

## Senior Design Final Report

### Executive Summary

Through our application Unichefs, our team hopes to create a community for university students to share recipes and gain greater access to home-cooked food. Our main stakeholders are college students, food businesses, local vendors, and the people involved in developing our application. Our customers include not only students who love home-cooking, but also those who never home-cook and are looking to buy home-cooked food from others. Though we face competition from other platforms, we are confident in our ability to capture users and grow the platform. The app will earn money through advertisements and selling data to restaurants.

### Business Analysis

#### **Value Proposition**

Our application allows college students to easily access, review, and post meals/recipes, as well as buy and sell home-cooked food. This tackles one of the largest pain points of college students, which is wanting to eat healthier and cooking more at home.

#### **Stakeholders**

Stakeholders in our project include the founders and employees of our company, college students, local grocery stores, restaurants, food businesses, and local vendors (i.e. people making food in their home who want to sell). Each stakeholder has a different incentive for using the application.

The main concern for college students would be to find recipes that are fast, easy, and cheap to make. As indicated by our user research survey, over 77% of students wished they cooked more at home, with most of those students currently eating out at restaurants majority of the time. Our in depth interviews with current students from both sides of the spectrum (avid chefs to students who don't cook at all) show strong interest in the app as "it would be really cool if [they] could find simple, quick recipes to try" and how they "like sharing recipes and food with friends at Penn so this app would be a really cool way to do that." Students could use this application to get more ideas on what to cook as well as see what their peers cook that's affordable and fast.

Local stores and restaurants would be incentivized to use this application as it would provide them with more exposure to the Penn population. In our interviews with different local businesses we found that a majority of them would be interested in advertising on our platform. This would allow them to reach a larger part of the Penn population, and we could also generate revenue through this stakeholder group as we would likely be sponsored by them or set-up some sort of model where we could get paid based on the click through rate and conversion rate of the various advertisements.

Finally, local vendors are households that are interested in selling to students in bulk. In our survey we found that approximately 75% of students are potentially interested or already buying from local vendors in Philadelphia. These would likely be individuals who reside in Philadelphia who are interested in cooking and making money from it (whether it be a full-time business or a part-time job).

#### **Customer Segmentation**

College students are our main customer base. When we think about the different groups within this population we get the following breakdown:

- 1) *Students who barely cook now*: these are students who eat out a high percentage of the time (>80% of the time), but wish they could save more money and cook at home

- 2) *Students who cook a good amount now but wish they had more ideas*: these are students who eat at home a decent amount but get bored of what they eat at home and wish they had more easy, feasible ideas to make at home
- 3) *Students who are solely interested in buying from vendors*: these are students who are not so concerned with the recipe posting portion of the application but rather the vendors who are selling in bulk. They want the convenience of eating takeout, but finding a cheaper alternative

We believe our application has features that will strongly encourage the students in the categories above to use it and to greatly benefit from it. Based on our user research and our own research into the student population, we are optimistic of this application’s ability to penetrate these niche markets and greatly alleviate the current complaints of the customer segments.

### **Market Opportunity**

We conducted a Google Forms survey and garnered 88 responses. The survey was sent out to the broader Penn community through numerous listservs and group chats. Granted, we note that the survey is heavily skewed towards upperclassmen since that is where the majority of our friend groups and respondents fell. Nevertheless, we believe this is quite representative of the target audience since we anticipate upperclassmen to use our app more (as freshmen and sophomores are on the dining plan).

From the survey, we were able to draw out a few key insights. First, we found that a majority of Penn students eat over half of their meals outside. In addition, more than 75% of students wished they cooked at home more, with 85% students potentially interested in buying from local vendors. There are also more than 1/3 of students who have interest in sharing recipes and building an online following. Common cited reasons for why students do not cook as much as they’d like is that it’s time-consuming, inconvenient, and hard to decide what to cook. Thus, there is interest in a platform like ours that allows students to share recipes, as well as offer them the possibility of buying home-cooked meals from peers.

### **Estimation of Size and Growth of Market Segment**

We can narrow down the size of our market segment as follows: Penn’s student population is approximately 25,000 people. Out of this number freshman and sophomores would likely not use our platform as they are required to be on the dining plan. This leaves us with about 20,000 students who would possibly be interested in our platform. From our market research survey we found that 75% of students would be interested in contributing to and using our platform which leaves us with 15,000 students. Let’s say out of this group that we have a 50% yield of students who actively use the platform. That leaves with a 7,500 estimated market size (which is a conservative estimate). Below illustrates what we envision for the growth of the market segment over a 10 year horizon. We came to these growth projections based on how our competitors like Snackpass (a student made business that is also in the food/restaurant industry) and other recipe based applications have experienced growth. At the end of the next 10 years we believe it is fair to expect nearly a million users. We project a steady growth of 80% for the next few years and then see growth decreasing for the rest of the horizon as we would expect that the number of users will eventually level off. This is based on how we will be expanding to other campuses after a year or two’s time and hopefully expand to the majority of the colleges in the United States and other countries.

	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
<b># of users</b>	7,500	13,500	24,300	43,740	75,233	123,984	196,291	299,320	440,717	628,088	868,419
<b>growth</b>		80%	80%	80%	72%	65%	58%	52%	47%	43%	38%

### **Competition**

Some of our competition includes other applications that are meant for college students when it comes to cooking and recipe ideas. There are applications such as “My Recipe Book” or “Big Oven” that also serve the role of facilitating college student’s lives when it comes to cooking, and these applications could be targeting a portion of our market share. However, we find that these applications are generally

not targeting college students specifically and rather have anyone who is interested in cooking/meal prepping. As our application is more targeted, we are confident that we will be able to compete effectively in this space.

Competition in our particular market segment would be SnackPass. SnackPass is an application founded by students at Yale that offers college students various discounts with restaurants around campus. Though our value proposition is different from SnackPass, there might be some slight competition when it comes to the vendor selling/buying portion of our application. However we are providing a platform to sell/buy home cooked food rather than restaurant food which would serve a different purpose than SnackPass does for students.

### Cost

Our main costs would be maintenance of the application (in terms of fixing bugs, enhancing user interface etc.) and also the cost for storing the data which would get much higher with time. We also anticipate marketing and research costs as we try to expand on to other campuses.

### Revenue Model

Below is an ad-based revenue model we created with projection on the sales we expect to make over a ten year horizon. We anticipate making all of our money through advertisements so we looked at how the number of views and clicks on ads would vary overtime and used standard industry numbers for the other metrics (CPC, CTR, etc).

Ad-based Revenue Model											
	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Revenue	\$21,825	\$39,285	\$70,713	\$127,283	\$218,927	\$360,792	\$571,207	\$871,021	\$1,282,485	\$1,827,737	\$2,527,098
# of views	7,500	13,500	24,300	43,740	75,233	123,984	196,291	299,320	440,717	628,088	868,419
# of clicks	2,250	4,050	7,290	13,122	22,570	37,195	58,887	89,796	132,215	188,427	260,526
click thru rate (CTR)	20%										
cost per thousand impressions (CPM)	\$10										
cost per click (CPC)	\$5										
cost per acquisition (CPA)	\$7										

In terms of our revenue model, we anticipate the primary source of our revenue coming from advertisements. Since our users will be Penn students, we believe local restaurants would be interested in placing ads on our platform. In fact, we've already spoken to around a dozen restaurants around campus, ranging from small food trucks to established chains like HoneyGrow, and the vast majority have expressed verbal interest in placing ads on our app. While we don't have specific estimates for how much revenue we could generate from this ad platform, we expect to have a better idea once we build our app and get data regarding our traction within the Penn community. Another source of revenue that we brainstormed during our recent check-in with Dr. Boon and Professor Smith were for us to sell the data we garner through the app. Restaurants and grocery stores may be interested in knowing which types of food students are most interested in, as well as the peak times students are browsing for food.