# Community In Transition in terms of cuilinary ritual

Design of personalized food delivery Service

——Fangqian Shen

**Final Work of Master (FWM)**

Community In Transition in terms of cuilinary ritual
-
Design of personalized food delivery App

By
Fangqian Shen

Director
Frederic Vila Marti

Master Degree in Advanced Studies
in Design-Barcelona (MBDesign)
Design, Innovation and Technology
Academic year 2021-2022

Escola Tècnica Superior d'Arquitectura de
Barcelona (ETSAB)
Universitat Politècnica de Catalunya

July 2022

**UNIVERSITAT POLITÈCNICA
DE CATALUNYA**
UPC BARCELONA**TECH**

*Let food be thy medicine and medicine be thy food.*

*——Hippocrates*

# Abstract

*FOOE* explores the next popular element in culinary rituals: improving eating quality relates to health and well-being. The design is based on research and inquiries and inspired by the subscription business model and service model. FOOE is a customized food distribution App that provides a subscription service on raw food delivery. The algorithm offers the optimized food choice according to each user's condition. Users can monitor their nutrient intake concerning body statistics on the application. The thesis will elaborate on the business model, distribution model, sustainable goals, and application overview.

This project analyzes future culinary trends from the perspective of world food history, e.g., the genetic and climatic discrepancies that determined the regional culinary traits and politics and economies that provoked food hierarchies in changing forms throughout global history. Quality eating is one of the trends, but there are realistic factors that encumber many populations to adopt healthy diets. One particular reason is that work/study plus household chores take up a large amount of individual time. Paying much attention to meals causes fatigue, which elicits a necessity to change the present food ritual. Singaporean and Swedish have experienced revolutionary social transitions in culinary rituals and family structure. Both involved specific facilitators such as industrialization and social consensus. The thesis will also investigate Kibbutz, an example of self-sufficient intentional living to discuss the possibility of local-reliant provisioning and a thorough study of the existing product with a similar function.

Keywords: Health, Service, Culinary ritual, Food delivery, Subscription

# 绪论

FOOE探讨了社会饮食习惯中的下一个流行元素，即与健康和福祉有关的饮食质量的改善。这个设计是基于研究和调查的结果，同时也受到订阅商业模式和服务模式的启发。FOOE是一个定制的食品配送应用，提供生鲜食品配送的订阅服务。该算法根据每个用户的情况提供优化的食物选择，用户能够在应用程序上监测他们的营养物质摄入量和身体统计数据。该论文将阐述商业模式、分销模式、可持续目标和应用概述。

本项目将从世界食品历史的角度分析未来的饮食趋势，例如，决定区域饮食特征的遗传基因和气候差异，以及政治和经济引发的以食品为载体的阶级的变化，这些都存在于全球历史中。高质量的饮食是趋势之一，但有一些现实的因素阻碍了大多数人采用健康的饮食。一个特别的原因是工作/学习生活和家务事占用了大量的个人时间，更多的注意力放在吃饭上会导致疲劳，这引起了改变目前饮食习惯的必要性。新加坡和瑞典在烹饪仪式和家庭结构方面都经历了革命性的社会转型，这涉及到工业化和社会共识等特定的促进因素。论文还将调查Kibbutz，一个自给自足的有意生活的例子，以讨论依靠当地供应的可能性。本文也将对具有类似功能的现有产品进行深入研究。

关键词：健康、服务、饮食习惯、食品配送、订阅

# Acknowledgement

I have learnt a lot this year, not only in terms of knowledge, but also in terms of the way of thinking. I would like to thank the professors in my line and my FWM tutor for their dedication, advices and support. I am also very lucky to have such friendly and genuine classmates.

I am also grateful to my parents for supporting me and always being there for me. Finally, I would like to express my appreciation to friends I met in Barcelona for their companionship and encouragement.

# Table of Contents

## 01
## Introduction

## 02
## The history of food rituals

## 03
## Everything as a Service

## 04
## Case studies

# Table of Contents

## 05
## Research analyze

## 06
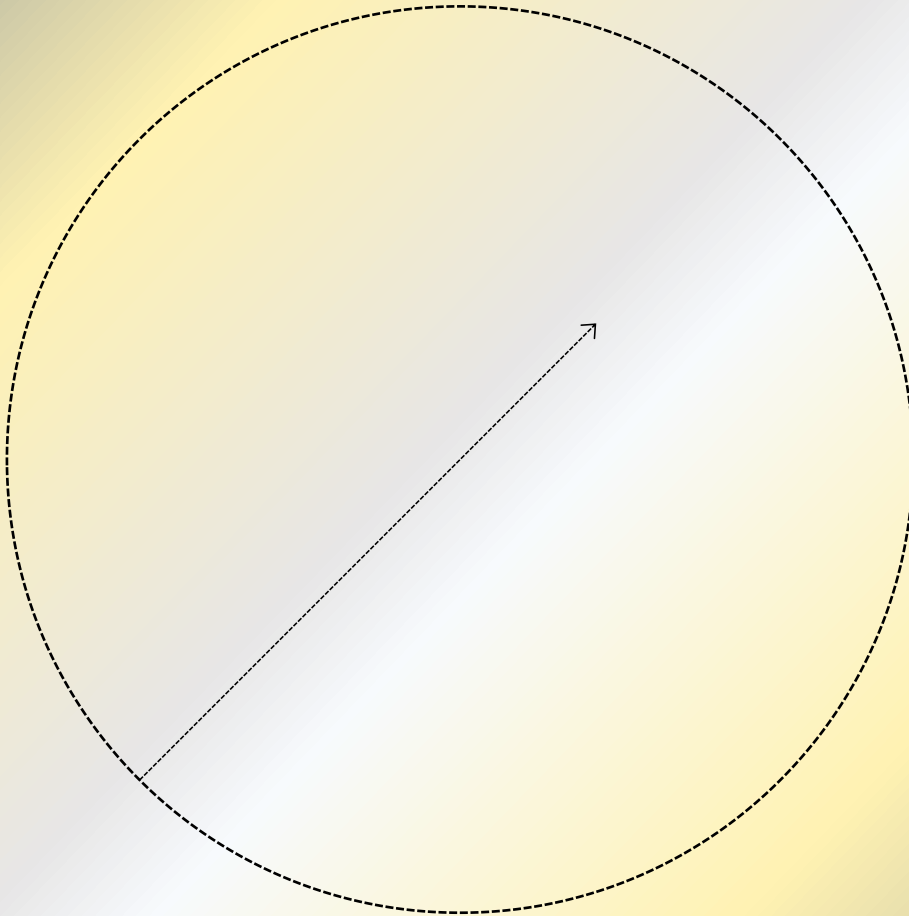## Final design - FOOE

## 07
## Conclusion

Reference

Appendix

# Introduction

*Technology has changed human beings from children into persons. But all such progress of individuation has been at the expense of the individuality in whose name it took place, leaving behind nothing except individuals' determination to pursue their own purposes alone (Dialectic of Enlightenment p. 125).*

## 1.1 Background

The original intention of the work was to provide convenience and efficiency to the cooking processing. The group of international students' experience inspires the idea. As international students, we must strip ourselves of our families, which have sheltered and nourished our well-being. We have to be our own chefs and caregivers. Growing up, I was always curious about the kitchen. I used to stand by and watch my mother turn the ingredients into gourmets. For a kid, cooking is magical, like chemical experiments. While being able to cook is also a symbol of independence, which approves that we have mastered a technique to support ourselves.

Although enjoying much and having a sense of achievement during cooking, the enthusiasm fades away as I discover so much time I have invested in the kitchen to prepare daily meals.

I never restrain my pride in my country's food. Flavors spoil my tongue. In contrast, flavors require multiple procedures that take significant amounts of time. Doing cooking every day, I can no longer find pleasure, and it only radiates anxiety and becomes a burden of mine. It seems like a secular convention; it would be a misfit to raise the doubt that there are unreasonable factors in modern cooking behavior. We are following a tradition out of touch with our reality. It also reminds that how underrated and complex household chores are.

Household and its influence regularly transgress the domestic as household is both a microcosm of society and an active agent instituting change within that society (Kerri S. Barile, Jamie C. Brandon, 2004). Household chores existed almost as early as the birth of humans, which women often undertake. Technology, in a certain way, has emancipated humans from household labor.

We have washing machines doing the laundry, vacuum cleaners, dishwashers, and other electric tools piling up, supposedly making our lives easier. While factually, chores become more complex. For instance, different garment textures require particular detergents during the laundry. There is still manual labor unfolding, such as taking the clothes to the drying procedure, folding them, and tidying them in the closet.

The advanced tools raise the bar of chores. Technology created convenience but simultaneously elicited new needs. People whirl around the household machines, which still draw incredible attention and time. The revolution of social norms is not satisfactory if it only stays at a purely technological level. The technology could be a helper towards radical change in social behavior, which would liberate humans.

The design would focus on a particular social factor which is culinary culture. The thesis will analyze the growing subscription model in the service business. The trend shows an opportunity for material products to adopt the business model. The design tends to integrate subscription service with food delivery, transferring a significant proportion of the work in the home kitchen to a third party.

The thesis will also investigate the history of culinary habits in order to generate useful conclusions to help complement the final design. The modern food industry can feed most of the population, albeit the covid-19 pandemic has worsened the world hunger. Here I still hold a positive attitude to speculating what components make our culinary habits in next era. In the middle ages, eating fine white bread was regarded as a symbol of nobility (Jeffrey M. Pilcher, 2002). Nowadays, people evaluate white bread as unhealthy food. Food factories and shops have made products more tasteful and universal. Even the culinary hierarchy at the subsistence level has been flattened. People are more concerned about chemical additives and balanced nutrient intake.

The evolution of culinary rituals in different regions was determined by various components such as climate, culture, religions, and even genes. Advanced agriculture guaranteed the basic needs, at the same time, kindled the primitive market in exchange for goods. Politics and economies went on stage, playing a crucial role in food history. Gender is also involved, as in the patriarchal context, women undertook most responsibility in the home kitchen while being given less value than men. The social hierarchy also appeared as nobilities consumed rarer ingredients while the poor depended on a large grain intake to alleviate hunger.

The final design of FOOE aims to provide comprehensive food service in the contemporary era. The users can subscribe to customized recipes according to their body statistics and receive weekly ingredient distribution at home to gain a rational percentage of protein, grains, and other nutrients, avoiding excessive intake and malnutrition. The goal is also set to address the extra values we generate in the home kitchen satisfactorily.

The project is not oriented to serve a certain tier, but determined to be universal. Although the goal would be challenging to apply in the short term, many regions still suffer from hunger. The transition of people's perception of food structure also takes an extended period. For instance, Eastern Asian people have an obsession with carbohydrates. Another value is to be sustainable by adopting biodegradable packages and arranging reasonable transport to reduce carbon footprints.

The approach would also primarily use local resources to curtail emissions and stimulate the local economy. The value is to bring caring and considerable service to people. Users only need to follow a few easy steps to obtain customized recipes. The App could also present body statistics giving the user a holistic understanding of their body conditions by connecting to smart scales. The App can also tell the nutrients by analyzing photos of cuisines, the function is available also for non-subscribed users.

**The whole process:** Fill out the form in the App (Allergies, preferences, vegan or vegetarian)--Choose food plan (Breakfast, Lunch, Dinner)--Pay the fee--The main page showing the following week's recipes--Receive the package--Cook with the help of recipes.

To specify, the ingredients are all pre-processed to reduce preparation time before cooking. The users can make cuisines by simply dropping the ingredients into the pan, or bowls if the food does not require heating such as salads. The seasonings would also come with the food with exact rations.



FOOE

Universality

Sustainability

Caring

*Fig. 1.1 The Company Philosophy*
*Source: author*

**1.2 Objective**

The design is to provide a service that could generate healthy recipes according to the users' conditions. The business model is embedded with a subscription service that offers weekly food delivery to clients' homes. The goal is to provide a tool to help society transition to a more palatable community to live in. One of the two features is to transfer a certain proportion of home kitchen labor to the third party as a solution to address home labor contradiction. Another feature is to promote healthy eating to be more common. The world history of food rituals concludes the idea. As industrialized production well-fed the population and flattened the hierarchy at the subsistence level. Health becomes privileged in the current situation. Food is the most direct intake of nutrients. While today, being able to afford nutritionists' guidance is a luxury. The design aims to provide healthy diets to the average population at a reasonable cost.
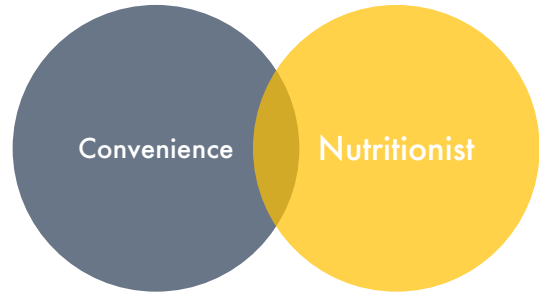


Fig. 1.2 The Offered Value by Comapny
Source: author

The final design combines the two elements above. 'Convenience' manifests as weekly delivery of food following the customized recipes. The ingredients are pre-processed, which helps reduce users' time on preparation before cooking. The App function as a cyber nutritionist, providing nutritional recipes.

Users upload the basic information on height, weight, allergies, and preferences, and the algorithm then calculates the optimized food choice according to the data.

- Sort out the supply chain and the reasonable geographical configuration of warehouses.
- Study user journey map, and test the validation of the system.
- The design of the App

**1.3 Hypothesis**

Many solitary individuals have trouble arranging daily meals properly and maintaining a healthy diet.

Suppose we offer a customized food delivery App that generates recipes according to users' conditions and dispatches the ingredients on recipes to customers' homes weekly. We can help reinforce and promote the idea of healthy eating, making balanced diets more tangible in society. Ultimately healthy eating will be a universal social consensus.

**1.4 Methodology**
1.4.1 Inquiry

One of the methodologies selected is a digital questionnaire carried out by google forms in order to get broader and comprehensive results on people's awareness of social shifts, adaptation to novel technology, cyber privacy, eating habits, and repercussion of current food apps.

1.4.2 Individual investigation and interview

The individual investigation is set to insight into users' daily routine, how and what they eat, time and frequency of cooking, and thoughts about food delivery and home-cooking. The interview is to have more details regarding perception towards health and social transition.

### 1.4.3 Literature Survey

The book Food in world history (Jeffrey M. Plicher, 2002) presents comprehensive research on culinary culture and food politics. It demonstrates the political, social, and environmental implications of our changing culinary history and how hunger and taste influence and integrate into human history.

The purpose is to research the regional culinary ritual. Investigate the factors that determine the transition in world food history, along with the evolution of food productivity and preservation before and after the Industrial Revolution.

Finally, examine the food trends present and shortly that would again facilitate the transition of our culinary ritual.
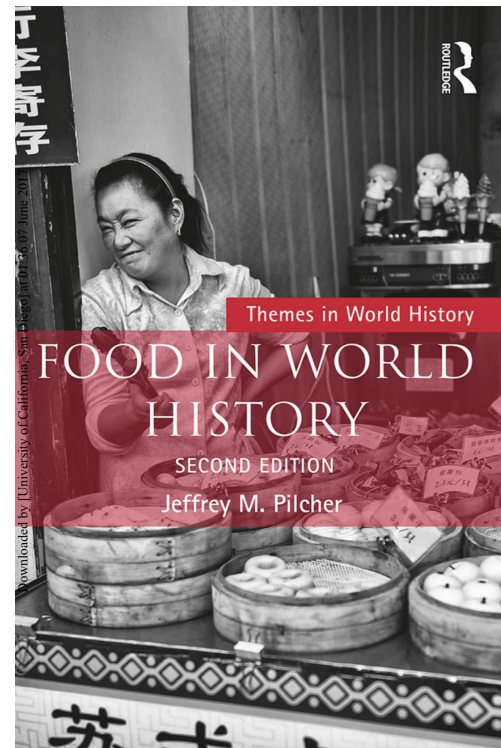
*Fig. 1.3 FOOD IN WORLD HITSORY*
*Source: Internet*

1.4.4 Case studies
1.4.4.1 Singapore hawker center

Hawk center is an integral segment of Singapore communities. Often located near town centers or within walking distance of residential areas, a considerable population depends on their daily food intake.

A hawk center is often a gathering of mobile food carts. In 1987, hawk centers experienced a round of urbanization reform to improve food hygiene, facilitating its ubiquitousness and acceptance in local communities. Modern hawk centers are even equipped with AC. In 2020, UNESCO announced the Singapore hawk center as a 'community dining room,' where people from various backgrounds eat together. The local food culture is that Singaporeans are more accustomed to dining in the hawk center than cooking at home.

I am using this case to analyze how the economy, culture, and legislation would beget evolution in culinary rituals.

1.4.4.2 The Kibbutz

The word 'Kibbutz' means 'gathering, clustering' in Hebrew. It is a collective community in today's Israel, founded by members of the Bilu movement who emigrated to Palestine. The first Kibbutz was Degania Alef, founded in 1909. The most income in Kibbutz communities comes from agriculture and industry. The original conception of the Kibbutz was based on a form of economic cooperation that in many ways resembles communism (Dana Regev, 2016).

The Kibbutz was a unique product of the Zionist labor movement and the Jewish national revival (Encyclopaedia Judaica). The Kibbutz movement aims to establish a community where there is no individual wealth and which takes responsibility for the needs of the whole and its people. Located in the militant area, the Kibbutz had to reduce its dependence on external markets to develop local agriculture.

Through Kibbutz case analysis, the expected result is to acquire a general conclusion of the possibility of relying extensively on local production to reduce transportation.

1.4.4.3 The Swedish Social Policy

Sweden's social reforms in the 1970s demonstrated the role of collective consciousness and non-authoritarian government in advancing and guiding social transition. The revolution aimed to free every Swedish individual from domestic and social dependences.

The Swedish model of society illustrates the possibilities and the way forward for future communities. I am using this example to explore the impact of individualism on future eating rituals.

1.4.4.4 Glovo

Glovo is a Barcelona-based company oriented as an on-demand courier service that purchases, picks up, and delivers products through its application. The products range from restaurant meals to groceries.

The thesis will analyze its business model and revenue flow in order to conclude its pros and cons and inspiration for the design.



*Fig. 1.4 Fig. Glovo courier*
*Source: https://about.glovoapp.com/our-business-model/*

**Design Evolution**
**Design Routine**



Fig. 1.5 Roadmap
Source: author

**Design Evolution**
**Role Play-Customer Interaction**



*Fig. 1.6 Roleplay*
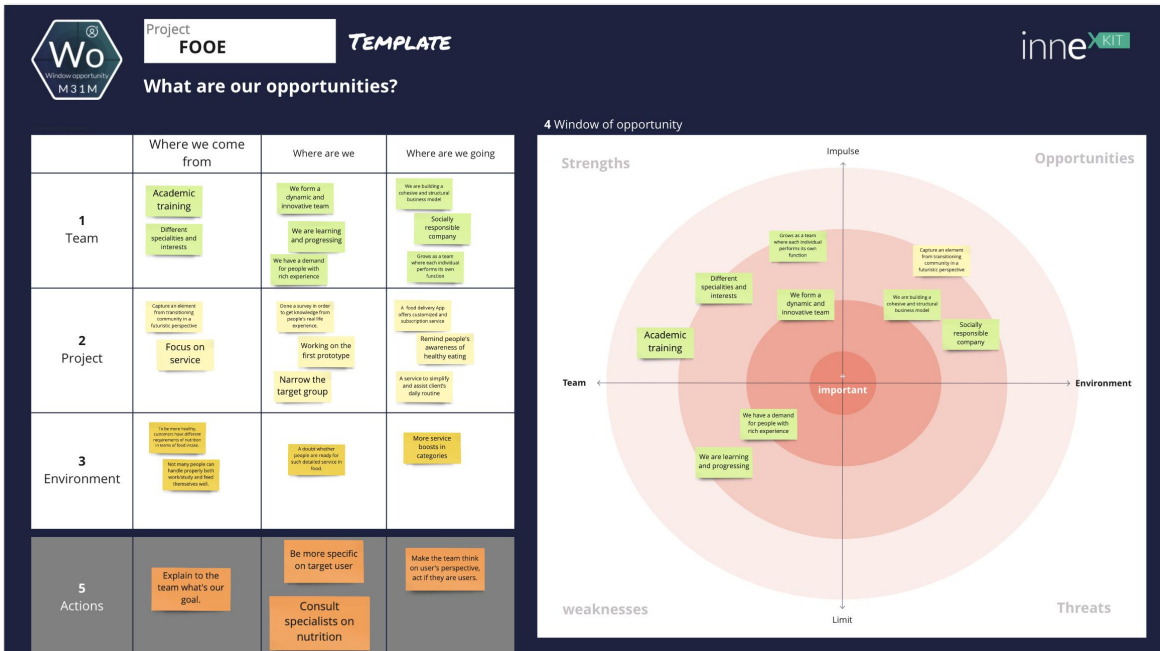*Source: author*

**Design Evolution
Business Plan**



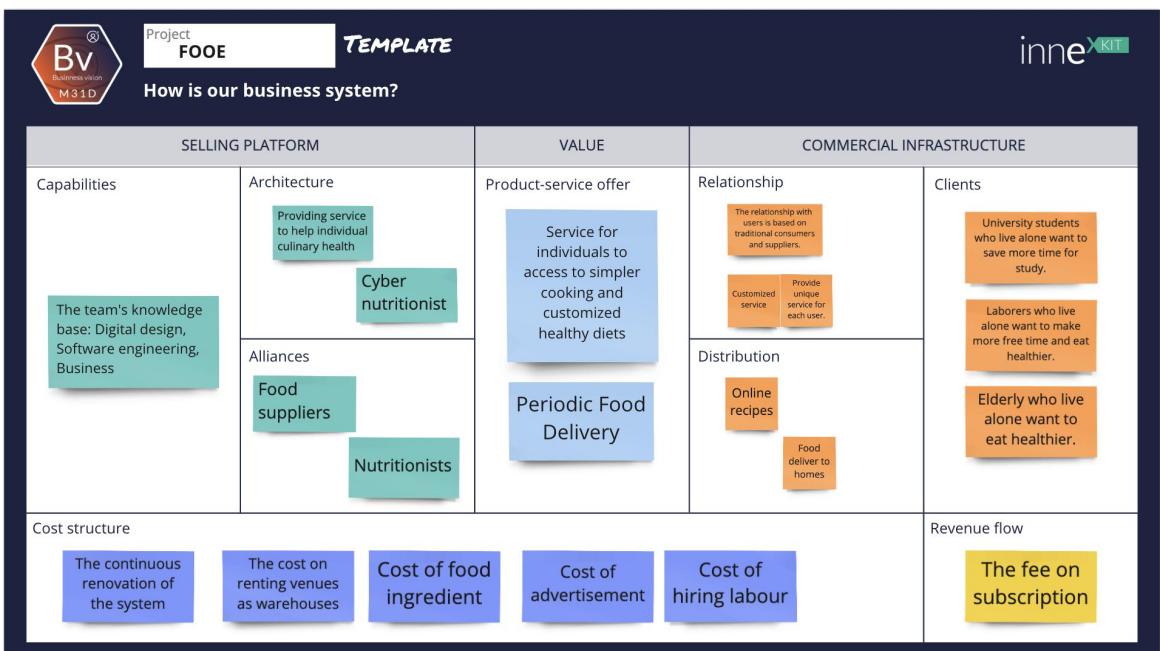Fig. 1.7 Window Opportunity
Source: author



Fig. 1.8 Business Vision
Source: author

**Design Evolution**
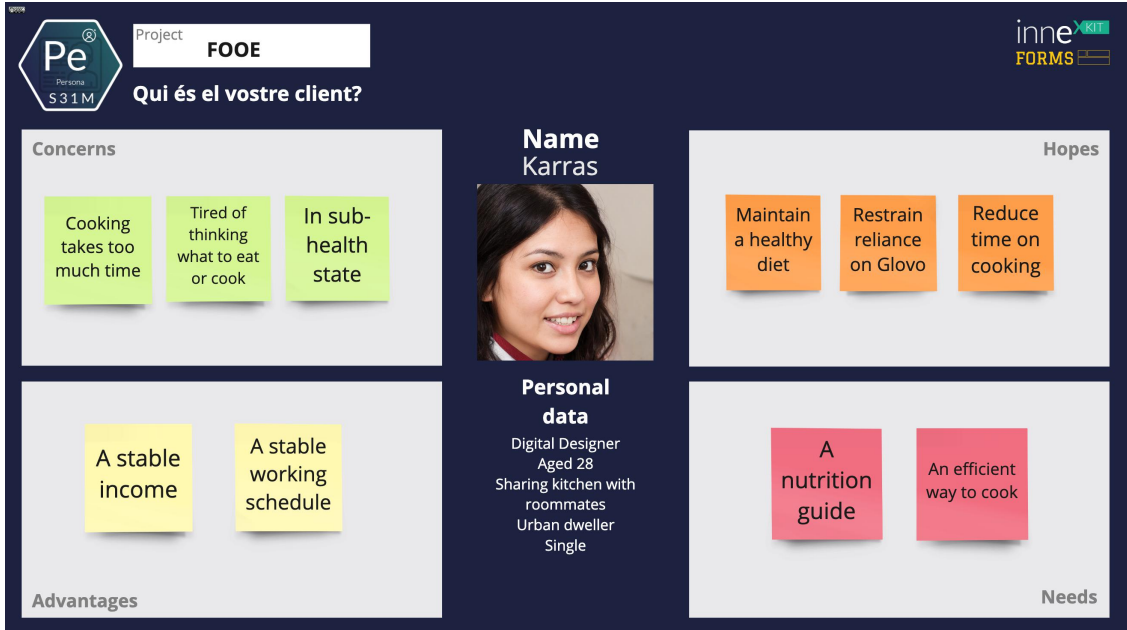**User Persona**



Fig. 1.9 Persona
Source: author



Fig. 1.10 User Journey Map
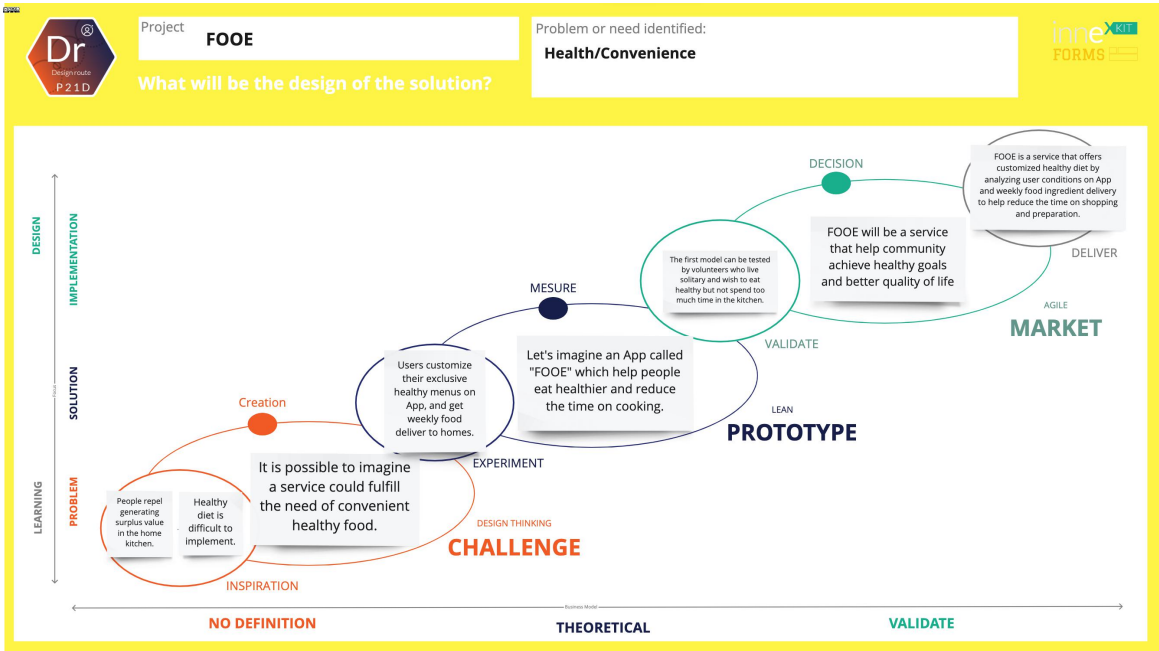Source: author

**Design Evolution
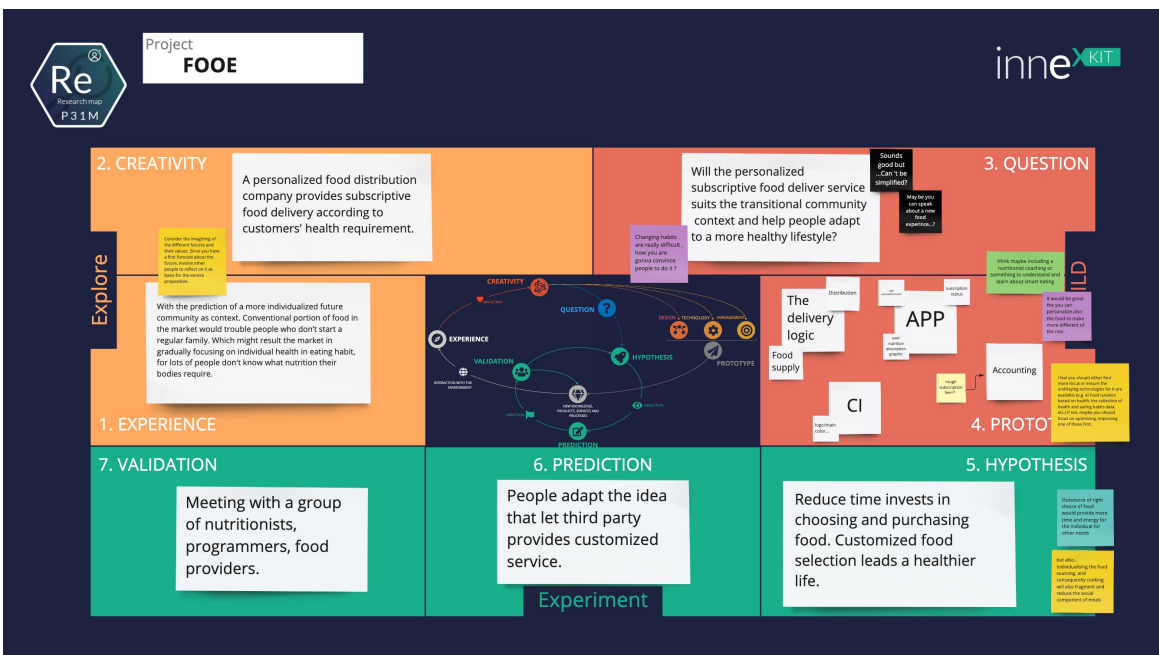Validation**



Fig. 1.11 Design Route
Source: author



Fig. 1.12 Research Map
Source: author
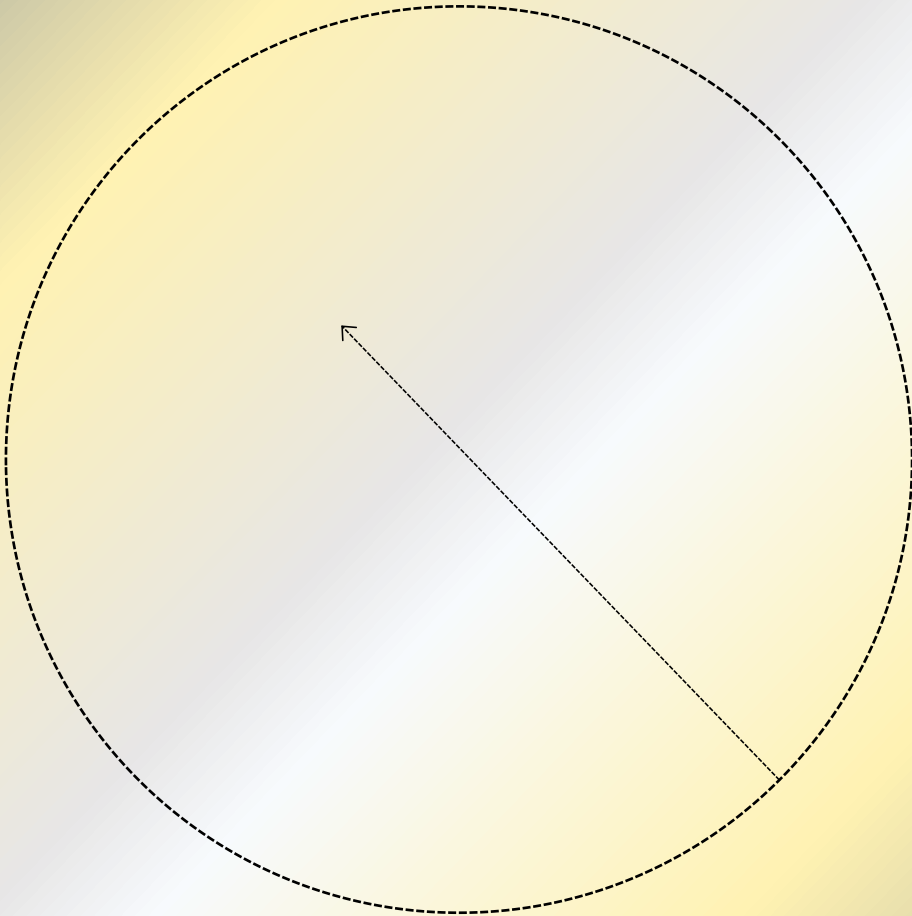
This chapter will illuminate the history of world cuisine, which was influenced by many factors such as climates, religions, politics, and economies, according to the book *Food In World History* (Jeffrey M. Pilcher, 2002).

Modern industrial production guaranteed sundry choices for individuals while the assortment of food supplies tapered off. The novel diets and individualistic eating traits have lessened the sense of community that formed at the dinner table. Sharing food is a distinctive human behavior; most animals eat alone and guard the food against others. When agriculture ensures the basic needs, eating together becomes a social event that develops intimacy and solid social ties. Nevertheless, the same foods that bring people together as social groups also separate them from outsiders. People search for a unique identity in cuisines that could differ from states to next-door neighbors, taking pride in their exclusive recipes.

It may lead to an understanding how foods helped shape human societies, such as Irish potatoes and Chinese tea. Culinary taboos are also a factor that reinforces social identities, differentiating people from other religions and communities.

The different food choices in the geographic spectrum also involve genetic reasons. The groups beyond Northern European, Central Asia, and East Africa are unlikely to process amylase in dairy, a valuable source of protein. Nevertheless, there are alternative recipes, such as East Asian tofu, Mesoamerican corn tortillas, and South American cassava bread.

In the book, the author raised five historical subjects functioning as decisive causes in the formation of human culinary habits. The first is the ongoing exchange of foodstuff due to merchants transporting goods continentally. The second of all is the tension between agriculture and pastoralism. Social hierarchy is also a non-negligible cause. Another component is likely to link with gender roles, the labor division, preparation, and allocation of consumption within a family in the patriarchal context. The final theme is the state's role in determining the production and the allocation of food. The five factors demonstrated the influence of food in the global transition to modernity.

**3.1 The Early World Cuisine**
3.1.1 Asian Rice Cuisine

Confucianism deeply impacted the ancient Chinese food ritual. Confucianism supports a patriarchal monarchy and thus emphasises the strict hierarchy between monarch and minister, father and son, husband and wife. At the heart of the monarchy was the Legalism idea of manipulating the people and keeping them uninformed. Confucianism, which is morally highly disguised, became a tool for the rulers to win over the subjects. The Confucian culture of the monarchy's ideological tool has restrained the opportunity for East Asia's development in industry and democracy. The population had experienced constant famine during the periodic change of monarchy and war. The autocratic regime obliterated the breakthrough of this archaic agrarian civilization.

Confucius also had a set of rules for eating. He believed that the mainstay of a meal should be grains, and that meat should be eaten with rice in an appropriate ratio. More meat than rice, is too greasy and inappropriate. Thus one particular trait in Eastern Asian eating rituals is to have large rice bowls with fewer condiments such as meat and vegetables. In ancient times, people lived by agriculture and handicraft, so they needed to eat more grains that could instantly supplement energy. The ritual of eating rice with dishes as condiments is seen as a custom that remains till today.

3.1.2 Classic Mediterranean Food

Before the republic of Romans, Greeks and Phoenicians had established colonies and planted wheat, olives, and grapes throughout the Mediterranean and the Black Sea basins. The merchants had exploited the early market in subsistence and luxury goods. Most of the population earned a living through farming. Nevertheless, the most self-sufficient farmers made exchanges in the market.

The early republic led a frugal food ritual. Wheat porridge, protein-rich broad beans, cabbages, and other vegetables made up daily meals. Some urban residents kept a kitchen garden where they could directly access fresh greenery to make salads complemented by olive oil. Unlike the Chinese wok culture, the Romans believed vegetables were naturally cooked by the sun. The grass and fodders for the stocks were rarely reachable due to the Mediterranean climate; even the riches had limited access to animal protein.

Lavish banquets are also a trait of the Roman republic, involving political, social, and religious purposes. For instance, meat sponsored by patrons was provided to entertain plebeian participants in order to gain their votes in a political context. On the other hand, it reflected the hierarchy in political and social aspects.

A new hierarchy emerged as the aristocracy installed ovens in the houses. Home-baked fine white bread and cakes were attainable for the upper class, while the ordinaries purchased coarse loaves in local bakeries.

### 3.1.3 Multicultural Origin of Muslim Food Ritual

Islam also incorporated multicultural traditions and inherited Persian and Greek civilizations through conquering under the second caliph. Expanded from Spain to North Africa and from the Middle East to India, Muslim food rituals comprised elements from three continents, absorbing ingredients and cooking techniques from each continent.

The unity acknowledged commerce and migration, which promoted the Asian corps to the western world. Unlike ancient China, Muslims recognized merchants as an honorable profession. Low tax, free labor, and a chance to own lands attracted farmers from Persia and India to migrate westward. The thriving trade business pushed crops to ship roundabouts; the ingredient was introduced to another world and improved.

The Muslim culinary ritual has a distinctive religious feature. Some restraints beget particular food preferences. For instance, Muslims abstain from pork, making mutton the favorite source of animal protein.

### 3.1.4 Conclusion

Geographical differences determined the eating ritual in pastoral and agricultural communities. In the meantime, the genetic factor of lactose intolerance forced many East Asian adults to give up dairy food. Although butter, cheese, and yogurt are common ingredients in West Asia and the Mediterranean world. Compared to nomadic communities, agrarian societies intake protein-rich beans as a replacement for meat. Nonetheless, malnutrition was a general status in the ancient world.

Culinary hierarchies exist in all three cultures. Being able to consume scarce foodstuff differentiated the privileged from peasants. Cuisines and taboos that were endowed with social identities separated insiders from foreigners. The enthusiasm for ethnic cuisine and spice facilitated long-distance food commerce. Food preparation also reflects gender inequalities; while women arrange family food in the home kitchen, men dominated the field of chef profession in the courts and churches. Last but not least, the mix of cultural and political patterns could lead to a long-term impact on plebeian food structure and the mode of production as in ancient Chinese society.

**3.2 Morality, Politics, and Economies**

In the eighteenth century, food riots prevailed as food supplies became more dependent on markets. The enhanced agriculture and growing markets largely prevented natural famines. When the subsistence needs were met, people tended to look forward to a higher quality of life. Nonetheless, food distribution made up an imperative role in the food market just as its production. Therefore, when the merchants decided to ship the crops to cities that generated more profits rather than feed local people, the conflicts broke out in the European countryside. In response to the avarice of merchants, the crowd asserted the request for a "moral economy." Though with different contexts, similar riots took place in China and Ottoman empires, when the issues accumulated as established hierarchies were blatant.

3.2.1 The Hunger of Early Capitalism

The early market was rarely regulated, which resulted in the relentlessly increased prices of essential matters. Food riots broke out as women who were usually in charge of their family's daily care observed that the bread prices were so exorbitant that they could hardly make ends meet.

The crowd looted bakeries and markets while still paying the sums they thought to be reasonable. The purpose was to prompt local elites to shoulder their social responsibilities.

The agricultural standard in eighteenth-century England was relatively advanced, capable of feeding its population. The enclosure movement facilitated the privatization of communal fields. Wealthy farmers were able to accumulate land and hire laborers. Even the villagers depended on markets to purchase daily goods rather than their grain production at the time.

In France and England, both landowners sent their grains to the cities in exchange for higher profits. By the late eighteenth century, liberals began to promote free trade by abrogating medieval laws against monopoly. The action of ignoring hungry locals beget disturbances. Nevertheless, the British elites still asserted that the free-market guaranteed public welfare.

### 3.2.2 China's Ever-normal Granary

Contrary to the philosophy of western elites, the ancient China court had been purposely avoiding the free market. In Han Dynasty, constant wars with nomadic people conducted financial stress. Emperor Wu adopted the strategy of which iron and salt became a state-run business with the intent to finance from the most substantial need(Esson M. Gale, 1930). After Emperor Wu's intervene, subjects were unable to afford salt. The unilateral supply and pricing engendered unnatural inflation of prices.

Likewise, the granary system was founded in Han Dynasty. When the grain is cheap at harvest, the state will buy a large amount of grain higher than the market price to avoid low prices encumbering farmers. When the grain harvest fails, the state would sell a large quantity of grain at a price lower than the market price to curb the rise of grain prices and prevent famine.

Nonetheless, the system had limited impact in areas where markets sufficiently complemented the needs. The merchants thus shouldered an imperative role in mobilizing food from regions of oversupply to where food was scarce.

A similar riot to Europe occurred during a shortage between 1742 and 1743. According to the current governor of Jiangxi Province, the local landowners and merchants were responsible for the shortage by hoarding grains and refusing to sell them at current prices.

By the end of the eighteenth century, the granary system withered along with the Qing Dynasty. The unrest situation increased the military demand and ultimately depleted grain storage. Feudal bureaucracy bred corruption, and the only benefit of autocary-efficiency was finally drained.

### 3.2.3 The Ottoman Empire

In the sixteenth century, Ottoman sultan rulers had a strict supervision mechanism over urban supplies. By the late eighteenth century, the once invincible empire began to disintegrate as the Janissaries turned their back on military modernization and were inclined to profiteering. Local potentates under the central government raised private armies. The unrest situation impeded subsistence supplies for ordinary people. Corruption by governors triggered riots in a time of shortage.

The loosened supervision beget agricultural deterioration and depopulation. The law that inhibited grain transporting between provinces only worsened the situation. Suffering from hunger and labor exploitation, peasants fled to the cities or resorted to violence, leaving the fields fallow. Bureaucracies profited from grain commerce and raised food prices by hoarding ample supplies in the cities. Janissaries brought no protection but intersected grains and sold them to the black markets. When the angry crowds protested outside the court, troops came to disperse them. Resembles the Chinese case, absolute autocracy only assures the population's well-being when the system has zero corruption.

3.2.4 The Great Hunger

Before the English invasion, the Irish mainly subsisted on dairy food in the sixteenth century. When the invasion occurred by the end of the century, the habitants were forced to tenant farming. The exorbitant rents raised the plant cost, and the Irish had no choice but replaced grains with potatoes as subsistence. The Andean tuber is well adapted to the local soil, productive and nutritious, encouraging a significant increase in population which exceeded the capacity of fields.

The 1845 Irish famine started with a species invasion. An American fungus, phytophthora infestans, the most costly potato pathogen, spread throughout Ireland, causing a million casualties during the famine years. However, ships with piles of grains set out to the English markets from Ireland, even as local people died from starvation.

The natural disaster was partly responsible for the situation. Parliament launched a complementary law in 1838, while the starvation stretched nonetheless. At the time, the prisoners could consume superior meals to local workers, which ignited locals to get more food by committing crimes.

3.2.5 Conclusion

Modern starvations mainly were attributed to inappropriate distribution other than natural causes. Harvest failures provoked the crisis, but political and economic measures can determine the upcoming consequences

**3.3 The Industrial Kitchen**

Modern diets largely depend on mass production in food factories. Cuisines once served only to the nobility, such as white bread, became the home kitchen's typical dish. At least in most regions, starvation has become an uncommon issue.

The assorted provisioning of food improves the nutrition status of ordinary people. Notably, the supply chain in one country could involve multiple continents. Canned food turned shoppers into entrusting the labels. Livestock has been disassembled in the factory so the meat can be placed neatly in the supermarket freezer, categorised by parts. Farmers directly supply goods to big warehouses at standard market prices.

3.3.1 The Preservation Technology

The canning and refrigeration technologies prolonged the food quality period and enabled mass production to feed large populations. The advanced machine standardised manufacturing from inanimate objects to living beings, as livestock was divided precisely into parts. The steam engines promoted the extensive exchange of goods globally.

The Ancient Chinese discovered salt could be used to preserve meat products, as in Europe, North Atlantic salt cod was popularised in the sixteenth century. Tin can technology only emerged in the eighteenth century. At the beginning of the Napoleonic Wars, the troops demanded a large amount of quality food. The French government announced a reward for whom could provide efficient methods to preserve food. The local confectionary, Nicolas Appert, discovered that food boiled in a jar did not deteriorate unless the seal failed, although without knowing the theory. The British soon adopted the technology, yet the primary process was slow and laborious. The market stagnated within British Army and Royal Navy. In Europe, canned food was once a middle-class symbol and a novelty in the middle of the nineteenth century. The mass production unfolded as the factory in New York used improved tin-plated wrought-iron cans to preserve meat and even fruits and vegetables. World War I furthered the canning technology as soldiers required high-calorie food with large quantities which could be transported easily and efficiently. After the war, the factories improved the canned food quality, aiming to gain the attention of civilians.

Mechanical refrigeration as well makes an integral component of modern food distribution. Urban dwellers are thus accessible to fresh meat well preserved in low temperatures. (In 1867, cowboys opened the Chisholm Trail, driving longhorns north to the railhead at Abilene, Kansas, for shipments to eastern markets.) When George Hammond first managed to ship beef by railroad icebox, live cattle transports had barely existed. The prosperity of refrigerated rail cars could almost be foreseen as a general trend. The cost was primarily reduced within a decade, making fresh meat more economical.

3.3.2 Industrial Food Creation

The growing knowledge enables scientists to meet new demands, such as grains that could be milled more easily based on industrialization standards. Chemical additives are invented to slow decay, and artificial substitutes compete with natural extraction. Food science-primarily aimed to increase field production, yet it has transferred the culinary process from the home kitchen to the factory.

In 1866, the French government launched a competition to find a substitute fat for the military and the working class to remedy the difficulty in supplying fresh dairy to city inhabitants. The chemist Hipolyte Mège-Mouriés introduced "oleomargarine" (which comprised emulsified beef tallow, skimmed milk, water, and salt for flavoring.) The low-cost substitute for butter soon spread widely.

In the 1850s United States, Gail Borden developed condensed milk in response to the demand for less perishable milk. The same technology was applied to factory-made soups fifty years later. Much as the convenience tin cans had brought with them, still, the bulky size raised marketing problems. The invention of breakfast cereals is a good case to demonstrate how technology overturned culinary habits by supplanting hot porridges with cold convenience food.

### 3.3.3 Post Industrial Worries

Industrial production begets consumers' distrust of manufacturers. The safety of packaged foods raises concerns as the shoppers have limited knowledge about the freshness of raw ingredients before they are made as to products. People hold uncertainty about whether chemical additives in food, either out of flavor or preservation, have harmful effects on human bodies. By the end of the nineteenth century, the fear of possible upheavals caused by industrialization led to a social transformation. Workers who were considered by the middle class to be drunk and dangerous were inculcated with moral values.

The unregulated food standard in factories also triggered activists to call for the government's action in market regulation. A triangle contest involving industrial scientists, government officials, and consumers aims to control modern food production remains to this day. In 1870, Britain pioneered a regulatory system with adulteration acts. After international health conferences, Canada and Australia passed the law to restrain food adulteration.

The safety of workers in the premise of industrial production also spawns uncertainty. In 1878, fourteen workers died of an explosion in a Minneapolis flour mill. When the air is filled with a certain amount of particles, one tiny spark could cause an explosion as powerful as dynamite. Particles such as flour can also bring about lung diseases through long-term exposure. Steam engines and other heavy equipment would also cause accidents in factories.

### 3.3.4 Conclusion

Industrialized food provisioning has dramatically transformed modern culinary habits from the nineteenth century to the present day, from Europe and its colonies to the whole world. When mass production guarantees the supply, the culinary hierarchy essentially flattens as consumers can access food previously only available to the aristocracy. The total intake of sugar, fats, and meats enlarge the chance of contracting heart diseases, high blood pressure, diabetes, and obesity in great numbers.

**3.4 Problems and Trends**
3.4.1 Culinary Identity and New Hierarchy

The present-day gourmets' desire for assorted food adventures originated in postwar reactions against consumerism. Affluent Parisians are dedicated to inventing novel cuisine inspired by Japanese minimalism aesthetics. It was counteracting industrial products and natural and simple cooking that excluded pesticide and chemical additives popularized in the 1960s. The idea of growing food on communal farms, albeit most of which failed, the surviving few became the basis for the organic food movement.

As plebeian street food and peasant cuisines were gentrified, little did the culinary hierarchy dribble away. The modern "foodies" and celebrity chefs are dedicated to seeking culinary adventures that possess authenticity and exoticism compared to industrial food to their sophisticated audiences. The natural, historical, and chemical-uncontaminated trait of foreign cuisine from distant lands makes up an unusual yet excellent savor. The adventures pursued unrecognized recipes and often created a distance between epicures and unknown foreign cooks whose racial bodies were considered evidence of exoticism and authenticity.

3.4.2 The Amateur Chef and Gourmet

Social media has provided an efficient way to access food advice, thus shortening the distance between professionals and amateurs. Social media apps such as Yelp and Instagram have also encouraged a direct dialogue between food critics and audiences, sometimes perpetuating a middle-class gaze regarding ethnic cuisines. Through comment spaces, as in Google Maps, every individual can express criticisms and affections toward the restaurant cuisines regardless of professional.

The covid pandemic stimulated people's desire to cook. Expressively uploading photos of homemade cuisine became a social media trend worldwide, establishing a link to the community during the quarantine period. The cooking experience also fulfilled a sense of satisfaction and engendered happiness. By posting recipes and food, users also gained belonging through interaction in the community.

### 3.4.3 Gender Labor

The advancing technology and cultural changes have a limited impact on household labor division. Despite the famous kitchen debate in the Cold War, statistical evidence shows a slight decline in the total hours of reported house chores. Women still shoulder both physical and emotional labor, such as caring for the whole family. Instead of encouraging an equal labor division, women are requested to take more household responsibility. Neglecting families becomes modern women's 'crime' for not balancing careers and families.

According to the IZA World of Labor 2020, with the aid of household machines, the average time of routine labor has decreased by 17% in the past 50 years, from 22.5 hours per week to 18.3 hours per week for people aged 21-65 in the US, which is not a significant decline during the long 50-year period. Notably, even the first-world country has benefited so little from household machines.
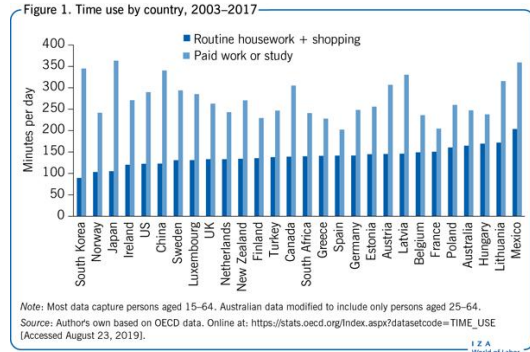


*Fig. 2.1 Time use by country*
*Source: https://wol.iza.org/articles/determinants-of-housework-time/long*

### 3.4.4 Conclusion

Compared to previous factors such as economics and politics shaped global diversified culinary rituals. Modern gastronomy also involves food quality, food experience, individual identity, and community belonging. *Gender issues* are a long-standing element that is associated with structural social norms.

### 3.4.4 Health Privilege

While intaking nutrients lead directly to overall health. Many struggles to access to healthy diet due to financial reasons and the capability to maintain a healthy eating ritual.

There are many reasons preventing modern people stay healthy. The urban pace of life often forces people to skip one meal or two or have a rough meal such as instant food or greasy takeouts. On this basis, socioeconomic status is the most critical determinant of individual health. This issue of the Journal contains several articles that touch on the connection between socioeconomic status and health. Pappas et al.' report that in 1986 Americans with a yearly income of less than $9,000 had a death rate three to seven times higher (depending on race and sex) than those with a yearly income of $25,000 or more (Marcia Angell, M.D., 1993).

As industrialized food factories fulfilled essential needs, the next step of our culinary pursuit should achieve quality eating at the public level, which requires clean, nutritious food and is about maintaining a wholesome diet to achieve healthy goals.

### 3.4.5 Conclusion

Compared to previous factors such as economics and politics shaped global diversified culinary rituals. Modern gastronomy also involves food quality, experience, individual identity, and community belonging. *Gender issues* are a long-standing element that is associated with structural social norms.

In the contemporary era, eating well is still an uncommon principle. The design aims to promote the idea of keeping a healthy diet and offer a method to achieve it.
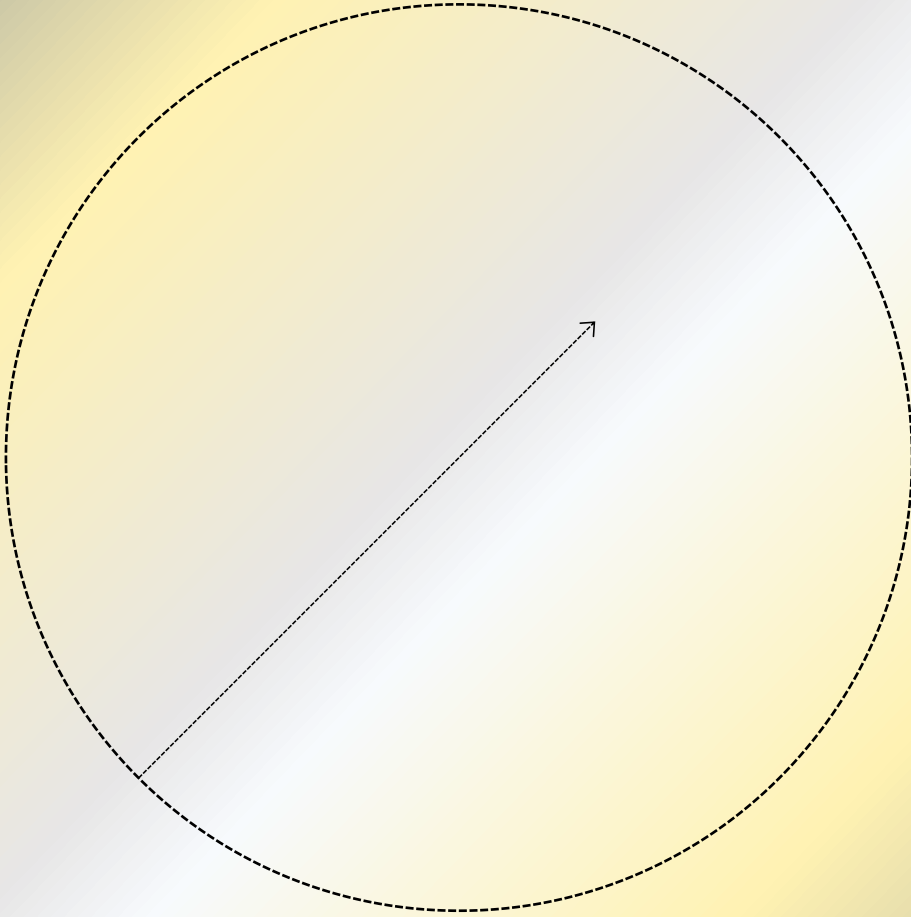
## 2.1 What is XaaS

The term 'as a service' originated from the technological area, specifically in the software world with the 'Software as a service' model, and quickly spread to other technological fields (Servicetonic, 202). Although it still manifests as a technological trend, the model has been functioning in the economic area to transition to 'as a service world.'

Everything can be coded and stored as bits and bytes in a digital era. The music and movie industry has had its first success in the transition from material format to dematerialized format.

## 2.2 Transition From Selling Products To Service

Spotify's subscription service has made music recordings no longer tied to conventional physical storage such as Vinyl, CDs, and music players and altered user behavior from ambiguous ownership to 24/7 access to the content (Koen De Bosschere, Marc Duranton, 2021). Spotify has not only changed our habits. According to the Canadian musicologist Hubert Léveillé Gauvin, the intro in an album is harder to find than in the era before Spotify. Songs get to the point faster and more straightforward, for users can press skip whenever on a streaming platform. The competition is endless. Songs need to be as eye-catching as possible to draw listeners' attention. One of the reasons could be that musicians depend on streams to get rewards from Spotify. It only profits when a song is played for more than 30 seconds.

Similar to the business model of Spotify, Netflix was initiated as a DVD rental service company, then shifted to a streaming platform with a subscription service. People have all the content available on the platform without having to deal with material matters. Users today are more than willing to accept a service that simplifies their lives. The side-effect is that artificial intelligence is learning user behavior, providing exclusive content for different users. Thus users are easily constrained within their preferences, in some way, manipulated by technology.

## 2.3 Subscription Business Model

Regularly paid fees by customers underpin the subscription business model. In exchange, consumers receive a continuous service or access to products provided by the company. In order to sustain business performance, the model requires durable connectivity between clients and the company.

While the EaaS trend has led to some disturbances in business sectors, it has facilitated a necessity for companies to reform the business model, which is to transition from selling products to selling services in order to survive in the competitive world.

Many corporations have seized the opportunity and dipped their toes into the water of the subscription market. Audi has offered its new e-Tron 55 Black Edition in the vehicle industry via a third-party subscription company. The vehicle is available to order from 1299 pounds per month. The service is operated by an electric car subscription service specialist, Onto. The monthly payment is considerably higher than leasing and PCP deals, but it is a different idea than owning a car. At the end of the month, the user decides whether to subscribe for another one or two months. The subscription plan leaves users room to regret and relatively lessens the responsibility of taking care of a car to make it last longer.

Although the subscription business model is not a novel concept, it is until recent years that more fields of enterprises have adopted the idea. It is also necessary to note that in recent research, subscription businesses are achieving 5x faster revenue growth than the S&P 500 (Gary Fox).

The trend has boosted several innovative services. Dollar Shape Club is a US-based company that provides razors and personal grooming products. Its distinctive feature is that the company emphasizes offering a subscription service, that is, to deliver products to customers' homes periodically by mail according to users' needs. At the same time, other companies struggle to promote their products to customers' faces—dollar shape club hands over a solution. A monthly shipped package supports customers to maintain regularity and functions as a caring assistant.

What pillars of subscription service, or more accurately say, an advantageous element that reinforces the ongoing strategy, is the state of the art of digital technologies. Payments processes and customer engagement management systems have made operating so much easier.

**THE SUBSCRIPTION ECONOMY INDEX LEVEL VERSUS S&P 500 AND RETAIL SALES GROWTH**
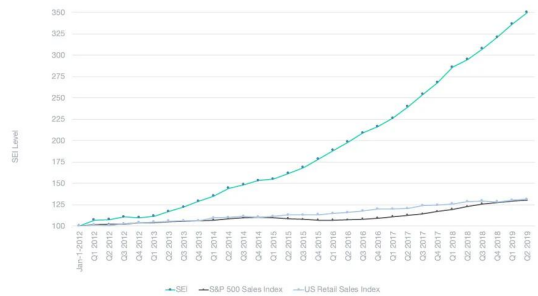
*Fig. 3.1 Overall, the SEI data reveals that subscription businesses grew revenues about 5 times faster than S&P 500 company revenues (18.2% versus 3.6%) and U.S. retail sales (18.2% versus 3.7%) from January 1, 2012 to June 30, 2019 source: https://www.zuora.com/*
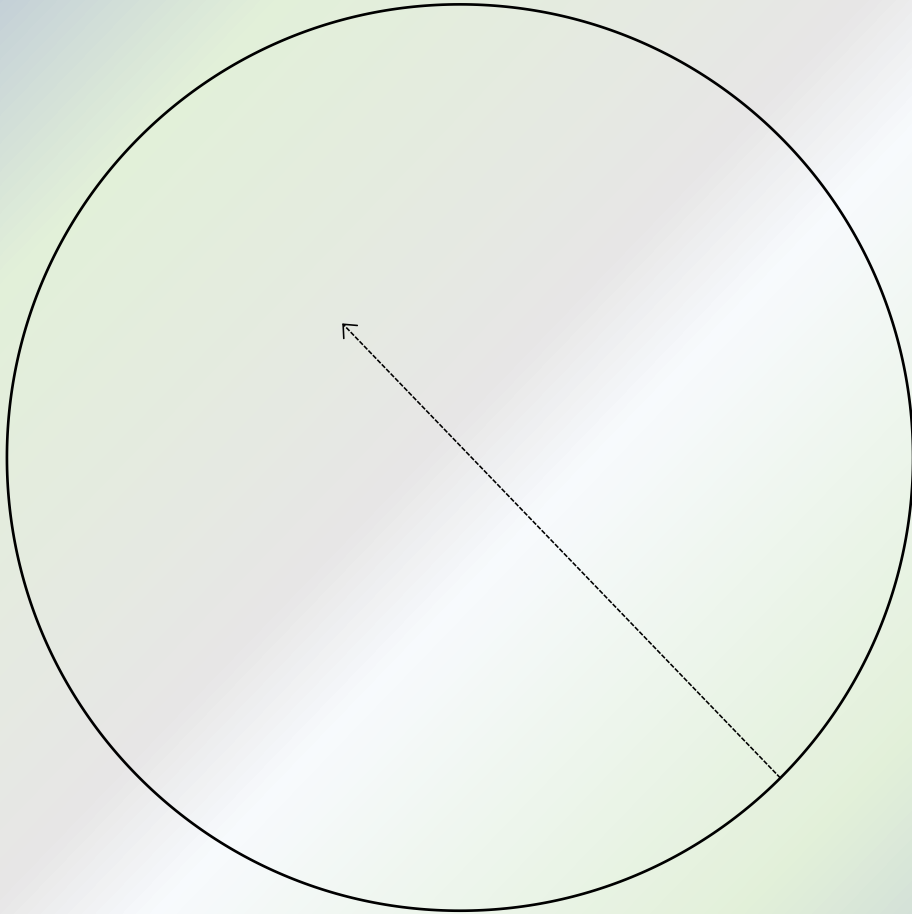
# Singapore hawker center
# Neo culinary identity



*Fig. 4.1 Fig. People dining in Singapore hawker center*
*Source: https://www.bonappetit.com*

The term 'hawker' refers to someone who sells food without a fixed location. For city administrators, hawkers are disorderly and unsanitary. Nevertheless, in the postwar era, street hawking allowed people with limited education to earn a living. The rapid industrialization in Singapore also created a demand for convenient and low-cost meals.

Contrary to the public's affection for street food, hawkers were administrators' primary concern regarding public health, for Singapore is vulnerable to infectious diseases due to its climate and location. The existence of hawkers also impeded city cleanliness and became the nightmare of street cleaners. The local government sought a way of regulation, requiring hawkers to submit to a medical inspection by municipal health inspectors to work with a license legally. In the late twentieth century, the hawker culture experienced a round of reformation, by which hawkers were taken off the streets and provided with a centralized under-roof space where sanitary conditions were improved. The business could be controlled more efficiently.

The hawker center spread across the country has become a crucial part of the region and an iconic element of national identity. Modern hawker centers are equipped with air conditioners and comfortable dining areas, providing affordable and hygienic cuisines. Often within walking distance near residential areas, hawker centers function as national dining rooms, each with a population depending on it for the daily necessities. It is also necessary to address that a hawker center is not where people feel obliged to dress up and maintain appearances (Randy Chan and Jolene Lee, 2014) despite the gentrification renovation. The atmosphere is rather casual and inclusive, making people feel at home. A public dining room also provides a space where people can sit and engage, reinforcing a sense of community belonging.

The hawker center case demonstrates how industrialization prompts a sensation among the population towards transforming culinary rituals. The role of the government is to vector social order and secure the most benefits, mainly subsistence for the populace.

# The Kibbutz
# Self-supply Agriculture



*Fig. 4.2 Fig. Kibbutz community*
*Source: https://www.touristisrael.com/*

The Kibbutz community is a practice of intentional living that began with zionist migration to Palestine in the 1880s. The East European immigrants brought socialist ideals, which prompted them to create a communal-style living.

The original economic goal targeted agriculture, partly intending to provide subsistences to dwellers and partly contributed to the dominant pioneering ideology. Nevertheless, Israel is not an ideal land for agriculture. The climate, cold, moist winter, and hot, dry summer make up a difficult situation for crops to survive. Along with dessert grounds and shortage of water.

The communal farm dedicated to planned mixed farming, the first tryout in 1951-1954 greatly overestimated the number of new immigrants, the water availability, and the progress of agricultural technology. Later with more accurate analysis, crops are planned to make the best use of field and water possible. Mixed farming not only realized autarky but also diversified risks such as natural causes or market fluctuations. Maintaining both crops and stocks also achieved complementation of rotation. The high self-sufficiency secured subsistential needs for a country like Israel surrounded by hostile states (Dan Leon, 1964).

Although a rare successful case of intentional life that aims at collective agriculture and communal living, it still has to open to the exterior system, maintaining a balance between its doctrine and necessary adherence to certain features of the outside world (David Barkin,1983). The principle of proximity simplifies the distribution system, but achieving complete reliance on local resources is not realistic considering the variants among different regions. The design model requires a diversified food supply to guarantee varied personalized needs.

# The Swedish Social Policy



*Fig. 4.3 Fig. Sweden*
*Source: https://nayadaur.tv/2019/08/culture-of-individualism-strong-welfare-state-swedes-prefer-living-alone-average-age-to-leave-home-around-19/*

The 70s Swedish social policy paved the way for Sweden's progress toward statist individualism. The manifesto called out to abandon outdated family stracture, free women from men, free the elderly from their children, and free the teenagers from their parents. The Swedish believe *'Authentic human relationships are possible only between autonomous and equal individuals'.*

Despite the pursuit of independence integrated into Swedish education, addressing independence as an essential capacity from an early age, a large proportion of the population actively participated in voluntary associations, possibly a more significant proportion than in any other country(Å Daun, 1991). In those groups, people who share resembling features join together.

The half-Italian and half-Swedish director, Erik Gandini, introduced the dark side of Swedish societies in the Swedish documentary theory of love (Erik Gandini). Although a country with high welfare, the population has been experiencing some plights, such as loneliness and dying alone. The director was appalled by the case of an elderly found dead in his apartment two years after his death. He compared the incident to Ethiopian culture, saying that someone could die alone is beyond the Ethiopian concept. Nevertheless, I hold a different viewpoint than Grandini attributes to the system of values. I do agree with the importance of community bonds to a certain extent.

The impact of individualism on future eating habits may be reflected in the dissipation of family meals. The traditional family dinner ritual predestines family members to have the same food. In order to enhance the health significance of the diet for the individual, recipes tailored to the individual diminish the need for traditional family dinners.

At the same time, the social aspect of food may not diminish along with it. During covid-19 quarantine, many people shared the homemade food photos on social media to gain a sense of community. Eating out with others will still be something to enjoy and connect with society. Because professional cooking is difficult to replace by the home kitchen and its convenience makes it a palatable service.

Regarding the design, which has individualism as a precondition, providing a personalized diet is challenging to implement in a family. Nevertheless, the design does not intend to reinforce isolation in the design. Thus it is necessary to add the function of sharing in individualized culinary services, such as sharing today's menu with relatives and friends.

# Glovo Business Model



*Fig. 4.4 Fig. Glovo courier*
*Source: https://about.glovoapp.com/our-business-model/*

Glovo is a Barcelona based quick commerce comany popularizing in Europe.

Glovo operates from Barcelona, Spain; it provides on-demand delivery service in 21 countries. The company has grown into unicorn status in Spain. The service covers delivery from restaurants, shopping centers, supermarkets, pharmacies, and courier services.

**Business Model**

The business model allows customers to pick and purchase products online and deliver them within a specific time. Glovo works with independent contractors (couriers) who are hired to fulfill the orders. Couriers must have their vehicles(bikes, motorcycles, scooters) and a mobile phone for contact and accepting orders.

**Additional Service**

Besides delivery service, the company also developed the delivery of its grocery products.

Quick Commerce
Small warehouses in which store thousands of products purchased from brands or wholesalers. Warehouse employees help pick the products on order. Customers can only order online, and the service is 365/24h available.

Cook Rooms
Glovo provides dark kitchens for restaurants when they reach total capacity. Restaurants can rent the venues placed in Europe to raise their food productivity.

**Revenue**

- Getting shares on orders: Glovo charges a percentage of the fee on joined partners when they make an order with clients.

- Shipping fees: Glovo charges shipping fees from both partners and clients.

- Subscription fees: Glovo offers a membership plan for its loyal customers. The delivery cost will be exempted when the order reaches a specific limit after subscription.

- Q-commerce: By establishing its warehouses, Glovo can gain revenue by selling supermarket items.

- Cook rooms: Glovo also revenues by renting kitchens to busy restaurants to expand the business.

**Reflection**

Glovo's success doubled during the quarantine period. The company purposely avoided competitive areas such as UK and USA for Glovo aims to earn the most market share wherever it launches. Glovo and similar companies have become a significant feature in the contemporary era, capturing the social demand for convenient food supply.



*Fig. 4.5 Fig. Glovo and Uber eats courier Source:https://www.emprendedores.es/gesti on/glovo-uber-eats-ley-rider/*

While the food delivery company provides more and more considerable convenience to consumers, ranging from food to other necessities, what has been ignored is the labor protection for the company employees. For instance, Glovo has launched a Q-commerce business that provides 365/24h grocery delivery. The company's promotion of highly convenient service for its customers is based on the exploitation of laborers. The availability of grocery stores cannot be juxtaposed with the necessity of hospitals. Considering the demand for a can of Coca-Cola at 2 am. is not a justified reason for someone to sacrifice their regular schedule for late-night orders.

The design would not pursue absolute convenience by exploitation because corporations have the ability in social transitions, and the company philosophy influences social values. The service will focus on the improvement of essential human life quality.

# Research
# analyze
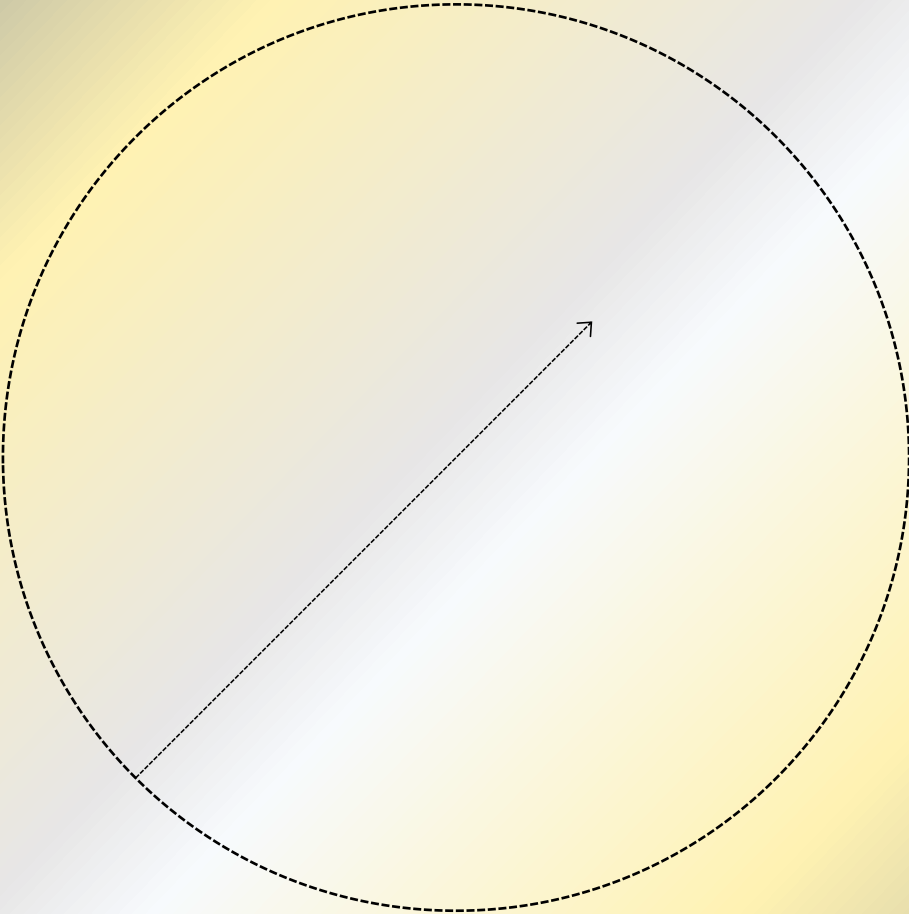
**5.1 Inquiry**
5.1.1 Questionnaire

**The participants comprise 75% European residents and 25% non-European residents aged 18-65.**

- Do you feel yourself actively adapt to new technology?//¿Siente que usted se adapta activamente a las nuevas tecnologías? 请问您觉得自己主动适应新科技吗？ (0-3,Not at all/Para nada to Very/Muy)
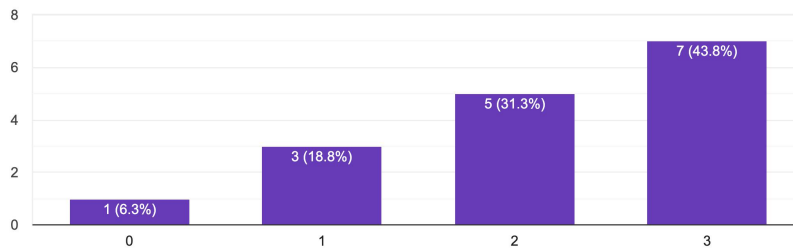
16 responses



*Fig. 5.1 Bar chart of result on people's self-awareness on adaptation to new technology*
*Source: from the author*

Conclusion: The graph shows a step forward trend from left to right. Among the participants, most of whom lean towards active adaption to new technology. 18.8% of the people are less motivated to embrace novelties. Only 6.3% passively adopt new technology.

- Are you comfortable with giving personal datas to companies?/¿Se siente cómodo dando datos personales a las empresas? 您是否愿意向企业提供个人数据？ (0-3, I'm not ok with it./No estoy bien con eso.-I'm ok with it./Estoy bien con eso)

16 responses
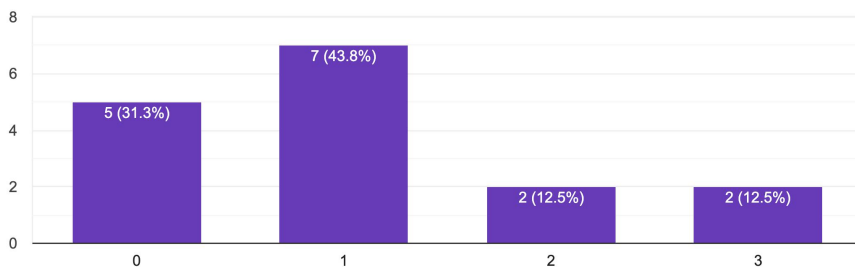


*Fig. 5.2 Bar chart of result on people's perception of data security*
*Source: from the author*

Conclusion: Most participants more or less reluctantly authorize personal information to corporations. A fraction of 12.5% of users does not mind sharing personal data with companies.

- Do you give personal datas to companies or organizations despite unwillingness, in exchange of convenience?/ A pesar de su falta de voluntad, ¿proporciona usted datos personales a empresas u organizaciones porque le conviene?/您是否将个人数据提供给公司或组织以换取方便尽管不情愿?
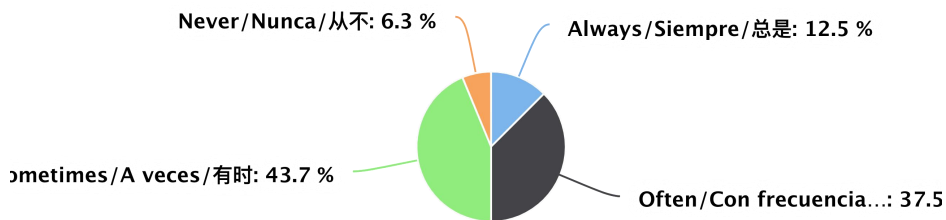
Never/Nunca/从不: 6.3 %   Always/Siempre/总是: 12.5 %

ometimes/A veces/有时: 43.7 %   Often/Con frecuencia...: 37.5

*Fig. 5.3 Pie chart of people's self-awareness on adaptation to new technology*
*Source: from the author*

Conclusion: Most participants share data with corporations in exchange for convenience despite their unwillingness. 43.9% of contributors tend to be more careful.

- Do you think you are eating healthy?/¿Usted cree que come sano?/请问您认为自己是否饮食健康?

16 responses

8

6

4   8 (50%)

2   3 (18.8%)   3 (18.8%)   2 (12.5%)

0
0        1        2        3
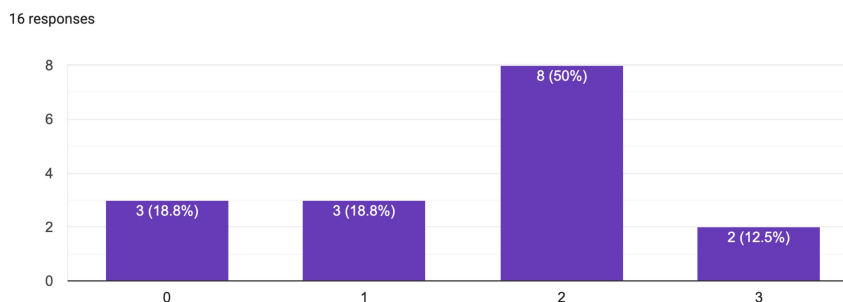
*Fig. 5.4 Bar chart of people's self-perception on thier diet*
*Source: from the author*

miro

Conclusion: Half of the participants assert they have a healthy diet but are not so assured. About 37.6% of people indicate they are eating less healthy, and half are eating completely unhealthy. A small portion of 12.5% of contributors is leading a healthy diet.

- Do you think in general people know how to make the right choice according to nutrition requirement when buying food?/¿Usted cree que, en general, al comprar alimentos, la gente sabe cómo elegirlos correctamente de acuerdo con los requisitos nutricionales?您认为一般人在购买食物时是否知道如何根据营养需求做出正确的选择？
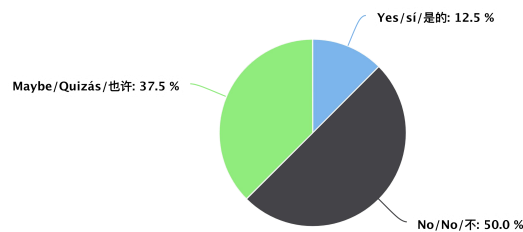


*Fig. 5.5 Pie chart of people's perception on average public health diets*
*Source: from the author*

Conclusion: Approximately half of the contributors reckon that, in general, people have difficulty purchasing food according to nutrition requirements. 37.5% of people are unsure, and 12.5% stay favorable toward consumers.

- Are you willing to accept paid customized service to assist your daily life?/¿Está dispuesto a aceptar un servicio personalizado pagado para ayudarlo en su vida diaria?/您愿意接受付费定制服务来协助您的日常生活吗？
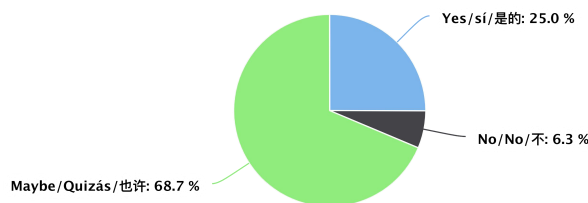


*Fig. 5.6 Pie chart of people's willingness to accept paid service*
*Source: from the author*

Conclusion: Most participants are unsure about accepting paid customized services to assist daily life. 25.1% of people make clear that they are open to the service.

- How much are you accepting as extra payment for professional help in food, considering that you would feel more healthy?/¿Cuánto está dispuesto a pagar como pago extra por la ayuda de un profesional en alimentación, considerando que se sentiría más saludable?/考虑到您会感觉更健康，您接受多少作为食品专业帮助的额外费用？
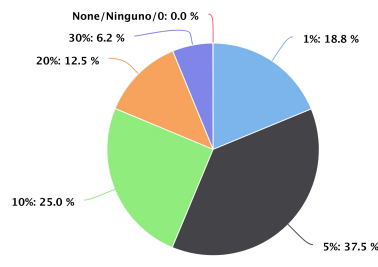


*Fig. 5.7 Pie chart of people's acceptance on extra payment for professional help*
*Source: from the author*

Conclusion: Approximately six out of ten participants can accept 5%-10% extra payment to gain health goals. 18.8% can pay a 1% extra fee. Furthermore, 18.7% are willing to pay 20%-30% more.

- Have you subscribed to any service? (Including both digital and non-digital service)/¿Te has suscrito a algún servicio? (Incluyendo tanto el servicio digital como el no digital)/您订阅了任何服务吗？ （包括数字和非数字服务）
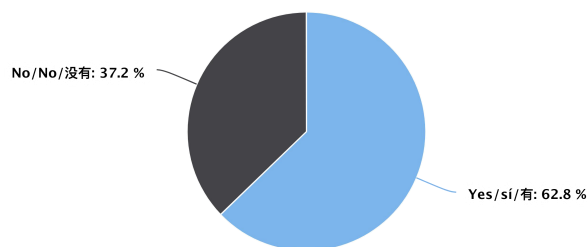


*Fig. 5.8 Pie chart of survey on the prevalence of subscription service*
*Source: from the author*

Conclusion: Tow thirds of participants have subscription service, and  the rest 1/3 of whom don't.

- Do you use current food distribution apps?/¿Utiliza las aplicaciones actuales de distribución de alimentos?/您是否使用外卖App?
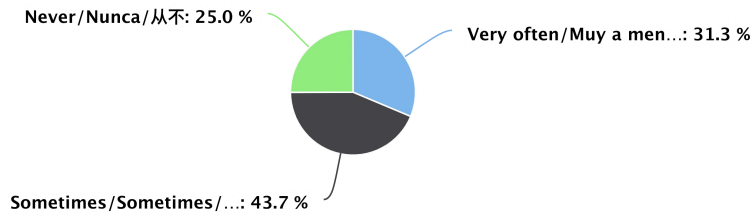
Never/Nunca/从不: 25.0 %

Very often/Muy a men...: 31.3 %

Sometimes/Sometimes/...: 43.7 %

*Fig. 5.9 Pie chart of survey on the usage of frequency in food delivery Apps*
*Source: from the author*

Conclusion: Most participants have used Food Apps. More than a quarter of them use it very often. 43.8% of contributors use food Apps sometimes.

- What food distribution apps do you use more frequently?/¿Qué aplicaciones de distribución de alimentos usa con más frecuencia?/您更经常使用哪些外卖App?
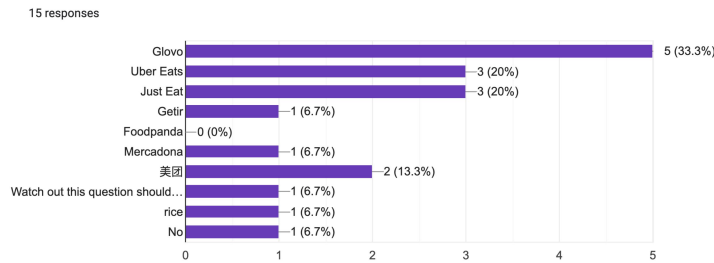
15 responses

| | |
|---|---|
| Glovo | 5 (33.3%) |
| Uber Eats | 3 (20%) |
| Just Eat | 3 (20%) |
| Getir | 1 (6.7%) |
| Foodpanda | 0 (0%) |
| Mercadona | 1 (6.7%) |
| 美团 | 2 (13.3%) |
| Watch out this question should... | 1 (6.7%) |
| rice | 1 (6.7%) |
| No | 1 (6.7%) |

*Fig. 5.10 Bar chart of survey on the popularity on current food delivery Apps*
*Source: from the author*

Conclusion: Most Apps have audiences among the participants. Glovo is more favorable for audiences.

- How much time do you invest each time when choosing products to purchase on food App?/¿Cuánto tiempo invierte cada vez que elige productos para comprar en la aplicación de alimentos?/每次在外卖App上选择要购买的产品时，您会投入多少时间？
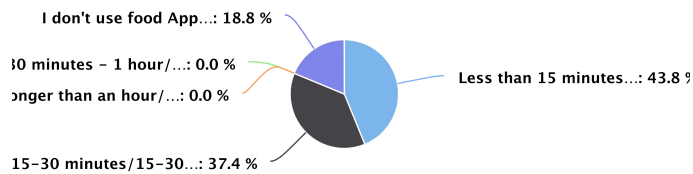
I don't use food App...: 18.8 %

0 minutes – 1 hour/...: 0.0 %

onger than an hour/...: 0.0 %

Less than 15 minutes...: 43.8 %

15–30 minutes/15–30...: 37.4 %

*Fig. 5.11 Pie chart of survey on time participants spend on pruchasing on food delivery Apps*
*Source: from the author*

Conclusion: The participants who often use food delivery Apps devote 0-30 minutes to choosing food.

## 5.2 Individual Investigation



**Lingna**

➤ Industrial designer in Ningbo, China
➤ Area of work - Industrial design
➤ Live with partner, work from 9 to 17:30, Mon. to Fri.
➤ Commuting duration - 30min



**Wiki**

➤ Graphic designer in Hangzhou, China
➤ Area of work - Cosmetics
➤ Live alone, work from 9:30 to 18:00, Mon. to Fri.
➤ Commuting duration - 25mins



**Xu Jie**

➤ International students in Barcelona
➤ Live with two roommates
➤ Have classes in mornings and afternoons from Monday to Friday



**Juntong**

➤ International students in Barcelona
➤ Live in students recidencia, no roommates
➤ Have classes in afternoons from Monday to Friday

*Fig Source: Participants*

Figure 1



*Fig. 5.12 Lingna's food routine*
*Source: from the author*

Although Lingna lives with her boyfriend, they don't spend the meal time together for they have different working schedules. She only prepares one portion of food, making the itinerary more flexible. Lingna cooks one meal a day on premise if she gets off work on time.

She enjoys cooking as well, It can hardly go wrong when she follows the recipes. Finding recipes nowadays is so much easier when social media apps deeply penetrate our lives. The abundant information is accurately pushed in your phone when they detects your intention or inclination in cooking. Contents as cooking instructions are exploding in Douyin, Tik tok, Youtube, etc, which provides a solid foundation for DIY.

Contrary to smooth step-by-step routine and tidy kitchens in well edited videos, Lingna's kitchen always ends up a mess. Numerous work before and after the ingredients sizzle in the pan is inescapable. Which makes kitchen life less fun for her.

**Figure 2**



*This is one ordinary day of Wiki*

## The day begins

😊 8:30 Get up

🚇 9:00 take the metro

🏢 9:25 Arrive at work

🍙 9:30 Breakfast

🍱 12:00 Lunch

🕕 18:00 Go off work

🍽 19:00 Dinner

😴 00:00 Sleep

**The Advantages&The Constraints
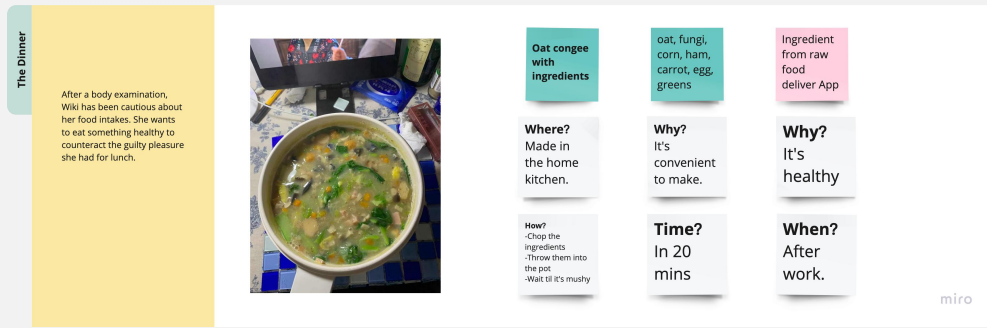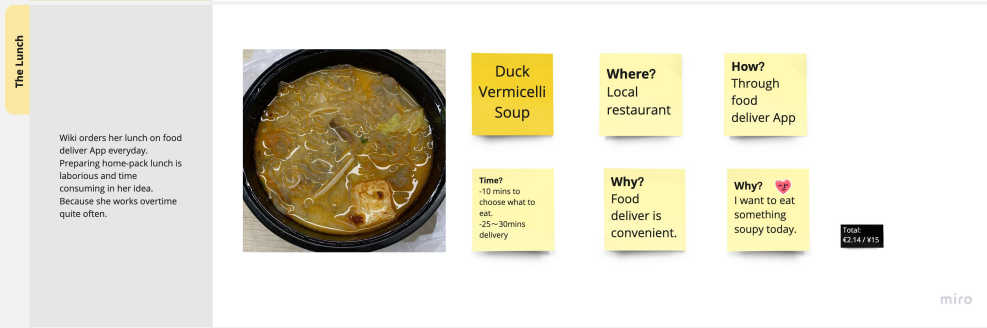-Home cooking**
- Home-cooking is healthy.😊
- I don't want to do it everyday.🙂

**The Advantages&The Constraints
-Takeout**
- Food delivery is convenient and miscellaneous.😊
- It's not healthy.😣

**Profile**

*Base in Hangzhou, China*

**Wiki**

💼 Graphic designer
🕐 Work from 9:30-18:00 Mon.-Fri.
🚇 Commuting duration: 25mins
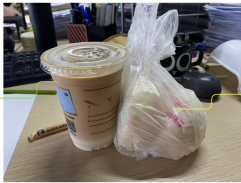
**Live alone**

**The Breakfast**

Most of the time Wiki skips the breakfast for her stomach hasn't "activated" in the morning.

If she is having breakfast, she is not having much. It's only a psychological implicative comfort to her. Something like 🖐Ok, I had breakfast, I'm healthy today🖐

**Where?**
Convenient shop

**Why?**
-The store is near the company.
-Economic

**Soy milk & bun**

**How?**
Direct purchase

**Time?**
5 mins

Total: €0.85 / ¥6

**The Lunch**

Wiki orders her lunch on food deliver App everyday. Preparing home-pack lunch is laborious and time consuming in her idea. Because she works overtime quite often.

**Duck Vermicelli Soup**

**Where?**
Local restaurant

**How?**
Through food deliver App

**Time?**
-10 mins to choose what to eat.
-25~30mins delivery

**Why?**
Food deliver is convenient.

**Why?** 💖
I want to eat something soupy today.

Total: €2.14 / ¥15

**The Dinner**

After a body examination, Wiki has been cautious about her food intakes. She wants to eat something healthy to counteract the guilty pleasure she had for lunch.

**Oat congee with ingredients**

oat, fungi, corn, ham, carrot, egg, greens

Ingredient from raw food deliver App

**Where?**
Made in the home kitchen.

**Why?**
It's convenient to make.

**Why?**
It's healthy

**How?**
-Chop the ingredients
-Throw them into the pot
-Wait til it's mushy

**Time?**
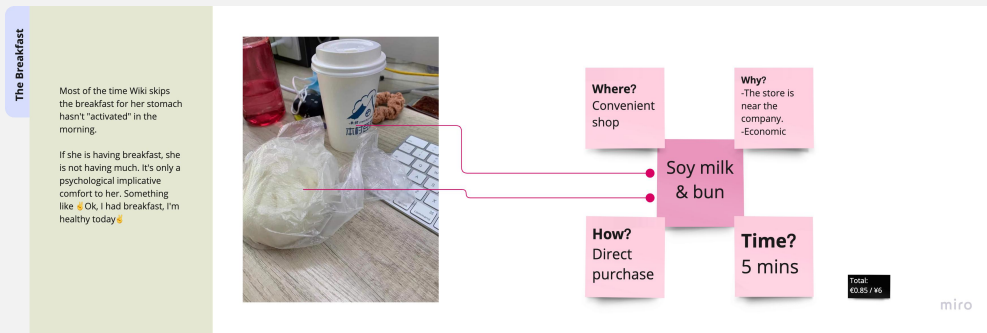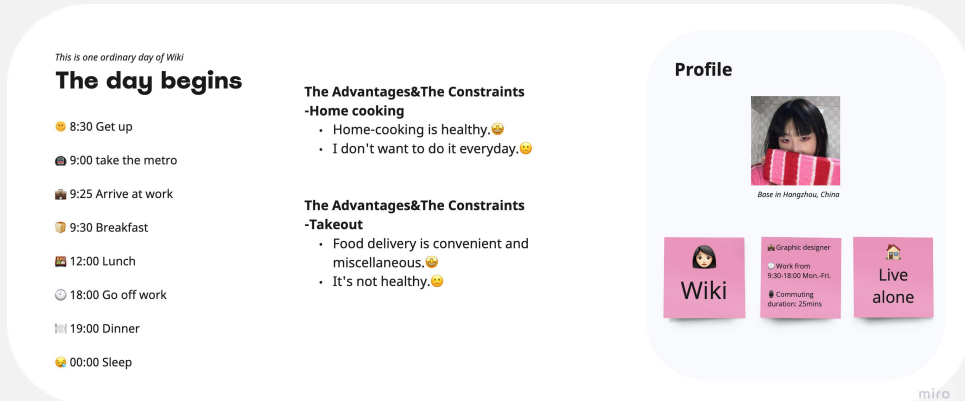In 20 mins

**When?**
After work.

*Fig. 5.13 Wiki's food routine*
*Source: from the author*

Cooking is a joyful event for Wiki. She spent two months cooking everyday dinner right after she graduated from university. That was when she was living with her other two friends. During the time, they had a clear division of labor in the cooking process. One prepared the ingredients, and one cleaned dishes, tables, and the stove afterward. Wiki was responsible for setting the menu and cooking.

Nevertheless, the enthusiasm was soon extinguished. All three had full-time jobs. Although they were being efficient, the schedules sometimes didn't meet well. Often one of them worked overtime and was going to miss her task and dinner. For Wiki, the most troubling thing was to set the menu every day. For convenience, she started preparing repetitive meals. And that didn't go well. All three soon got weary of the repeated flavors.

Another problem is that, although the labor was divided, the whole process could take up to three hours. They only managed to have their own time of the day, starting at 9:30 pm.

Now living on her own, Wiki didn't cook as much as she did before. In fact, food delivery is now her strong dependence. Two months ago, she ordered both lunch and dinner on the food App every day. However, as soon as she got her body examination test, she determined a radical change in her food intake. The doctor told her she had gallbladder polyps, heavy oily, and seasoning food clearly was responsible for it.

Recently Wiki has been cutting down her reliance on food delivery. Only on lunchtime and a few days when she has to work overtime would she use deliver App.

## Figure 3
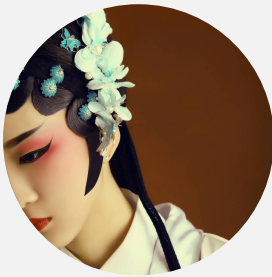


**Xu Jie**

➢ International students in Barcelona
➢ Live with two roommates
➢ Have classes in mornings and afternoons from Monday to Friday



Breakfast



Dinner



Lunch

*Figs from Xu Jie*

A cup of homemade coffee and a kiwi started the day. Today, Jie has classes both in the morning and afternoon, so she had a simple lunch, a chocolate bar, and a tiny cake at school. For dinner, she had instant ramen noodles and meatballs cooked together.

**Concern**
The major problem for Jie is deciding what to eat every day. Health is a not-so-important element of her concern. Living with two roommates, she has to share the refrigerator, which limits the capacity of food storage. She has intense school work, so she usually eats easy-cooked food.

## Figure 4



**Juntong**

➢ International students in Barcelona
➢ Live in students recidencia, no roommates
➢ Have classes in afternoons from Monday to Friday



- Jutong had her breakfast in the residencia cafe, a buffet she could have whatever she wants. She is very concerned about balanced intake.



- Because she has classes in the afternoon, so she arrived at school a little earlier in order to have lunch in the school cafe. She usually orders her dinner on Glovo or eats outside as she does not have a kitchen.

*Figs from Juntong*

**Concern**
Because of her hypoglycemia, Juntong has a very regular diet. Not enjoy much in cooking, she is satisfied with the residencia canteen, but it only provides breakfast. She has a pursuit of convenience and efficiency, so she uses the food delivery App a lot, but meanwhile, she struggles because food delivery costs her too much.

**5.3 Interview**

# Interview with Wiki

Q: How do you feel about order both meals on food delivery everyday? For me I would worry about food hygiene, financial spending and psychologically it doesn't feel like a proper way of living, I don't know but it's quite against what we've been told growing up. Like subconsciously we automatically put a derogatory tag on it whenever we bring up the topic.

A: For me it's mainly because the food from outside is too oily and not hygienic. I only order food for lunch and on weekends. Some evening too if I go off work late. And I find that unhealthy takeout is cheap, healthy food is expensive.

Q: How much time on average do you spend on preparing dinner?

A: On average maybe 20mins.


Wiki

Q: That's actually not much time. 20 mins is acceptable for me. I usually spend more.

A: I cook really simple meals and seasoning them with only salt and pepper, I don't add oil to it at all. Because the takeaway lunch is greasy, I need to adjust a bit on dinner. This oat congee contains protein, dietary fiber, carbohydrates, rich and healthy ingredients, and it's enough for one person. So I cook only one meal a day, it's not a problem yet.

## Interview with Wiki

Q: It looks delicious and all the ingredients are undeniably natural and healthy. Is there other recipes you would follow, something with different flavours or way of cooking?

A: Recently I've been eating it everyday. My lunch has a strong flavor. The take-out is delicious is because they put more oil, salt and sauce, which makes it more greasy. I have gallbladder polyps, so I can't eat too greasy food. I have a high metabolism at noon so it's ok. For dinner I can't. But sometimes I order dinner when I don't want to cook or when I want to eat something else. Also I'm actually trying to lose some fat.

Q: Do you feel that our eating behavior has been impacted by take-out? Three meals a day from our kitchen is now a service can be ordered at any time. Although take-out is more colored with derogatory implication, it's a supplemental part of our life now. Our reliance on it is growing, I can't tell it's good or bad, but it's happening.

A: Yeah, even though I cook, I order ingredients on food App. It's mainly because I don't want to go to the supermarket alone and I have to make time for it. During quarantine it's the only way to access food, once people have a taste of convenience, they can hardly reject after.

## 5.4 Conclusion

Regarding inquiry: Most people hold a positive attitude towards novelties. In the digital era, many people are more or less nudged to authorize personal data to companies in exchange for convenience despite unwillingness. The unwillingness comes from the fact that some companies are not trustworthy, and the laws for cybersecurity are not improved enough.

While the majority of participants think themselves are leading a healthy diet, they hold negative speculation that, in general, people don't know how to make wise decisions in buying food. However, most contributors are giving vague replies about whether they are willing to accept paid personalized service to assist life. There is a quite large percentage has already adapted to subscription services. Most of them accept extra payment of less than 10% of regular expenditure to be more healthy.

Food delivery Apps have also penetrated into modern life. It has been an integral part of today's culinary ritual. Nevertheless, there are new problems lurking, such as health problems and labor exploitation.

Regarding individual investigation and interview: The four participants comprise two urban office workers in China and two international students in Barcelona, Spain.

Most investigation subjects show an inclination and demand for health regarding eating rituals. Often they have to make compromises to work or uni schedule. The most common alternative to acquiring convenient meals is through orders on food delivery Apps.

One of the participants shows a considerable reliance on takeaway lunch, meanwhile being at the brink of sub-healthy status according to medical examination results. Before the health alert, the partaker does not receive particular pay attention to healthy food intake. Thus health awareness is necessary to enhance society.

One of the two students sacrifices decent meals for school work, although the individual does not show much health concern. The problem in home cooking is a consensus among all participants. Most have been avoiding time investment in kitchen labor. The one participant that does more cooking than others is not satisfied with the significant time consumed in the kitchen.

The interviewee expressed her worry over the delivered food. Although healthy food is also available on food Apps, it tends to be more expensive. Furthermore, the cooking method and seasonings are pretty simple, making her feel like it does not worth the bill. She also agrees that food delivery has radically impacted contemporary eating rituals, mainly because of the lure of convenience.
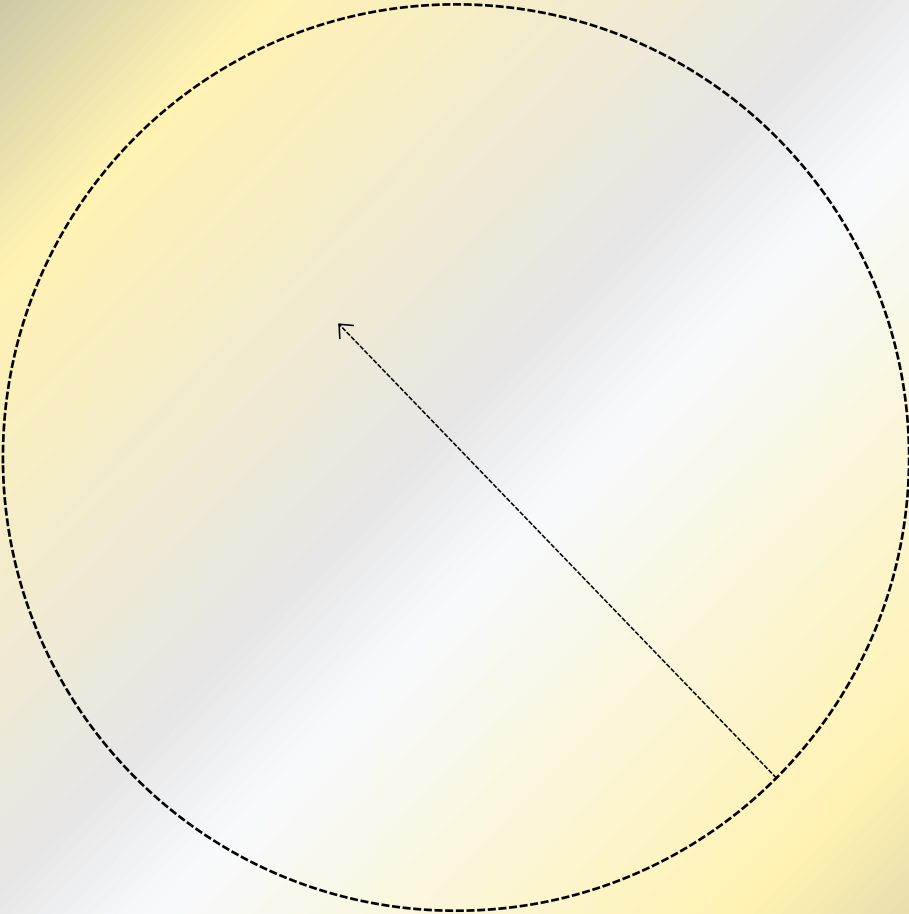
Design Proposal

The final design is a mobile phone application that integrates food delivery and health monitoring, which helps people to get easy access to healthy eating rituals. The food selection for each user is generated by an algorithm according to the standard of adult nutrition intake and variables such as preferences, allergies, and taboos. The users are able to prepare meals with ready ingredients delivered by company warehouses according to the recipes shown on the application. In order to adapt to diverse users' daily activities, the application can also help users record food intake from other sources.

The first target user group is adults between the ages of 21-35, with the consideration that this age group is more likely to be individualistic and more suitable for the tryout of personalized food provisioning. The long-term goal is to provide service to all age groups, e.g., recipes for children and teenagers.

## The overview of business model
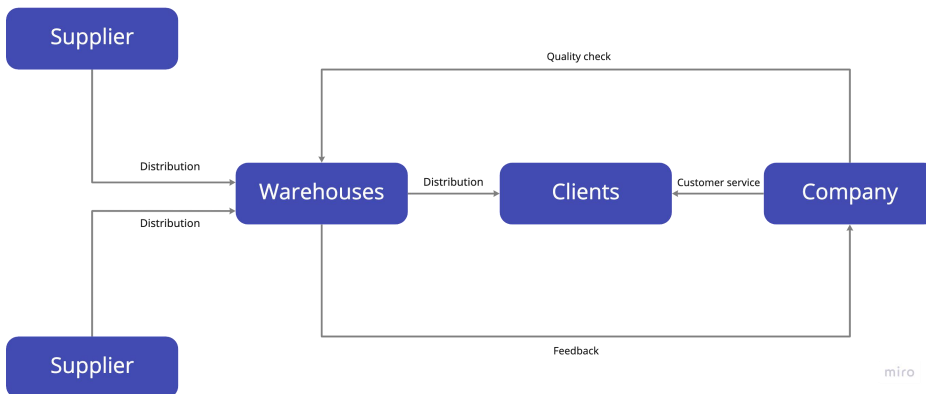


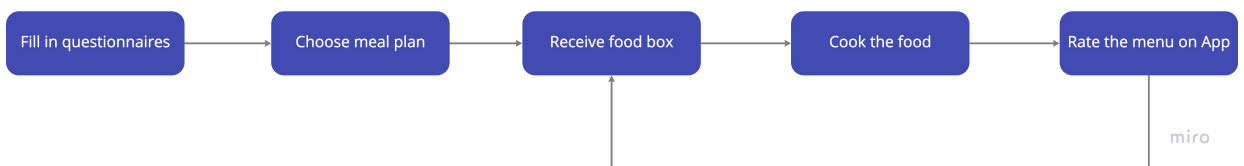## The overview of user routine



*Fig 6.1 Model overview*
*Source: Author*

## 6.1 The Distribution Model

The warehouse is located in the middle of the responsible area and covers the distribution area with circular radiation.
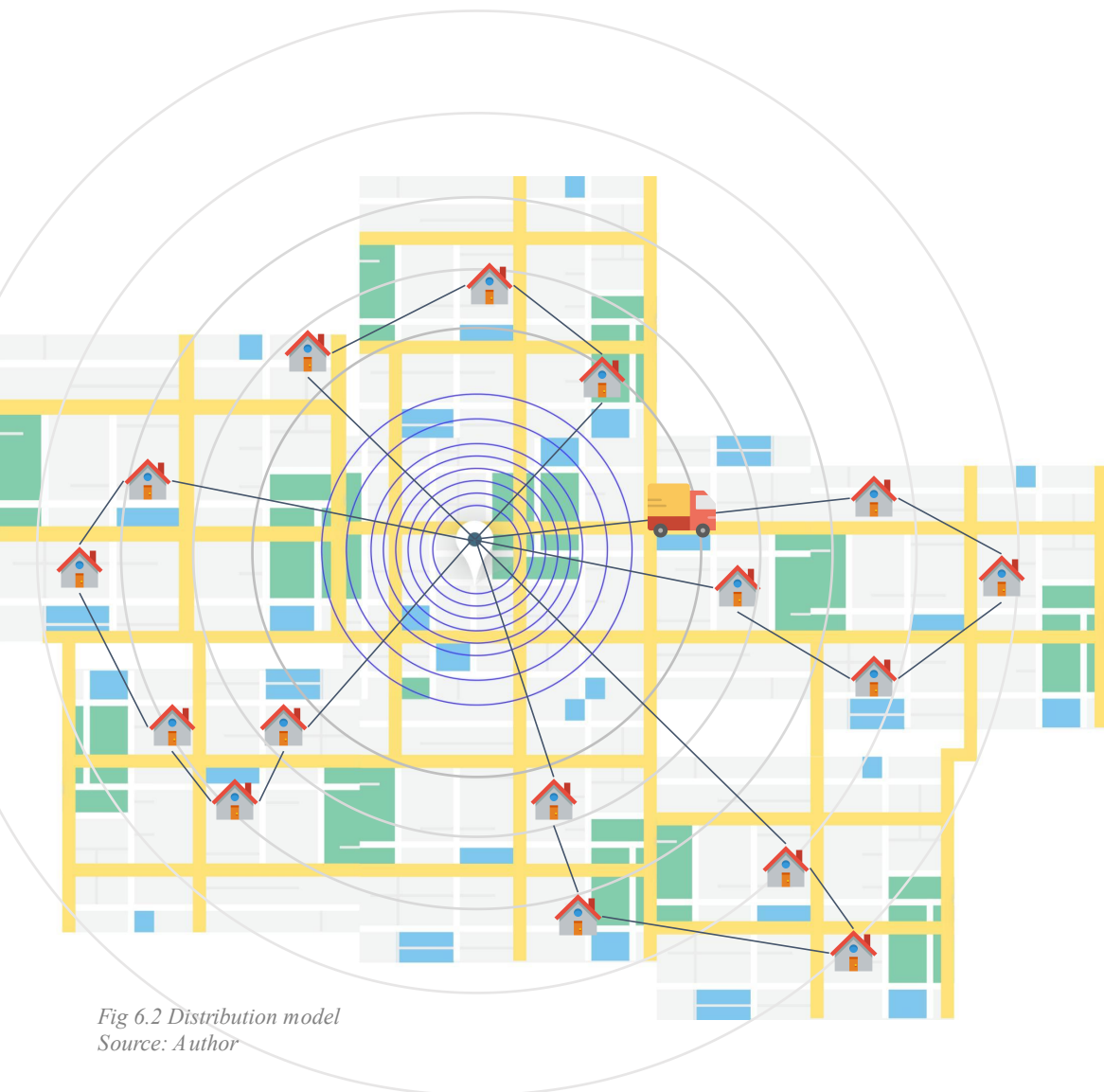


*Fig 6.2 Distribution model*
*Source: Author*
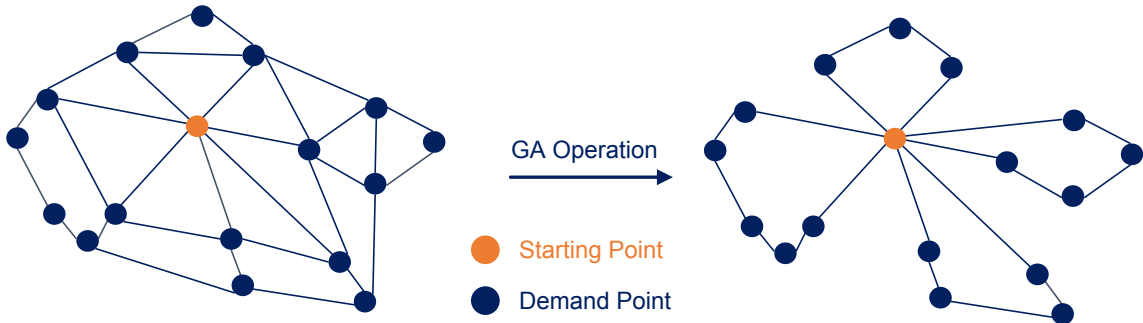
**Genetic Algorithm**



*Fig 6.3 GA problem solving*
*Source: Author*

Genetic algorithms is a heuristic search algorithm inspired by Darwin's theory of evolution and drawing on the process of biological evolution, use the heuristic information possessed by a problem to guide the search, reducing the search scope and complexity of the problem, and are often used to generate appropriate solutions to optimize the situation.

First, the parameters in the actual problem are determined, such as the distance from the departure point to each demand point, the distance between demand points, the number of goods at each demand point, the estimated arrival time, and the number of vehicles, the vehicle capacity, etc. The parameters are digitized, for example, the departure point and each demand point are labeled 0, 1, …, n, and the distances between the points are d1, d2 ..., dn, etc.

Next, randomly determine the initial combination, such as vehicle A specified line 0-1-4-5-0, vehicle B line for 0-3-6-0, etc., after the system measurement, compared to the actual demand, the initial evaluation of the combination. If the demand is satisfied, output the results; if not, reorganize the code to change the routing planning. Re-evaluation until the demand is maximally satisfied and generates the optimal solution.

**Genetic Algorithm**

Routing planning can be generally divided into four major steps: data collection - model computation - result interpretation - integration with reality, communication, and confirmation.

Genetic Algorithm is widely used in logitics field. The distribution model will adopt GA in order to generate the finest solution, optimise distribution routes and reduce redundancy
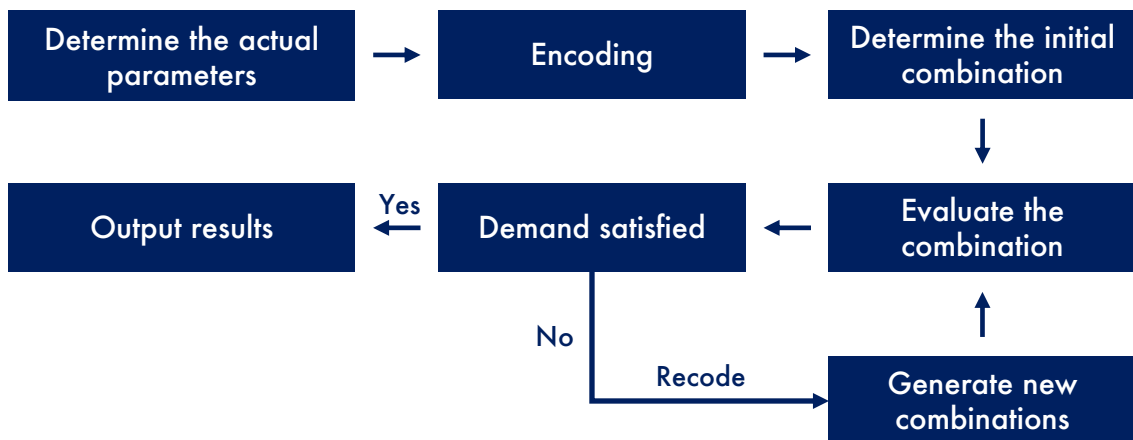
| Determine the actual parameters | → | Encoding | → | Determine the initial combination |
| | | | | ↓ |
| Output results | ←Yes— Demand satisfied | ← | Evaluate the combination |
| | No↓ | | ↑ |
| | Recode→ | Generate new combinations | |

*Fig 6.4 Routine determination*
*Source: Author*
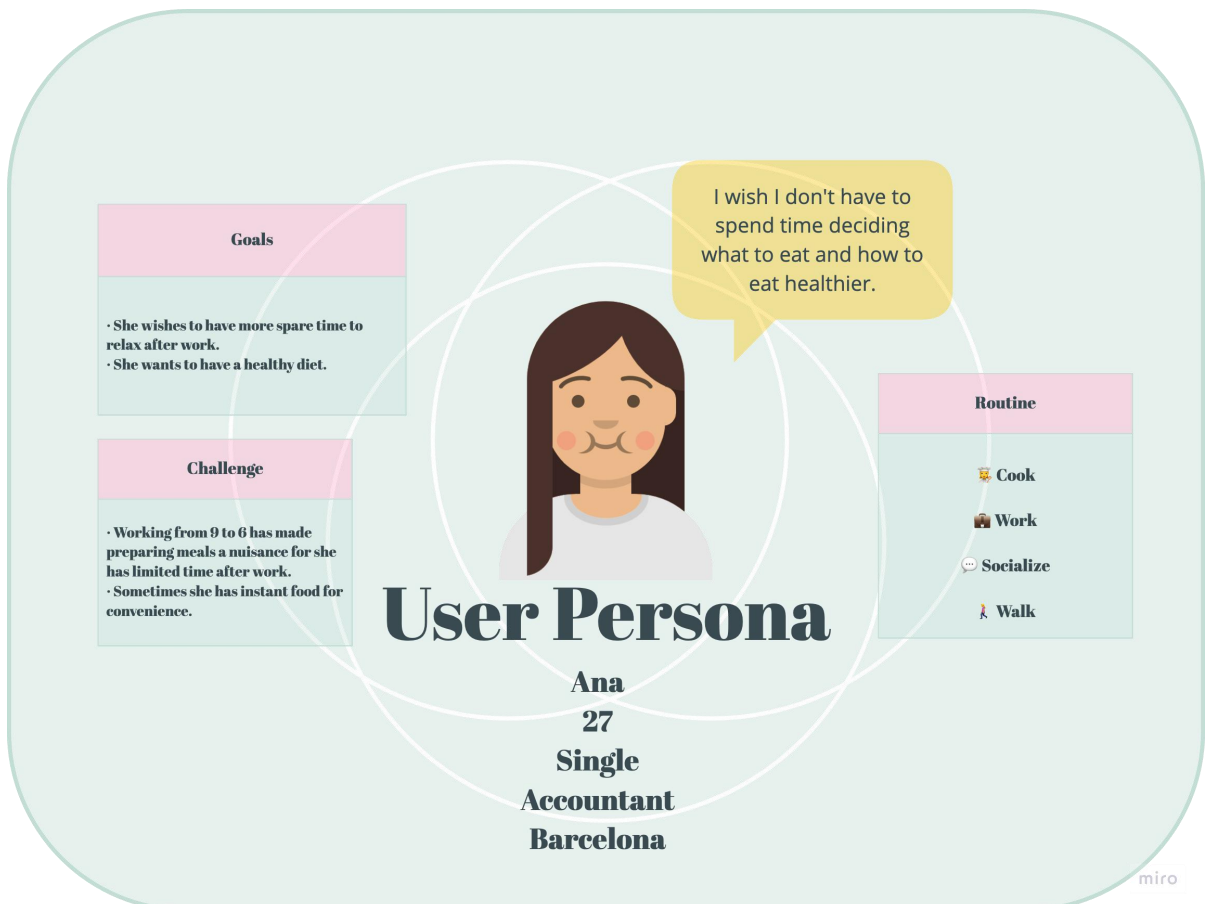
**6.2 Business Model**

**User Persona**

**Short-term**
The target audience will focus on the age group between 21-35. Primary focus on solitary living clients, offering customized healthy food recipes and weekly food delivery, bringing health service and convenience to comfortable living.

**Long-term**
The age group of the target audience will extend to all age groups. The service will cater to both independent individuals and families. The company will also provide more professional services such as menus for fitness purposes, children, and customers with underlying diseases.



**Goals**

· She wishes to have more spare time to relax after work.
· She wants to have a healthy diet.

**Challenge**

· Working from 9 to 6 has made preparing meals a nuisance for she has limited time after work.
· Sometimes she has instant food for convenience.

I wish I don't have to spend time deciding what to eat and how to eat healthier.

**Routine**

👩‍🍳 Cook
💼 Work
💬 Socialize
🚶 Walk

**User Persona**
Ana
27
Single
Accountant
Barcelona

*Fig 6.5 User persona*
*Source: Author*

**Data Collection**
Purpose

In order to develop customized healthy diets, it will need to collect personal data such as body statistics(height, weight, gender, labor intensity), preferences, and allergies. The delivery service will also require details like addresses and contact information.
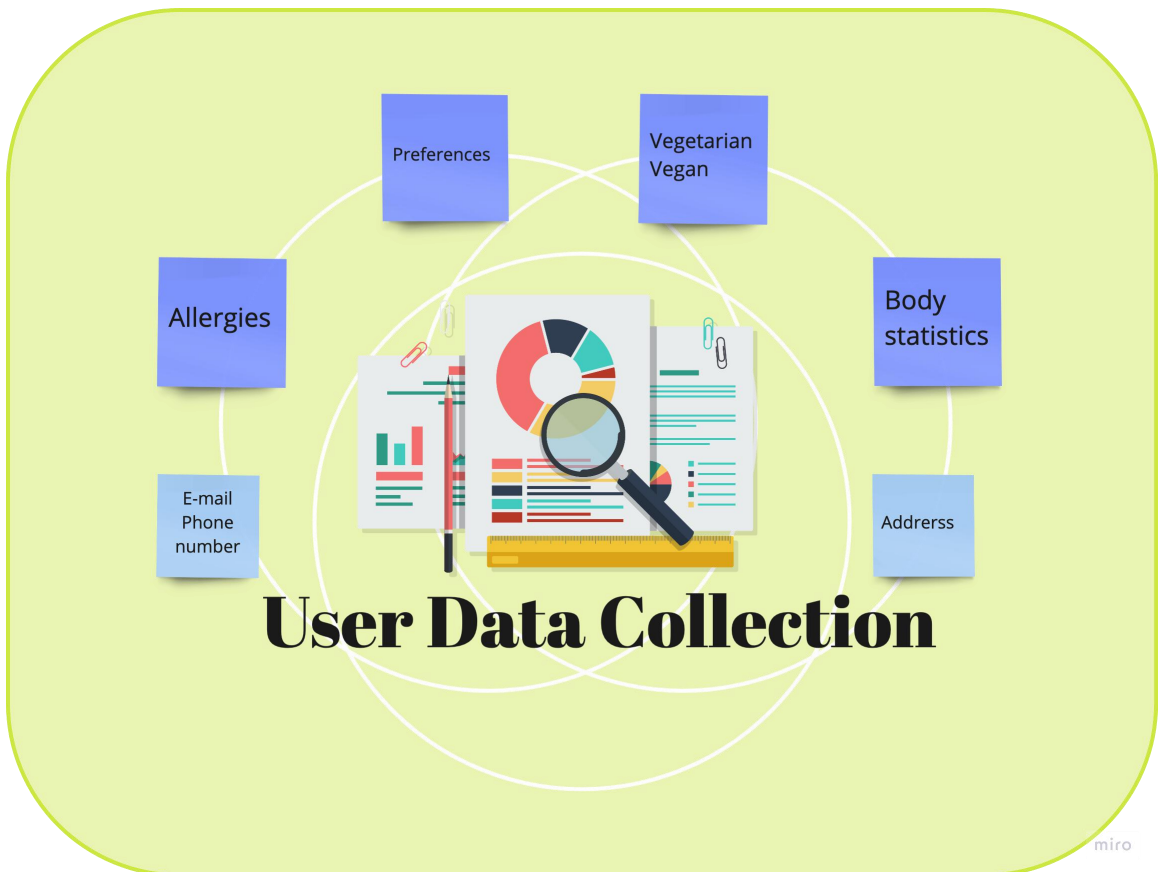


*Fig 6.6 Data collection*
*Source: Author*

**Data Collection**
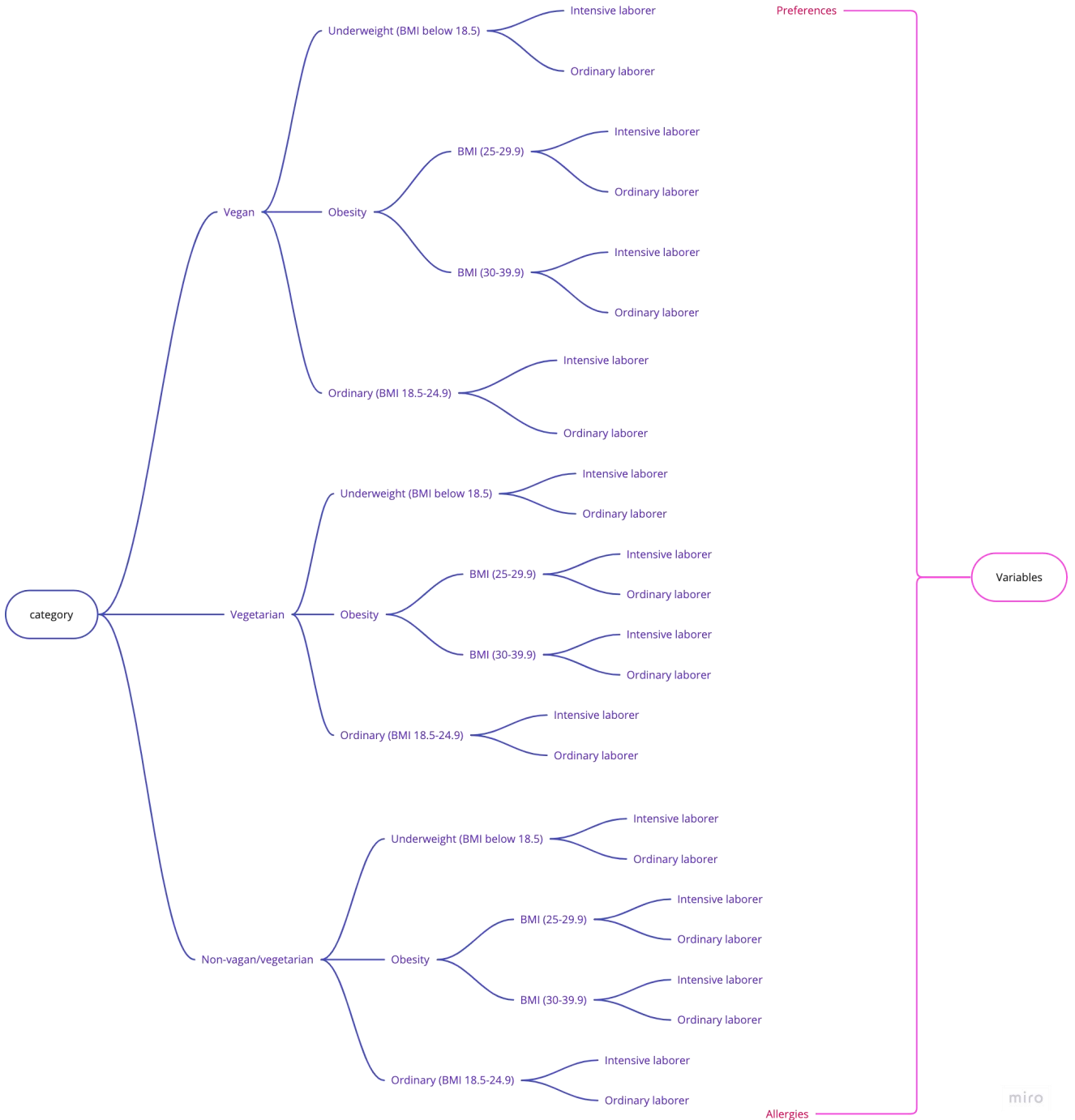User classification



*Fig 6.7 User classification*
*Source: Author*

**Relationship-Supplier and Warehouse**

Each warehouse connects to its source of supply. Considering that the warehouse recognizes its actual needs better, giving more autonomy can help it function smoothly. The warehouse can directly contact and negotiate with local suppliers.

In order to equal the prices link to the subscription fee and achieve a miscellaneous inventory in each area. It's necessary to replenish goods from other sources involving distant transportation.
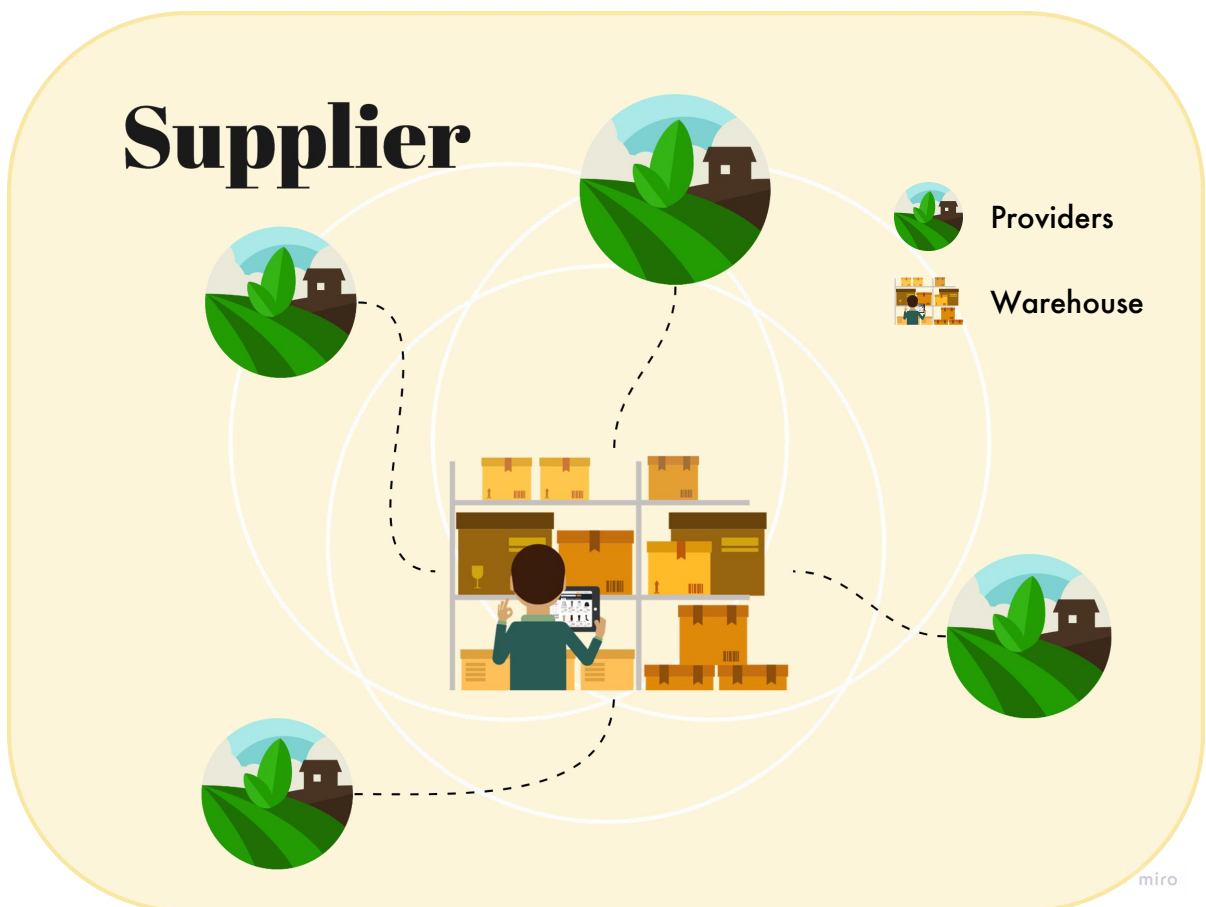


*Fig 6.8 Supplier and warehouse*
*Source: Author*

**Warehouse internal arrangement**

The responsibility of the warehouse includes replenishment of goods, negotiation with suppliers, processing the food, and distribution. The warehouse receives the raw food from providers, sort the ingredient (arrange food by category), process the raw material (e.g., cleaning, marination, and chopping), allocate the ingredient (allocation the ingredient according to the customer's weekly recipes), and pack the food for distribution.



*Fig 6.9 Warehouse internal arrangement*
*Source: Author*

**Relationship-Company and Warehouse**

The company's role is to design overall planning such as advertisement, site selection, recruitment, budget planning, etc. Regular visits to warehouses are necessary to ensure food safety and quality. The company is also responsible for customer service, responding to complaints, and other contingency.
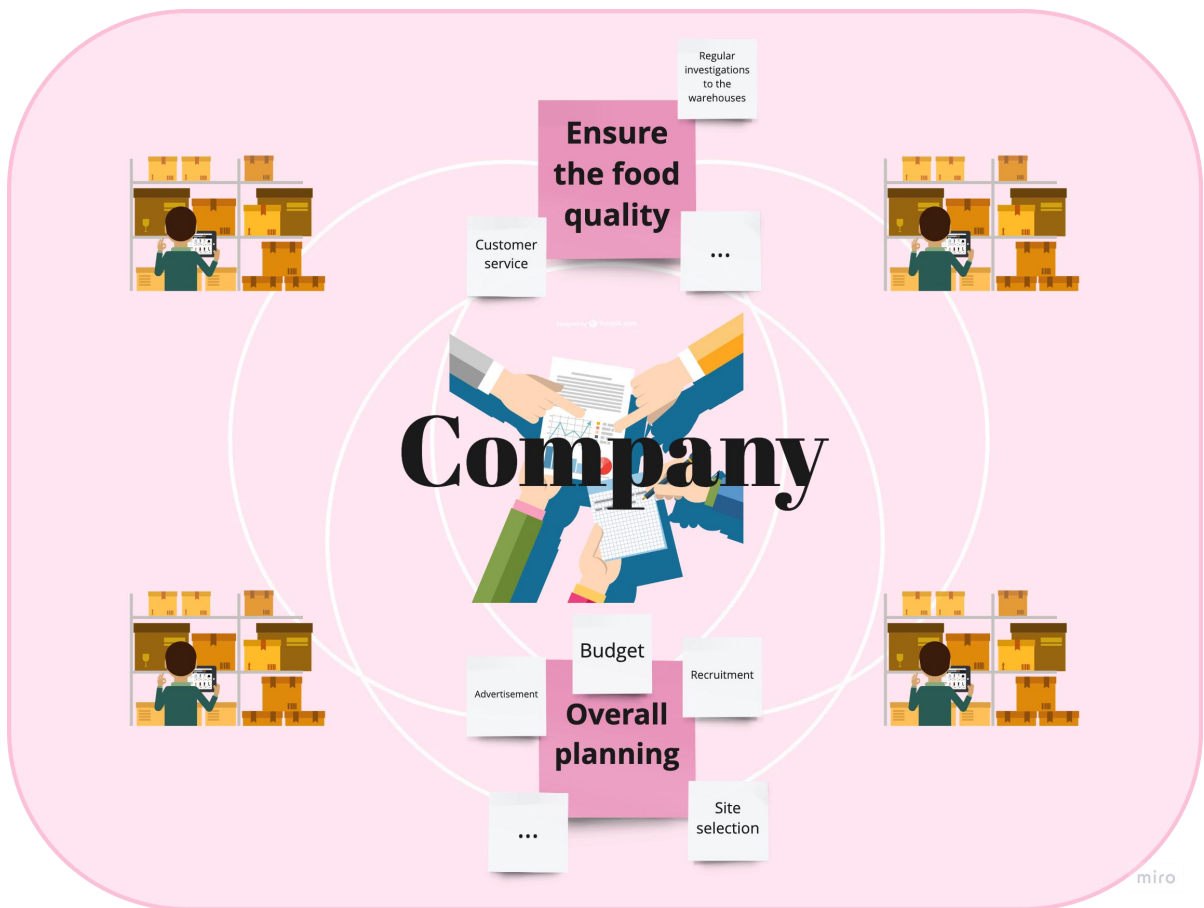


*Fig 6.10 Company's role*
*Source: Author*

**Sustainability**

The primary component in terms of sustainability is to adopt sustainable packaging. Materials such as glassine, cellulose, and cornstarch are all biodegradable and environmental-friendly. Recyclable material will also be taken into consideration.

Nevertheless, the recyclability is not satisfactory in reality. Thus the company should take responsibility for achieving sustainable goals. A reward mechanism can be enacted to motivate the customers to participate. If the customers return the packages at the next delivery, they would be given points in exchange for rewards. As the company knows more about the packaging materials, it can classify the collected packaging more accurately and profit by selling recyclable materials. Food purchases would follow the proximity principle to reduce distance transportation. An efficient distribution routine is also necessary.

**Reward mechanism**

Achieve recycling circle between clients and the company.
· The company retrieve the packaging and give users reward if they return the packages to the company.
· Label the packaging material on the packages (recyclable, compostable).

**Sustainable Packaging**

Only use sustainable material
· Biodegradable packaging: Glassine packaging, Cellulose packaging, Cornstarch packaging
· Recyclable packaging: Plastic packaging

**Distribution Routine**

· Adopt the most efficient distribution routine.

**Proximity principle**

The warehouses will primary load local resources to reduce carbon footprint by transportation.

**Sustainability**

*Fig 6.11 Sustainability*
*Source: Author*

**Sustainability**



*Fig 6.12 Brand application*
*Source: Author*

Information 'Return this package at next delivery to gain reward' on packages encourages customers to partake recycle movement by FOOE.



*Fig 6.13 Packaging example*
*Source: Author*

**Revenue Stream**

FOOE generates revenue by charging subscription fees varies on customers' selection. The fee is priced by the consideration of transportation cost, food cost, and labor cost.
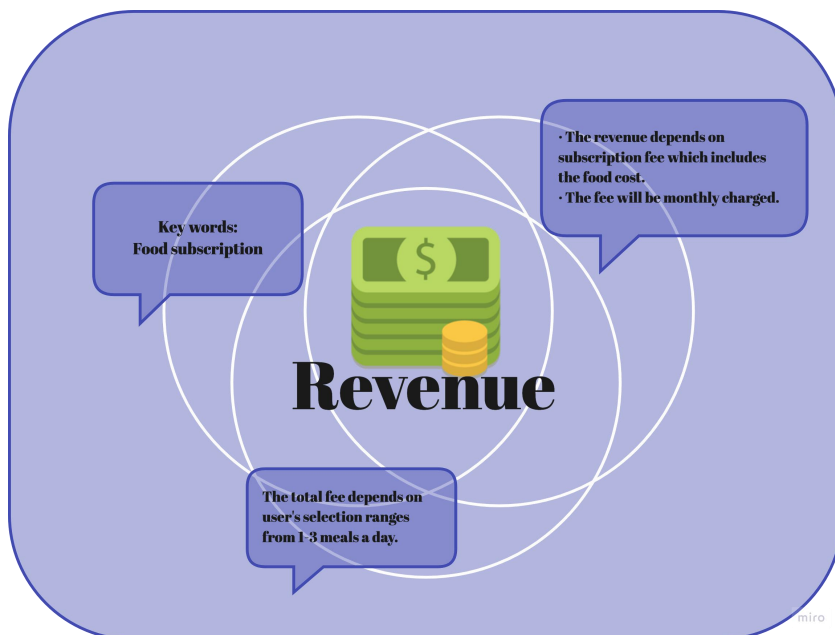


✓ **Breakfast**

€29.9/week

✓ **Lunch**

€45.9/week

✓ **Dinner**

€45.9/week

✓ **Breakfast**
✓ **Lunch**

€57.8/week

✓ **Breakfast**
✓ **Dinner**

€57.8/week

✓ **Lunch**
✓ **Dinner**

€68.8/week

✓ **Breakfast**
✓ **Lunch**
✓ **Dinner**

€78.8/week

*Fig 6.14 Revenue*
*Source: Author*

**Adaptability**

Considering different regions' unique culinary rituals vary from cooking methods to preferable flavors. Religious taboos and regional food intolerance are also essential when adapting to different localities. For example, an estimated 90% of adults in Eastern Asia and 80% of central Asia are intolerant to lactose, which should be considered when making recipe inventory.
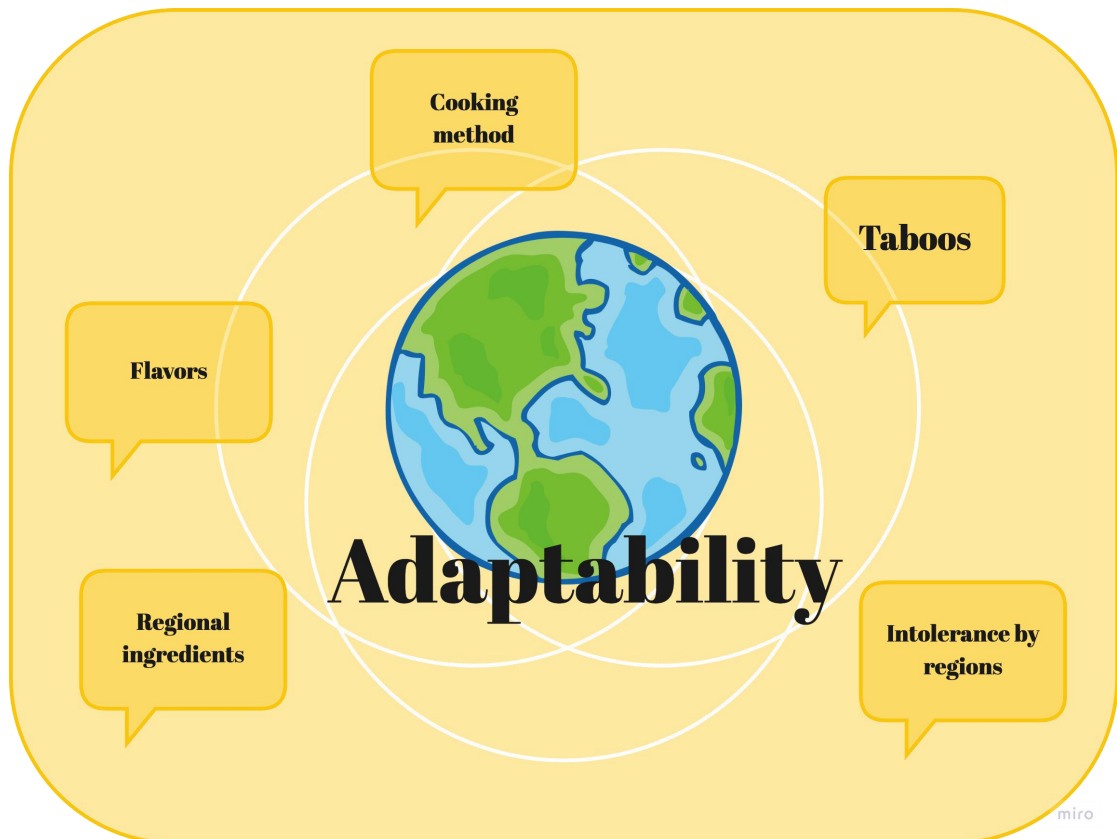


*Fig 6.15 Adaptability*
*Source: Author*

## 6.3 Supporting Technology

Im2Calories is a system able to recognize the ingredient of a meal from one single image, then predict its nutritional contents and sizes (Austin Meyers, Nick Johnston, Vivek Rathod, Anoop Korattikara, Alex Gorban, Nathan Silberman, Sergio Guadarrama, George Papandreou, Jonathan Huang, Kevin P. Murphy, 2015). The earliest version depended on a multi-label classifier trained by data, e.g., existing restaurant menus. The later version adopts a database of images from 23 different restaurants, using a CNN-based classifier, significantly outperforming previous work.

The research team developed a set of 201 generic, restaurant-independent food tags. It extended the existing dataset with these tags using crowdsourcing to solve the problem of uncertainty by randomly cooked food and the diversity of restaurants. After achieving food segmentation, the system needs data on the surface height of the food above the plate to more accurately obtain the volume of food. The theory is to estimate the depth of each pixel from a single RGB image, using a CNN to estimate the volume of food.

The design can adopt this system to help users track their meals beyond the provisioning from the company. The application is thus also available for non-subscribed users.
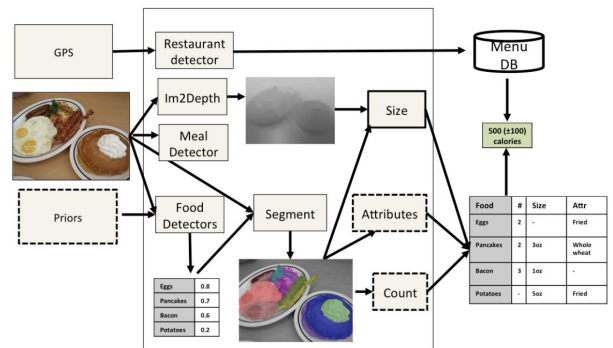


*Fig 6.16 Adaptability*
*Source: A. Myers et al., "Im2Calories: Towards an Automated Mobile Vision Food Diary," 2015 IEEE International Conference on Computer Vision (ICCV), 2015, pp. 1233-1241, doi: 10.1109/ICCV.2015.146.*

**6.4 Brand Image**

**Logo and Branding**



*Fig 6.17  Icon*
*Source: Author*

## Color

Color carries an intrinsic meaning that is related to corporate identity. The primary color of the brand image is blue and yellow. Blue implies being responsible and professional (Lauren I. Labrecque & George R. Milne, 2012). The yellow has a vibrant sense, which holds qualities of arousal and excitement. Both colors indicate an amiable and professional company image.



#F4E492        #59698E

*Fig 6.18 Main color*
*Source: Author*

## Typography

Design by Ek Type, a collaborative type design studio based in Mumbai, Baloo Bhai, is a typeface with rounded edges which gives a friendly and pleasant feeling. The Baloo project consists of ten font families with unique local names for each of the nine Indic scripts plus Arabic (Baloo Bhaijaan 2). The font is simplistic without many decorations, and the letters are easy-identified. The chosen font is compatible with the company image of its gentle grace of amiability.



abcdefghijklmnopqrstuvwxyz
ABCDEFGHIJKLMNOPQRSTUVWXYZ
0123456789 (!#$%&/.|*`@´,?:;)

# Penultimate
The spirit is willing but the flesh is weak
## SCHADENFREUDE
3964 Elm Street and 1370 Rt. 21
The left hand does not know what the right hand is doing.
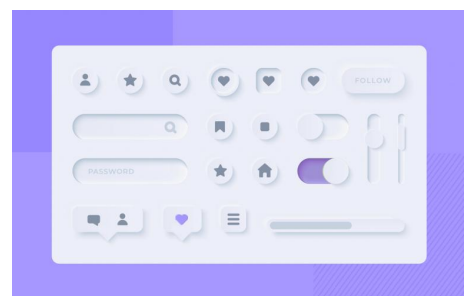
*Fig 6.19 Baloo Bhai*
*Source: https://www.cufonfonts.com/font/baloo-bhai*

## Aesthetics

Neumorphism originated by combining the old classic skeuomorphism (Interface objects that mimic their real-world counterparts in appearance) (UX Planet, 2020). The former Apple CEO, Steve Jobs, believed that familiar icons and symbols would help first-time users better understand digital product navigation. The design adopts a neumorphism interface to give users a visual guide and mitigate the pressure of getting used to a new product.



*Fig 6.20 Neumorphism interface*
*Source:https://www.justinmind.com/ui-design/neumorphism*

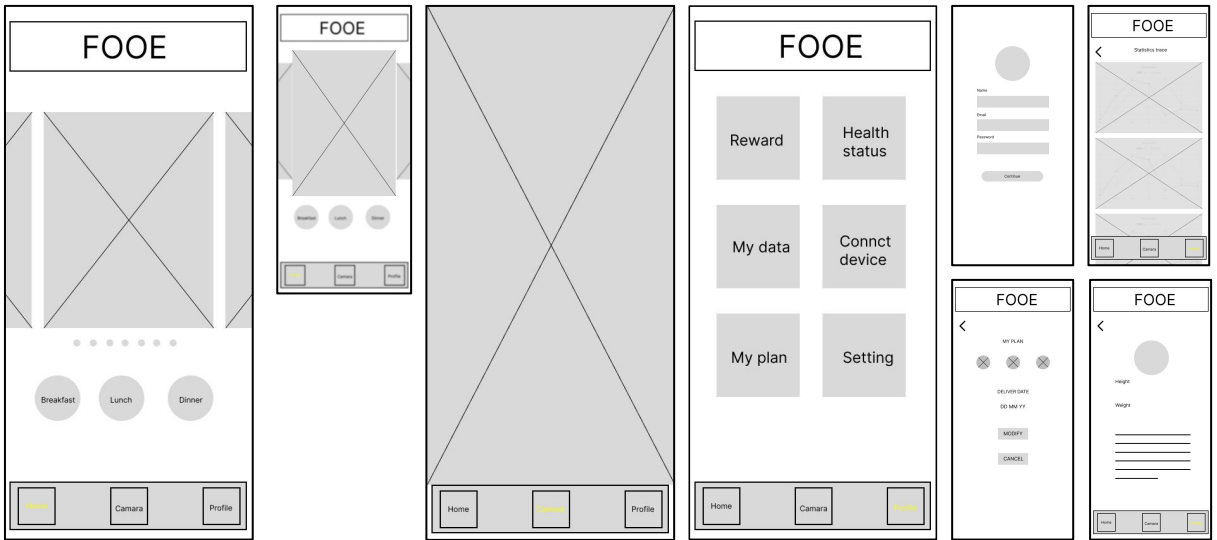## 6.5 App Design

### Wireframes



*Fig 6.21 Wireframes*
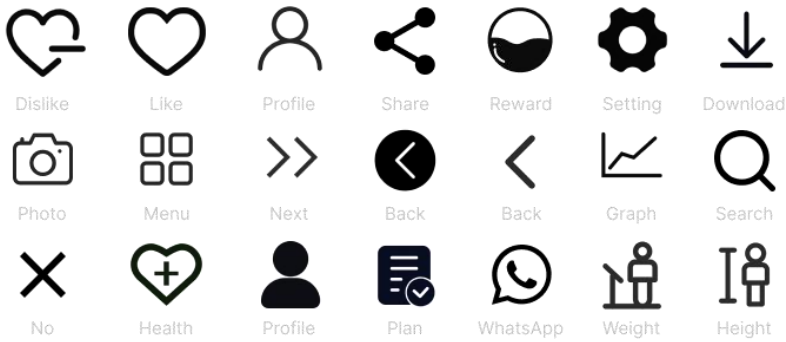*Source: Author*

### Iconography



*Fig 6.22 Iconography*
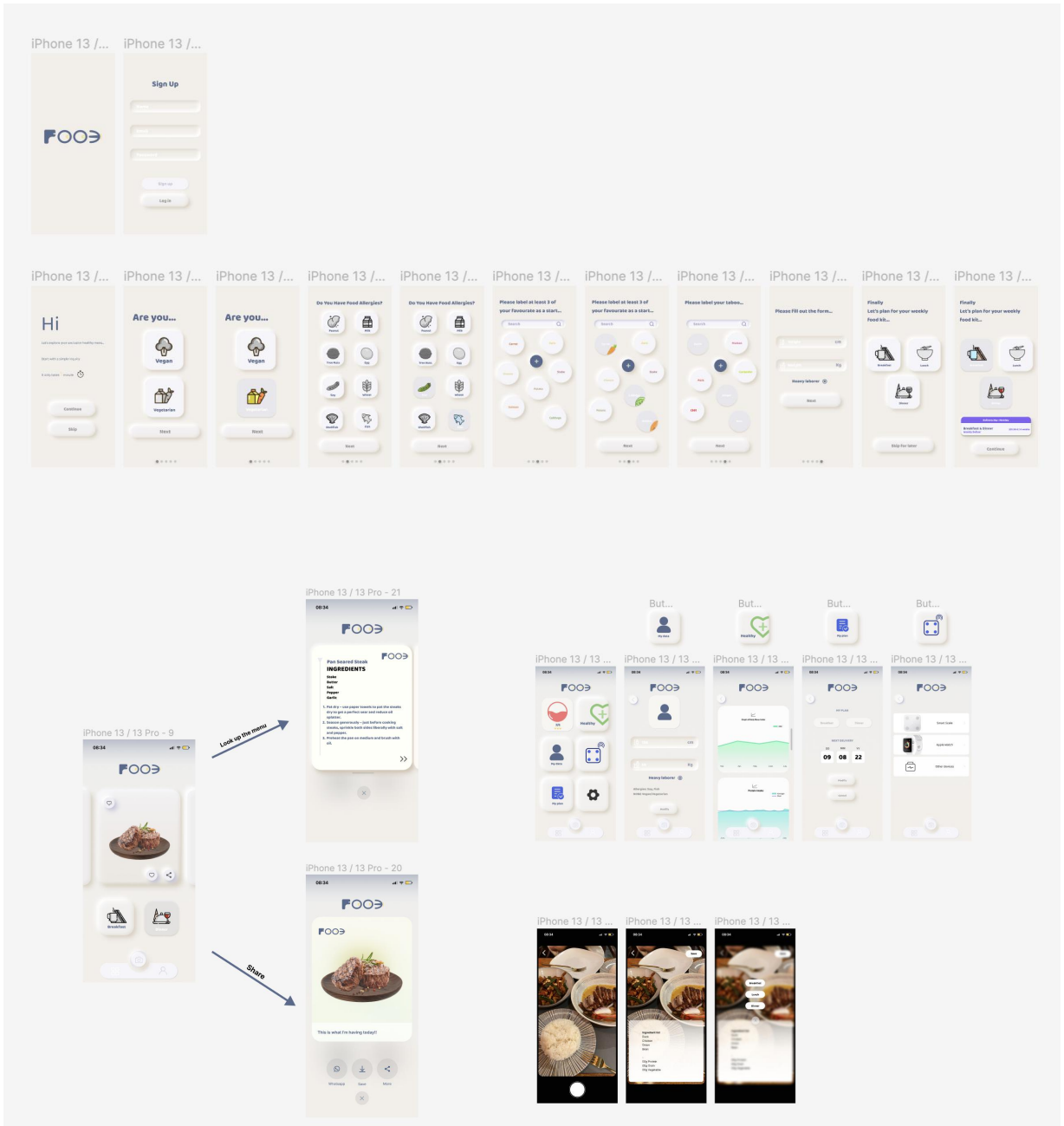*Source: Author*

**Navigation**



*Fig 6.23 Navigation*
*Source: Author*
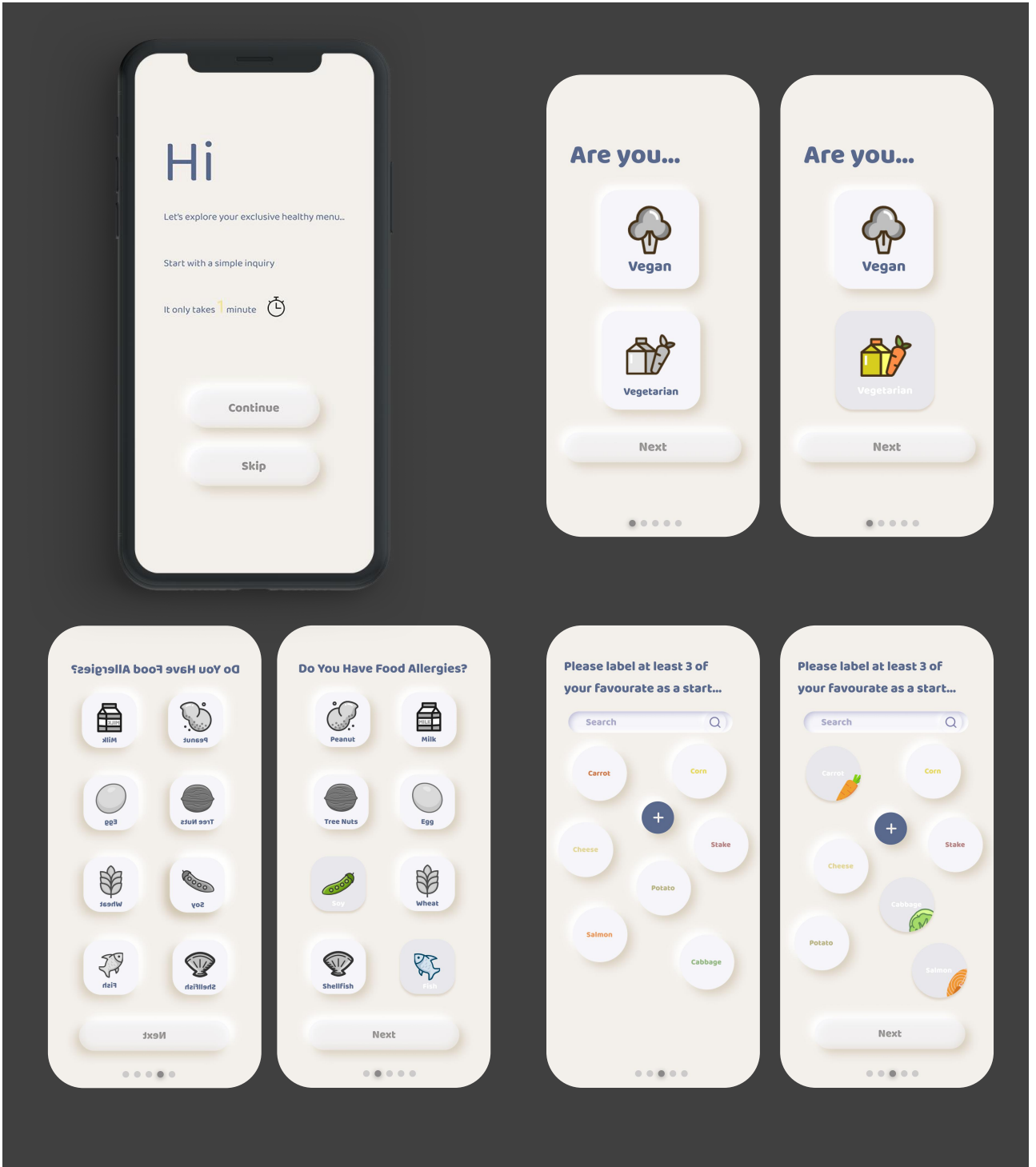
**User Inquiry**



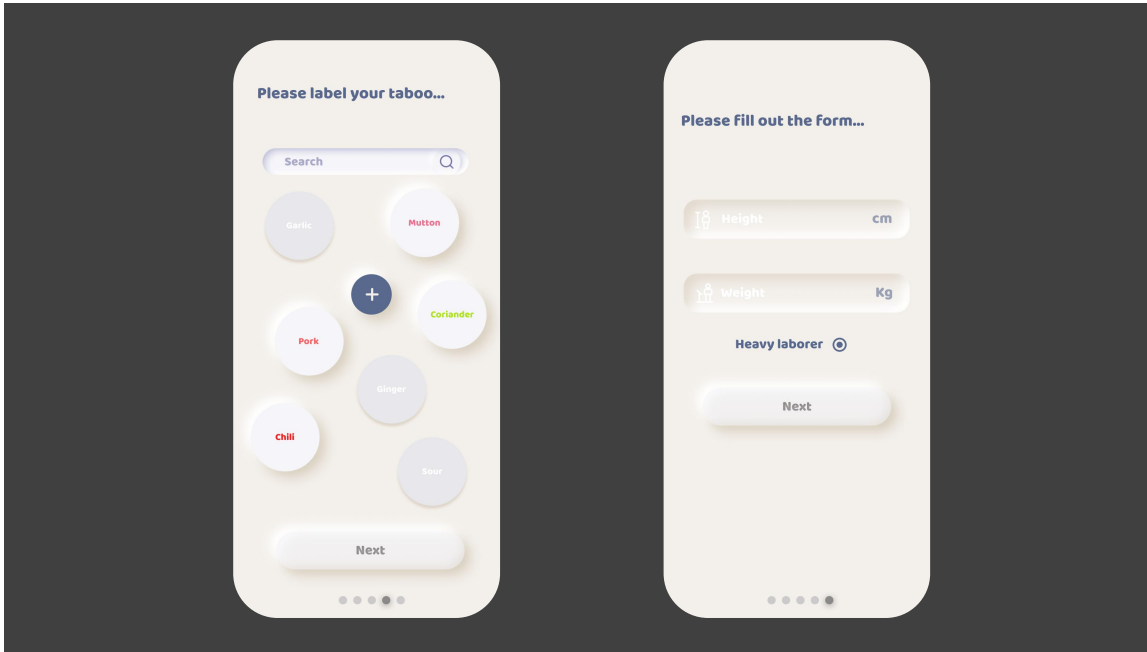*Fig 6.24 User inquiry*
*Source: Author*

*Fig 6.25 User inquiry*
*Source: Author*

Users are advised to fill an inquiry about preferences, allergies,  taboos, and basic body statistics. The inquiry is for an algorithm to classify the clients and formulate optimized recipes.
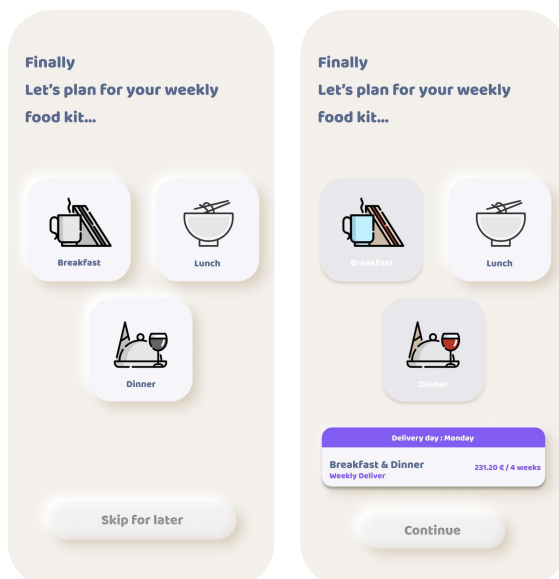
### Subscription Page



Following the inquiry, users can select their meal subscription service on this page. The service provides three basic meals (breakfast, lunch, and dinner). Users can choose from one to three meals.

*Fig 6.26 Subscription page*
*Source: Author*
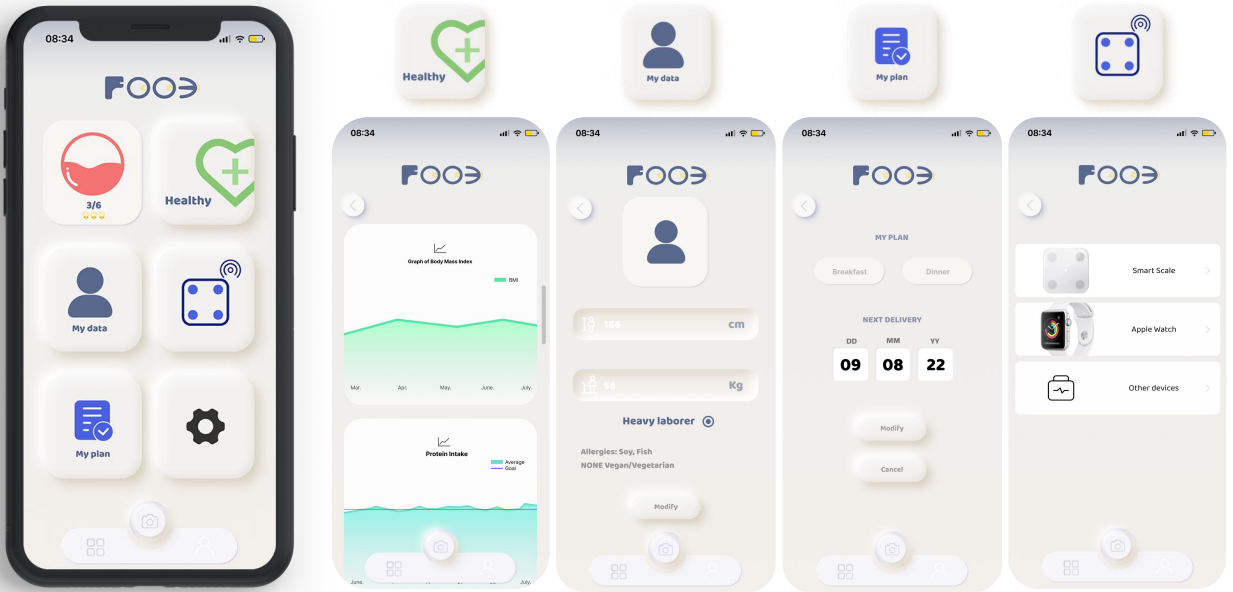
**Profile page**



*Fig 6.27 Profile page*
*Source: Author*

The reward module (Fig 6.28) is to give the user stimulus to participate in the package recycling activity. When the user returns the packages six times, one reward circle is completed, and the user will be given a gift.
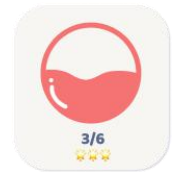
The healthy status page gives users a platform to observe their change. If the BMI is within the normal range, the button is green. If the user is under or overweight, the bottom will be red and yellow if the user is on the brink of being healthy(Fig 6.29).
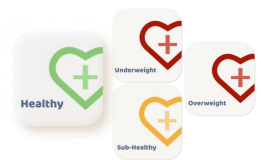
Page 'My data' is for users to edit statistics. The data can automatically update if users connect the application with smart scales.

Page 'My plan' is to show users' food delivery plan and the next delivery date. The users can apply for food plan changes or date changes on this page.

Page health device is to connect with hardware such as smart scales and apple watches, associating with other health activities. The bottom is grey, meaning no devices are connected (Fig 6.30 ).



*Fig 6.28 Reward module*
*Source: Author*



*Fig 6.29 Health status*
*Source: Author*



*Fig 6.30 Health device*
*Source: Author*

**Menu page**

The menu page directly shows the recipes for the whole week. Users are able to switch the menu among the subscribed meals. Users can express their preferences towards the recipes by rating the menu 'like' or 'dislike.' The algorithm would learn user preferences with constant feedback. Open the recipe page. The ingredients and cooking procedures are all on the page. The users can cook according to the recipe with delivered food. Users can also share the dish on social media.
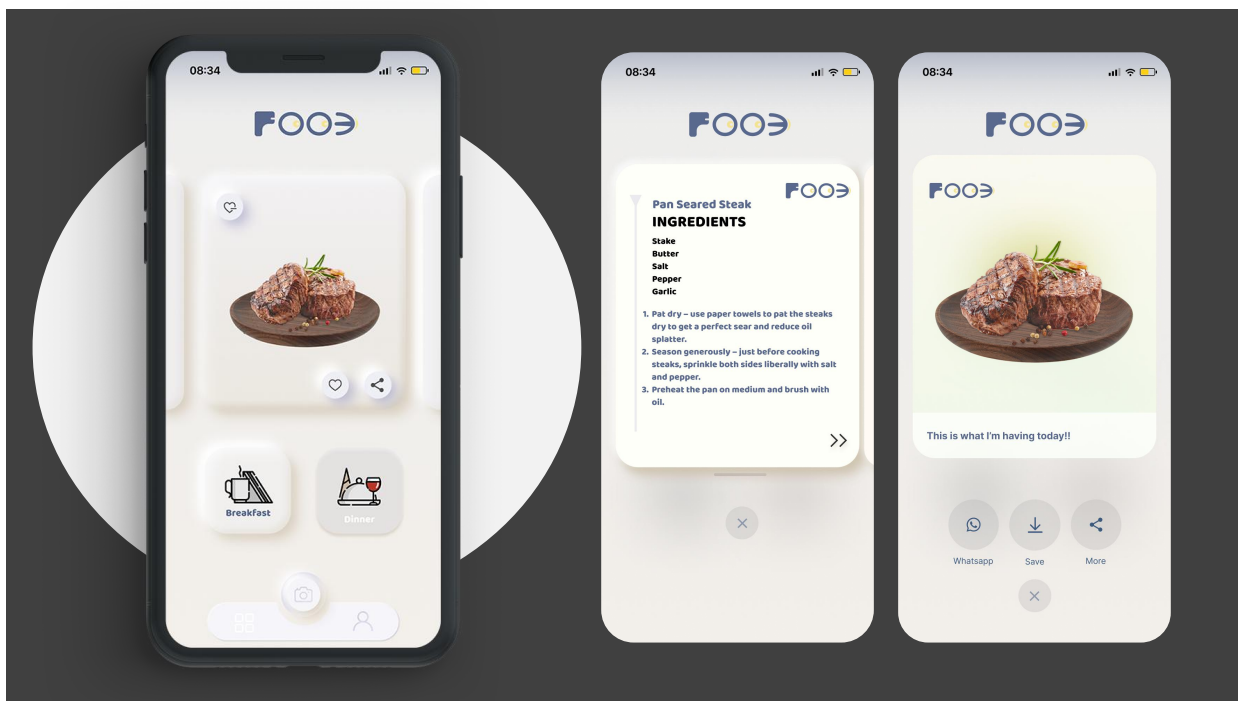


*Fig 6.31 Menu page*
*Source: Author*

**Photo page**

The photo page allows the users to record food intakes beyond the consumption of subscribed food delivery. Simply snap a photo of the food, and the application will identify the food ingredient and its proportion. Users can save it for breakfast, lunch, dinner, or other meals. The technology is to use machine learning to identify food from pictures. Many have adopted the technology to monitor calorie input in the dietary field. The function is catering to people's miscellaneous activities such as eating out or taking takeouts. Users who don't subscribe to the food delivery can also use this tool to trace their food intake and body statistics.
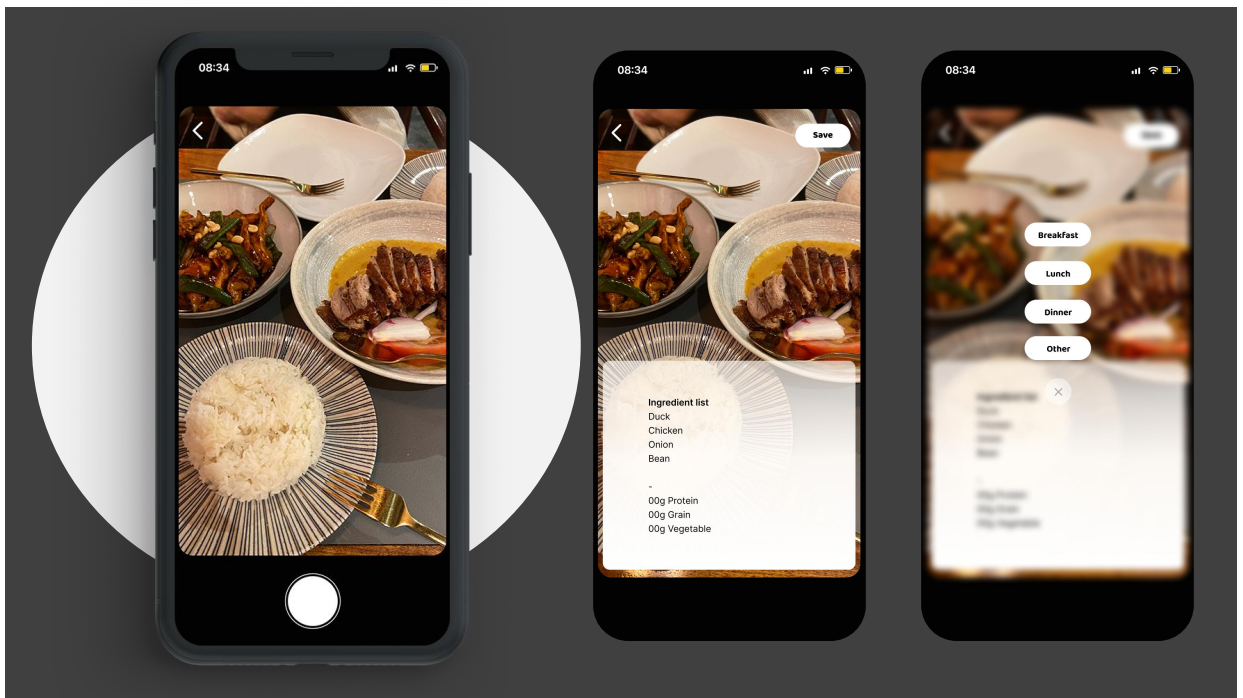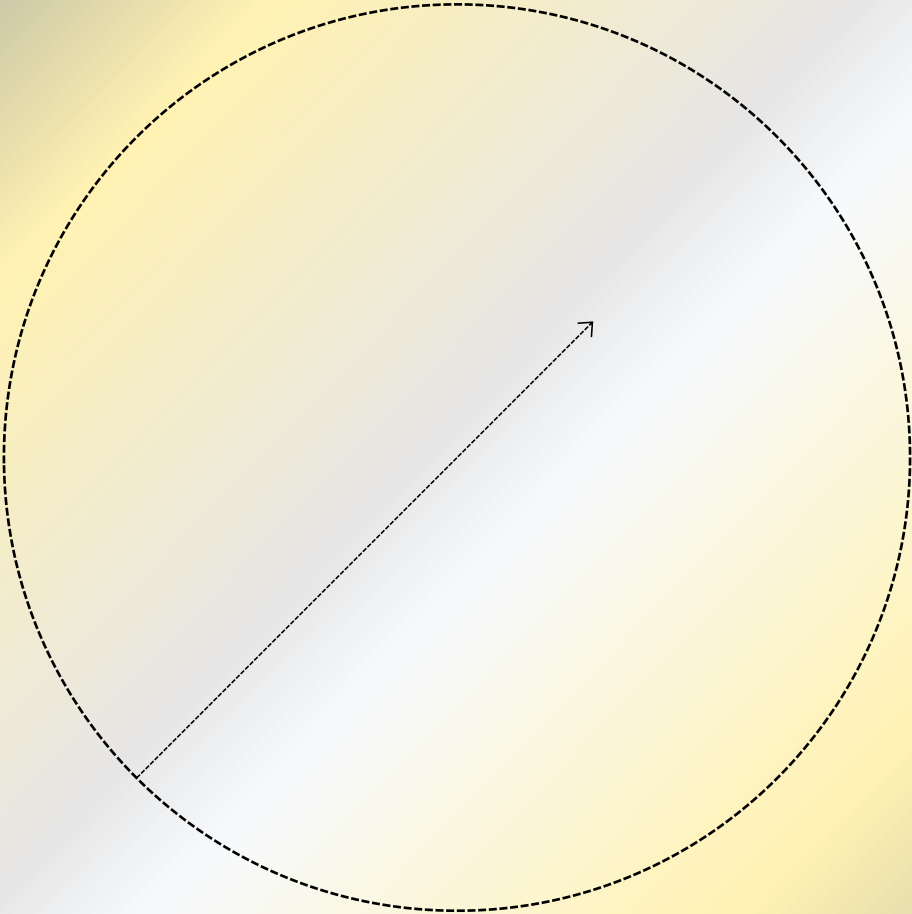


*Fig 6.32 Photo page*
*Source: Author*

# Conclusion

To eat healthily is a prevailed consensus, yet applying it to habitual daily routines is not easy. At present days, being able to maintain a healthy diet requires more free time and adequate financial resources. Socioeconomic status is the most evident determinant that encumbers (Marcia Angell, 1993) modern community to adopt wholesome food rituals. Thus, it has become a contemporary privilege in our time. Throughout the world's food history, many cuisines that were once regarded as nobility symbols have become accessible resources for the average population. Today, with abundant resources, quality eating comes to be the new demand and to be normalized. Kitchen work is a laborious household chore that takes much free time. From the perspective of traditional family structure, the existing food manner is not satisfactory for most populations, concerning labor division and diversity of individual needs. A whole session of kitchen work is not worth the result for the solitary individual. With the popularization of XaaS in the business field, this project envisions transferring labor from private kitchens to public services provided by corporations.

The design provides a tool to help the general public adopt healthy food rituals without concern. The outcome is a personalized food delivery service, offering processed raw food and customized menus after filling the application's inquiry regarding food allergies, preferences, and taboos. The algorithm can learn user preferences and make predictions through pattern recognition. Users can constantly give feedback, e.g., rate the recipes to help the system become accurate. Users can monitor their health status and nutritional intake on the application. The application also identifies the ingredients and quantities of food by taking a photo, helping users keep a handy record of their food intake beyond subscribed food.

The social transitions in both Singapore and Sweden involved promoters brought about by industrialization and social consensus. Singapore demonstrates how industrialization's labor-intensive nature squeezed ordinary people's spare time at the expense of private kitchen time. When Hurowitz (Toward a Social Policy for Health, 1993) speaks to the issue of socioeconomic status and health, he cautions against expecting too much from reforming the health care system without more fundamental social and economic reform (Marcia Angell,1993). The design provides a handy tool to maintain a wholesome diet, but the social and economic transformation is also relevant to public health.

# Bibliography

Angell, M. (1993). Privilege and Health -- What Is the Connection? New England Journal of Medicine, 329(2), 126–127. https://doi.org/10.1056/nejm199307083290210

Barile, K. S., Brandon, J. C., Galindo, M. J., Bonine, M. L., Pappas, E., I., Franklin, M., Beaudry, M. C., Battle, W. L., Wood, M. C., Stewart-Abernathy, L. C., Anderson, N., Davidson, J. M., & Spencer-Wood, S. M. (2004). *Household Chores and Household Choices: Theorizing the Domestic Sphere in Historical Archaeology* (First Edition, First ed.). University Alabama Press.

Barkin, D., & Bennett, J. W. (1972). Kibbutz and Colony: Collective Economies and the Outside World. *Comparative Studies in Society and History*, *14*(4), 456–483. https://doi.org/10.1017/s0010417500006800

Bowes, A. M. (1989). *Kibbutz Goshen: An Israeli Commune*. Waveland Pr Inc.

CHAN, R., & LEE, J. (2014). HAWKER CENTRES: SITING/SIGHTING SINGAPORE'S FOOD HERITAGE. *Public Space in Urban Asia*, 90–107. https://doi.org/10.1142/9789814578332_0006

Daun, K. (1991). Individualism and collectivity among Swedes. *Ethnos*, *56*(3–4), 165–172. https://doi.org/10.1080/00141844.1991.9981433

De Bosschere, K., & Duranton, M. (2021). Everything as a service. In M. Duranton, K. De Bosschere, B. Coppens, C. Gamrat, T. Hoberg, H. Munk, … O. Zendra (Eds.), HiPEAC vision 2021 : high performance embedded architecture and compilation (pp. 206–211). https://doi.org/10.5281/zenodo.4719715

Deutsche Welle (www.dw.com). (n.d.). *Communal idealism for the privileged few*. DW.COM. https://www.dw.com/en/israeli-kibbutz-communal-idealism-or-a-privileged-few/a-19261240

Fox, G. (2020, September 10). *Subscription Business Model: 10 Amazing Industry Examples*. GARY FOX. https://www.garyfox.co/subscription-business-model/

# Bibliography

Gale, E. M. (1930). Public Administration of Salt in China: A Historical Survey. The Annals of the American Academy of Political and Social Science, 152, 241–251. http://www.jstor.org/stable/1016558

Goel, A. (2021, December 24). How Does Glovo Make Money? A Close Look at the Glovo Business Model. JungleWorks. https://jungleworks.com/how-does-glovo-make-money-a-close-look-at-the-glovo-business-model/

Heinö, A. J. (2009). Democracy between collectivism and individualism. De-nationalisation and individualisation in Swedish national identity. *International Review of Sociology*, *19*(2), 297–314. https://doi.org/10.1080/03906700902833619

Hurowitz, J. C. (1993). Toward a Social Policy for Health. New England Journal of Medicine, 329(2), 130–133. https://doi.org/10.1056/nejm199307083290213

*Kibbutz Movement | Encyclopedia.com*. (n.d.). Encyclopedia.Com. https://www.encyclopedia.com/religion/encyclopedias-almanacs-transcripts-and-maps/kibbutz-movement

Kong, L. & National Environment Agency (Singapore). (2007). *Singapore Hawker Centres*. National Environment Agency.

Labrecque, L. I., & Milne, G. R. (2011). Exciting red and competent blue: the importance of color in marketing. *Journal of the Academy of Marketing Science*, *40*(5), 711–727. https://doi.org/10.1007/s11747-010-0245-y

Leon, D. (1969). *The Kibbutz: A New Way of Life (The Commonwealth and international library)* ([Rev. and enl. ed.] ed.). Pergamon.

Myers, A., Johnston, N., Rathod, V., Korattikara, A., Gorban, A., Silberman, N., Guadarrama, S., Papandreou, G., Huang, J., & Murphy, K. (2015). Im2Calories: Towards an Automated Mobile Vision Food Diary. 2015 IEEE International Conference on Computer Vision (ICCV). https://doi.org/10.1109/iccv.2015.146

# Bibliography

Nicasio, F. (2022, June 14). *9 Eco-Friendly Packaging Materials to Help Your Business Go Green*. Noissue. https://noissue.co/blog/environmentally-friendly-packaging-materials/

Pilcher, J. M. (2006). *Food In World History* (1. ed.). Routledge.

Redaktion, T. B. (2020, April 3). *How did we survive before Spotify..?* The Teufel Blog. https://blog.teufelaudio.com/music-listening-before-spotify/

S. (2021, May 26). *ServiceTonic for a "as a service" world*. ServiceTonic. https://www.servicetonic.com/news/servicetonic-for-a-as-a-service-world/#Origin_of_Xaas_Everything_as_a_Service

Santos, H. C., Varnum, M. E. W., & Grossmann, I. (2017). Global Increases in Individualism. *Psychological Science*, *28*(9), 1228–1239. https://doi.org/10.1177/0956797617700622

Stratton, L. The determinants of housework time. IZA World of Labor 2020: 133 doi: 10.15185/izawol.133.v2

*The Subscription Economy Grows More than 350% Over 7.5 Years*. (2019, October 4). Zuora. https://www.zuora.com/press-release/the-subscription-economy-grows-more-than-350-over-7-5-years/

TARULEVICZ, N. (2018). HAWKERPRENEURS: HAWKERS, ENTREPRENEURSHIP, AND REINVENTING STREET FOOD IN SINGAPORE. *Revista de Administração de Empresas*, *58*(3), 291–302. https://doi.org/10.1590/s0034-759020180309

*V. (2021, July 5). The Glovo Business Model – How Does Glovo Make Money? Productmint. https://productmint.com/glovo-business-model-how-does-glovo-make-money/*

# Bibliography

*Why lactose-free is going to be massive in Asia | DSM Food & Beverage*. (n.d.). @food-Beverage. https://www.dsm.com/food-beverage/en_US/insights/insights/dairy/why-lactose-free-is-going-to-be-massive-in-asia.html#:%7E:text=There%20are%20likely%20to%20be,impaired%20ability%20to%20digest%20lactose.

快递快运公司的核心能力—路由规划. (2018, October 14). Copyright Â© 2017 Sohu.Com Inc. All Rights Reserved. https://www.sohu.com/a/259439639_170557

# Appendix

**Inquiry**

- Do you feel yourself actively adapt to new technology?//¿Siente que usted se adapta activamente a las nuevas tecnologías? 请问您觉得自己主动适应新科技吗？(0-3,Not at all/Para nada - Very/Muy)

- Are you comfortable with giving personal datas to companies?/¿Se siente cómodo dando datos personales a las empresas? 您是否愿意向企业提供个人数据？(0-3, I'm not ok with it./No estoy bien con eso.-I'm ok with it./Estoy bien con eso)

- Do you give personal datas to companies or organizations despite unwillingness, in exchange of convenience?/ A pesar de su falta de voluntad, ¿proporciona usted datos personales a empresas u organizaciones porque le conviene?/您是否将个人数据提供给公司或组织以换取方便尽管不情愿? (Always/Siempre/总是, Often/Con frecuencia/经常, Sometimes/A veces/有时,Never/Nunca/从不)

- Do you think you are eating healthy?/¿Usted cree que come sano?/请问您认为自己是否饮食健康? (0-3, Not at all/Para nada/一点都不 - Very/Muy/非常健康)

- Do you think in general people know how to make the right choice according to nutrition requirement when buying food?/¿Usted cree que, en general, al comprar alimentos, la gente sabe cómo elegirlos correctamente de acuerdo con los requisitos nutricionales?您认为一般人在购买食物时是否知道如何根据营养需求做出正确的选择? (Yes/sí/是的, No/No/不, Maybe/Quizás/也许)

- Are you willing to accept paid customized service to assist your daily life?/¿Está dispuesto a aceptar un servicio personalizado pagado para ayudarlo en su vida diaria?/您愿意接受付费定制服务来协助您的日常生活吗? (Yes/sí/愿意, No/No/不愿意, Maybe/Quizás/也许)

- How much are you accepting as extra payment for professional help in food, considering that you would feel more healthy?/¿Cuánto está dispuesto a pagar como pago extra por la ayuda de un profesional en alimentación, considerando que se sentiría más saludable?/考虑到您会感觉更健康，您接受多少作为食品专业帮助的额外费用? (1%, 5%, 10%, 20%, 30%, None/Ninguno/0)

-

# Appendix

- Have you subscribed to any service? (Including both digital and non-digital service)/¿Te has suscrito a algún servicio? (Incluyendo tanto el servicio digital como el no digital)/您订阅了任何服务吗？（包括数字和非数字服务）(Yes/sí/有, No/No/没有, Not currently, but intend to./Actualmente no, pero tengo la intención de hacerlo./现在没有，但是有打算)

- Do you use current food distribution apps?/¿Utiliza las aplicaciones actuales de distribución de alimentos?/您是否使用外卖App？(Very often/Muy a menudo/经常使用, Sometimes/Sometimes/有时候, Never/Nunca/从不)

- What food distribution apps do you use more frequently?/¿Qué aplicaciones de distribución de alimentos usa con más frecuencia?/您更经常使用哪些外卖App？(Glovo, Uber Eats, Just Eat, Getir, Foodpanda, Mercadona, Others)

- How much time do you invest each time when choosing products to purchase on food App?/¿Cuánto tiempo invierte cada vez que elige productos para comprar en la aplicación de alimentos?/每次在外卖App上选择要购买的产品时，您会投入多少时间？(Less than 15 minutes./Menos de 15 minutos./少于15分钟, 15-30 minutes/15-30 minutos/15-30分钟, 30 minutes - 1 hour/30 minutos - 1 hora/30分钟-1小时, Longer than an hour/Más de una hora/多余一小时, I don't use food Apps./No uso aplicaciones de alimentos./我不用外卖App)

- How old are you?/¿Cuántos años tiene usted?/请问您的年龄是？(18-25, 26-35, 36-45, 46-55, 56-65, over 65/mayores de 65/65岁以上)

- Do you eat alone?/¿Come usted  solo?/请问您一个人吃饭吗？(Yes/sí/是的, No/No/不是)

-