Service Design | Product Design | Interaction Design

HIVE

Let’s give Lao Piao a High Five !

Individual Work
2021.08 — 2021.10
Dimensions: 36mm*55mm*10.5mm

The project focuses on the elderly drifters in first-tier cities, helping them to improve their personal awareness and focus on their needs. Research has been investigated by following a human centered design methodology, in the area around self-awareness formation, and physical and psychological aging.

Discover

Background

START POINT : 996 OVERTIME CULTURE

996 overtime culture was first prevalent at Internet companies in China, where a large number of employees have been being forced to work overtime.

996 Working System

work at 9 | leave at 9 | 6 days a week

The following 3 cities have become the most hotly debated areas for 996.

1st
Shanghai

2nd
Beijing

3rd
Guangdong

996 FAMILY : PARENTS WORK UNDER 996

Because of 996 work system, parents in 996 families have little or no time to spend with children. There are more and more 996 families.

77% Little Company

of parents spent less than 4 hours with their kids.

54% Leave to Elders

of 996 parents leave kids' daytime to grandparents.

52% Disappointed Kids

of kids feel parents spent much less time with them than they expected.

THE ELDER FLOATING GENERATION

The old left their hometowns to care for the third generation in order to support their children's careers, which in China is called

"Lao Piao"

75% of Families
with kids aged 0-3, grand-parents take care of them.

18 million Lao Piao
account for 6.8% of elderly population in China.

Reference:
<996 Urban Children Report>
<Intergenerational Education>

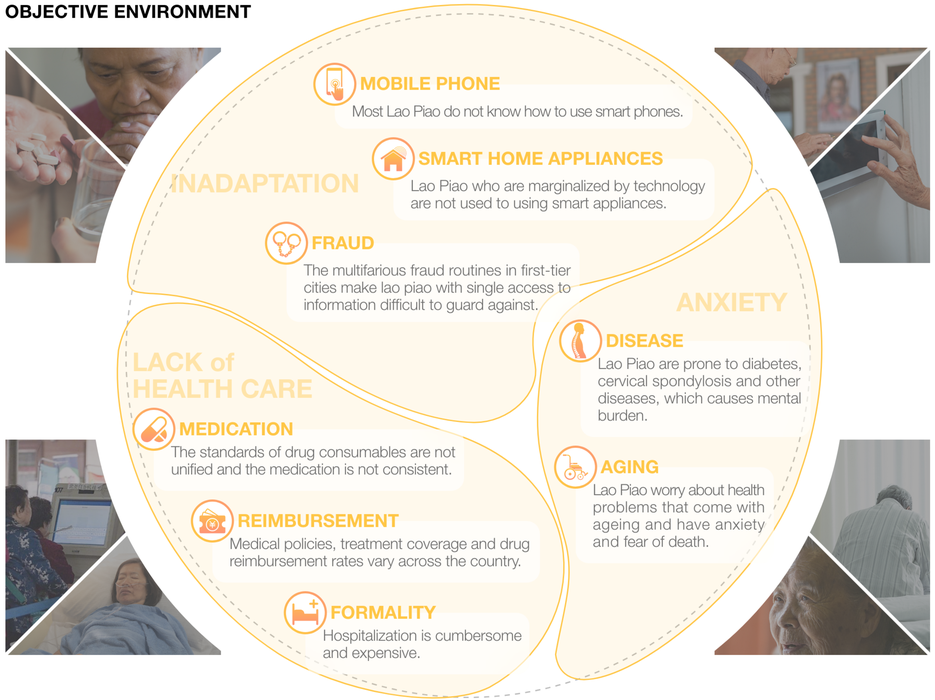
Research Question

What Are Lao Piaos' Children-Rearing Dilemmas?

Research

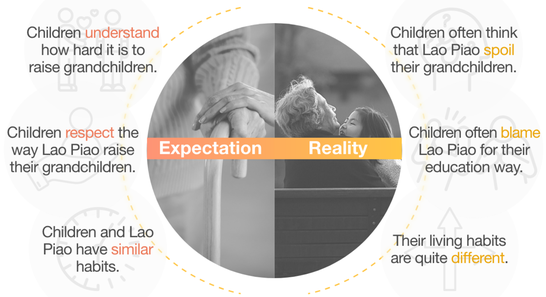
What is Lao Piao's living situation?

OBJECTIVE ENVIRONMENT



What is Lao Piao's living situation?

SUBJECTIVE CONTRADICTION



Generational gaps exist between Lao Piao and their children.
They are prone to conflicts and quarrels.

Lao Piao do not adapt to a strange city.
They lack social contact and care.

Desktop Research

Despite the subjective and objective pain points that need to be overcome, the reasons why Lao Piao are still willing to drift can be summarized as follows:

Chinese people advocate collectivism. When there is conflict between individual and collective, they will choose to abandon their interests.

Topographic & Hydrological Conditions
Natural conditions in China led ancestors to live in groups.

Natural Disasters
Frequent natural disasters require a collective effort in disaster relief.

A Sense Of Collective Identity & Belonging

Chinese Family-Oriented Culture
Under the influence of traditional cultural values, Lao Piao tend to place more emphasis on the collective, especially family.

Chinese are used to taking children as appendages, so they take it for granted to look after child's kid.

PARENTING STYLES
based on Developmental Psychology

Parent Ego State

Interference & Control
Chinese parents prefer to interfere in the affairs of their children.

Dependence
Chinese parents want to build inter-dependence with their children.

Self-Worth
Chinese parents regard helping their children as an achievement.

Interview

I interviewed 12 Lao Piao in the residential areas corresponding to 2 primary schools in Minhang District, Shanghai.

8-month-old granddaughter

ZHANG
Anhui Province
54 | Illiterate

- Time for Yourself ○
- Friends to Chat with ○
- Social Activities ●
- Life Satisfaction ○
- Desire for Change ●

2-year-old grandson

LI
Hebei Province
62 | Illiterate

- Time for Yourself ○
- Friends to Chat with ●
- Social Activities ●
- Life Satisfaction ○
- Desire for Change ●

half-year-old grandson

TAO
Anhui Province
59 | Literate

- Time for Yourself ●
- Friends to Chat with ○
- Social Activities ○
- Life Satisfaction ○
- Desire for Change ●

12-year-old granddaughter

FENG
Henan Province
58 | Literate

- Time for Yourself ●
- Friends to Chat with ●
- Social Activities ●
- Life Satisfaction ●
- Desire for Change ○

● Affirmative
○ Negative

Persona

"It's my responsibility to take care of the kid, but I'm tired of it."

Wang
58 | literate

- **BASIC INFORMATION**
  Drift Length : *3.2 years*
  with a 3-year-old grandson
- **SOCIALIZING & ACTIVITIES**
  Understand the Dialect or not : *no*
  Daily Entertainment : *morning exercise*
  Frequency of Contact with Home : *about once every 2 weeks*
  Using a Mobile Phone or not *: yes*

"I take the pressure off my son by taking care of my grandson."

Zhu
55 | illiterate

- **BASIC INFORMATION**
  Drift Length : *10 months*
  with a 1.5-year-old grandson
- **SOCIALIZING & ACTIVITIES**
  Understand the Dialect or not : *no*
  Daily Entertainment : *watch TV*
  Frequency of Contact with Home : *not fixed*
  Using a Mobile Phone or not *: no*

"I love looking after my granddaughter, she is lovely."

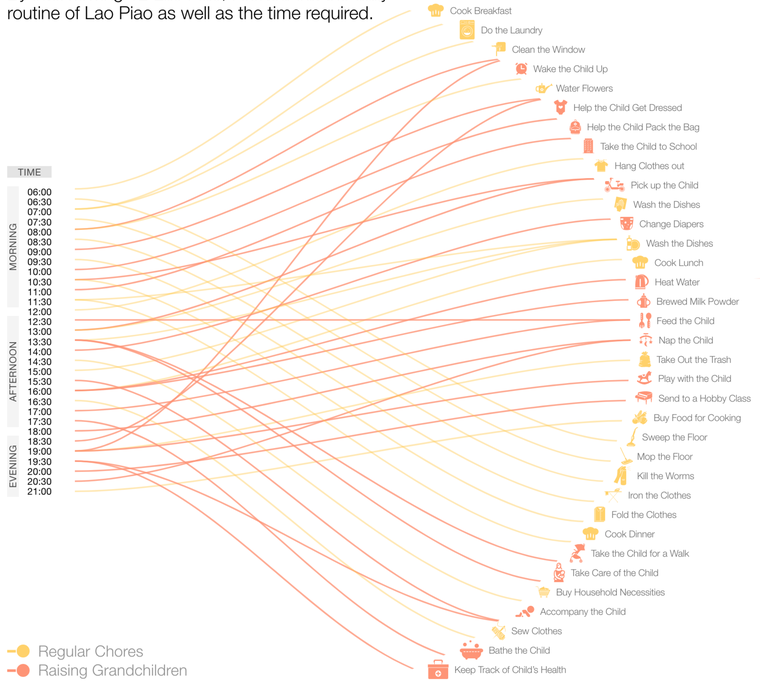
He
63 | literate

- **BASIC INFORMATION**
  Drift Length : *less than 4 years*
  with a 6-year-old granddaughter
- **SOCIALIZING & ACTIVITIES**
  Understand the Dialect or not : *just a little bit*
  Daily Entertainment : *not fixed*
  Frequency of Contact with Home : *basically 2-3 times a week*
  Using a Mobile Phone or not *: no*

Field Research

A DAY IN LAO PIAO'S LIFE

By interviewing 12 Lao Piao, I sorted out the daily routine of Lao Piao as well as the time required.



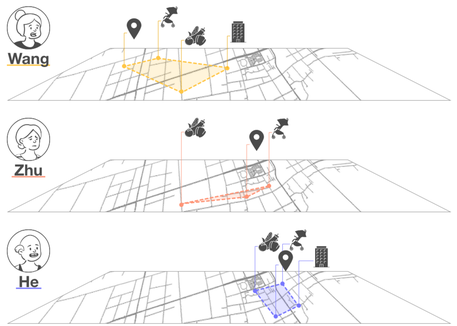
They have little time for themselves, and if they do, it is very fragmented.
They spend at least 9.3 hours a day with their grandchildren.

TIME BILL	
10 Min	Wake the Grandchildren Up
25 Min	Help the Grandchildren Get Dressed
5 Min	Help the Grandchildren Pack the Bag
45 Min	Take the Grandchildren to School
45 Min	Pick up the Grandchildren
10 Min	Change the Diapers of the Grandchildren
10 Min	Boil Hot Water & Make Milk Powder for the Grandchildren
40 Min	Feed the Grandchildren
60 Min	Nap the Grandchildren
60 Min	Play with the Grandchildren
35 Min	Send the Grandchildren to a Hobby Class
60 Min	Take the Grandchildren for a Walk
60 Min	Take Care of the Grandchildren
30 Min	Bathe the Grandchildren
60 Min	Accompany the Grandchildren

More Than 555 min = 9.25 h

LAO PIAO'S DAILY SPHERE OF ACTIVITY

I asked the three Personas to draw their daily paths on a map to find commonalities in their spheres of activity.



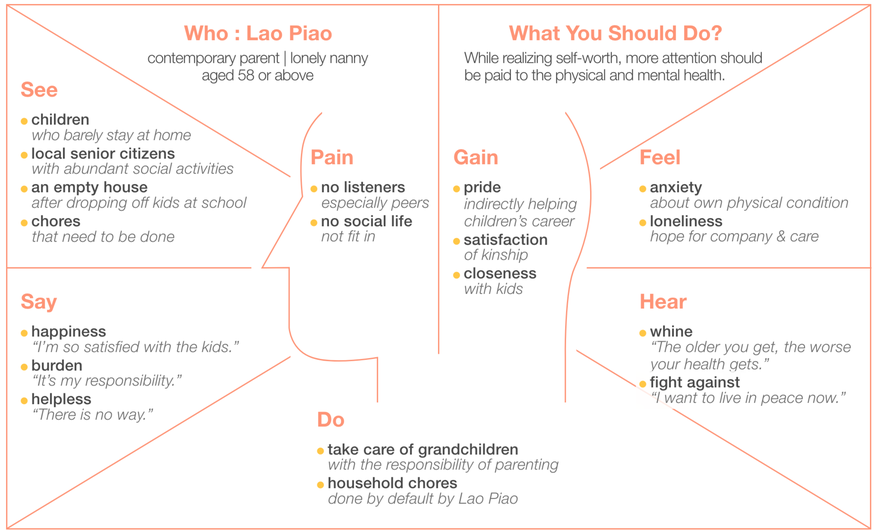
It is not hard to find that Lao Piao's main activity routes are home, grandchildren's school, food markets and pocket parks .

Lao Piao's activities are limited in location and range.

Although the scope is different, there is a high degree of overlap in type.

EMPATHY MAP OF LAO PIAO'S EMOTIONAL NEEDS

Based on interviews, I made an empathy map to analyze Lao Piao's emotional needs and feelings.



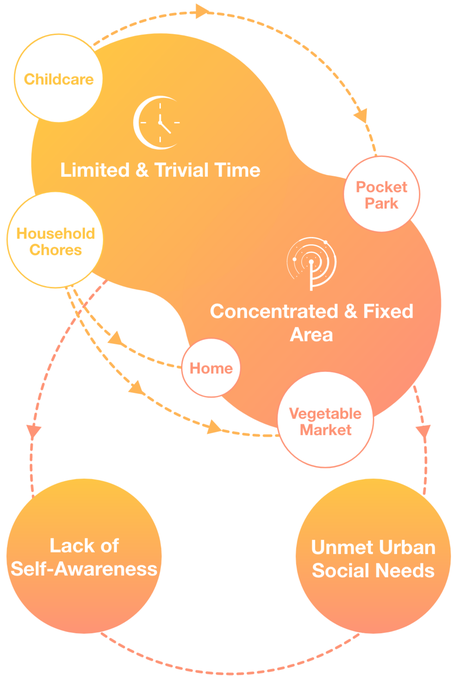
Lao Piao gradually lose self-aware due to the satisfaction of affection.

Lao Piao are prone to ignore or weaken their own needs and pains because of emotional gain.

Lao Piao's social & emotional needs have not been met.

Despite the happiness of kinship, they have little company or social contact.

Insight



Limited & Fragmentary Time

The time available to Lao Piao is limited and fragmentary. Childcare and daily chores are fixed and unchangeable.

Concentrated & Fixed Area Of Activity

Lao Piao's sphere of activity is limited by chores and caring for their grandchildren.

Unmet Urban Social Needs

Lao Piao's external social needs have not been met, still being stuck in family-centered internal socializing.

Reframed Question

How Might We Improve Lao Piao's Attention to Themselves?

How Might We Meet Their Social Needs within a Limited Scope of Activities & Time?

Develop

Low Self-Concern of Lao Piao

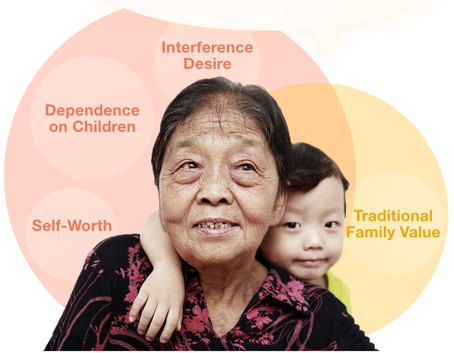
In order to better study the psychology and needs of Lao Piao, I followed up and interviewed 12 Lao Piao families.

WEAKENED DEMAND FOR LAO PIAO

The satisfaction of family intimacy and the sense of value make Lao Piao unconsciously weaken their own needs.

- Parents Behavior Patterns
- Cultural Environment

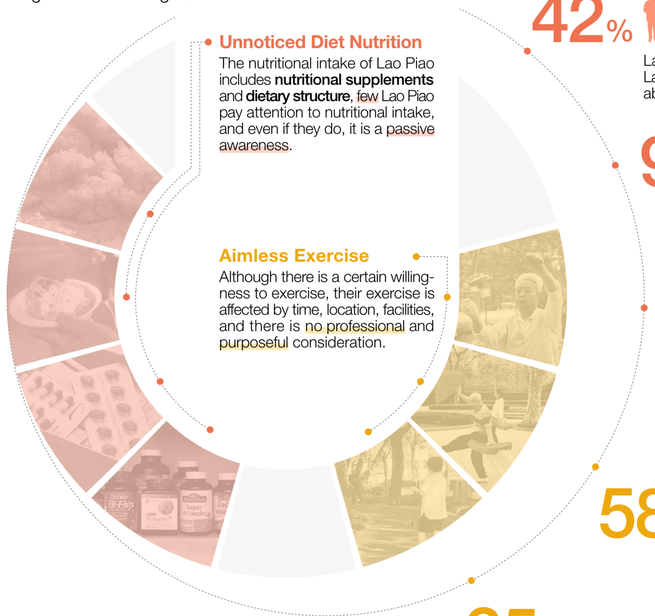
"I spend most of time with my grandson.
Raising him gives me a sense of accomplishment and I am happy enough."



kinship + ego state > loneliness

UNAWARENESS OF THE FUTURE STATE

I recorded Lao Piao's eating and exercise habits to get an insight into their living conditions.



Unnoticed Diet Nutrition

The nutritional intake of Lao Piao includes **nutritional supplements** and **dietary structure**, few Lao Piao pay attention to nutritional intake, and even if they do, it is a passive awareness.

Aimless Exercise

Although there is a certain willingness to exercise, their exercise is affected by time, location, facilities, and there is no professional and purposeful consideration.

42%

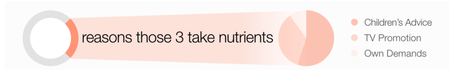
Lao Piao take their grandchildren's leftovers as their meals. 5 out of 12 Lao Piao have the habit of eating leftovers because they are worried about waste, which is harmful to their nutrition absorption.

91%

Lao Piao treat their meals with primary consideration of convenience.11 out of 12 Lao Piao prioritise the nutrition of their grandchildren, but are not concerned with what they should consume.

75%

Even though Lao Piao have health care products, they may not consume them on time. 9 out of 12 Lao Piao do not take extra nutrients .



58%

Although Lao Piao have the will to do sports, they do not have a fixed activity program. 7 out of 12 Lao Piao do not have a regular exercise program.

35 min

The average daily exercise time of the 12 Lao Piao is 35 minutes,less than they should for their age.

LACK OF SELF-AWARENESS

In Shanghai, social connections of Lao Piao are limited, mainly among themselves and with their families.

According to Mead, the self is formed and developed through interaction with others.

I usually chat with Lao Piao from the same hometown, we all bring up grandchildren and I don't think about how life can be better.

Who doesn't raise grandchildren at our age?

the Convergence of Ideas
brought by the interaction among themselves
+
Lack of Concern
from family focusing on children

My family has asked me to raise my grandson.

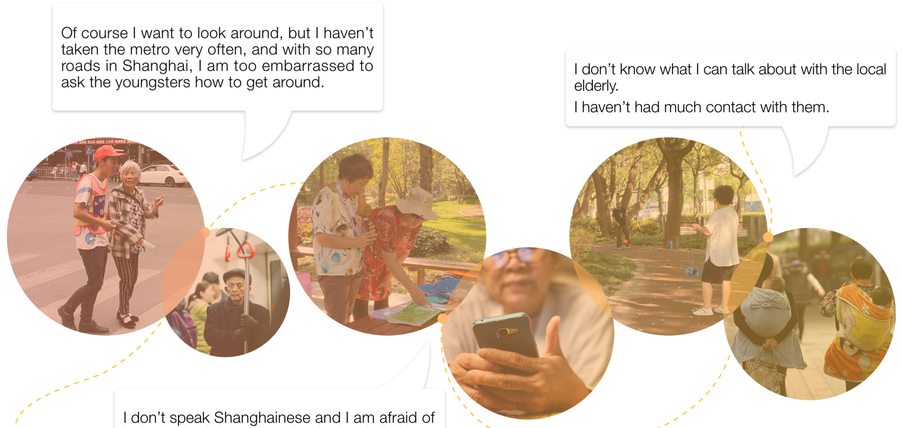
My grandson is the most precious in the family, and I am willing to help my child to raise him together.

Lack of more social activities to gain insight into diverse life possibilities of peers to promote formation of their own sense of self.

Lao Piao Social Needs

WHY DO LAO PIAO LACK THE INITIATIVE TO SOCIALISE EVEN THOUGH THEY NEED IT?

According to the interviews, most of Lao Piao have a desire to socialise, but they have a variety of worries.



willingness to break the fixed path & fear of unfamiliar environment

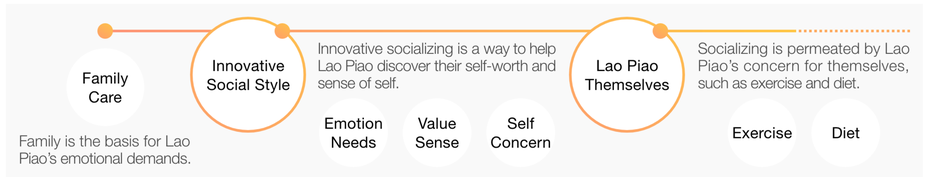
community identity & lack of self-confidence

differences in living habits & lack of social opportunities

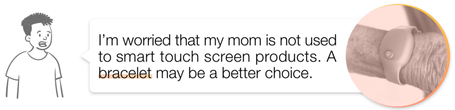
Ideation

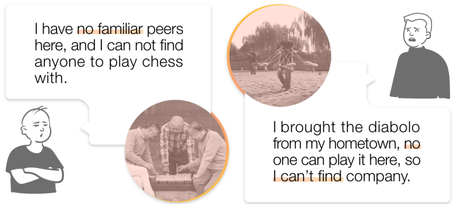
DESIGN POSSIBILITIES

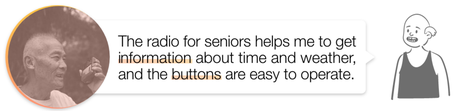
LOGICAL MINDMAP



DESIGN OPPORTUNITY







DESIGN DIRECTION

SOCIAL OPPORTUNITIES

health-related hobby + **discovery of commonality**

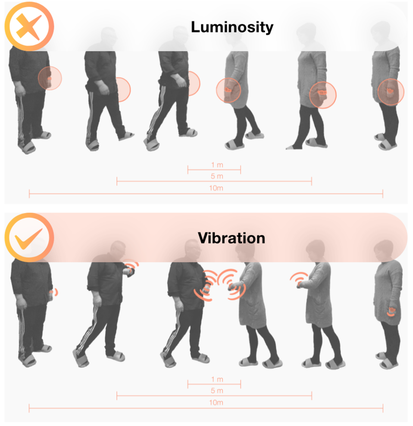
Deliver

Design Content

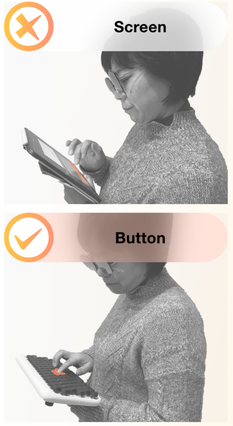
ROLE PLAY PROTOTYPE & TESTING

After comparing the neck strap and the bracelet, I chose the latter for convenience.

After comparing the luminous type and the vibrating one, I chose the latter to match the social psychology.



After comparing the screen and button, I opted for the latter.



Design Concept

Hive

Let's give Lao Piao a High Five

Hive = +

Hive hopes to drive busy Lao Piao to gather and socialize in their limited free time and activity areas like bees in a hive, through physical social interaction.

Physical Social Design for Lao Piao

HIVE WATCH

Adaptation of Scene

The silicone material can be adapted to different wrists and is user-friendly.

Family Share

The location information and fall alerts are updated on children's phones in real time.

Adaptation to Aging

visual display

Strips are colored to correspond to states of the Hive Cabinet. Dot matrix display shows the time.

touch & hearing

Press-down button is selected. Long press it for 2 seconds and the built-in audio will broadcast the weather.

HIVE CABINET

LED display

Marked items are displayed on the display screen to attract Lao Piao.

watch sensor module

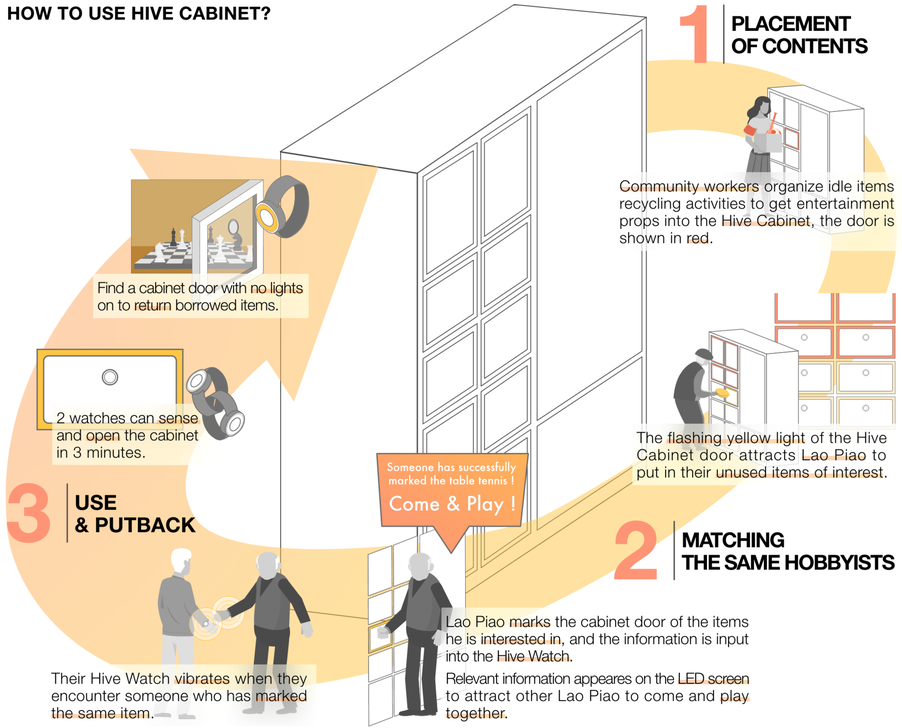
1 watch senses to mark the content, while 2 sense within 3 minutes to open the cabinet door.

strip lights

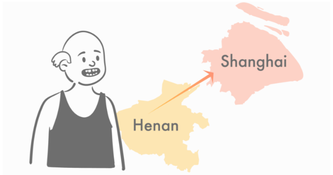
States correspond to different colors.

Interaction Concept Introduction

HOW TO USE HIVE CABINET?

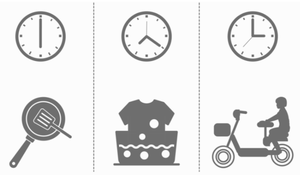


User Storyboard

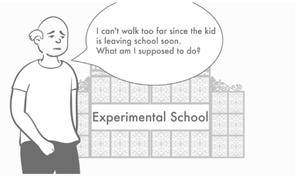


1 **What is Lao Piao ?**
He drifted to look after his granddaughter.

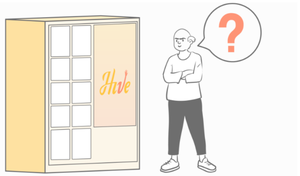
2 **Lao Piao's emotional conflict**
Besides the joy of kinship, he often felt lonely.



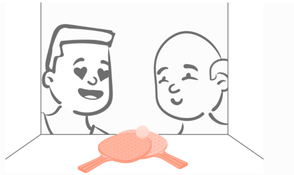
3 **limited activity time**
Despite his desire to socialize, he had no time.



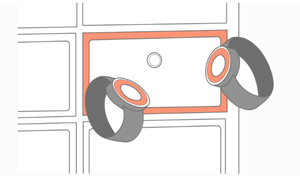
4 **limited activity area**
His range of movement is also restricted.



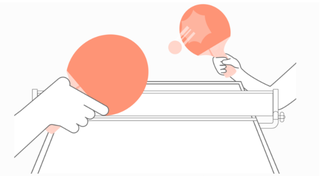
5 **curious about the Hive Cabinet**
Within his sphere he was drawn to Hive cabinet.



6 **a social opportunity for Lao Piao**
Lao Piao Lu was also attracted to the content.

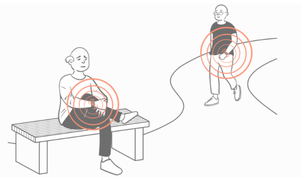


7 **How does Lao Piao borrow things ?**
They borrowed contents using the Hive watch.



8 **How to build friendship ?**
He and Lu often play table tennis together.

9 **more social possibilities**
Still, he is eager for more social opportunities.



10 **watch marked social opportunities**
Alone again, he felt his watch vibrate.

11 **last marked content**
As the two get closer, the vibration got stronger.

12 **Let's play together !**
He made a new friend by marking contents.