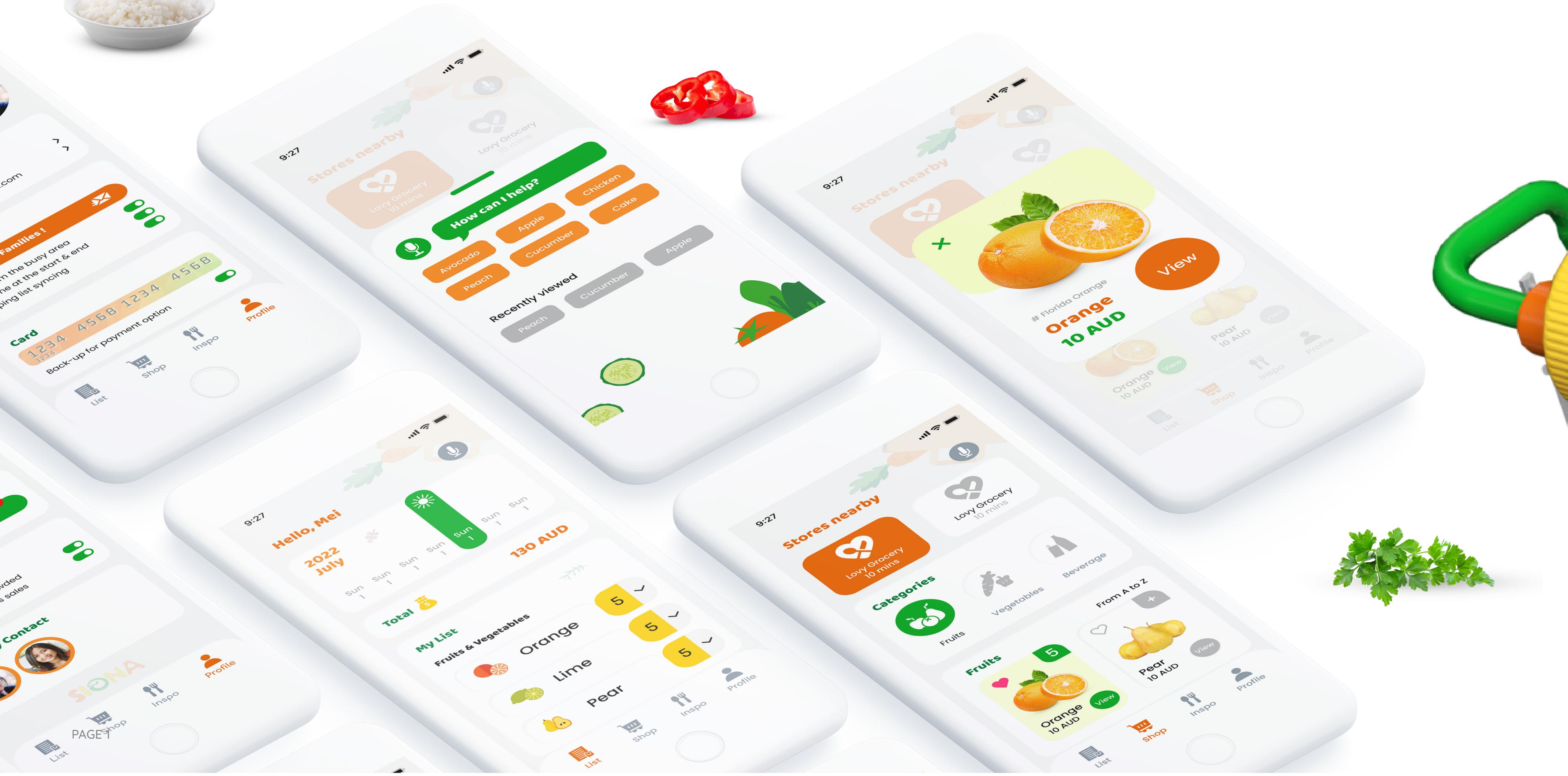


SIONA



A smart module assists senior shoppers, especially those diagnosed with Alzheimer Dementia for autonomous shopping experience, by smartly bridging care from family carers

Inspiration

Around 25% of the Alzheimer Dementia patients worldwide are from China. 80% of them are taken care by family.

I was born and raised in China. The enthusiasm of Chinese people for Farmer Market is well-aware. The taste of life is spreaded by the fresh goods, and the interactive ambience atmosphere.

How can we promote the accessibility of shopping for shopper diagnosed with Alzheimer Dementia to improve their engagement with life and family?



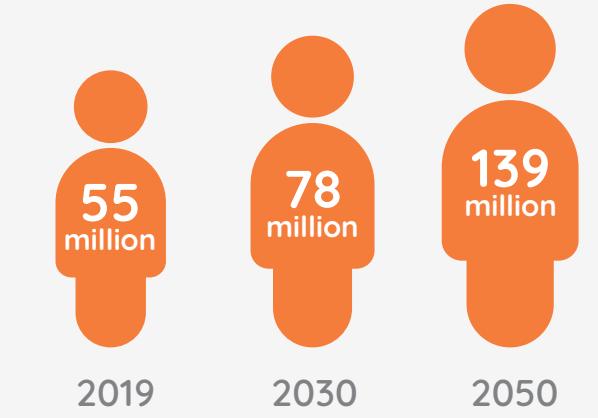
RESEARCH: Background

A Worldwide Challenge

Dementia has become a worldwide public health challenge related to population aging.

("ADI - Dementia statistics", 2022)

Estimated Growth in a number of people with Dementia



Every 3s
Someone in the world develops Dementia

60%-70%
of Dementia cases are Alzheimer Dementia (AD)

~80%
Be cared at home by families

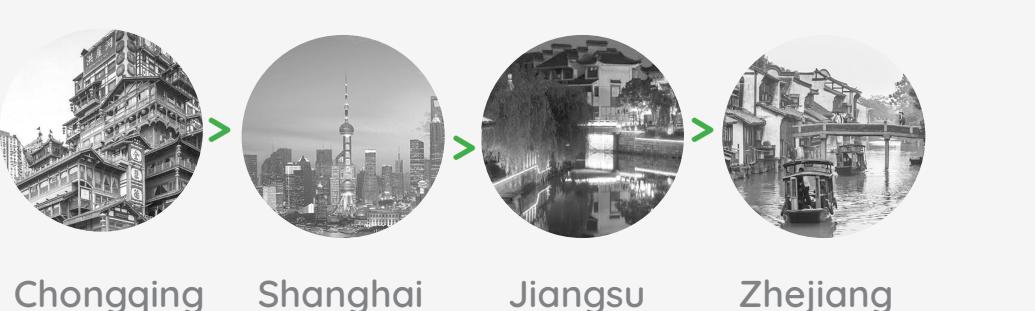
~20h/week
Intense work: least 1/3 caregivers give care 20h/week

China is one of the countries with fastest growing rate.



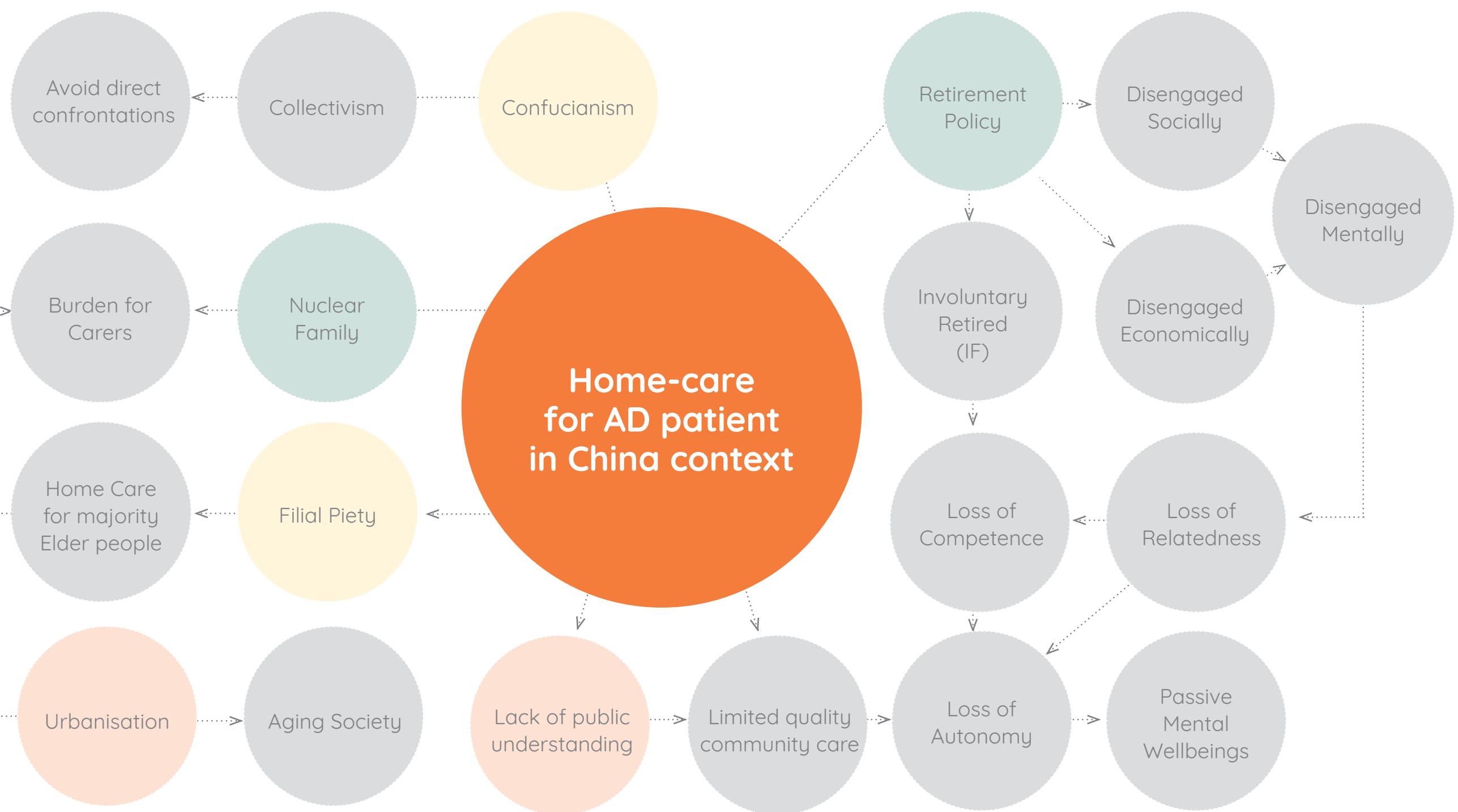
TOP 4 Provinces in China with majority Dementia Cases

(The China Alzheimer Report, 2022)



RESEARCH: Mapping & Theory Studying

Challenges of Dementia care in China



The Core Value of Person-centred Care (PCC)

Potential cultural barrier & lack of understanding of Person-centered Care, results in its lacking for people with Dementia in China.

(Dai et al., 2013) ("What are the 8 core values of person-centred care?", 2022)

Autonomy in PCC & Intrinsic Motivation

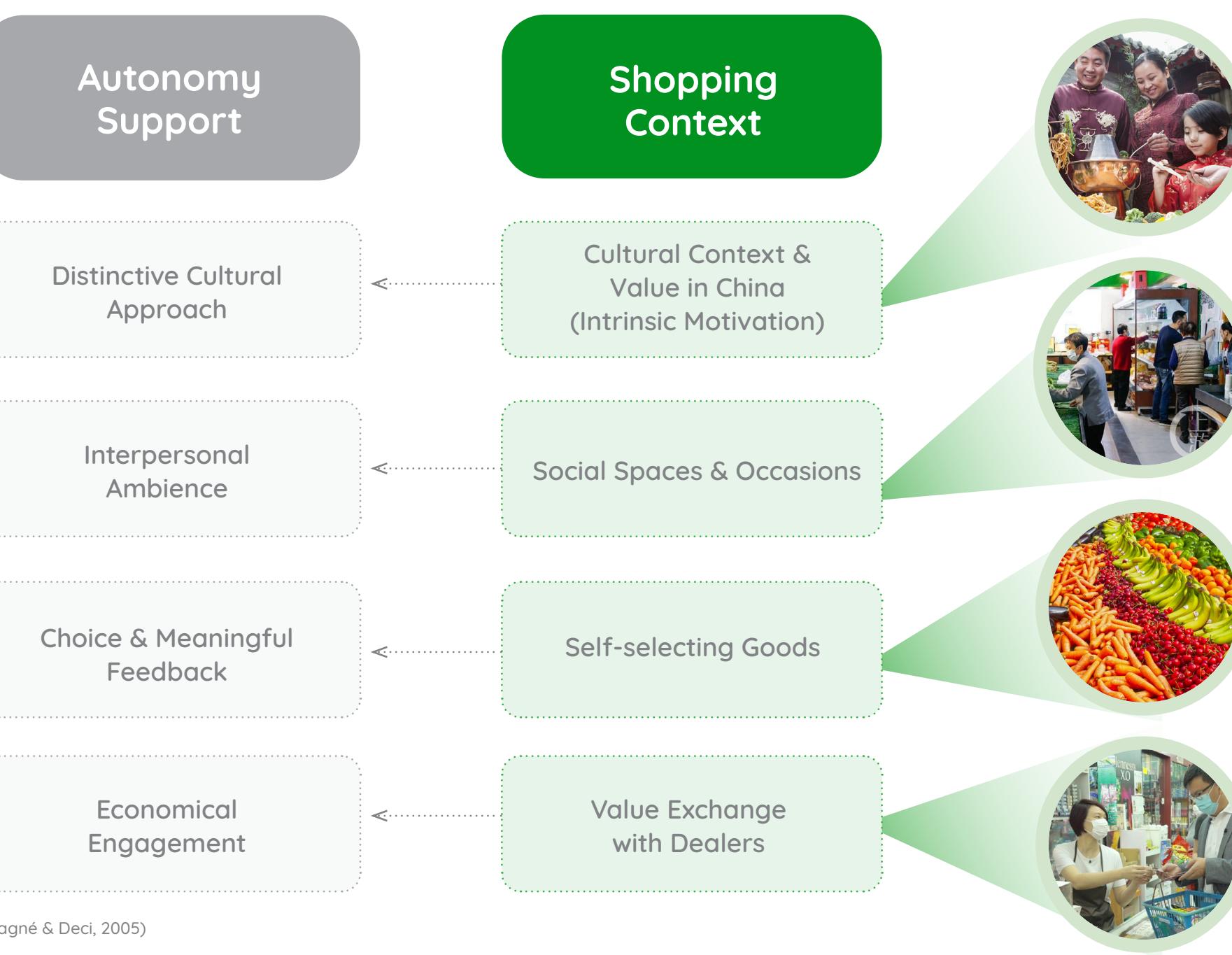
Autonomy involves acting with a sense of volition and having the experience of choice.

Intrinsic motivation (such as Shopping) is an example of autonomous motivation.

(Gagné & Deci, 2005)

RESEARCH: Analysis

The support for Autonomy during Shopping



Market Analysis in China

Market Class	Main Function	Visit In-store Main Audience	Audience Loyalty	City-tier
High-class	Tourism Cultural Label	Young & Middle-aged	Low	First-tier (e.g. Beijing, Shanghai)
Middle-class	Residents Nearby	Senior (>50 yrs old)	High	1-2 tier
Low-class	Community Residents	Senior (>50 yrs old)	High	3 tier

(Li, 2019)

RESEARCH: Questionnaire & Interview

Qualitative Interview

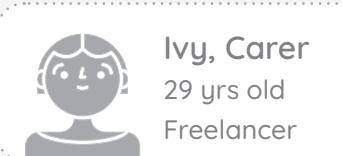
To better support the Intrinsic Motivation upon Shopping activity for China Dementia people, I interview with two Dementia family for better insights.

Questionnaire+Interviews
(n=5 / responded=2)

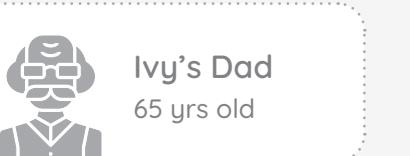
- Friends
- Volunteers

For viewing the questions & interview recordings: https://drive.google.com/drive/folders/1h8k2nVNVLW5ndOS3FnYfocSI3A_G2C0m?usp=sharing

Interview 01



Ivy, Carer
29 yrs old
Freelancer



Ivy's Dad
65 yrs old

With Family
• Afraid to **lose face** causing family burden due to the illness
• **Willingness to help**
• Lack of common topics with families



Home Care, Guangzhou

Dementia Stage
Moderate

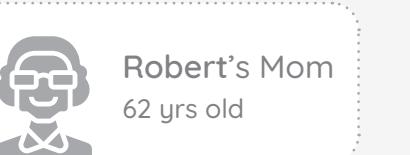
Caring-support
• Monitor at home
• Mobile phone

Shopping Experience
• **Forget what to buy (sometimes)**
• Prefer to **pay cash in counter** (may forget to bring wallets)

Interview 02

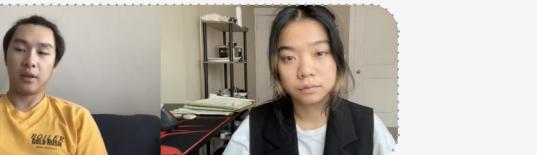


Robert, Carer
Male, 29 yrs old
Engineer



Robert's Mom
62 yrs old

With Family
• **Fewer conversations**
• **Not keen to have a chat**
• **Impatient** to answer & swear at families



Home Care, Shanghai

Dementia Stage
Moderate

Caring-support
• Monitor at home
• Smart door sensors
• Mobile phone calls

Shopping Experience
• **Forget what to buy/wallets**
• **Get lost** when locating goods/way to cashier

RESEARCH: Marketing Research & Insights

Insights

Difficulties for Home-care Dementia & carers in shopping scenario.
From questionnaires and interviews, there are four main perspectives.
Valuable insights support the further diagram synthesis to generate ideas.



Agitation
Less quality conversation



Carer's burden
Work & Care support



Forget what to buy/bring
Fail to locate



Overcrowded area
(get agitated for some)

Current Solution

Difficulties	Solutions	✓	✗
Forget what to buy/bring	Notes on phone/paper	Family conversation encouraged	Forget to bring Easy to lose
Overcrowded Info / Fail in locating items	Signages/ Structural interior design	Relatively helpful in locating goods	• Spacious: difficult to locate • Alike columns: disoriented
Trouble in Check-out	Relaxed lanes	Pace up with customers	Limited lanes worldwide

DEFINE: Analysis

Persona, User Perspective Analysis & Sympathy Building

I tried to map out with a typical user journey map for both family carers & Dementia patients when the latter is out for shopping.

This section supports further synthesis of the concept.



Mei, home caregiver,
Daini's daughter

Age: 32 years old
Residence: Shanghai, China
Marriage: no
Children: no
Occupation: accountant in company



Daini, Dementia patient
Moderate-dementia patient

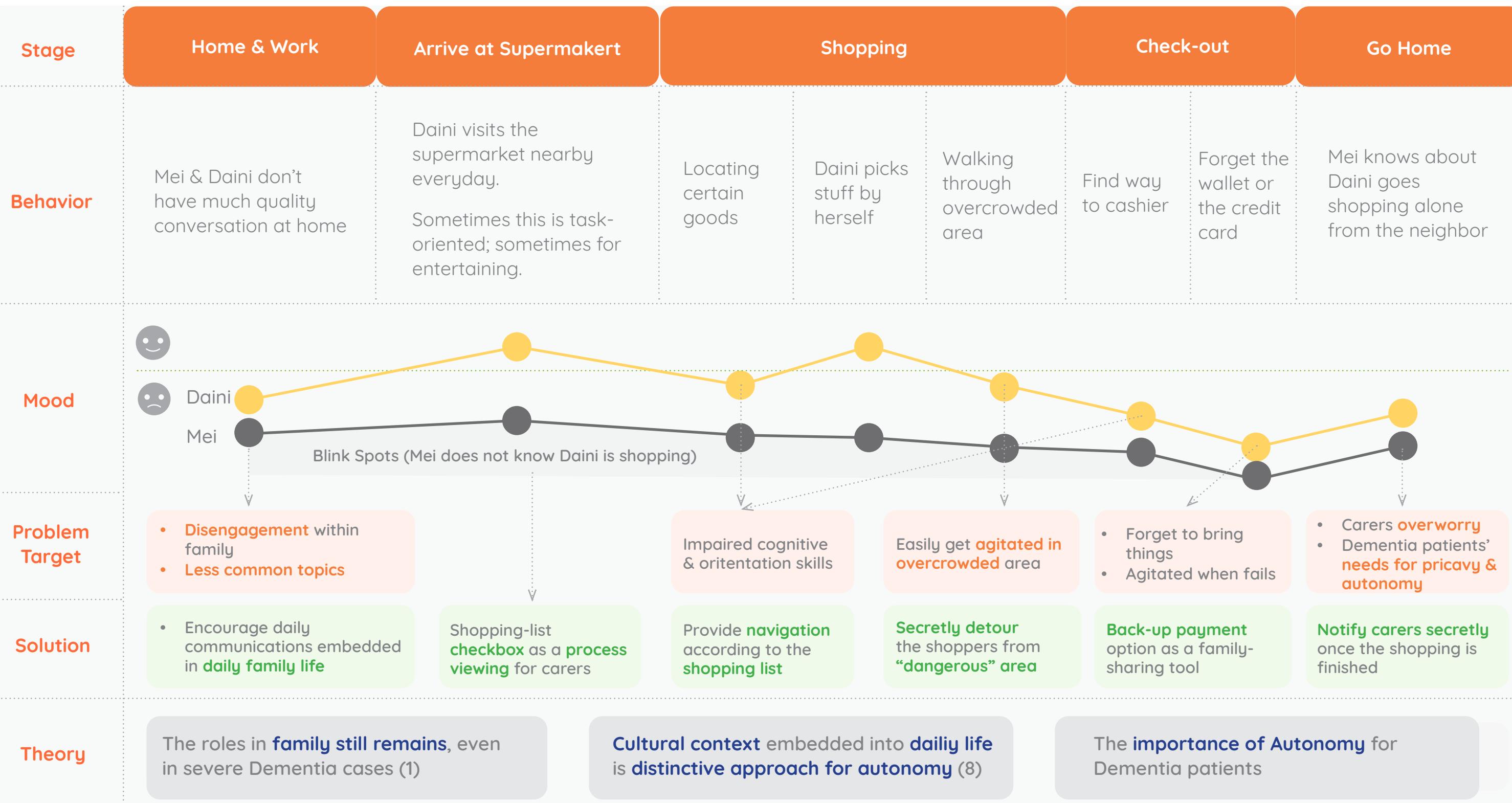
Age: 68 years old
Residence: Shanghai, China (1 tier)
Marriage: widow (from 60 years old)
Education: primary school
Occupation: none (retired due to Dementia at 62 years old)
Previous occupation: a prestigious toy factory manager (small enterprise)

Memory & Cognition & Interaction
Forget names & events
Can't recognise the currency
Can't recognise friends & colleagues

UNABLE
Memory & Cognition & Interaction
Forget names & events
Can't recognise the currency
Can't recognise friends & colleagues

Mobility
Imbalance in walking

Mental well-beings
Depressed & unhappy
Irritable & egocentric (with home caregivers)



CONCEPTUALISATION: Early Generative

Concept

SHOP INTRINSICALLY ORIENTED AND AUTONOMOUSLY

S I O N A

By improving accessibility of shopping for shoppers with Alzheimer Dementia to improve life and family engagement

Target Audience

Moderate Alzheimer Dementia
 • Capability & Willingness to shop
 • The needs for social & autonomous experience

Goal

Emotion
 Family engagement
Usability
 Autonomous successful shopping
Usefulness
 Navigation with optimised routine
 "Secretly" process tracking

Products

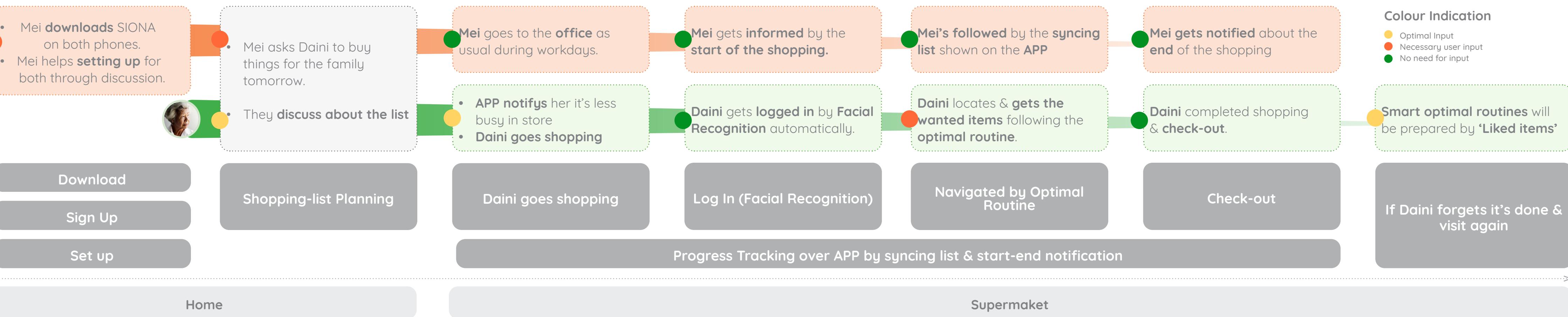
Family App + Smart Module for Shopping Cart



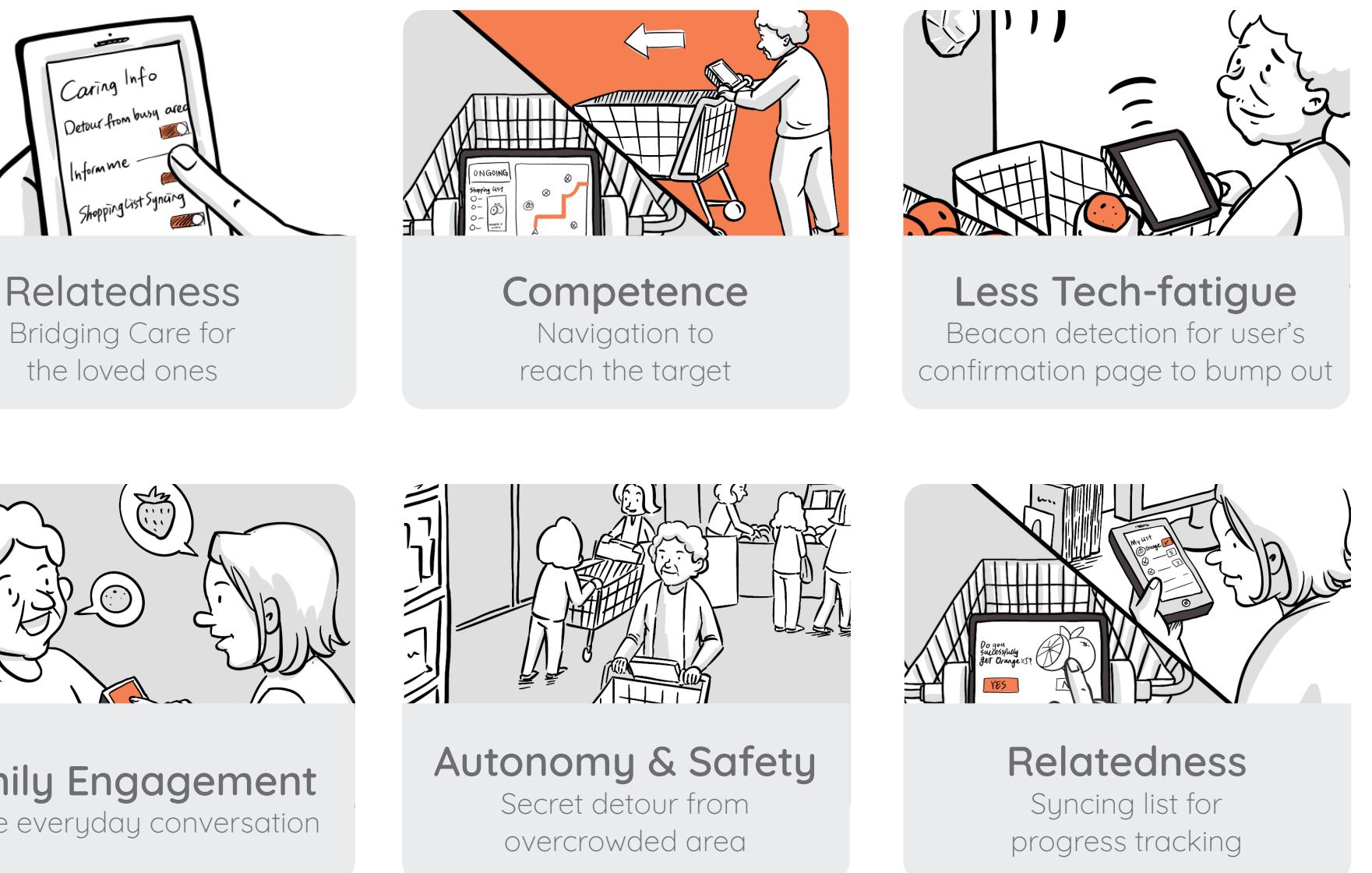
Both carer & shopping have access to the App. While the main operator might be the carer, the access to the app guarantee the autonomy of the senior.

CONCEPTUALISATION: User Flow & Service Touchpoints

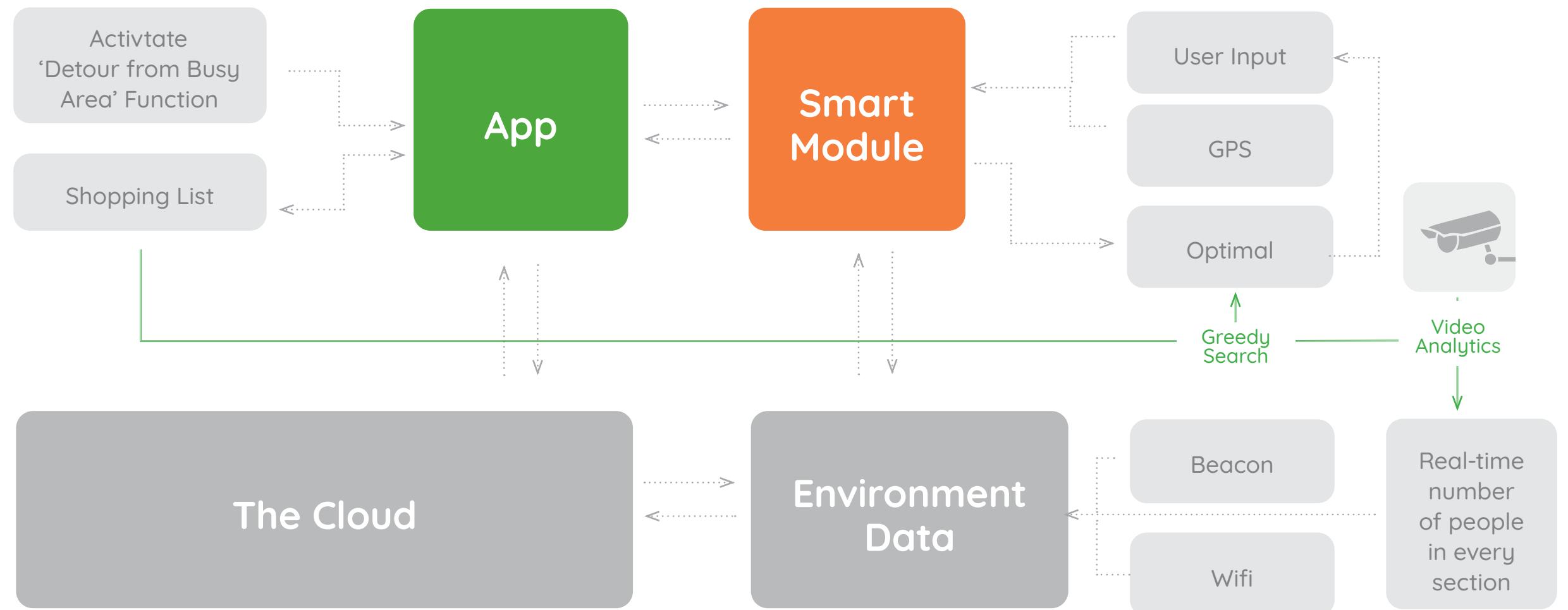
User Flow: Bridging Family Care with Autonomy Support



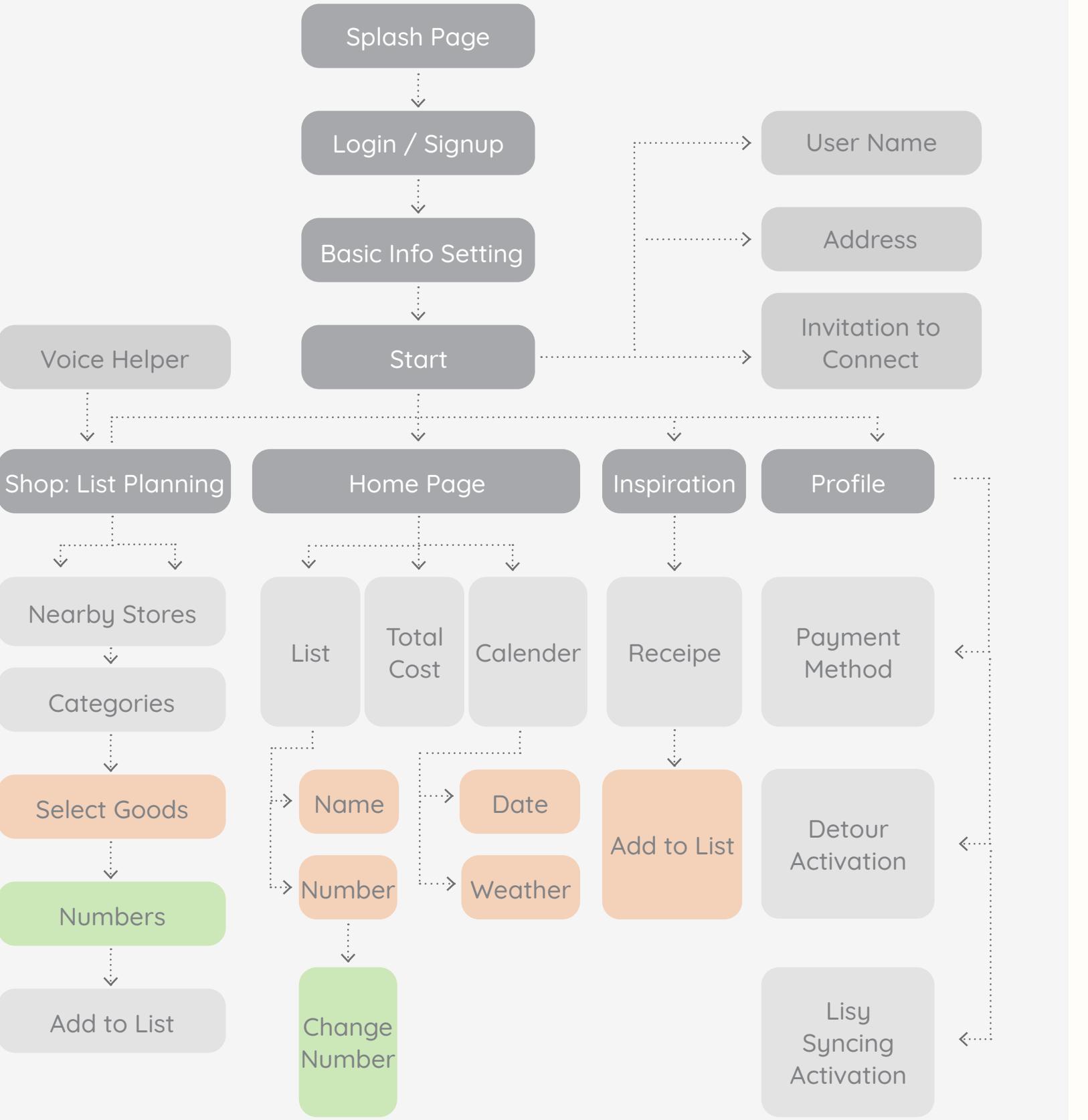
Service Touchpoints



SIONA System Diagram



CONCEPTUALISATION: Site Map



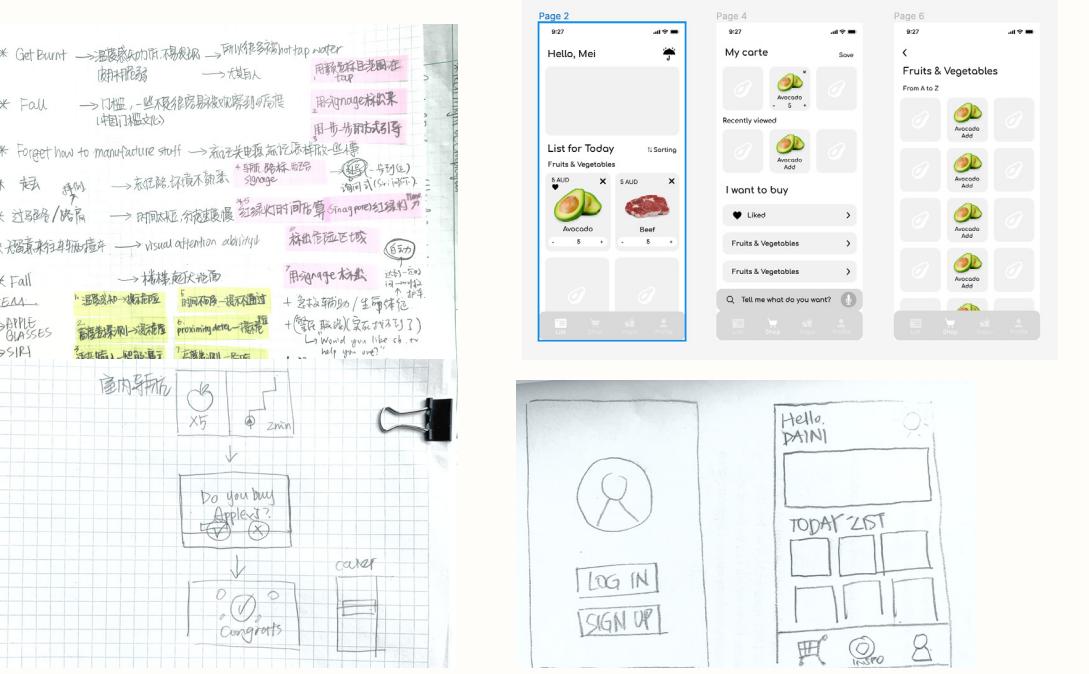
Key Design Principles for Dementia

- 1. Familiar
 - 2. Distinctive
 - 3. **Legible** (visual contrast / brighter colour & heightened colour contrast-less agitation)
(Koss&Gilmore, 1998)
 - 4. Accessible
 - 5. Comfortable & Stimulating
 - 6. Safe
 - 7. Familiar

(Halsall & Macdonald, 2015)

TOTYPING: Visual Identity System

Prototyping & WIP



Central Identity System

& ‘Orange’ as the main colours theme to be further extended, as resent fresh, happiness, positivity. With this combination, the t of colour is strong, ensuring the legibility.

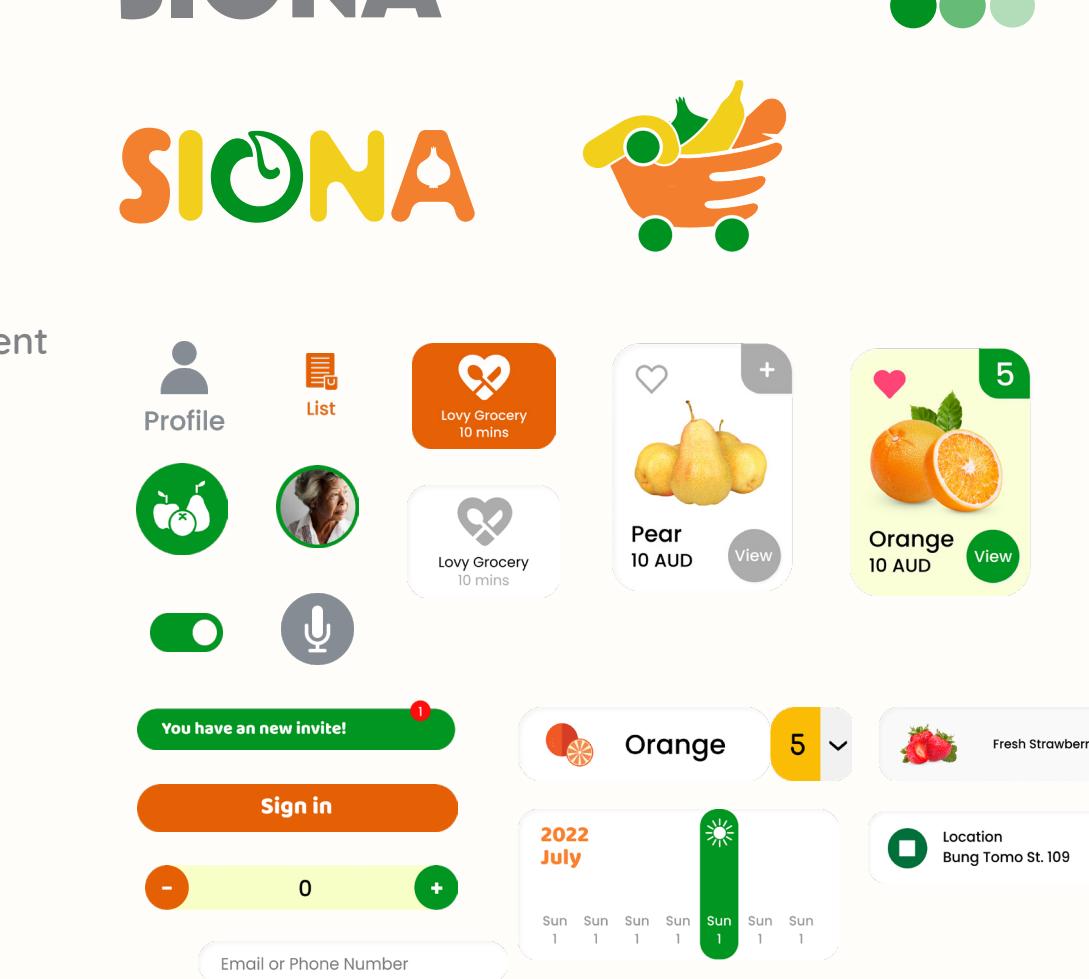
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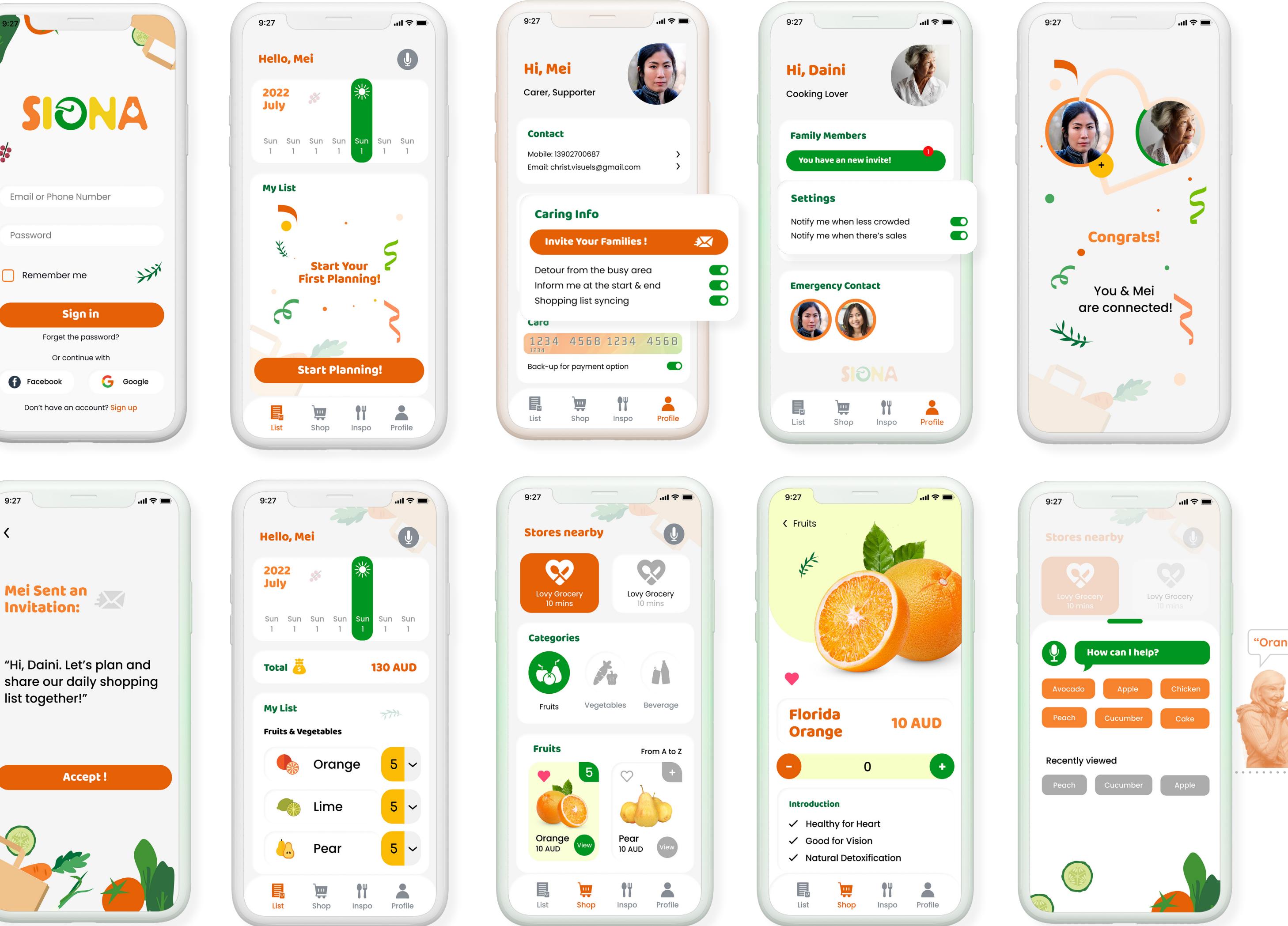
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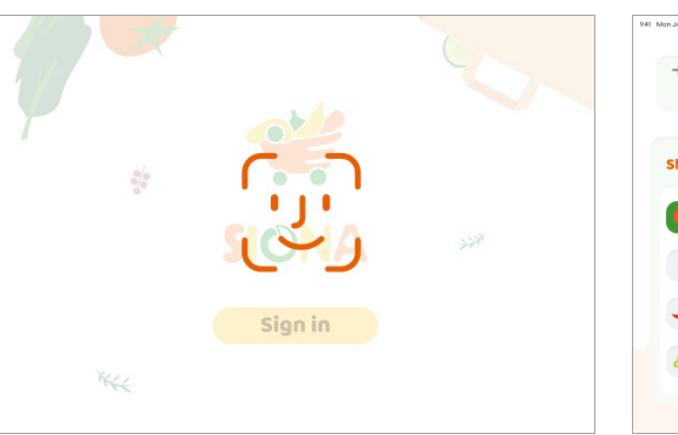
PROTOTYPING: Hifi-App Mockup

-fi UI Wireframes

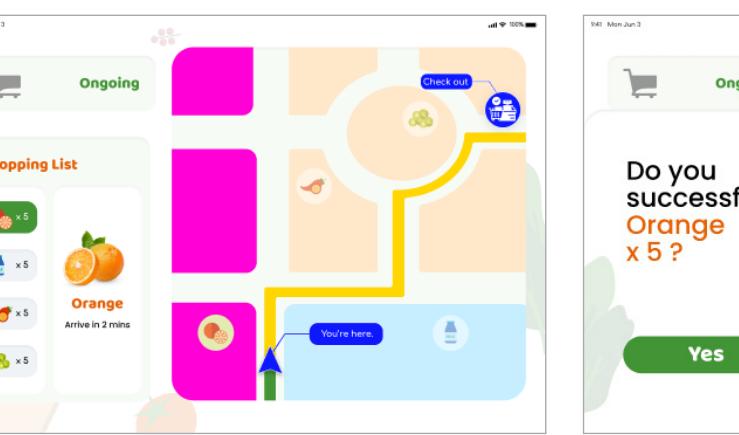


PROTOTYPING: Smart Module

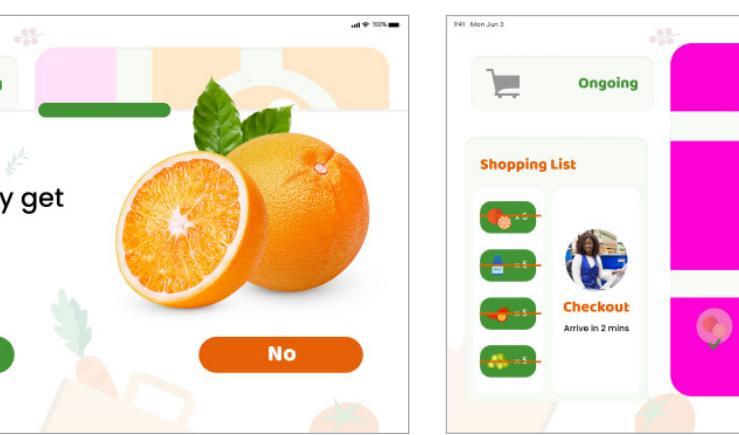
Smart Module User Interface



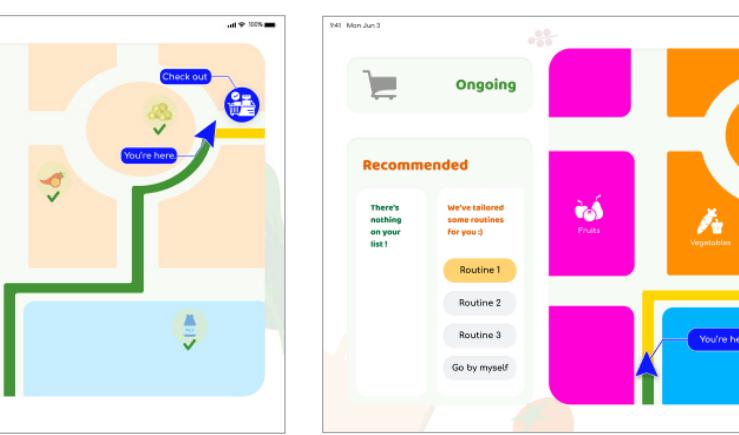
Log In with Facial Recognition Function



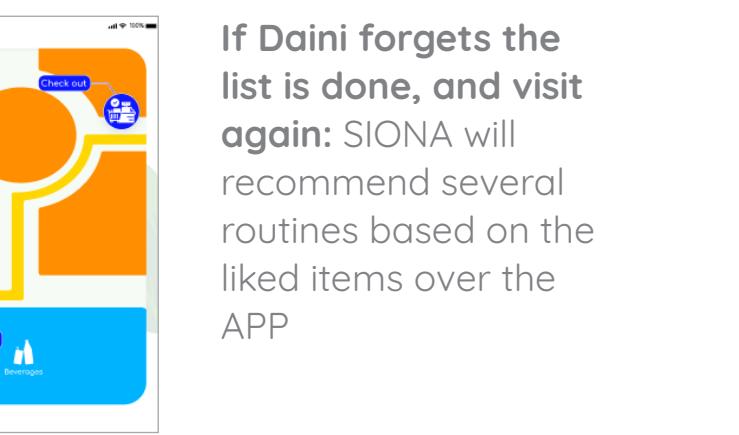
Follow SIONA to successfully locate your wanted items



Confirmation



Check-out Navigation

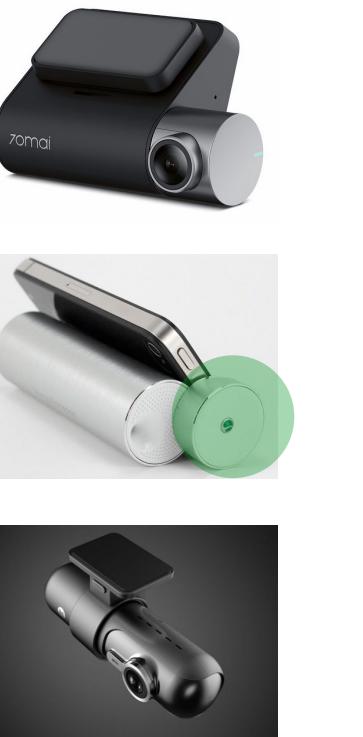


Routines recommended based on hearted items

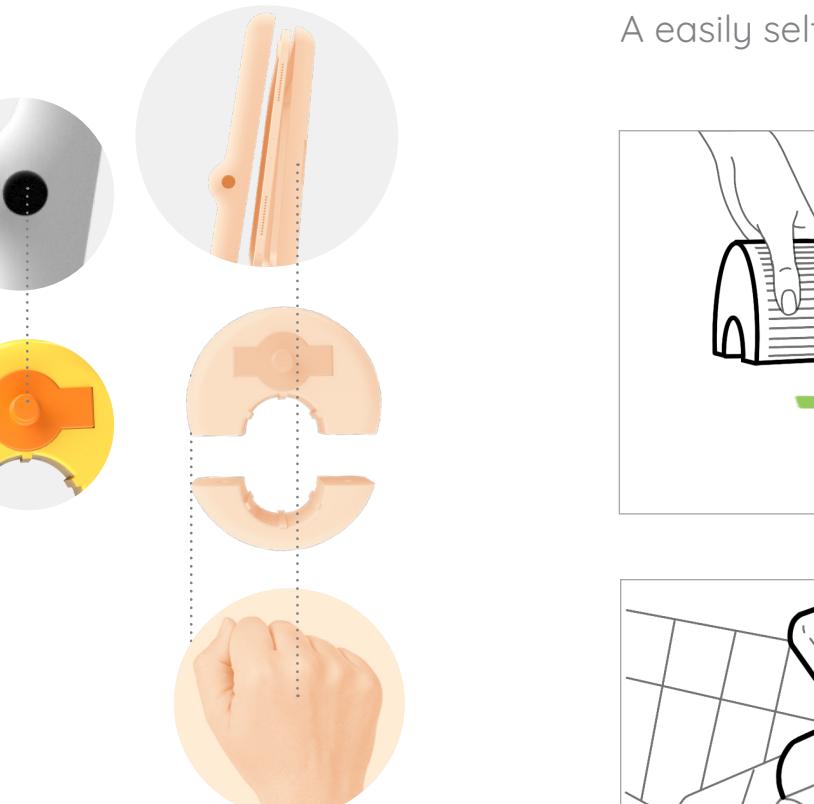
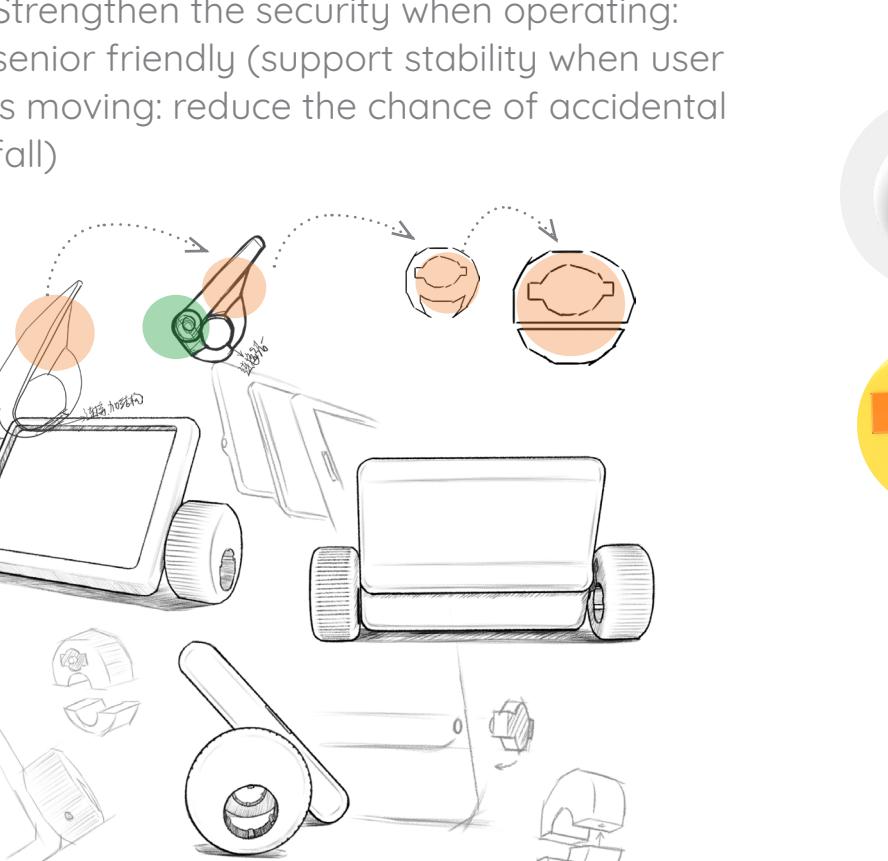
If Daini forgets the list is done, and visit again: SIONA will recommend several routines based on the liked items over the APP

Product Development

Damper:
To rotate & spare the stress



Fist-size Stabiliser (the yellow part):
Strengthen the security when operating: senior friendly (support stability when user is moving: reduce the chance of accidental fall)



3D Model Testing:
A 1:2 model is printed out to test the feasibility of '3Steps'

Easily Install by 3 Steps: wider accessibility
A easily self-installed Smart Module

