

A nurse in a white uniform and blue face mask stands in a hospital ward, pointing towards a group of patients. The patients are seated in a room with several beds, some of which are occupied. The scene is dimly lit, with a focus on the nurse and the patients in the foreground.

# The Design of Hospital Patient Food Service System in the Future Society

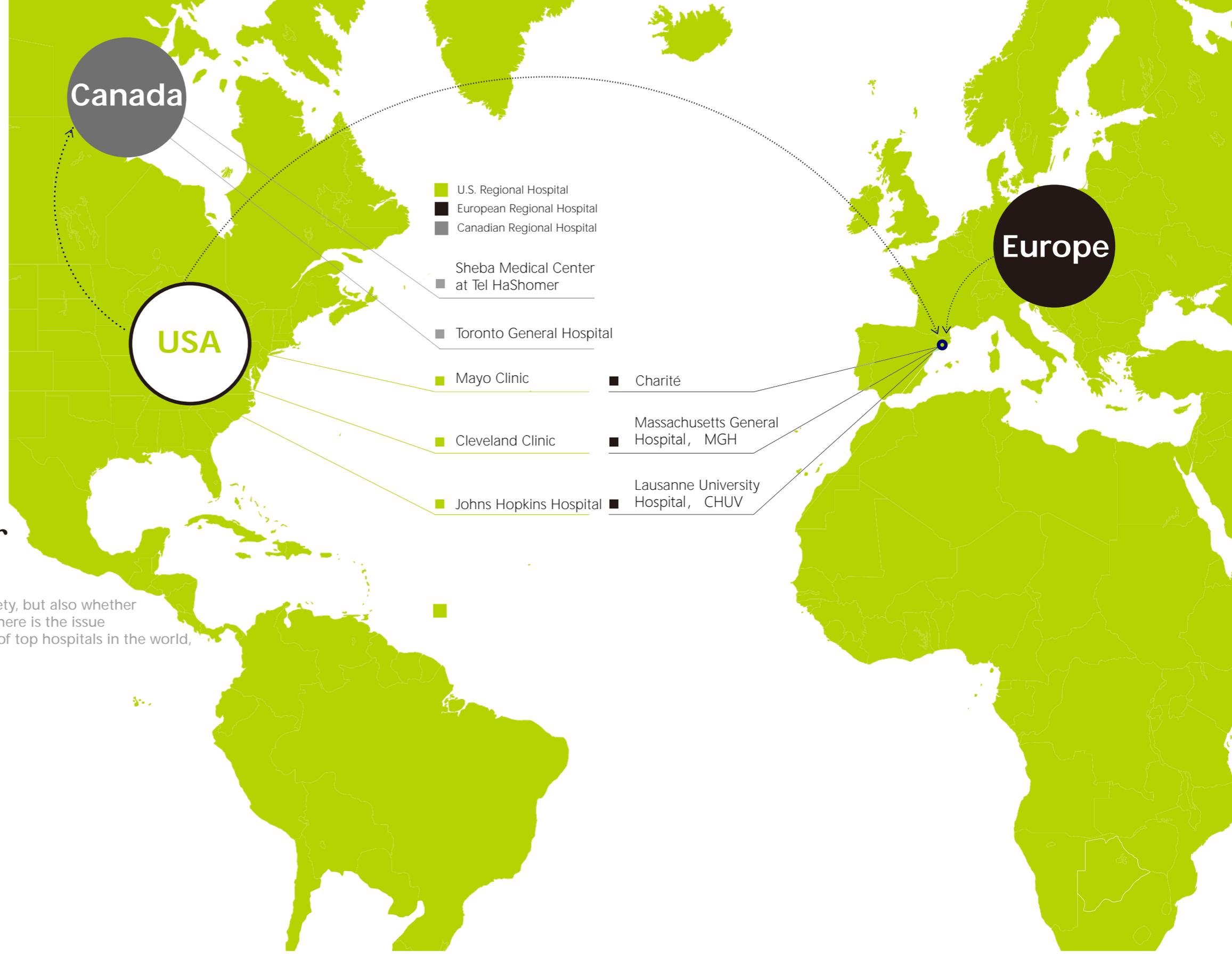
Designed based on the future needs of human sustainable diet, committed to improving the quality of meals for long-term inpatients

# O1 Context

The world's top ten hospitals are located in Europe and North America

**Hospital catering** is still a problem that top hospitals still need to consider

The issue of hospital catering is not only food hygiene and safety, but also whether the patient's diet helps the body recover. More importantly, there is the issue of patients' catering experience. In the catering service survey of top hospitals in the world, there is no catering system that is more popular with patients.



01 Context

# Husband and wife open life kitchen to solve cooking problems for patients' families

Beginning in 2003, a couple in Jiangxi, China, started operating the "kitchen of life", providing cooking stoves for the families of hospital patients and solving cooking problems.



## 01 Context

点到自家厨房

好再来加工菜

Restaurant name: Hao Zai Lai Processing Restaurant

In China,

processing restaurants

near hospitals are very common

The family members of the patient buy fresh ingredients and put them in the processing restaurant, which is responsible for processing, so that the processed ingredients have high nutritional value and help the patient recover.

## 01 Context

Although the nutrition problem is solved, the problems of distance, price and food safety remain to be solved

To create a healthy community environment in the future, we made the following design



## 02 Design Idea

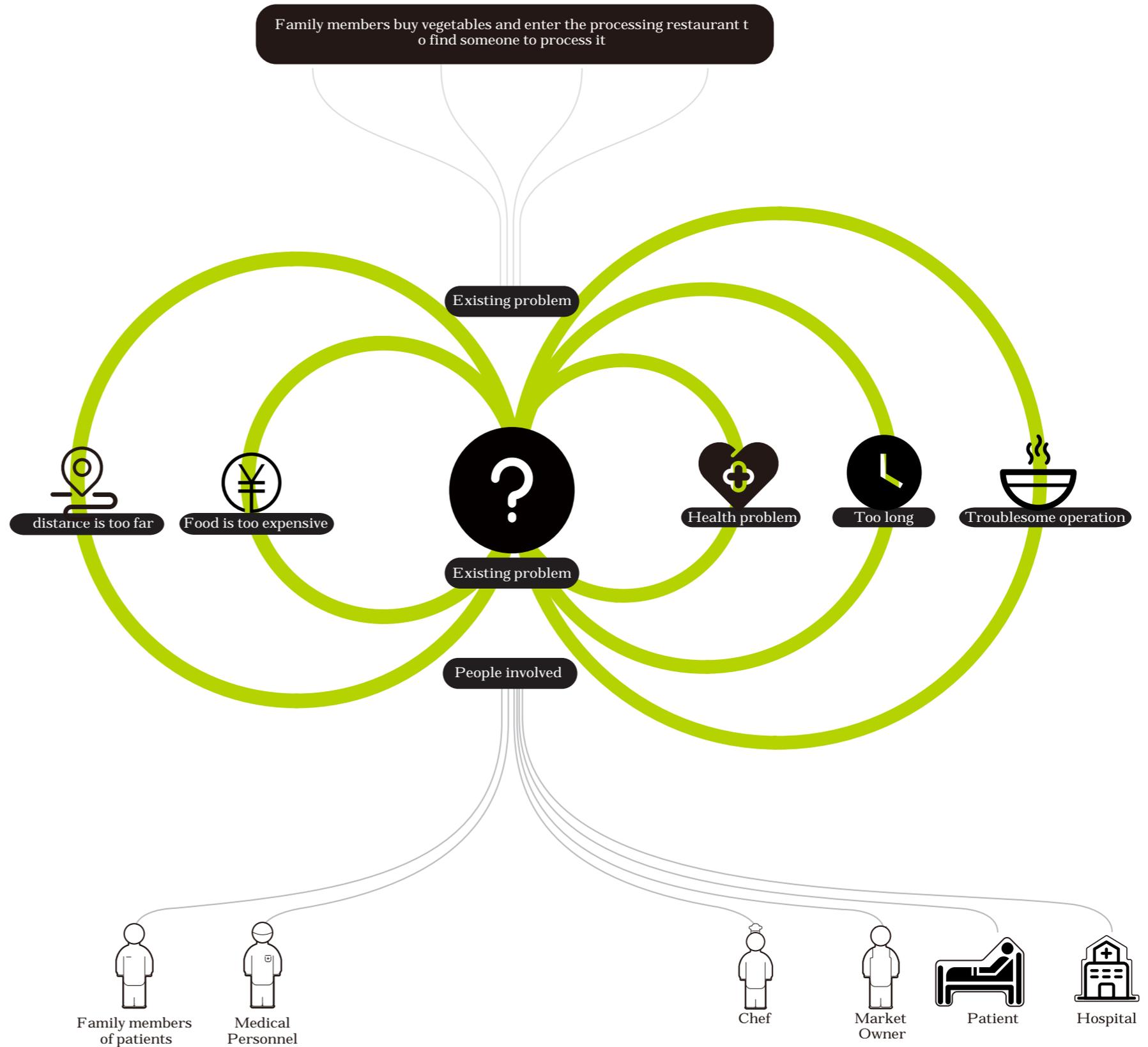


Based on the processing restaurant near the original hospital, the future hospital patient meal system is designed to ensure a safe, convenient and efficient diet based on healthy diet.

It is worth mentioning that this design can also provide employment opportunities for patients' families.

# 02 The Opportunity

Based on the existing opportunities, we define the service population as **long-term hospitalized patients (2 weeks-4 weeks)**



# 02 Typical User Behavior in A Day



## Patient's family member A/B one-day behavior table

AM 7: 00—9: 00

Hospital set breakfast  
Have breakfast with the patient  
Cooperate with doctors  
to care for patients

AM 10: 00—11: 30

Go to the vegetable market  
to buy vegetables  
Processing point looks at  
processed dishes  
Dining with patients

AM 11: 30—12: 00

Lunch break

PM 1: 30—2: 00

Organize the ward  
Cooperate with doctors to  
care for patients

PM 2: 30—3: 30

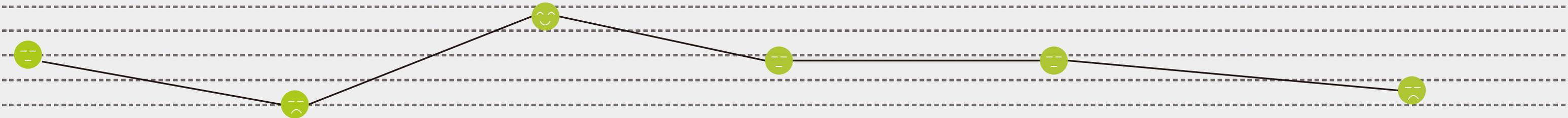
Accompany the patient  
for examination

PM 3: 30—5: 30

Go to the vegetable market  
to buy vegetables  
Processing point looks at  
processed dishes  
Dining with patients



## Patient's family emotional curve



## Design contact analysis

Breakfast order service  
Patient Care Monitoring Service

Solution to the meal problem  
Order service  
Delivery service

Lunch break space

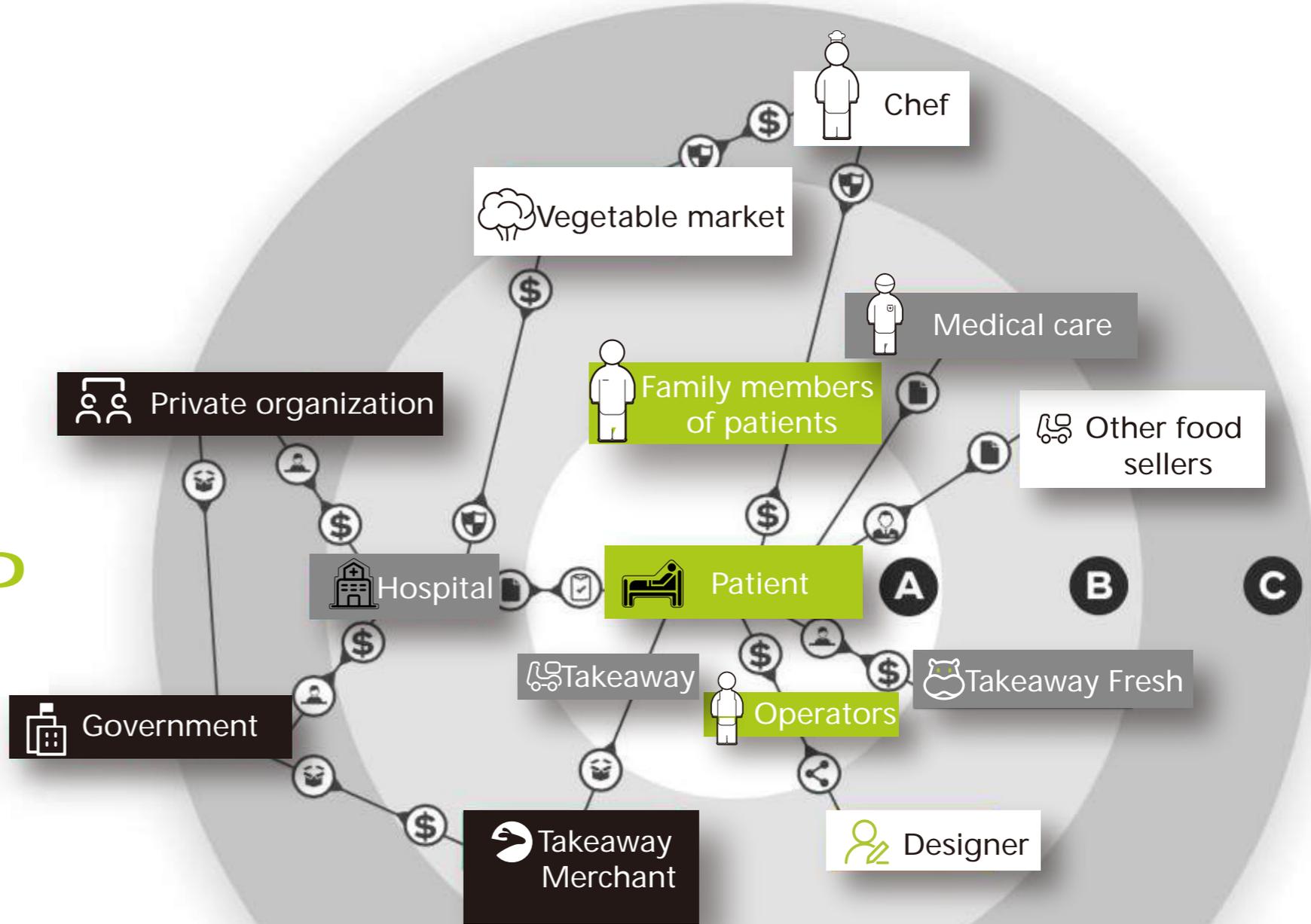
Nursing service

Nurse inspection appointment

Solution to the meal problem  
Order service  
Delivery service

# 02 Stakeholder Map Analysis

## STAKEHOLDER MAP



- A** End user
- B** First level user
- C** Secondary user
- Records and Guardianship
- Contact and communication
- Health protection
- Big data statistics
- Human Resources
- Financial resources
- Material resources

## 02 Typical User Analysis

Auntie Zhao who took care of Grandpa Li for a long time

# Aunt Zhao

Work as an accountant and retired at home

No experience in caring for patients

+

*“I hope my husband can eat well, but the hospital’s meals are almost the same every day.*

*We are all tired of eating and we don’t know if there is nutrition.”*

# 02 Discovery and Summary of Focal Issues

Users					
Age			Character		
<b>0~18</b> People in this age group are the ones who need to be taken care of, and sometimes some serious diseases can occur.	<b>19~64</b> People at this age tend to take on caregiving roles, balancing work and family.	<b>65+</b> Most of the people at this age are sickly and often need to be checked and treated in hospital.	<b>Patient</b> They need to be taken care of and have high dietary requirements.	<b>Relatives of patient</b> They need to spend a lot of time to take care of patients' diet and daily life, and have great psychological and physiological pressure.	<b>Nurse</b> Proper diet and lifestyle advice should be provided to the patient and his/her family.
					<b>Chef</b> Make food according to requirements.

Problems		
Communication level	Practical level	Security level
This plays a very important role between patients and their families, between nurses and patients and their families, between families and the cooks who share the kitchen, and between families.  Different people exchange information through communication.	The hospital needed to free up a lot of space for this shared kitchen.  The daily maintenance of this shared kitchen requires certain manpower and material resources.  It took time for people to adopt and use the gym's communal kitchen.  The processing of the ingredients is more difficult.  The use of the whole process requires a certain learning cost.	Since shared kitchens must be close to the inpatient department of a hospital, fire prevention and other safety concerns are important.  To ensure the food safety of hospitalized patients is a very important social problem.  Food that is both healthy and safe can greatly help patients recover.

Scenes		
Inpatient ward	Shared kitchen	Dining hall
Patients spend most of their stay in hospital in the ward.	Chefs employed by the hospital are here to make custom-made meals for customers.	Patients and their families can choose to eat in the ward or in the dining hall.

Perceives
<b>Patient</b> Able to meet individual dietary needs one on one.  Taste and nutritional needs can be met.  The source of the food is more transparent, and the food is more secure and safe to eat.
<b>Requesting users</b>  Reduce the physical burden of caring for the sick.  Make life easier.  The source of ingredients is guaranteed, the production process is more transparent, the food is nutritious and healthy, and it feels safe and secure to eat.
<b>Relational users</b>  Working with fellow patients in the same ward and taking turns to carry the prepared food can lighten the workload.  Helping other patients bring meals also increases financial benefits.  Communicate with patients, can reduce their psychological pressure and burden.
<b>Service-oriented users</b>  Increased job opportunities.  Make oneself obtain economic source, reduce the economic burden of the family.  Reduce social instability.

# 03 Personas



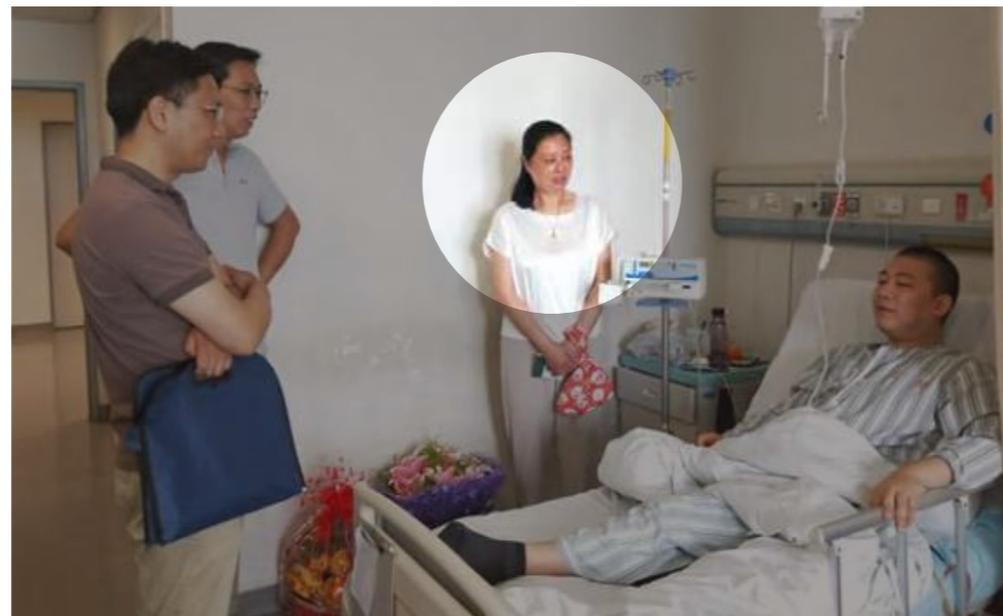
## The Request Type

35 years old

Software Engineer

Nanjing, China

" I took care of my father who was ill in hospital alone. Sometimes I was too busy to come by myself."



## The Associative Type

40 years old

Teacher

Nanjing, China

" Along with the other nurses on the ward, I cooked at the shared kitchen and sometimes we took turns picking up the prepared meals."



## The Service-orient Type

32 years old

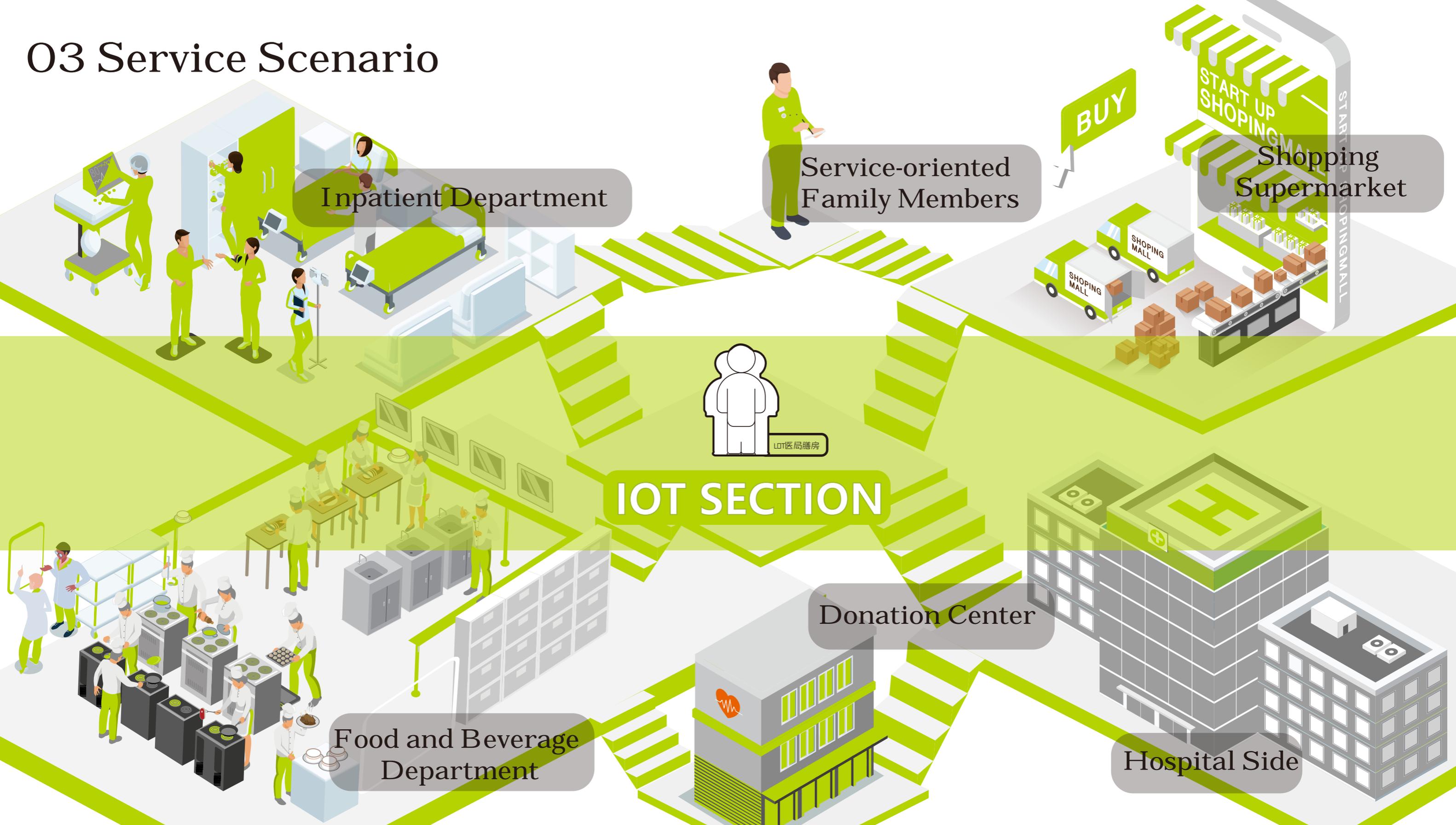
Worker

Nanjing, China

" I was at the entrance to the shared kitchen to help those who came to the shared kitchen for the first time to use the terminal machines and inform them of the relevant services."



# 03 Service Scenario



Inpatient Department

Service-oriented Family Members

Shopping Supermarket

IOT SECTION

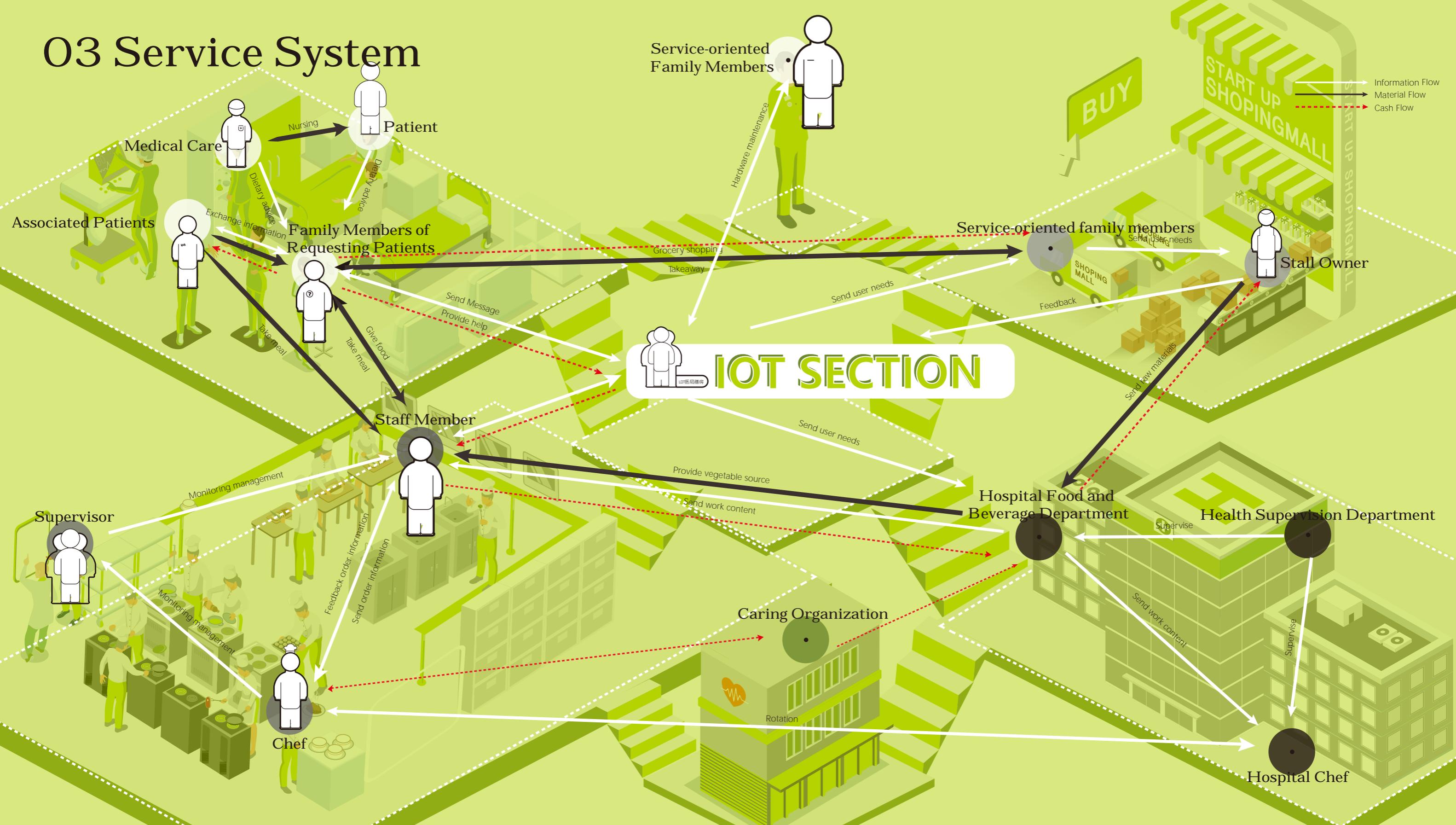
LOT医局膳房

Donation Center

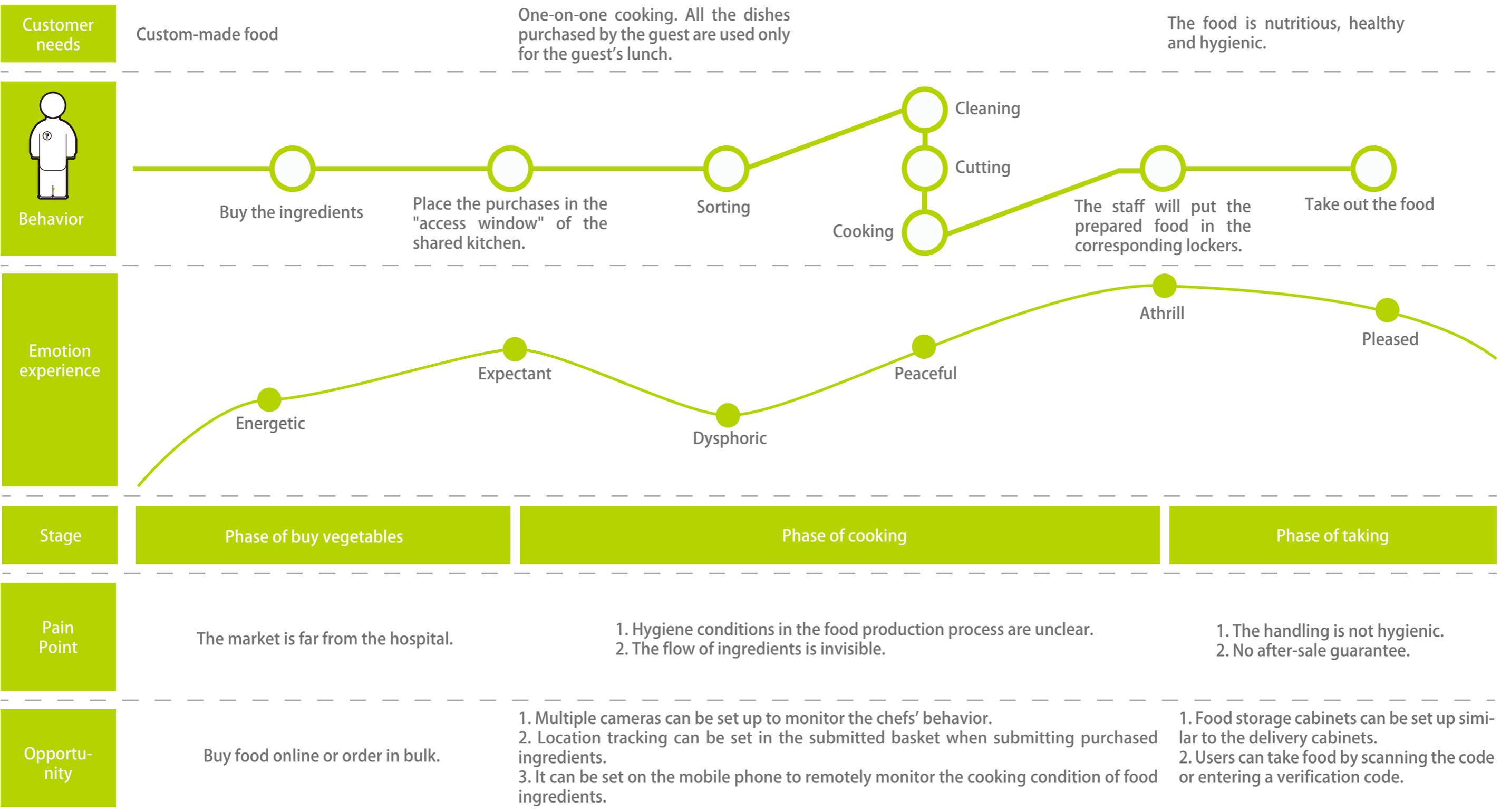
Food and Beverage Department

Hospital Side

# 03 Service System



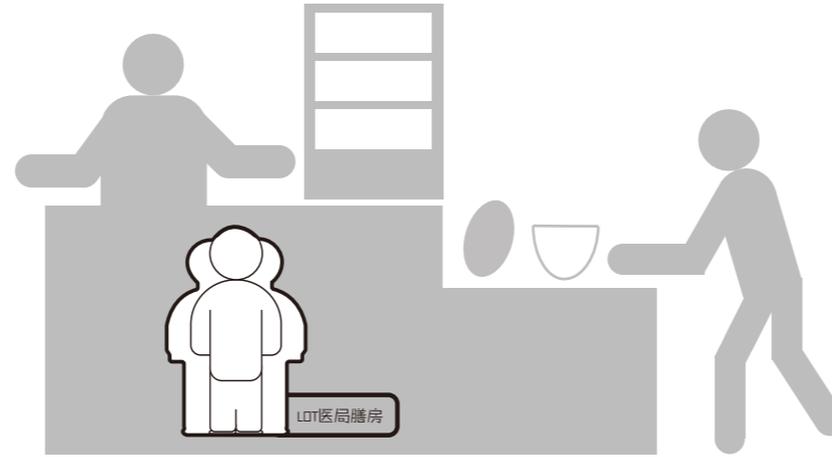
# 03 User Journey Map



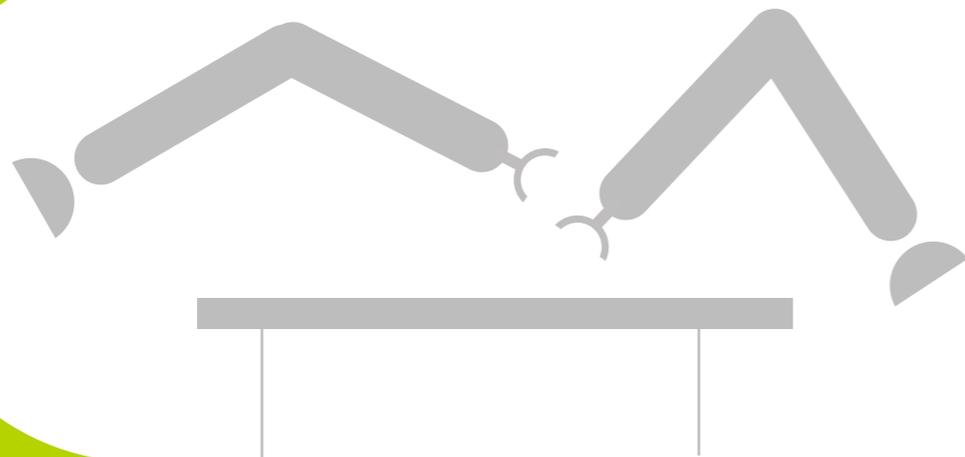
# 03 Storyboard



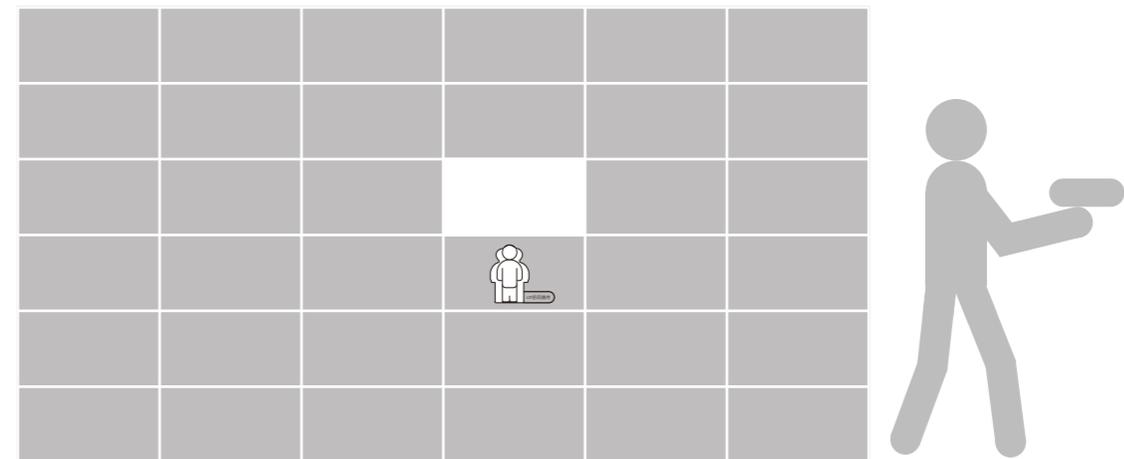
1. Buy the ingredients



2. Put the purchased ingredients in the ingredients window of the shared kitchen.



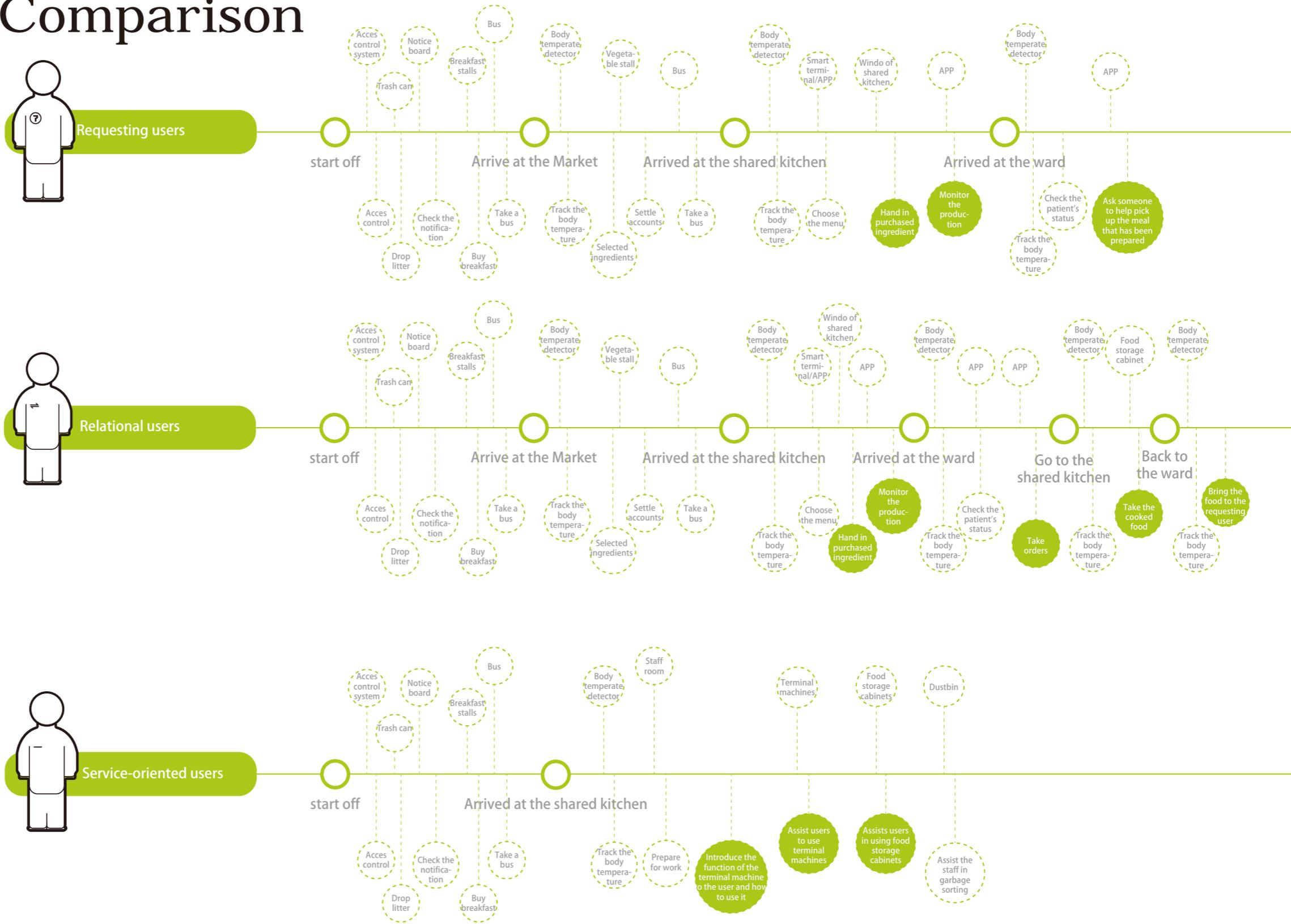
3. Processed food



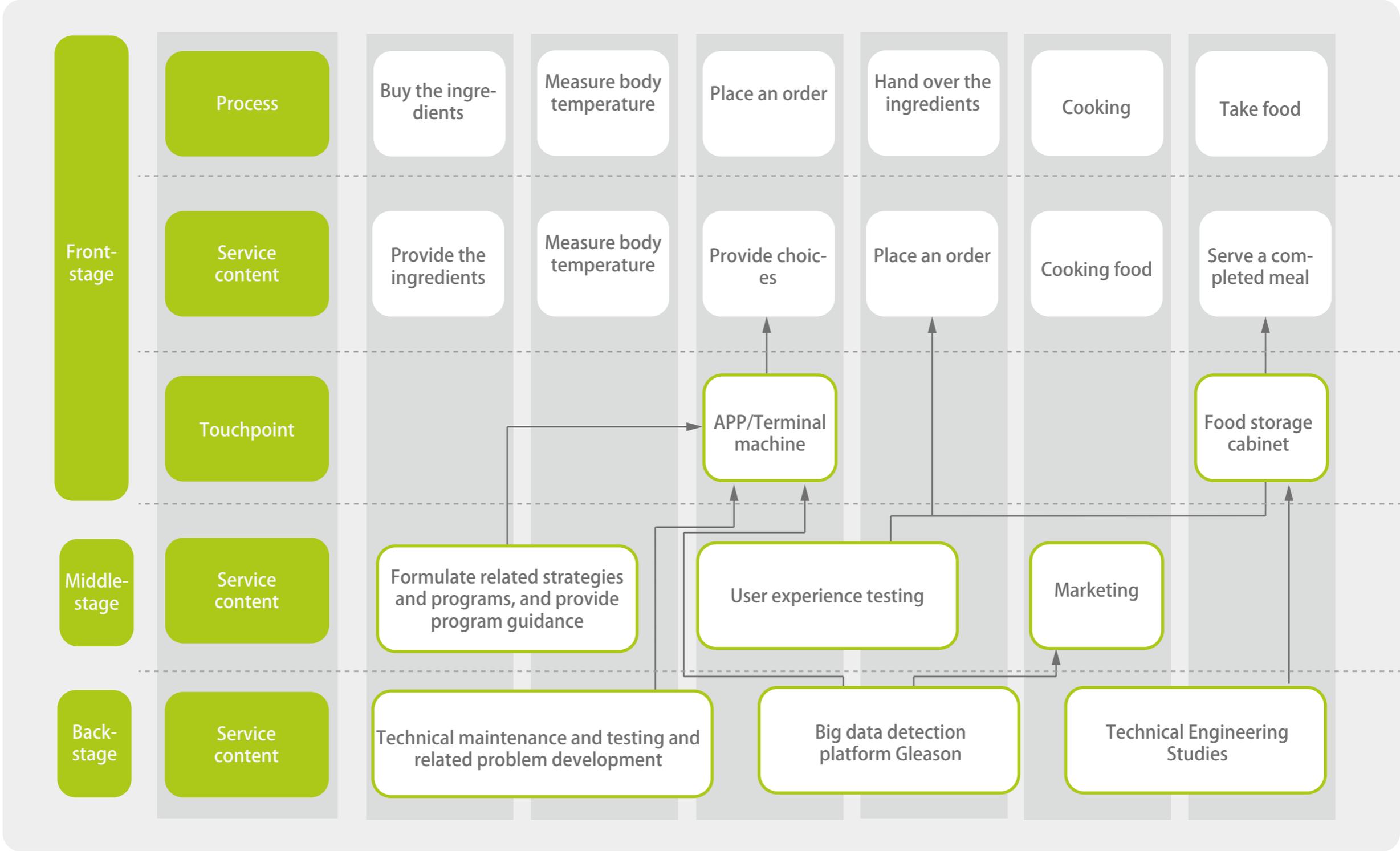
4. Take away the processed ingredients.

# 03 User Behavior Comparison

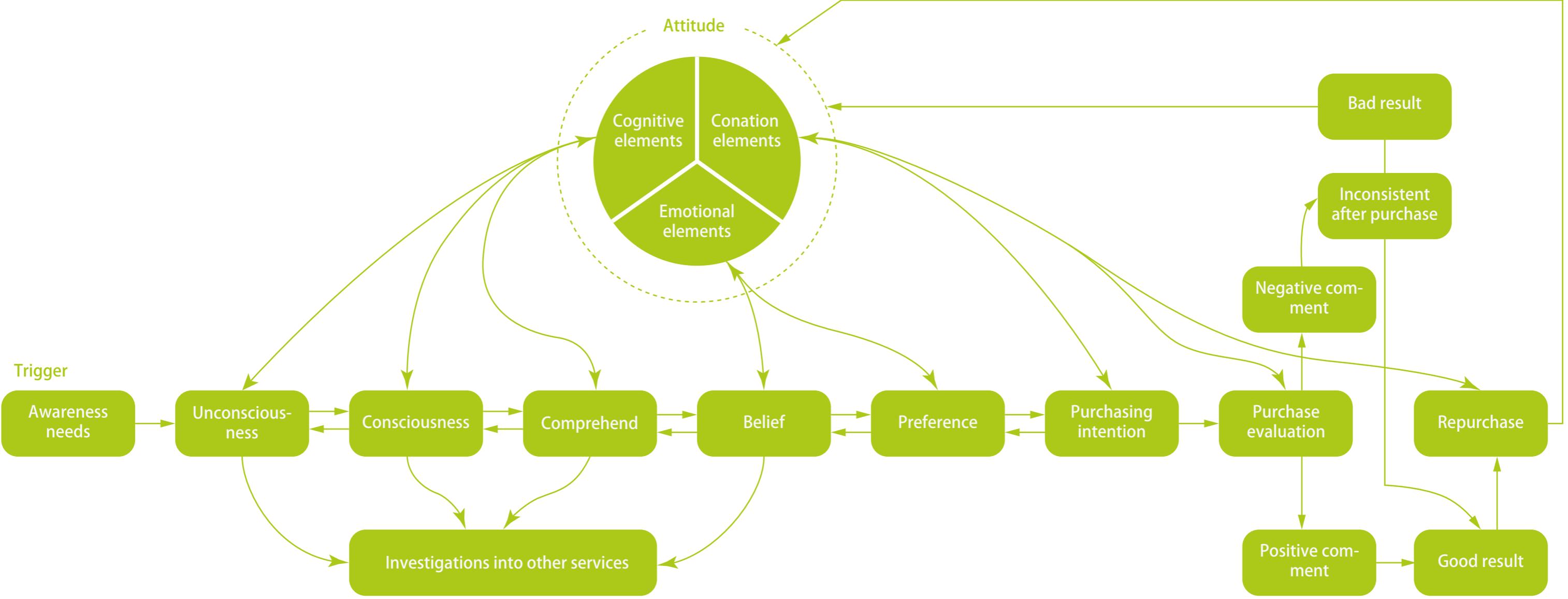
The common behaviors of service patients, related patients, and request patients are different



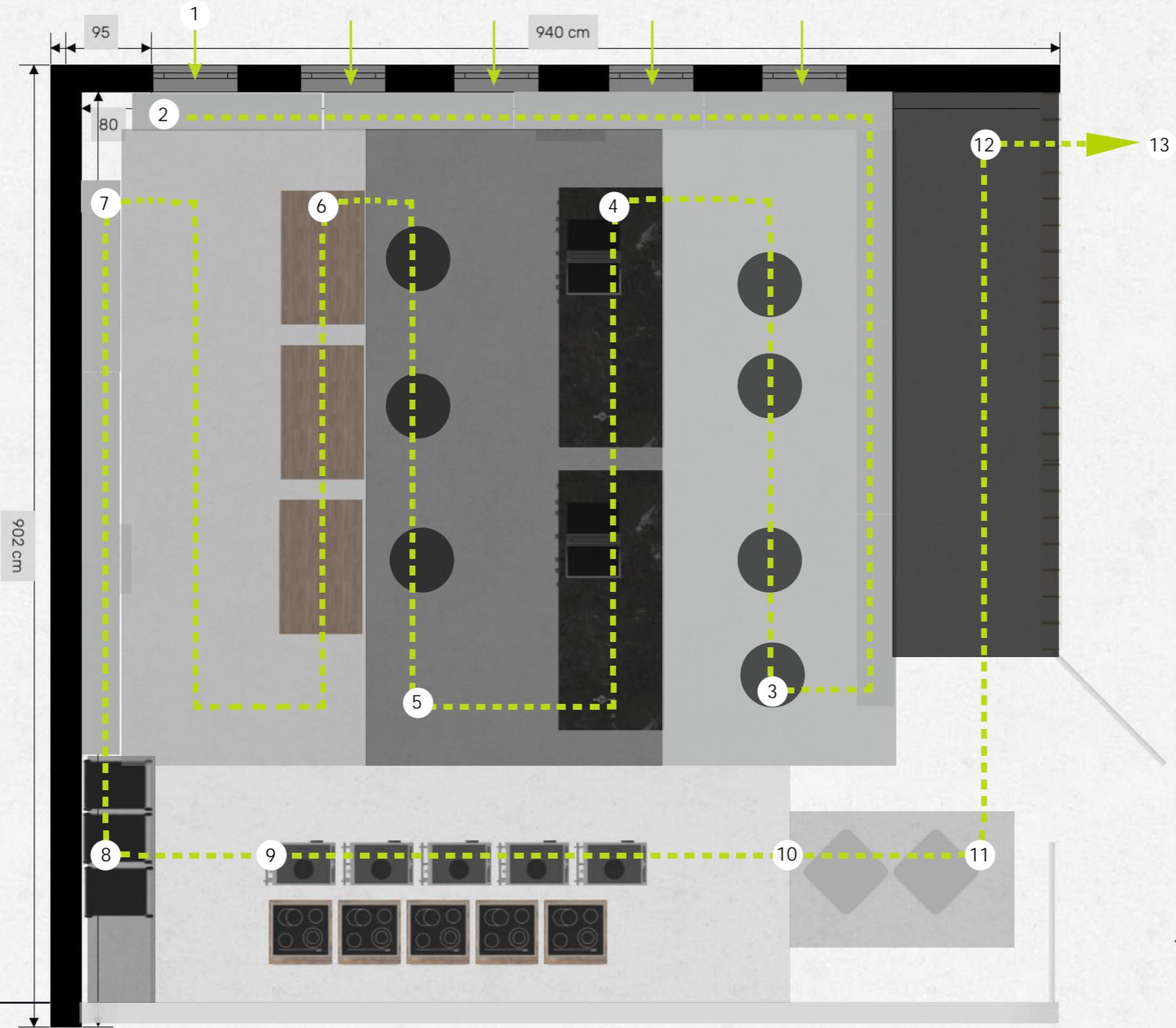
# 03 Service Blueprint



# O4 Customer Life Cycle Table



# 05 Spatial Contact Design



Dynamic Line Graph 86.48 m<sup>2</sup>

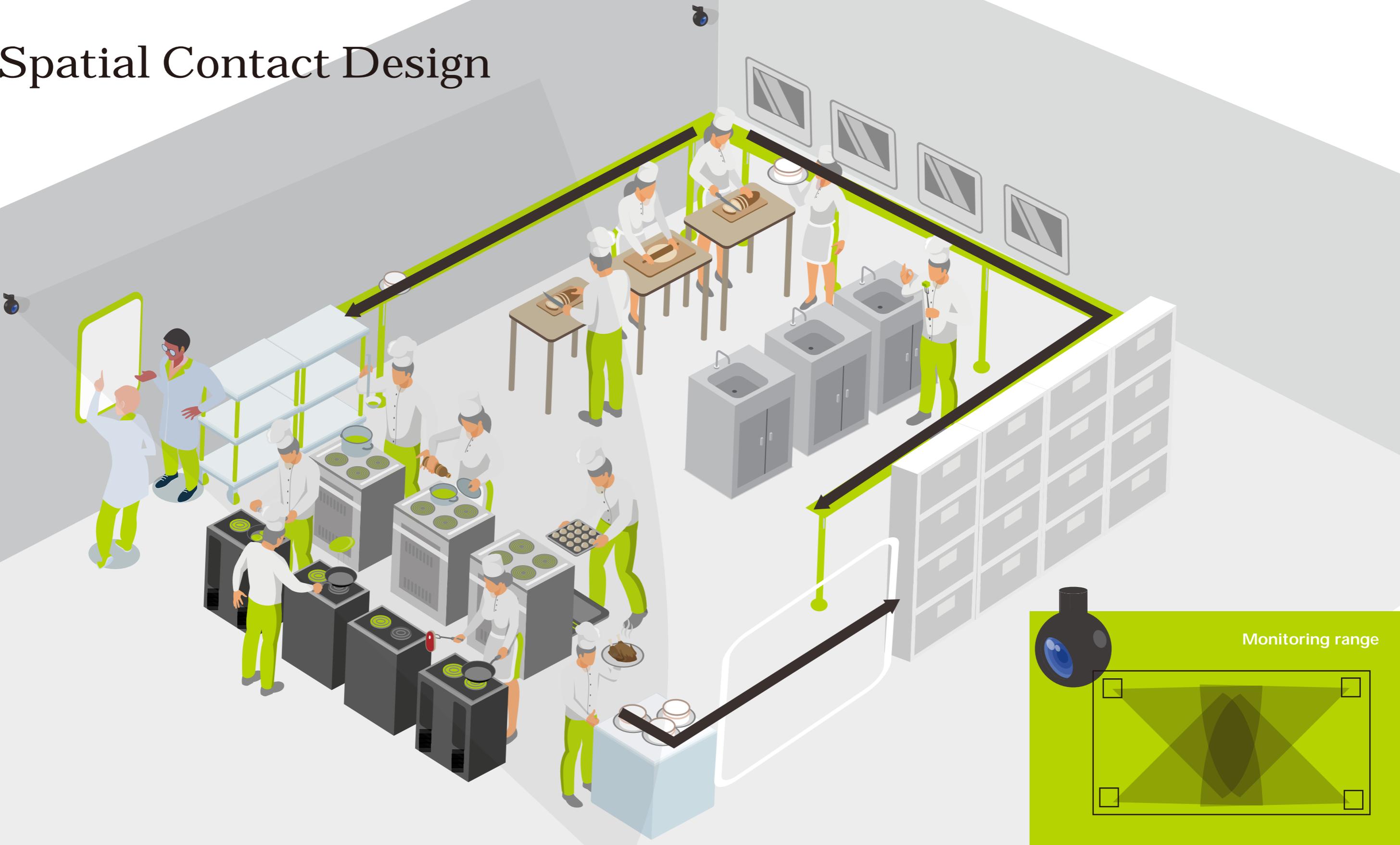
1: 100

# 05 Spatial Contact Design



Schematic diagram  
of regional division 86.48 m<sup>2</sup>

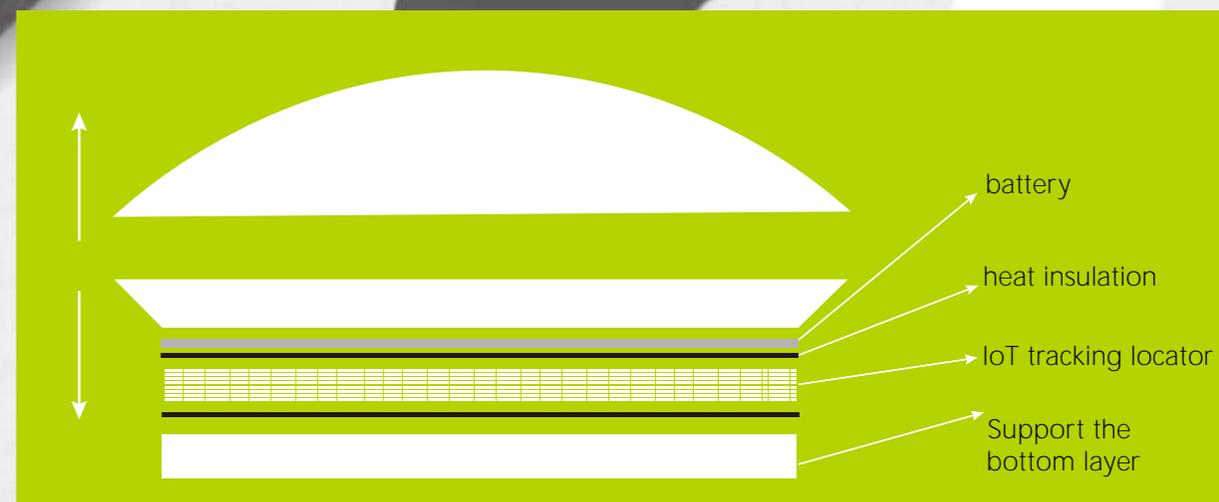
# 05 Spatial Contact Design



Monitoring range

This inset diagram shows a close-up of a camera icon in the top-left corner. To its right is a green rectangular area representing the 'Monitoring range'. This area is divided into four quadrants by a central vertical line and a central horizontal line, with a darker green diamond shape in the center. Small square markers are located at the corners of the green area.

# 05 Spatial Contact Design

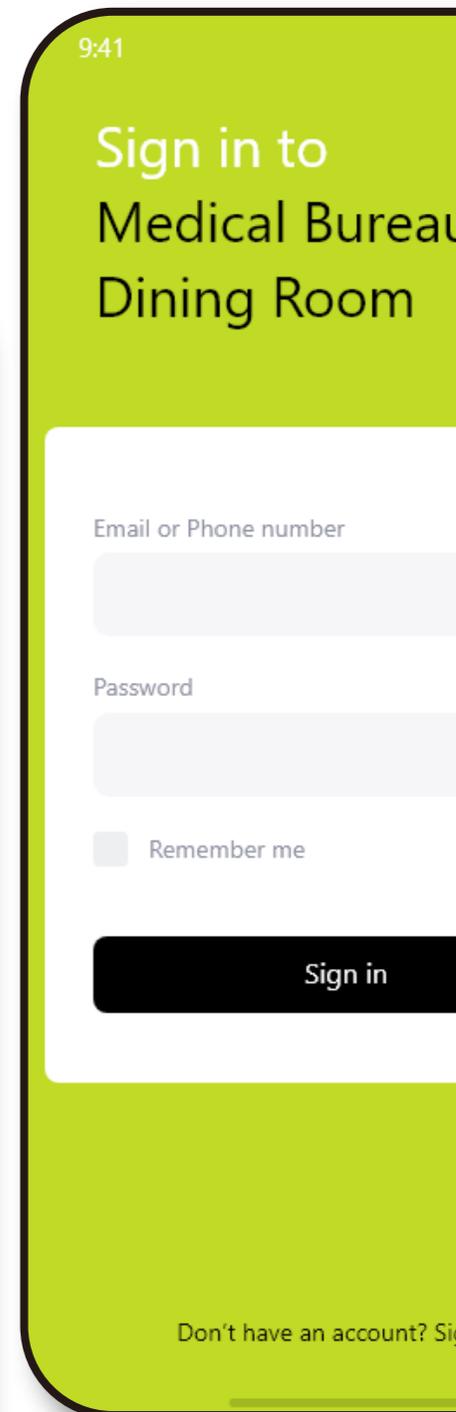
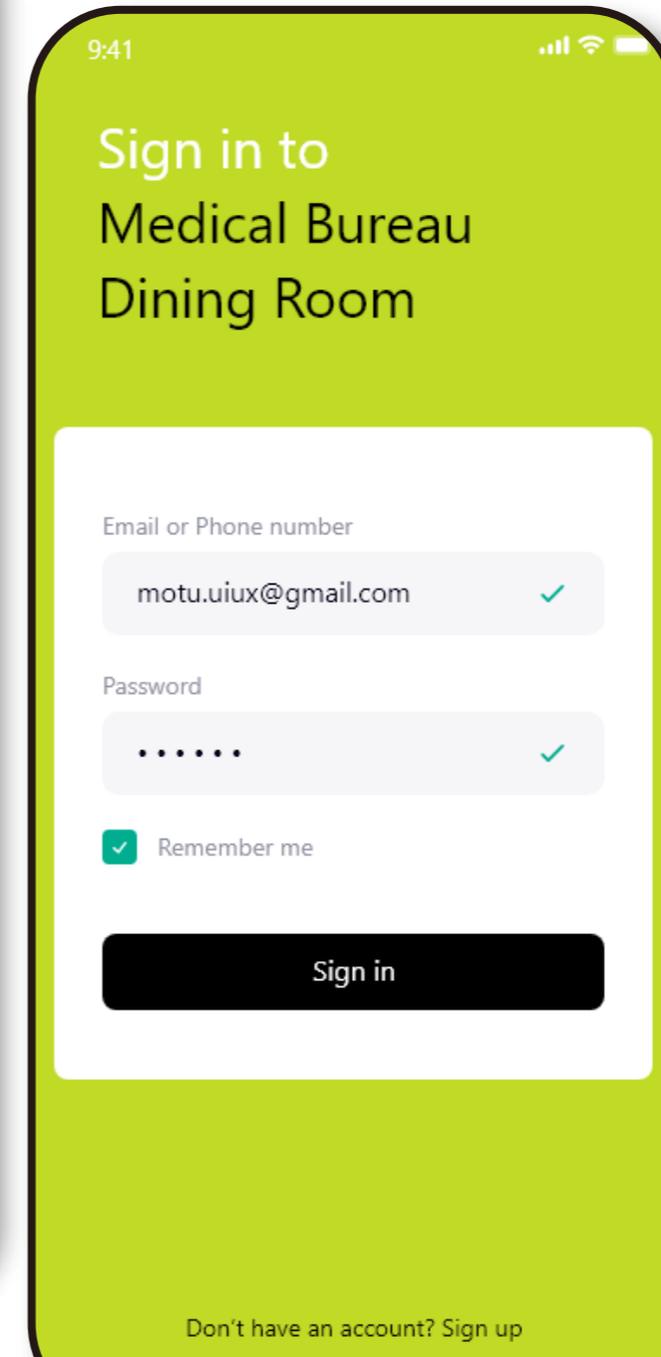
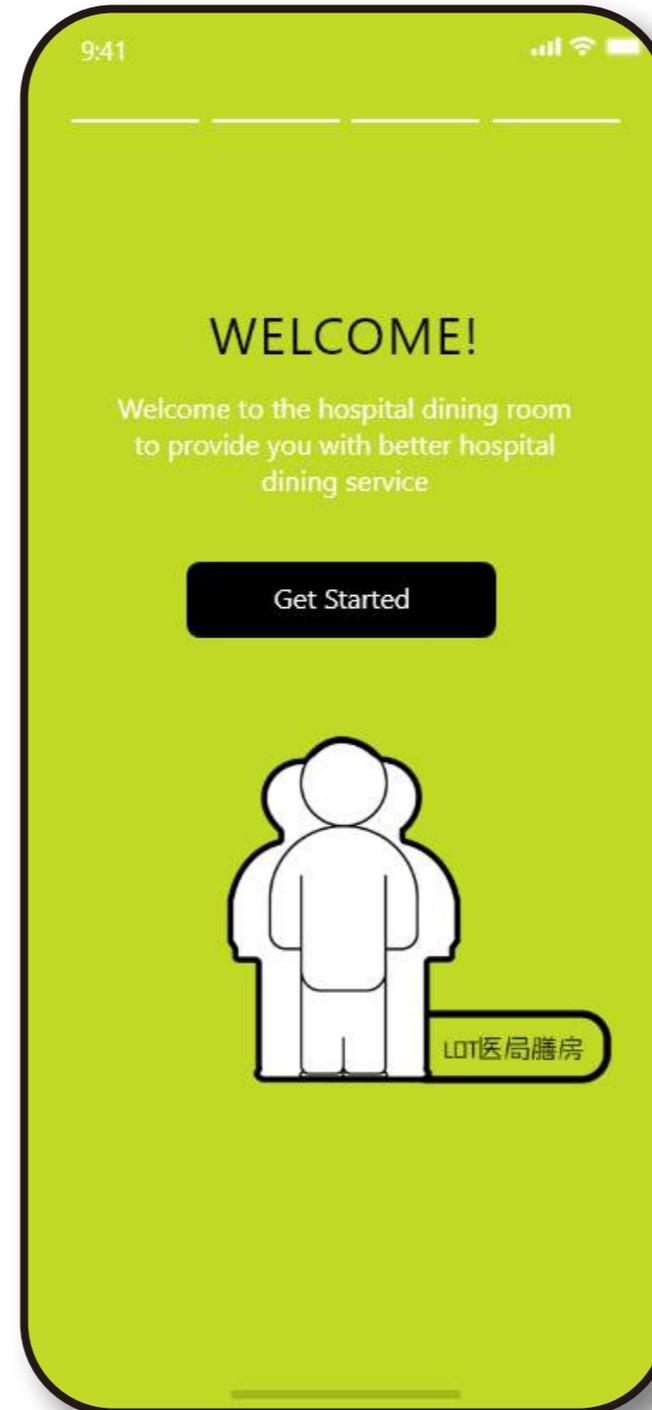


Tray disassembly diagram

# 05 Interactive contact design

## Home Page Display

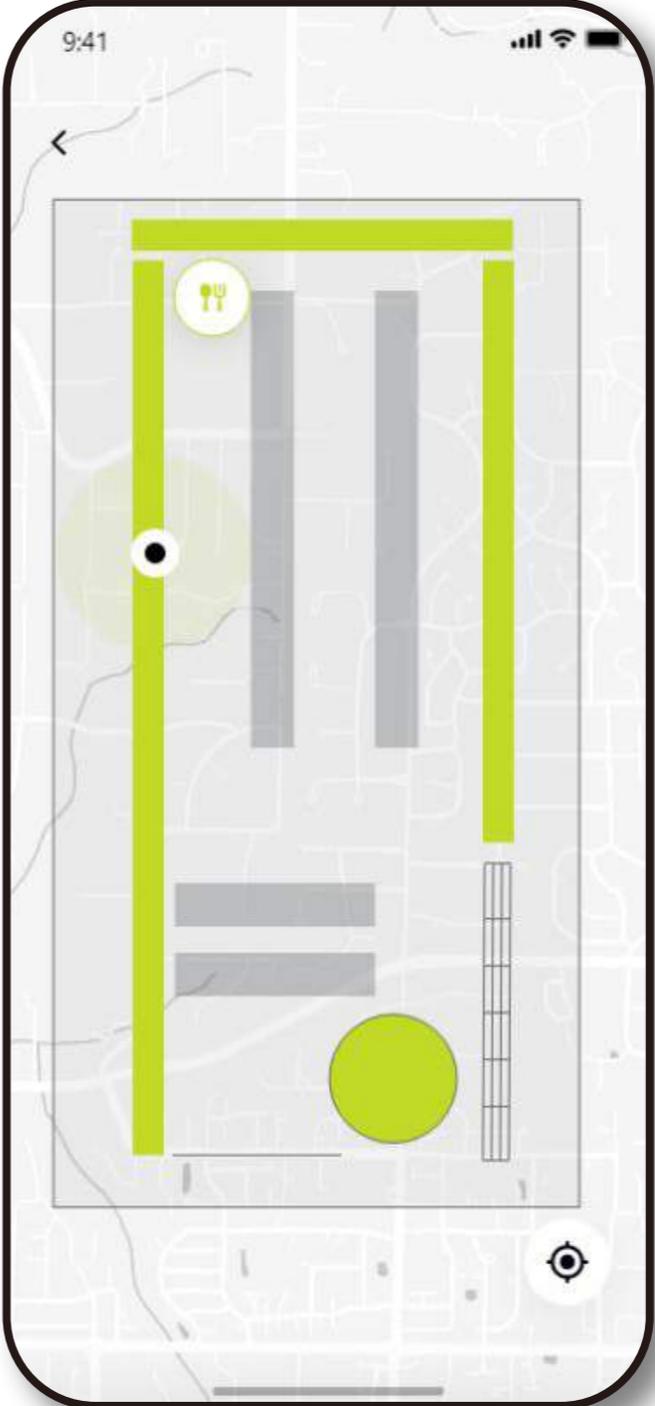
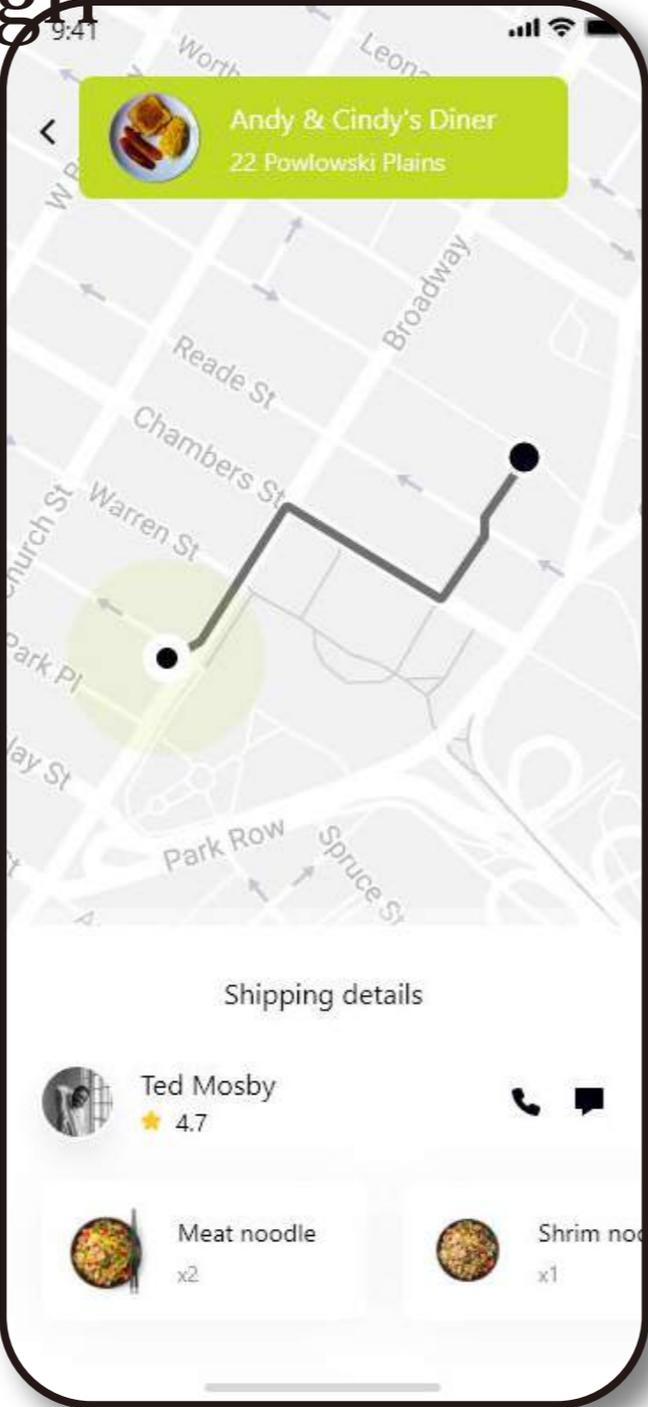
The content of the homepage is decorated with the icons of the medical dining room, and the login identity can be selected on the login interface, such as service user, service user and merchant identity



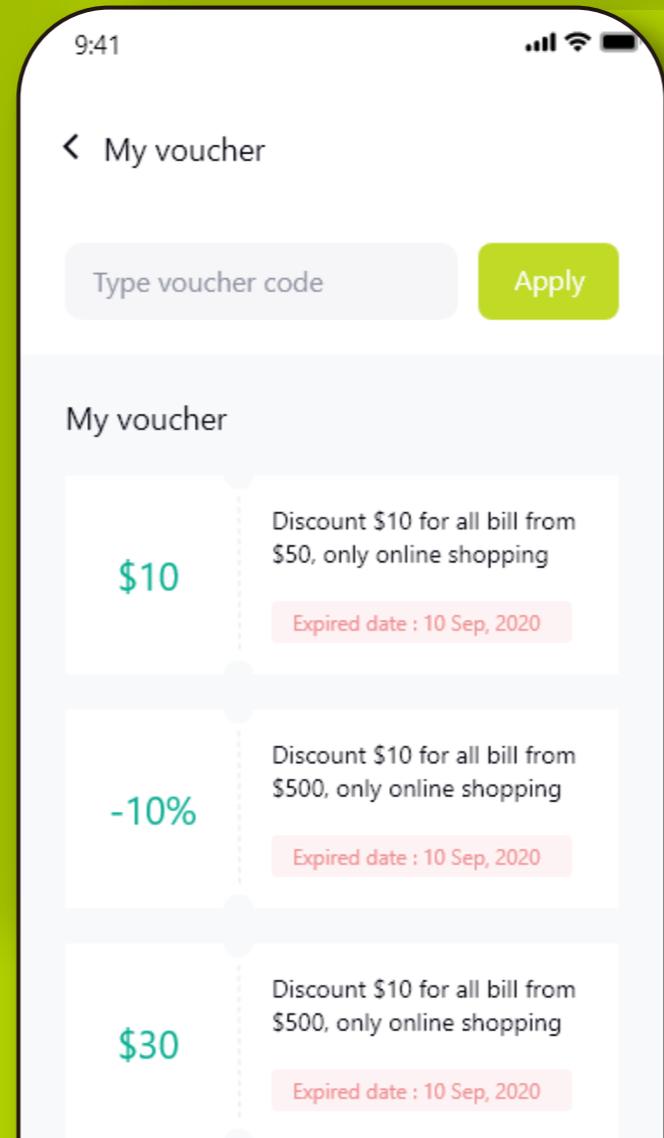
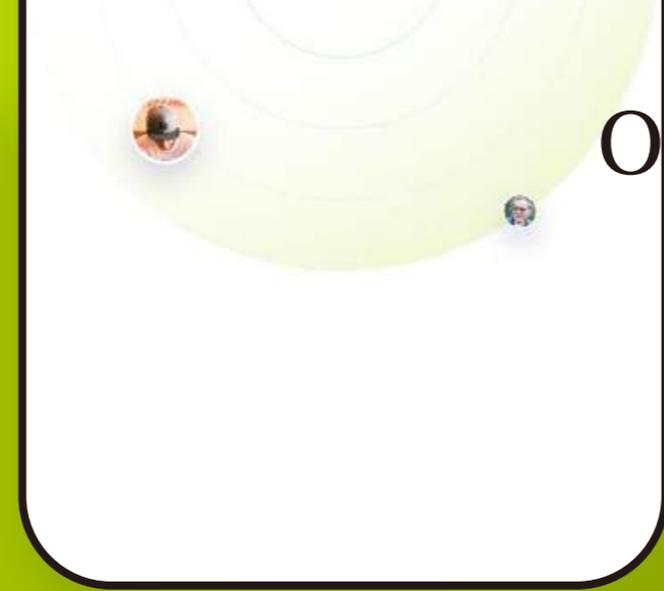
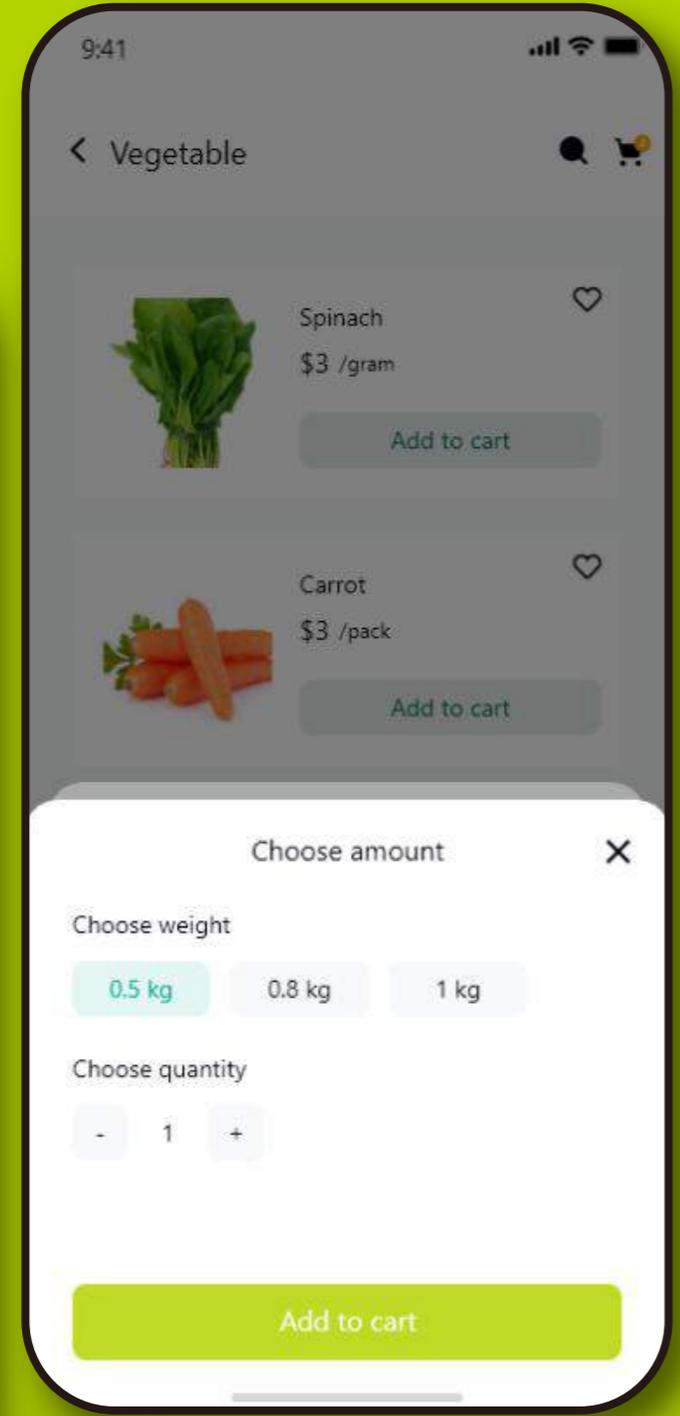
# 05 Interactive contact design

## IoT monitoring interface

Users can monitor the location and progress of meals on this interface, and check whether the dishes are safe and healthy at any time.



# 05 Interactive contact design

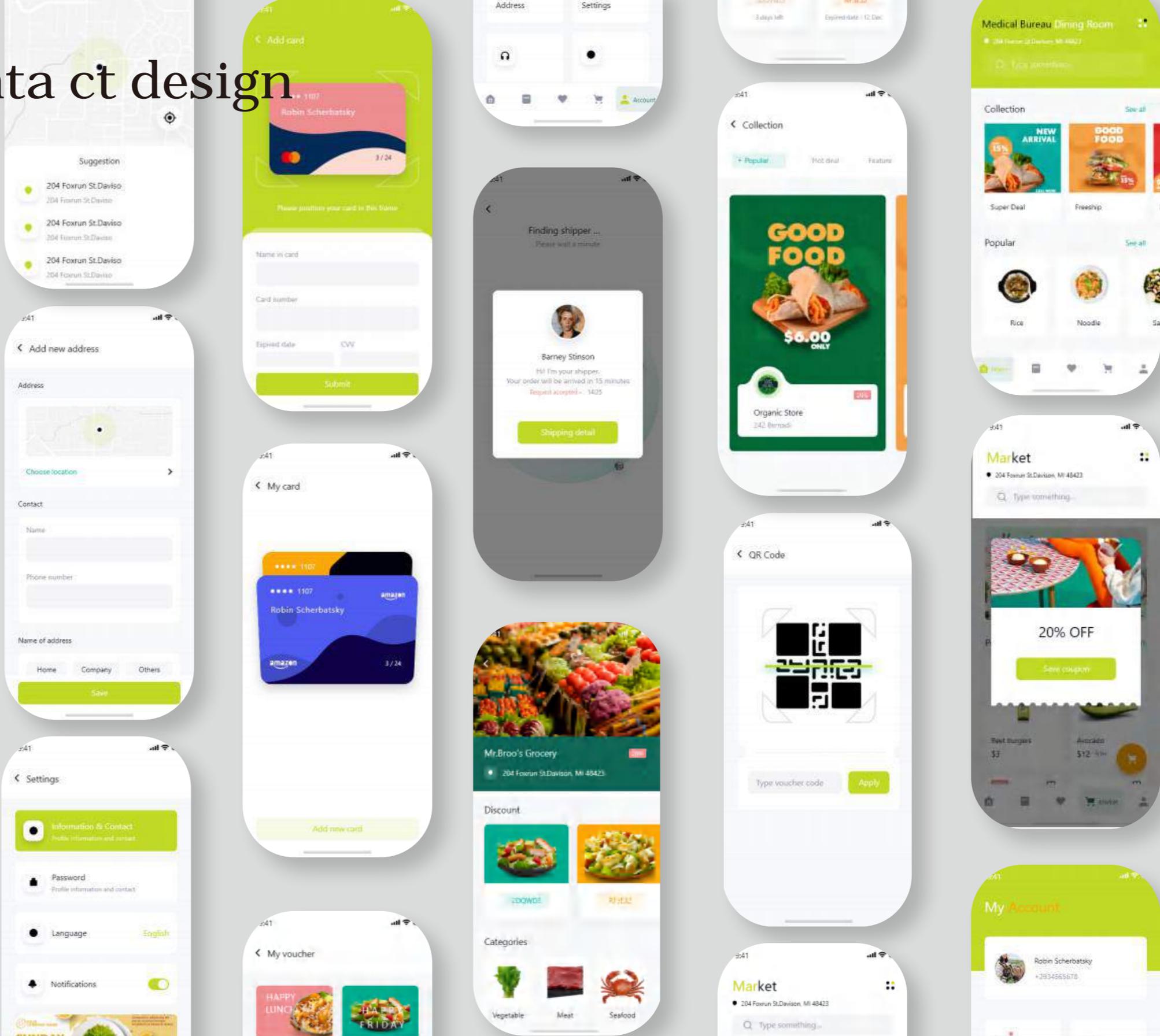


## Grocery shopping interface

Users can buy fresh vegetables on this interface, the hospital will give corresponding subsidies, and the operation can also be purchased on the all-in-one machine

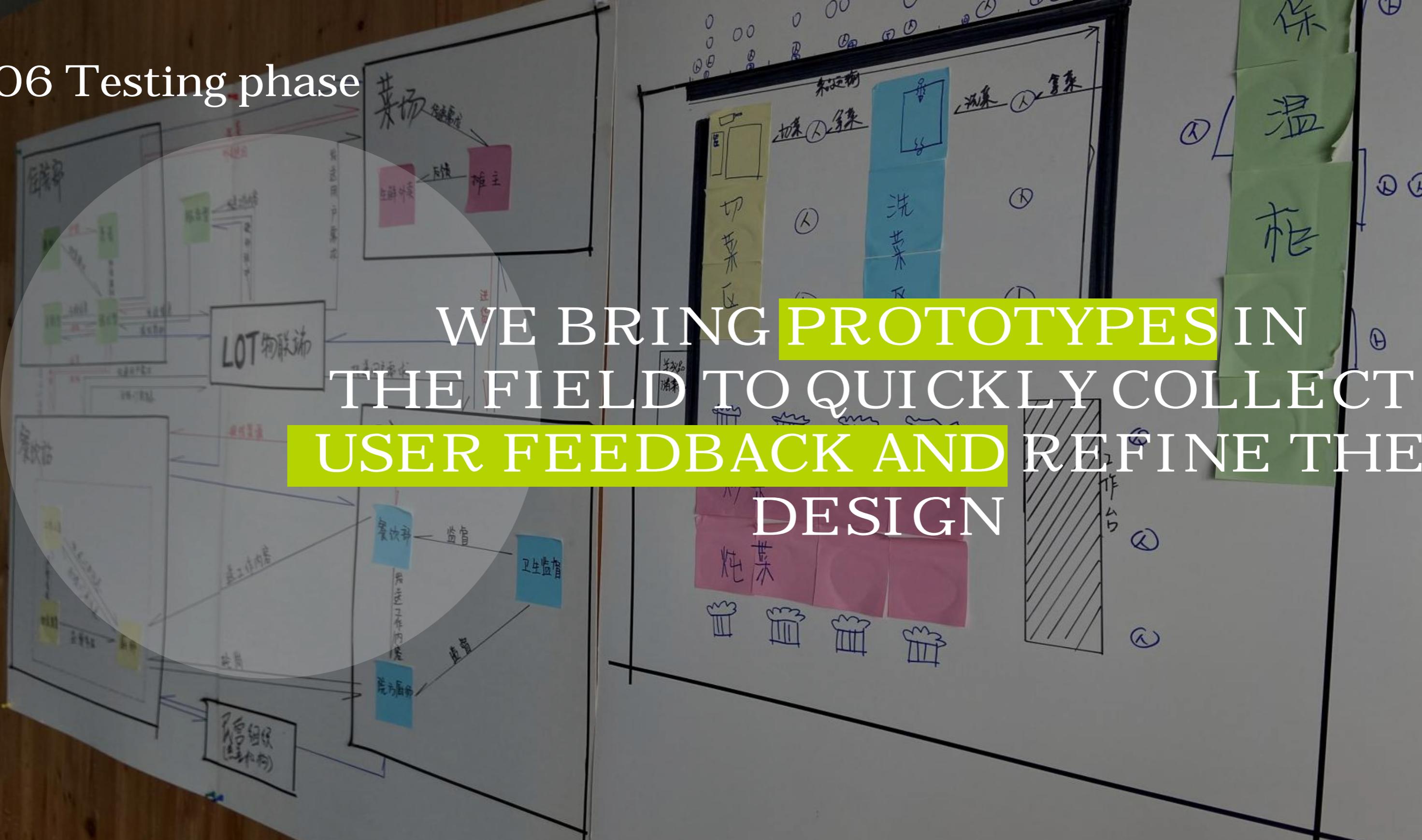
# 05 Interactive content design

## Page overview



# 06 Testing phase

WE BRING PROTOTYPES IN THE FIELD TO QUICKLY COLLECT USER FEEDBACK AND REFINE THE DESIGN



# 06 Ideate and Prototype



WE CREATE  
PROTOTYPES TO  
MAKE OUR IDEAS  
TANGIBLE AND  
EASIER TO  
COMMUNICATE AND  
EVOLVE

THANKS

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