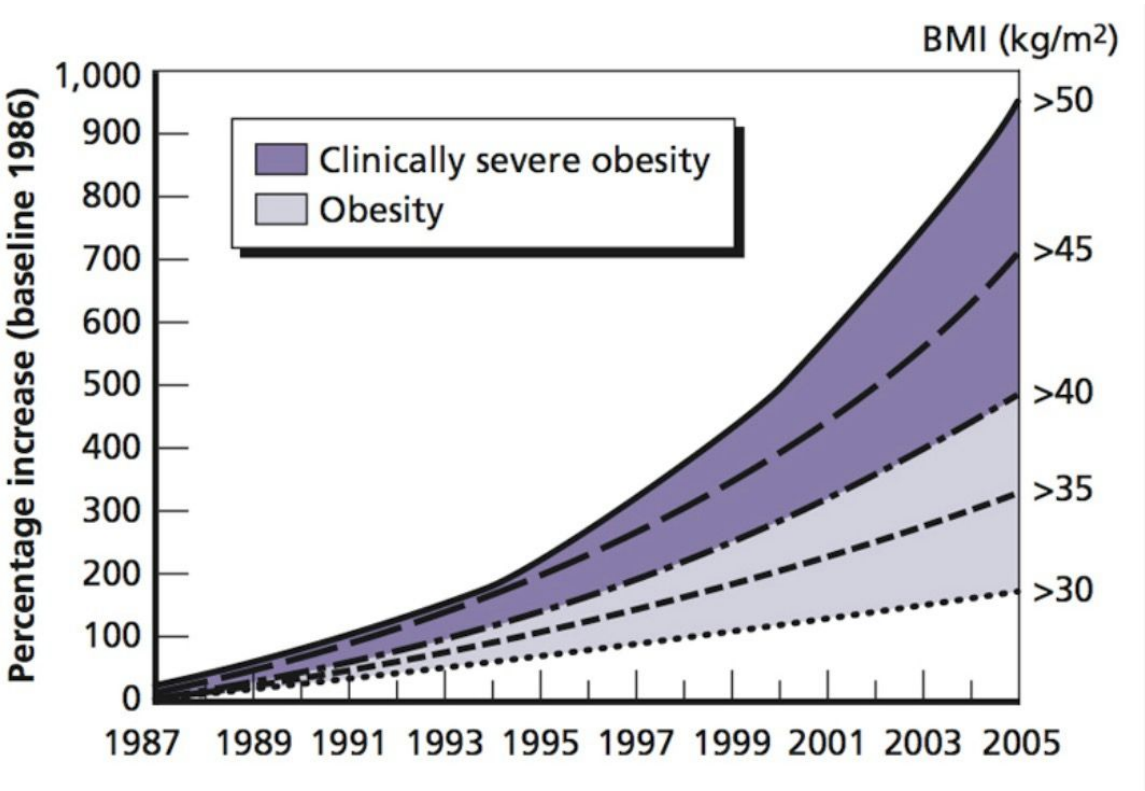
1.1.1. Restaurant Food

Restaurant business requires food to be cooked differently.

- Each dish has to be cooked within 3-10 minutes, or it is off the menu. This is to ensure acceptable time between ordering to eating for the customers, and all dishes can be served the same time for the same table.
- Restaurant cooks need to cook large quantity of dishes within the meal time windows. Restaurant kitchens are like well oiled and efficient machines
- Customers expect consistency of dishes
- Restaurants maximize taste at certain cost over healthiness and freshness. Extra salt, sugar, and oil are often used to maximize the taste

1.1.2. Healthy Food

Health is a primary driver for home cooked food. There have been many films and research to link fast food and processed food to the growing obesity problem in America. If we don't stop the trend, the younger generation will be expected to die younger than the older generation for the first time in history.



Here are a comparison of health benefits of a home cooked dish and a popular dish from large chain restaurant. The two dishes appear to have similar quantity but the numbers are very different.

	Home cooked pasta 	A popular restaurant dish 
Calories	601	940
Sodium	360	1900

Cholesterol	260	405
	Healthy home cooked cobb salad 	Cobb Salad of a large chain restaurant 
Calories	370	976
Sodium	312	1400
Cholesterol	250	140

There is a growing demand for healthy and inexpensive food.

1.2. Survey Results

To collect some anecdotal evidence we created a survey (Google form) and sent it out to some co-workers or friends. The survey comprised 5 questions. We obtained results from 22 participants.

Although the results are not statistically significant it showed overall support for our hypothesis that **there is demand for home cooked food and people are willing to pay $10-$15 per person per meal, possibly using our service for 1-3 times per week.**

Here are the questions and results:

Question 1: How often do you prepare home cooked food for dinner?

Once a week	9%
2-3 times per week	38%

Almost every day	53%

Question 2: If someone in your neighborhood would bring you a home-cooked dinner - would you eat it?

Not sure	9%
Maybe Yes	48%
Yes	43%

Question 3: If you had an option of a neighborhood cooked meal - would you pay for it?

No	9%
Not sure	19%
Maybe Yes	43%
Yes	29%

Question 4: How much would you be willing to pay for a home-cooked meal per person?

Up to $5	19%
Up to $10	52%
Up to $15	9%
Up to $20	14%
More than $20	6%

Question 5: How often would you use a home-cooked meal service if it were available?

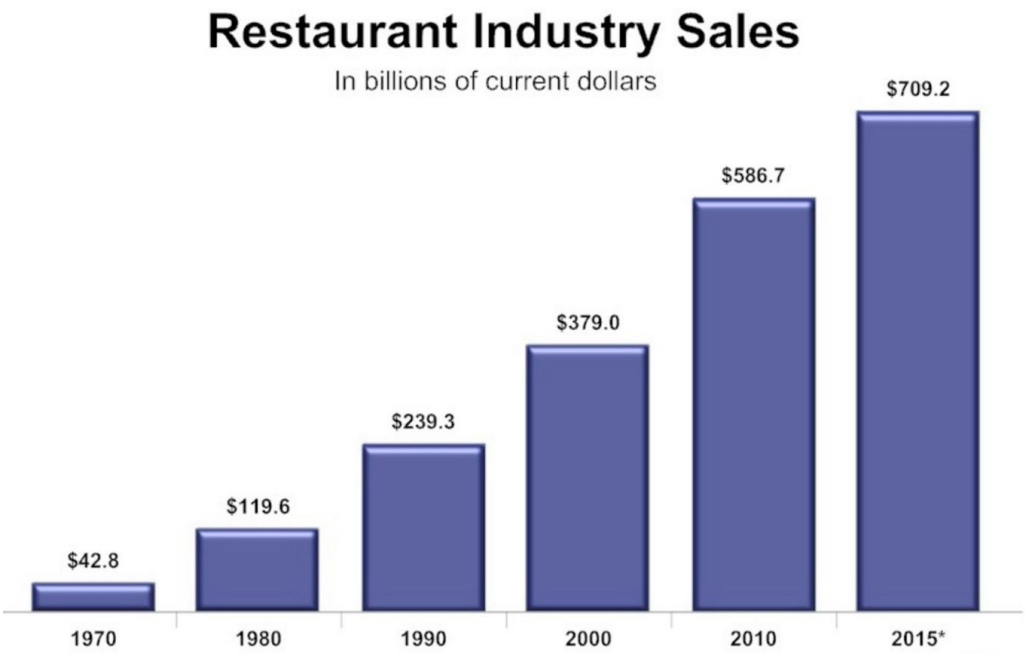
Never	5%

Once a month	9%
Every other week	5%
Every week	38%
2-3 times per week	38%
Every day	5

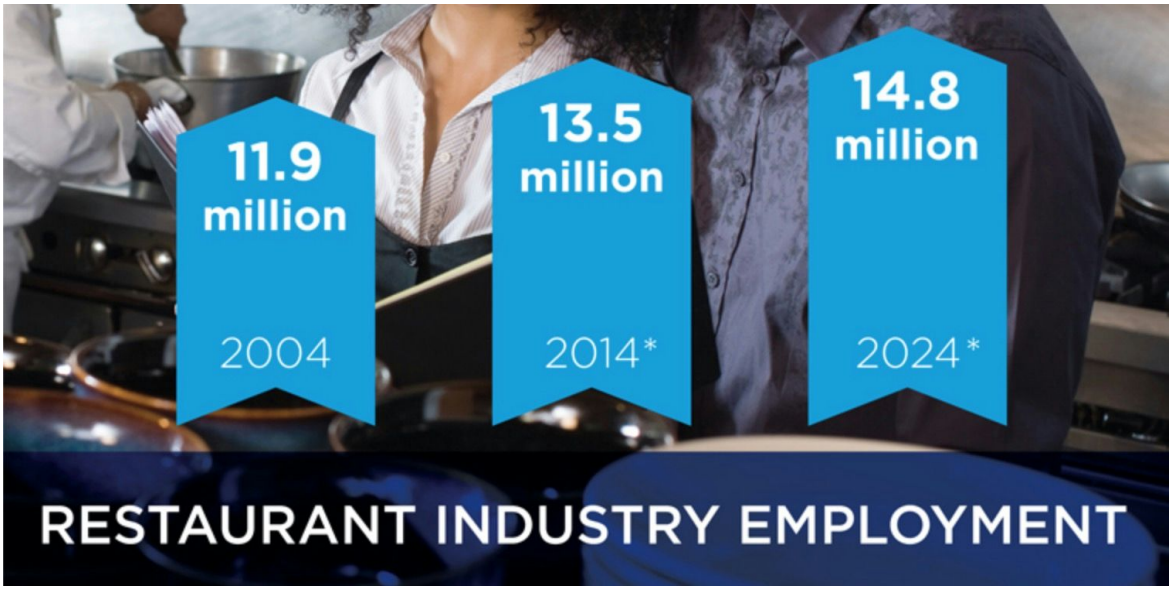
1.3. Home Cooked Food Market Opportunity

1.3.1. $709 billion US Restaurant Food Industry

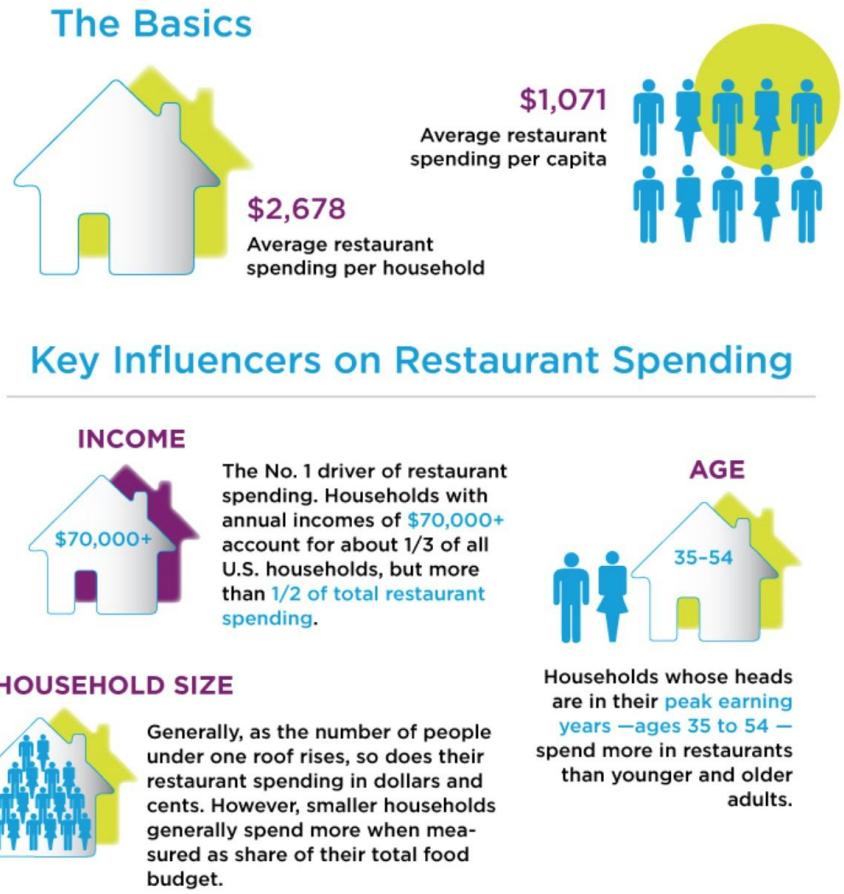
US restaurant food is a $709 billion and growing industry. This is bigger than the GDP of 90% of the world countries.



Restaurant industry employs 13.5 million workers. 1 in every 10 American workers work in restaurant industry.



1.3.2. Consumers Restaurant Spending

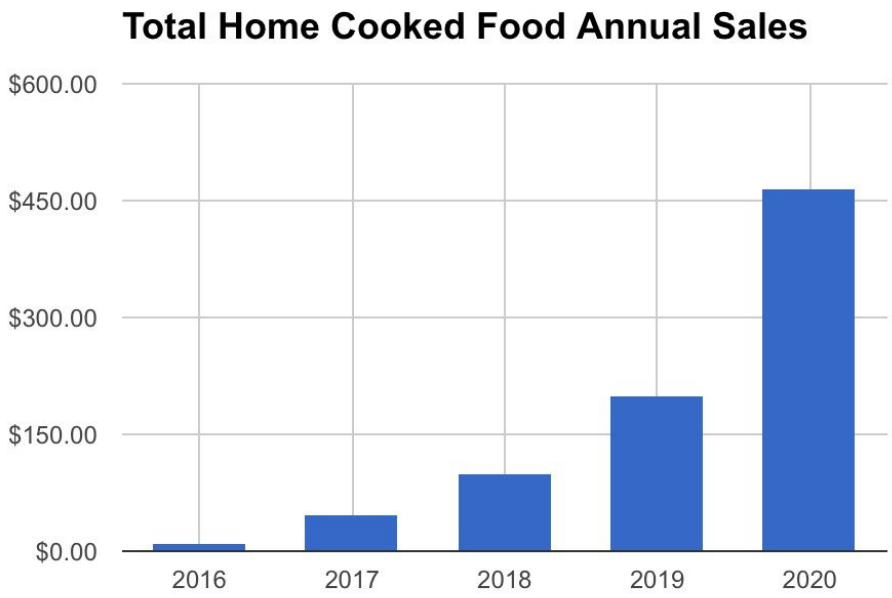


1.3.3. Home Cooked Food Sales Projection

Home cooked food industry sales is estimated by extrapolation from restaurant food industry sales. We estimated the sales ratio between home cooked food sales and restaurant food sales by per meal cost and spend frequency.

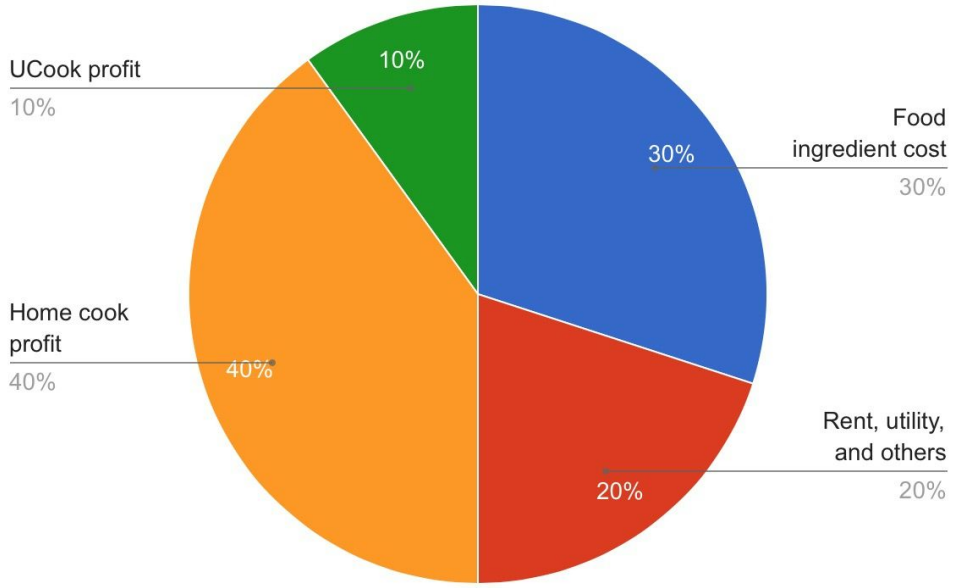
	Restaurant Food Industry Stats	Home Cooked Food Survey
Per meal cost	$21.31	$10.23
Number of meals per year per person	27.56	37.44
Estimated total sales ratio		65.69% of restaurant sales
Total Annual Sales	$709 billion	$465 billion ($709 * 65.69%)

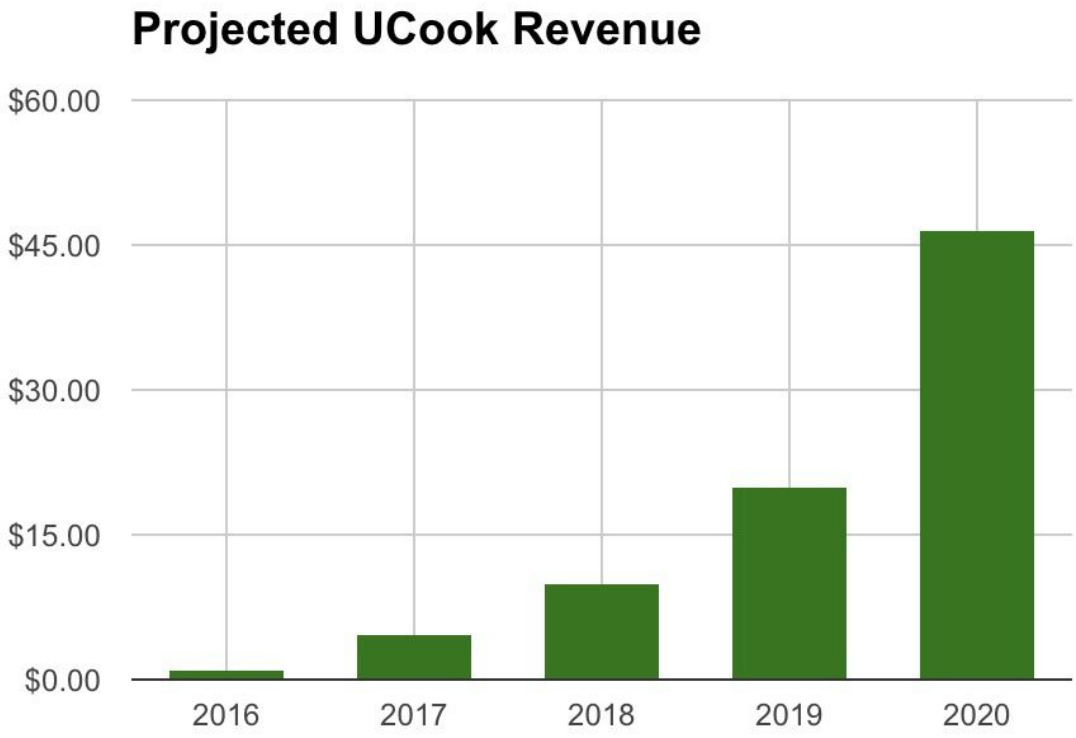
Our assumption is that it would take 5 years reach the expected sales.



We estimated the UCook revenue opportunity based on the following assumptions

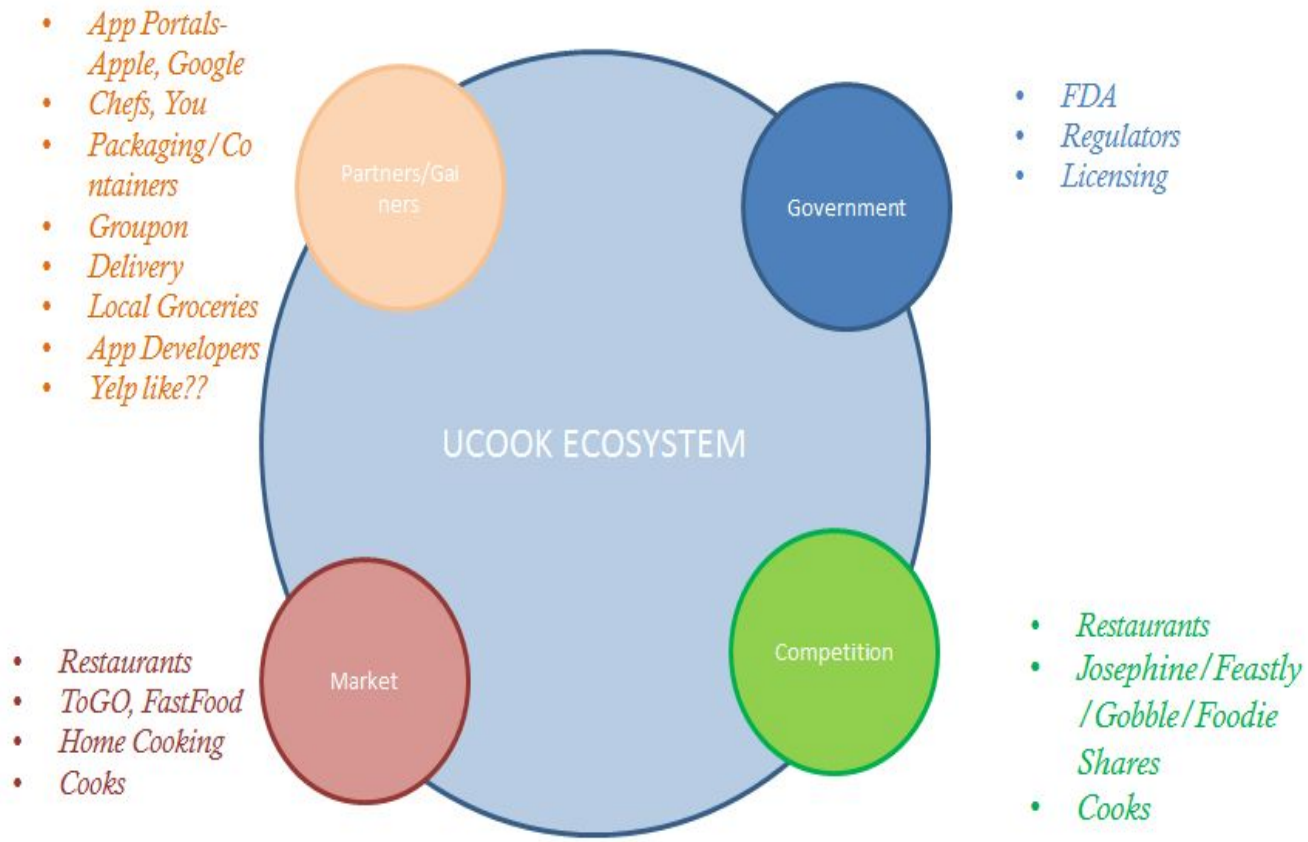
- Food ingredient cost is about 30% of the meal price. This percentage is consistent with the existing restaurant industry.
- Assume the other cost is 20%, including utilities, rent, etc.
- The remaining is the profit for home cooks and UCook. The business model is that home cooks take 80% of the profit while UCook take 20%.


UCook profit
10%
10%
Food
ingredient cost
30%
30%
Home cook
profit
40%
40%
Rent, utility,
and others
20%
20%


Projected UCook Revenue
$60.00
$45.00
$30.00
$15.00
$0.00
2016
2017
2018
2019
2020

1.4. EcoSystem

The diagram below shows the likely participants is a Business Model like "U-Cook".

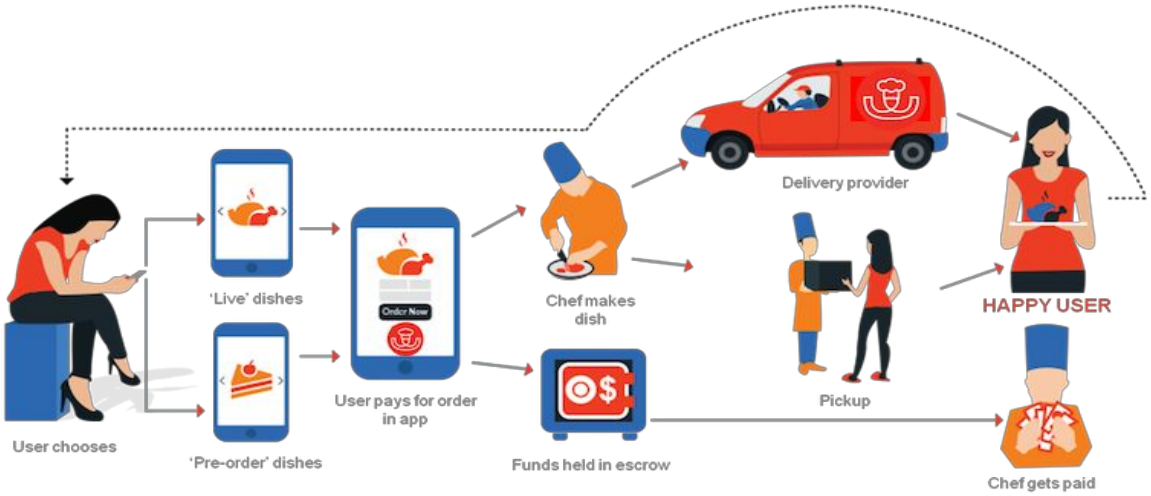


2. Competitive Landscape and Industry/Business Comparison

2.1 Competitive Landscape

The competitive landscape has quite a few startups; Josephine, Feastly, Foodie Shares, Gooble, MyTable, Homemade to name a few. While the business crux/theme remains the same they do have differences in their business models. Here we will discuss some of the different business models.

- Josephine
  - Business Model: Browse for the food, Order Online, Josephine sends the cooks address and you pick up the food. The company is based out of Berkeley and operates in Berkeley, Oakland, Albany, El Cerrito and San Francisco.
  - Safety and Trust: All verified Josephine cooks have passed a taste test, kitchen inspection, and obtained a CA Food Handler Card. All Josephine Cooks go through a rigorous inspection, training, and certification process before they can offer meals on their Platform.
  - Pros and Cons: Pros: Reliable. Trust, Safe, Great Website with Great Pictures. Cons: Too many overheads, Scalability can be an issue.
- Feastly
  - Business Model: It is more about the social market dining place than pick up food model. Cooks have a web platform for sharing food at their chosen place. Feasters (as they would call it) go to the website, browse for the meal, day and place and book seat(s). " Feastly is a close-knit and trusted community and we aim to foster this with all cooks and Feasters."
  - Safety and Trust: Feastly now offers $1 million towards cook protection. *The Cook Protection provides coverage for up to $1,000,000 in the rare event of damages of guests' property or bodily injury during a meal. The policy also provides 'host liquor liability' which covers the Cooks for negligence claims resulting in bodily injury or guests' property damage arising from the guest(s)' consumption of the alcohol the participant(s)' bring to the event. In other words, coverage is limited to guest(s) consuming liquor they've brought and served themselves (BYOB, BYOW, BYOL) to the event.* Also Feastly personally vets every cook and personally provides all cooks access to food handling certification and other documentation.
  - Pros and Cons: Pros → Social Dining, Reliable and Safe (Social Event and Cook Protection). Cons → Growth might be limited. Business is more about the social aspect.
- Foodie Shares.
  - Business Model: The Foodie Shares business model is the closest to what we envision could be the model for "Ucook". Here is a picture from their website describing how it works. (www.FoodieShares.com)



FOODIE SHARES

- Safety and Trust: Foodie Shares is in the sharing economy business. To get access to thier food users need to download the app and agree the the liability terms and conditions.
- Pros and Cons: Pros → Easy to use, Established Business Protocol (leveraging the Uber type business) and Business is highly scalable. Cons → Food and Safety are big issues.

2.2 Industry/Business Comparisons

The UCook business model is very similar to the UBER and Airbnb model in terms of transactions and customer dealings.
UBER and AirBnB have a very deterministic output versus expectations. What this means is users are used to travel in cars (in case of UBER), the car is a mode of transportation from point A → B and also it is only for a once in awhile hire thus the personal feelings or expectations dont play a big role. Same is the case with AirBnB where users are already used to the concept and the expectations are mostly set.
The case with the cooking could be different where food is a very personal choice and the recipe variation could be a lot which might be a deterrent. Presently users are used to restaurants where food consistency is very very good and the output is deterministic.

3. Technology Overview & Challenges

We envision as primary access point for users and cooks a mobile based app that allows convenient searching, browsing, recommendation and ordering, as well as allowing cooks to advertise their meals to facilitate transactions between both parties. As Uber's app is very similar in terms of functionality, and has already demonstrated that this type of app is feasible to build, our assumption is that required technology is available and we can also build it, although there are some unique challenges associated with our business model around home cooked food.

3.1. Functionality for Users

- Sign in and store preferences for meals, account details, location preferences
- Search & browse meals by neighborhood, food style etc.
- Recommendation engine
- Order meal and manage orders
- Payment processing
- Manage Reviews
- Basic communication capabilities between other users and cooks

3.2. Functionality for Cooks

- Sign-up process for new cooks
- Manage account, food inventory and schedule, preferences, payment processing
- Manage Reviews

The mobile app would be making calls to standard APIs managed in the cloud (e.g., Amazon AWS), which allows convenient scaling of our system. We would be using standard components and services.

3.3. Phasing and Prioritization

Initially we would be building out minimal functionality to get the overall system up and running quickly. Our focus would then be in these areas:

- solid payment processing to decrease overall number of fraudulent cases
- background check and signup process for new cooks
- simple search & browse functionality to order meals, shopping cart
- review system for both users and cooks

Later on we would build out a more sophisticated personalization and recommendation engine, and invest heavily in these technologies.

As we would be using standard components and services, initial investment would be quite low, and building up an initial prototype can be done quickly. Within 6-9 months a production ready system should be available for beta testing.

3.4. Technology Challenges

As other companies like Uber show that the actual technology itself is not that difficult to build and can be done as described above. However, there are a few items that require more thought in regards to scaling:

3.4.1. Sign-up process for new cooks

New cooks have to go through a rigorous background check and screening, as well as obtaining a food license (FDA) may need to be acquired from the local municipality. While there are many off-the-shelf general background check APIs, credit checks etc. readily available, and integration should be relatively straightforward, obtaining a license from the local municipality may be more tricky:

- The process of obtaining such a license may vary from city to city
- Most of the steps may require off-line coordination (e.g., calling a local city representative, sending in paperwork, scheduling an inspection)

Overall we think it can be done, but requires probably an automated process that combines an integration between off-line world processes with online world APIs. This can be done through customer service representatives / local agents who would help with this coordination. An internal CRM system is needed to manage the workflow and process for each signup.

3.4.2. Monitoring of food quality

We are going to build up a standard review based system that allows scaling and self-regulated quality of cooks and users.. The goal is to gradually weed out problematic cooks and customers as well. However, especially in the initial process of signing up new cooks it seems critical to determine the food quality provided by them, so that there are no surprises for customers (or limit those as much as possible.)

The license itself provided by the city is a minimum requirement, but that does not guarantee that the person actually knows how to prepare good meals. Again a process would be needed to coordinate the scheduling of local agents / food tasters who would verify food quality of the cooks. For example, a cook would need to pass a test of preparing 1 meal of choice.

3.4.3. Managing packaging supplies for cooks

Cooks need standard supplies for packaging their food, using consistent branding and quality when the food is delivered. There are logistics that need to be managed in our system.

3.4.4. Fraud management

As usual fraud will happen and we need to provide a secure platform for the cooks, where they can rely on payment and are insured in case of chargebacks. There are standard fraud solutions offered for merchant accounts, but the integration into our system needs careful planning.

3.4.5. Standard accounting, payment processing and back-office processing

As the business model relies on obtaining a percentage of the meals sold, we need to manage these payment transactions properly and make sure that payment transactions are secure, and the distribution model between the cooks and customers is solid. This is de-facto standard for all e-commerce based companies, but definitely needs to be rock solid, so requires work to get it implemented properly.

To summarize on the technology side it seems feasible, but there are some unique challenges with coordinating off-line processes of signing up cooks and help with obtaining proper licenses.

4. Constraints & Food Regulations

4.1. Cottage Food Laws

Cottage food laws in the united states allow and govern people to make food at home and sell it to other people. Many states pass their cottage food laws through legislation. The details of the laws are often then filled out through regulations passed by a state department of health or department of agriculture. For example, Maryland's cottage food law, passed in 2012, directs the Department of Health to adopt regulations to carry out the requirements of the cottage food law. Other states establish their cottage food rules through regulations only. Cottage food laws can also be implemented less formally, through an agreement between the state department of agriculture and state department of health or through guidelines posted on a state website. California passed the new **California Homemade Food Act** and became effective in January 1st, 2013.

There are common elements found in Cottage Food Laws. Analysis of the fifty states' laws found five main types of restrictions that states have used in their cottage food laws: types of cottage

food products allowed; limits on where cottage food products can be sold; required registration, licenses, and/or permits; limits on total sales; and required labeling.

4.1.1 Types of Cottage Food Products Allowed

For the most part, states limit cottage food production to foods that are "not potentially hazardous." Some states provide a detailed list of allowed foods, while others simply require the food to be not potentially hazardous. California's law lists sixteen foods that are approved for cottage food operations and directs the Department of Health to adopt and post to its website a list of other approved foods. The sixteen foods that California's cottage food law allows are: •

- Baked goods without cream, custard, or meat fillings, such as breads, biscuits, churros, cookies, pastries, and tortillas.
- Candy, such as brittle and toffee. • Chocolate-covered nonperishable foods, such as nuts and dried fruit.
- Dried fruit.
- Dried pasta.
- Dry baking mixes.
- Fruit pies, fruit empanadas, and fruit tamales.
- Granola, cereals, and trail mixes.
- Herb blends and dried mole paste.
- Honey and sweet sorghum syrup.
- Jams, jellies, preserves, and fruit butter that comply with federal standards for fruit butter.
- Nut mixes and nut butters.
- Popcorn.
- Vinegar and mustard.
- Roasted coffee and dried tea.
- Waffle cones and pizelles.

4.1.2. Limits on Where Food Can Be Sold

Nearly all states restrict cottage food operations to selling directly to consumers and do not permit sales to restaurants or other retail food establishments.

To illustrate, Tennessee's law states that cottage food products "may be sold at that person's personal residence, a community or social event, including church bazaars and festivals, flea markets, or at farmers' markets located in this state." By contrast, California's cottage food law allows broader sales than most states. In California, there are two levels of cottage food operations, each bearing distinct regulations on the locations of sales allowed: Class A cottage food operations are authorized to sell direct to consumers only; Class B operations may engage

in both direct and indirect sales, meaning they can sell to restaurants and other retail food establishments.

4.1.3. Required Registration, Licenses and/or Permits

States vary widely as to whether or not a cottage food operation must be licensed and/or permitted, as well as what requirements must be met for such authorization. Some states do not require any licensing or permits for cottage food operations. For example, Florida, Maryland, and Michigan, expressly do not require licenses for cottage food operations.

Some states require specific licenses: for example, Alaska requires cottage food operators to obtain a business license; Colorado requires a certificate in safe food handling and processing, but no other license or permit; Washington requires a food and beverage service worker's permit; and Utah requires a valid food handler's permit. Other types of permits may also be required. In Pennsylvania,for example, "home food processors" must have their kitchens inspected as part of the registration process to ensure that the kitchen facilities meet the applicable laws and regulations. There are often fees associated with licensing and permitting: some states have low fees ($20 fee in Maine), while others have a number of different fees associated with the varying permits required. For example, in Washington state, there is a $125 inspection fee, a $75 public health review fee, and a $30 processing fee.

4.1.4. Limits on Total Sales

About half of the states that allow cottage food production place a limitation on the amount of income a cottage food operation can earn and still qualify as a cottage food operation. For the most part, states frame the limit in terms of a dollar amount in sales per year. These sales limits range from $5,000/year up to $50,000/year. For example, Texas limits the sale of cottage foods to $50,000 per year.41 Louisiana, Minnesota, and Wisconsin, however, cap annual sales for cottage food operations at only $5,000/year. Both Michigan and California provide for a gradual increase in the annual ceiling over a period of years. In Michigan, until 2017, cottage food operations are capped at $20,000 in sales; after 2017, Michigan cottage food operators can make up to $25,000. In California, cottage food operations are limited to $35,000 in 2013; $45,000 in 2014; and $50,000 in 2015 and beyond.

Some other states frame their sales limits in terms other than a dollar amount per year. For example, Tennessee limits cottage food operations to 100 units of sale a week.

4.1.5. Required Labeling

Almost all states with cottage food laws have labeling requirements. Generally, cottage food products are required to be labeled with some combination of the following information:

- Name and address of producer;
- Common or usual name of product.
- Ingredients of product in descending order of predominance by weight;
- Any food allergens;
- Net weight and volume of food product by standard measure or numerical count;
- Date on which the food was processed; and
- A statement similar to the following: "Made in a home kitchen that has not been inspected by the (state)'s department of health (or agriculture)."

Overall, allowing for cottage food operations is an easy way that states can support the development of small businesses and increase the availability of local products within their borders. States continue to introduce new cottage food laws or amend their existing cottage food structures, which means there are numerous opportunities for advocates to get involved and make change. However, the differences of the laws from state to state increase the difficulties to expand the potential "home cooking" business from one state to another state.

4.2. Real Customer Reactions

FOODIE SHARES, the Uber of Home Cooking, is the closest business that is similar to ours. It was launched in L.A on March 5, 2015. Foodie Shares seem to hope that their status as a "private community" will help circumvent any issues from the regulations passed by health department. On their Website, they put on the following disclaimers:

FOODIE SHARES HAS NO CONTROL OVER THE QUALITY OF THE FOOD, CONDUCT OF COOKS, EATERS AND OTHER USERS OF THE SITE, APP AND SERVICES OR ANY ACCOMMODATIONS, AND DISCLAIMS ALL LIABILITY IN THIS REGARD.

The following are interesting consumer comments on FoodieShare business::

1) "ILLEGAL! There is no way once the health dept. catches wind that this would fly and whoever is legal adviser to Foodie Shares needs to actually read up on food production laws. There really isn't a "legal grey area" when it comes to food production. The law is very, very clear."
2) "Ridiculous that something like this would be illegal! The people cooking aren't necessarily cooking for the masses, they aren't necessarily doing large production meals

like a restaurant, would a chef have to have a license of some sort to come to your house to cook a meal for your family? Heck no ... and why shouldn't someone be able to sell some of the extra food they made to give someone else a good, home cooked meal and a few dollars in their pocket!

3) Now would I ever order from something like this? HECK NO! Who knows what their food safety precautions are like, what condition their kitchen is in, do they know to wash their knives, hands, cutting boards and counter tops after handling raw meat on them? Way too many unknowns for me to want to risk my health in the hands of a stranger cooking from their home ... as a former chef I would do the selling, never the buying, that's for sure. They must have one heck of a disclaimer to keep themselves out of trouble when that first case of salmonella poisoning hits!"

Clearly, in addition to the regulation constraints (due to food safety issues) which vary from state to state, real consumers are also concerned with food safety. These issues indicate there will be scalability difficulties in this "Uber of Home Cooking" business.

5. Conclusion and Future Directions

To summarize we think there is a great opportunity, with an estimated size of $429 billion, and a need clearly exists.

However, the think the legal constraints inhibit overall scaling in the U.S. at the present time.

When looking at the competitors we observe that they are either ignoring the legal constraints (e.g., Foodie Shares, which results in negative user reviews, lack of trust) or focus on it properly and try to fully tackle it (e.g., work with local authorities to facilitate obtaining licenses for cooks), but then have constraints on scaling it within a state or across the country, given the amount of manual work.

Due to the potential size of the opportunity, it is worthwhile to explore a variety of alternative approaches or business models to determine whether there still can be a loophole for a successful model in that space of home cooked food.

We therefore propose:

1. Investigate an alternative business model that would go around the legal constraints (e.g., social gatherings in neighborhood with food preparation, subscription based)
2. Limit food choices to veggies (aligned with cottage law)

3. Investigate case examples over food sharing from other countries where the proposed model could still work as is.
4. There could still be an opportunity in the future if legal requirements are changing?
5. If there are enough local based home cook food providers (like Josephine.com), is there room for an aggregation service?

As we're strong advocates and believe in the benefits of the idea of home cooked food and using technology and a model to make it available, we're confident that there are opportunities and creative approaches to make this work somehow. Maybe there will be more Josephine.com based solutons appearing in more neighborhoods across the country, given the demand. And if that is the case one can come in and try to integrate them with technology to allow users a seamless transaction (e.g., they order at a central location and order gets dispatched to local home-cooked food service like Josephine.com).

Bibliography

This page can also be a simple list of authors and affiliations.