

Milestone 1

Group 4

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Table of Contents

1. Overview
2. Users in the Problem Space
3. Existing Solutions
 - Cook Books
 - Online Recipes Resources
 - Subscription Meal Services
4. Task Analysis
 - Important characteristics of tasks performed by users
 - Important characteristics of task environment
 - Analysis of problem
5. Data Synthesis
 - Survey Responses
 - Research Findings
 - The Next Step

1. Overview

Cooking is a common activity that people around the world do almost on a daily basis. It is a healthier and cheaper alternative than eating out—and by a large margin; however, the United States has an extremely low number of meals eaten at home and a low average time spent on meal prep. In fact, among 28 countries where there was data available, approximately two-thirds of people cook on an average day, but the United States is the only country where both the participation rate and the average time of cooking are towards the bottom of the ranking of the 28 countries, showing that Americans put less importance on cooking relative to the other countries. A study conducted by the Organization of Economic Cooperation and Development found that Americans spend the least amount of time cooking each day than any other developed country (OECD 22-24). The time spent has been decreasing slowly but steadily since 1984, and there is no evidence of the trend stopping or reversing if nothing is changed. Much of this is attributed to not having time to cook which has led to the rise of packaged meals that are quicker and easier to prepare. It can also be attributed to the difficulty, the amount of effort, and the lack of entertainment in the activity of cooking. Efforts to mitigate this problem need to focus on increasing the amount of cooking in the home by focusing on decreasing the amount of time and difficulty of cooking as well as increasing the amount of entertainment of the activity. Currently the solutions to this problem are cookbooks, pen and paper cooking instructions from friends and family, online recipes resources, and meal subscription services such as Blue Apron, Home Fresh, Plated, and Green Chef; however, these solutions do not address the entire problem. Instead, they merely address certain aspects of the problem.

2. Users in the Problem Space

Through our research and surveys, we found that on average a people spend approximately 110 minutes cooking each day, and in the United States the average is closer to 60 minutes and a population participation rate of around 56%. From our survey of 63 people, only one respondent stated that the kitchen was the room where they have the most entertainment, and a large number stated that chores such as cooking could be more entertaining in their everyday lives. From these results, it can be seen that many people, especially Americans, currently put little importance on the activity of cooking but want something that will make it easier and more entertaining. Many people work and have little time to cook at home every day. The need to prep, cook, and then clean can be a large reason that many, with the limited time they have, do not want to cook. People want something that is quick. That is why microwavable and repacked meals have grown so much in recent years. In fact, according to a market research company, sales of these food are now above 25 billion a year. Users simply feel that cooking at home takes too long, is too difficult, and not entertaining enough, which is a large cause of its decrease in recent years.

The primary stakeholders include people that do not cook very often in their homes. This can be split into subcategories based on the reasons that they do not cook often. The first

subcategory is made up of working individuals. Working individuals do not have much time or energy to cook after they get off of work so they will be looking for something that can make cooking easier and take less time. The second is made up of cooking novices. Cooking novices have little knowledge on how to cook and so they shy away from the activity. They want something that will make cooking easier and more friendly by learning recipes, learning how to meal prep, and learning cooking techniques. The third is made up of people that see cooking as a chore. These people want something that will make cooking easier as well as more entertaining to do. Some people fall into a set of these categories and are looking for multiple improvements to the activity of cooking. Grocery stores may also be considered a tertiary stakeholder. The introduction of a solution that would make cooking more common among their shoppers would affect their sales, and it would affect what products people bought more of.

3. Existing Solutions:

Cook Books:

- Strengths:
 - Make learning new recipes easy
 - Can provide recipes that are quick and easy to make, depending on the cookbook
- Weaknesses:
 - Do not increase entertainment of cooking
 - Difficult to understand if you do not know the cooking terminology or cooking techniques.
 - Have limited number of recipes

Online Recipes Resources:

- Strengths:
 - Make learning new recipes easy
 - Large catalog of recipes from a number of different nations
 - Some provide picture or videos for cooking techniques to help teach novices
- Weaknesses:
 - Do not increase the entertainment of cooking
 - Difficult to understand recipes if a person does not know the cooking terminology or cooking techniques.

Subscription Meal Services:

- Blue Apron, Plated, Home Fresh, Green Chef:
 - Strengths:
 - Make food prep and cooking less difficult through pre-portioned ingredient amounts and easy to follow instructions
 - Provide step by step color photos and how to videos

- Provide recipes to customers that are quick to make (usually around 40 minutes)
- Eliminate the need to shop for ingredients for each meal
- Can teach people how to cook
- Weaknesses:
 - Do not increase entertainment of cooking
 - Can be more expensive than buying and preparing meals on your own
 - Most do not allow for meal choices apart from general categories of meat, fish, and vegetarian.
 - Delivery can waste user's time because of the need to unpack all the plastic bags of all of the produce and having to dispose of those bags, the gel packs, and insulation.
 - This must be done for every delivery (weekly)
 - Recipes call for a large number of dishes and utensils
 - Increase clean up time after cooking, adding on average 20-25 more minutes

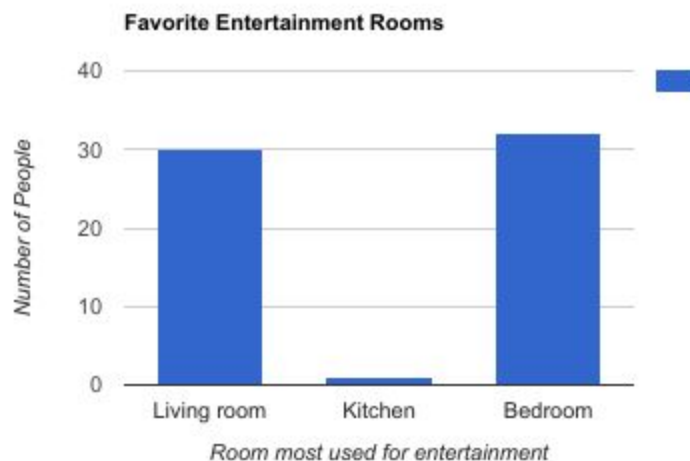
4. Task Analysis

- **Important characteristics of tasks performed by users:**
 - The tasks should be entertaining and interactive.
 - The tasks should be easily understood and followed.
 - The tasks should make the user feel as if they are progressing and honing their cooking skills.
 - The tasks should make cooking feel like rewarding fun rather than a tedious chore.
 - Tasks like cooking can often feel intimidating to the inexperienced.
 - Some tasks like chopping vegetables can have a certain level of danger associated with them.
 - The tasks should be low-cost (in both money and effort) but be high-reward.
- **Important characteristics of task environment (kitchen):**
 - The kitchen is shown to be rarely used for entertainment purposes.
 - Most people view the kitchen as a place to do chores rather than entertain.
 - The kitchen is among the more 'homey' rooms in a residence, meaning the users will feel comfortable in that environment.
 - For the best results, the kitchen should be stocked with necessary cooking equipment.
 - Kitchens vary greatly in size and available space depending on the residence.

- **Analysis of the problem:**
 - Research shows that people want mundane tasks like cooking and cleaning to be more entertaining.
 - Many view cooking and its associated tasks as a chore and don't find it enjoyable.
 - The kitchen is massively under-utilized as a space for entertainment.
 - Users have a finite amount of time for entertainment per day and would rather spend their time watching Netflix or browsing the internet.
 - Many users have a limited budget and cooking good meals can often be somewhat expensive.
 - Many people lead very busy lives and may not have the time to prepare a meal by hand.

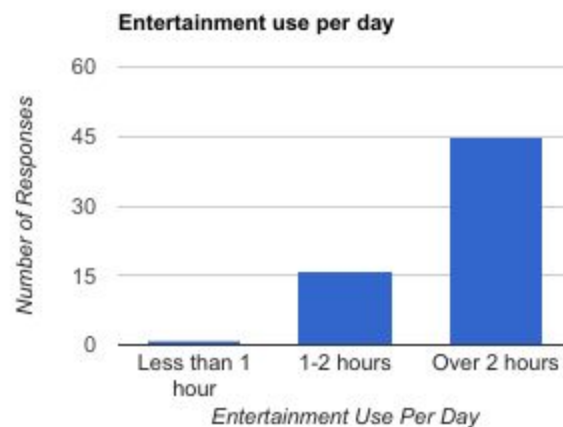
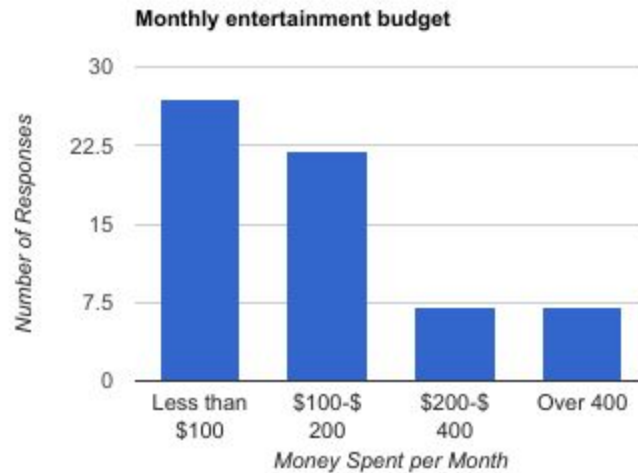
5. Data Synthesis

- Survey Responses
 - We issued electronic surveys using Survey Monkey and received 63 full responses.
 - Out of these 63 responses, only 1 person listed that the kitchen was his/her favorite place to be entertained within his/her home. This indicates that the kitchen is an underutilized area of the home for entertainment.



- We also discovered a significant amount of people that said cooking or cleaning/dishes were activities that were very boring.
- Most respondents were male (62%).
- The age groups were primarily 20-30 year olds (43%) and 15-20 year olds (36.5%). 15% were above the age of 50. This leads us to believe that most respondents are old enough to cook, and most have to do it very frequently.

- 65% of our respondents lived in houses and 27% lived in apartments. The rest lived in other types of housing like dorms. This leads us to a conclusion that most people have some way to cook in their home.
- We learned that most people spend less than \$200 a month on home entertainment, but most spend over 2 hours using home entertainment. This indicates that the solution must be relatively inexpensive to use.



○ Research Findings

- One of the articles we found discusses how people are often distanced from cooking because of distractions, inefficiency, lack of nutritional knowledge, and inexperience. It mentions a device called the "*Living Cookbook*" that lets people record the food they make and share it. The author suggests that attempts at cooking entertainment are done in a

“corrective” manner, meaning that the attempts are trying to fix something about the user. The author mentions how corrective approaches shouldn’t be applied to cooking since the mistakes of cooking have led to some of the world’s greatest dishes. Attempts to engage people in cooking should allow the user to be creative, activate some nostalgia, and feel relaxed among other things (Grimes p.467-475).

- Another article outlined a design for an interactive cookbook called *CounterActive* that avoided forcing the user to interact using the traditional computer input methods. They used a project mounted above the countertop and facing down, along with a method of detecting touch on the countertop to turn the countertop into a sort of touchscreen interface. Interestingly, they included the workspace within the UI, allowing the cookbook to feel like it is integrated into the kitchen and the user’s task (Ju et al. 269-270).
- Finally, *Kitchen Stories* takes a different approach to designing a UI for an interactive digital cookbook. The authors state, “Given Moore’s law, we know that IT development cycles are counted in months rather than years in contrast to renovation cycles of houses and homes, which involve decades” (Terrenghi et al. 411). Since technology’s short iteration cycles do not lend themselves to deep integration with the home, they opted for a tablet based solution, rather than a more cumbersome solution like the one suggested by Ju et al in *CounterActive*

- The Next Step

- From this data and research, we conclude that the kitchen is an extremely underutilized room for entertainment. We also concluded that people find cooking and cooking related tasks unenjoyable. We feel that our next step is to focus in on kitchen entertainment, specifically with cooking related tasks. Part of this focus is due to the fact that the other rooms of a house are already congested with home entertainment devices/services that we feel trying to compete against something like Netflix would only lead to failure. We believe that moving into the kitchen will allow us to carve out a piece of home entertainment better than the other rooms. We will explore mobile options as we believe these to be the most user accessible formats. Our goal is to make a system that helps users be more entertained while cooking. The system will need to make cooking fun of

course, but also give people the sense that even when they mess up, they are still making progress.

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