

SIONA



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

Timeline
3 months , 2021- 2022

Solo Project

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 spread by the fresh goods, and the interactive ambiance atmosphere.

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



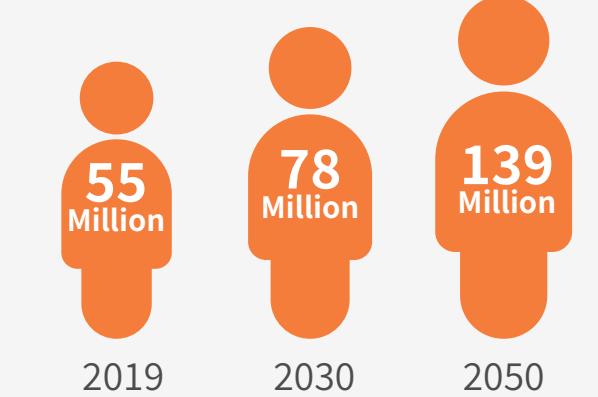
RESEARCH: Background

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.



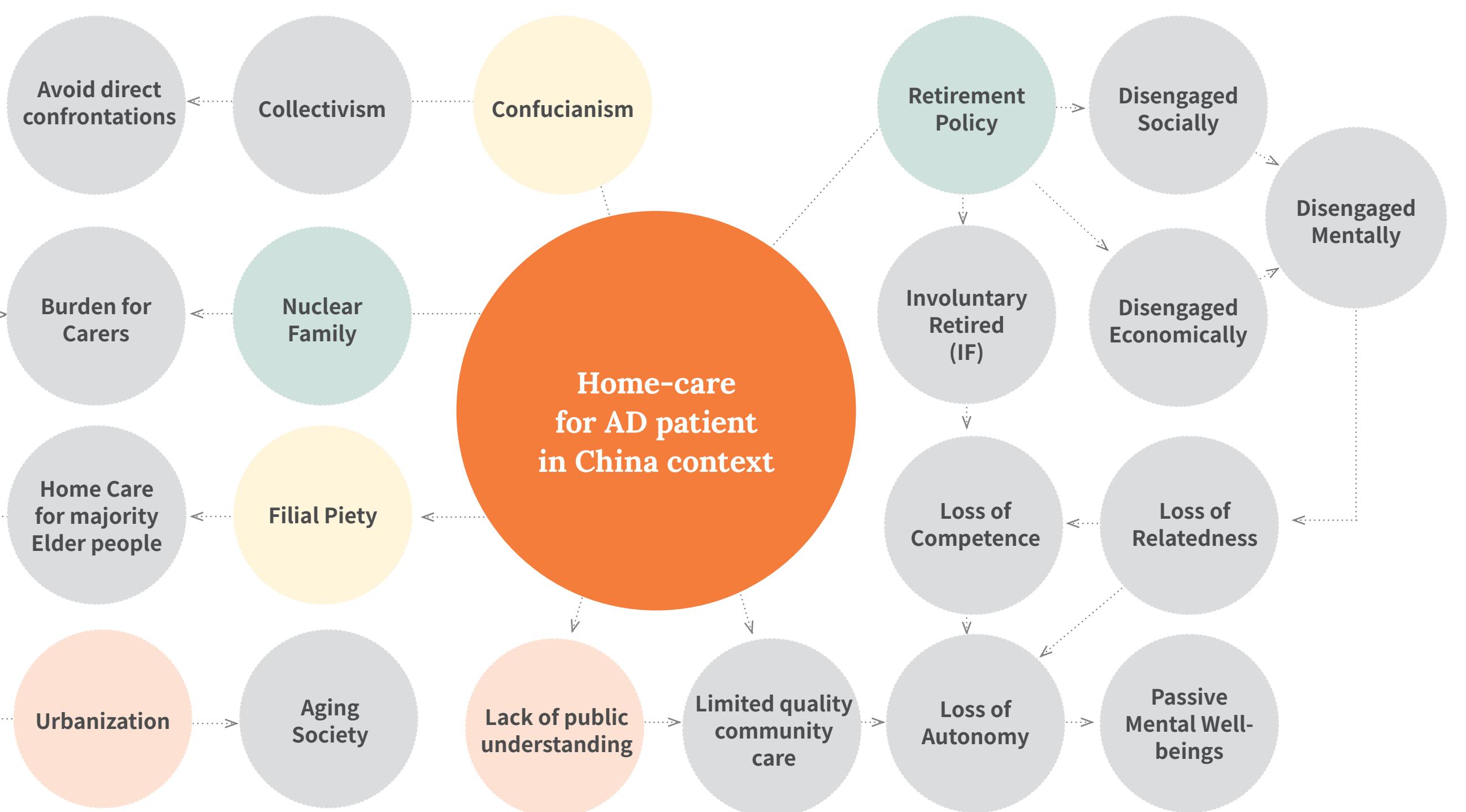
TOP 4 Provinces in China with majority Dementia Cases

(The China Alzheimer Report, 2022)



RESEARCH: Mapping & Theory Studying

Challenges of Dementia care in China



Color Indication

- Cultural Cause
- Social Development Cause (Education included)
- Government Policy Cause
- Results

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

(Dai et al.,2013)

The Core Value of Person-centered Care (PCC)

- Individuality
- Rights
- Privacy
- Choice
- Independence
- Dignity
- Respect
- Partnership

(“What are the 8 core values of person-centered 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/1h8k2nNVLW5ndOS3FnfocSI3A_G2C0m?usp=sharing

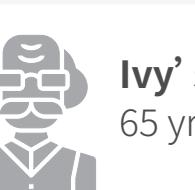
Interview 01



Ivy, Carer

29 yrs old

Freelancer



Ivy's Dad

65 yrs old



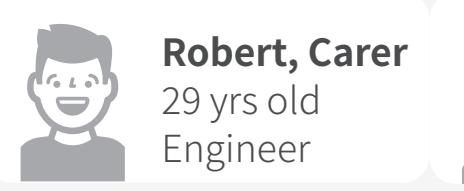
Home Care,
Guangzhou

Dementia Stage
Moderate

Caring-support

- Monitor at home
- Mobile phone

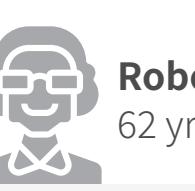
Interview 02



Robert, Carer

29 yrs old

Engineer



Robert's Mom

62 yrs old



Home Care, Shanghai

Dementia Stage
Moderate

Caring-support

- Monitor at home
- Smart door sensors
- Mobile phone calls

RESEARCH: Marketing Research & Insights

Insights

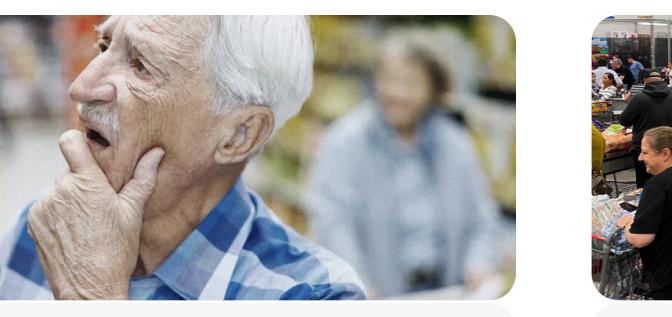
Difficulties for Home-care Dementia & carers in shopping scenario.
From questionnaires and interviews, there are four main perspectives.
Valuable insights support the further diagram synthesis to generate ideas.



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	Signage/ 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.



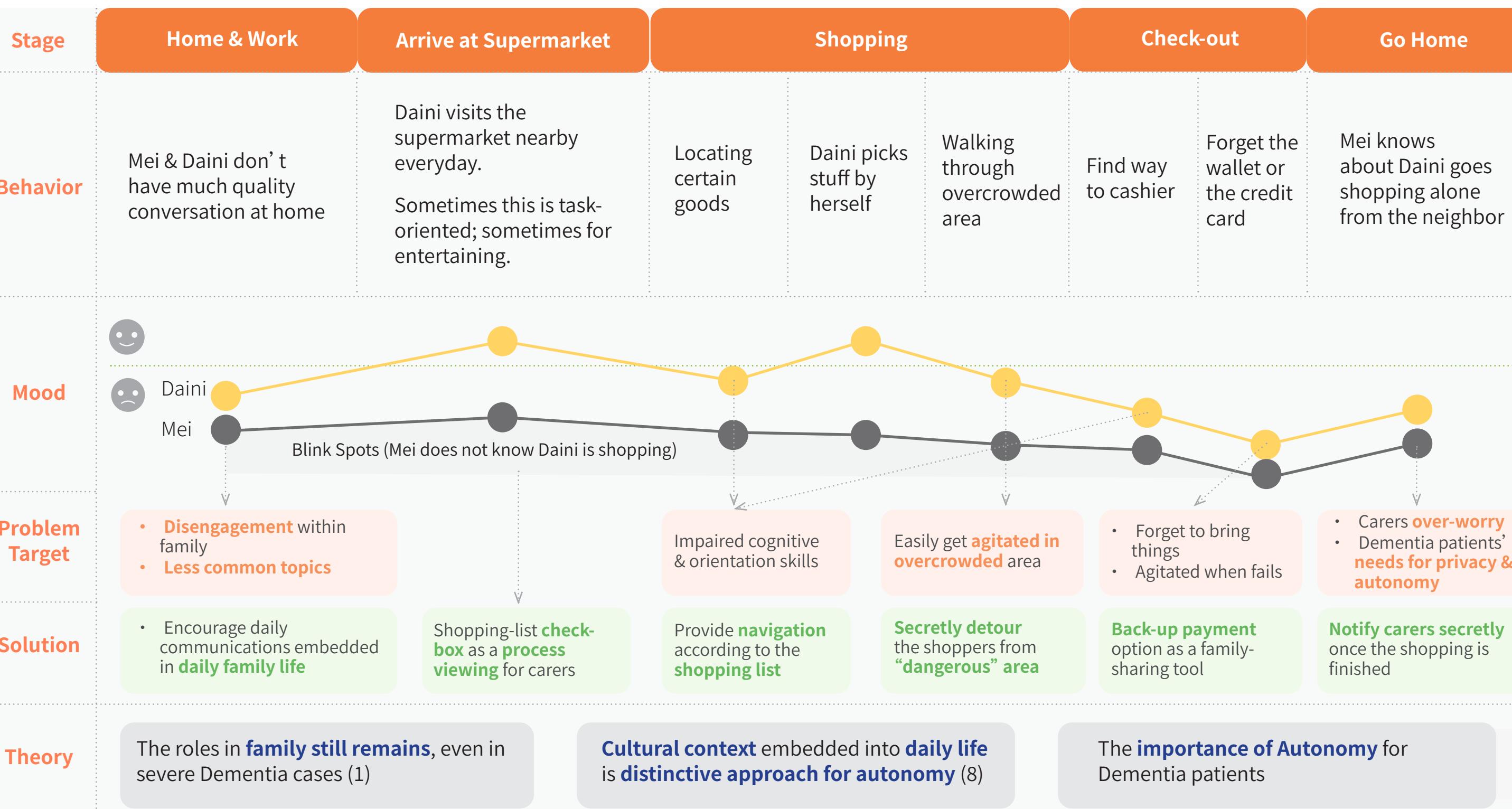
Mei, home caregiver,
Daini's daughter
Age: 32 years old
Residence: Shanghai, China
Marriage: no
Children: no
Occupation: accountant in company



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)

UNABLE
Memory & Cognition & Interaction
Forget names & events
Can't recognize the currency
Can't recognize friends & colleagues
Mobility
Imbalance in walking
Mental well-beings
Depressed & unhappy
Irritable & egocentric (with home caregivers)
Visual
Visual color agnosia



CONCEPTUALIZATIONS: 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

Pilot Demonstration

1-tier city in China
 Beijing, Shanghai, Guangzhou
 Middle-class Markets

Goal

Emotion
 Family engagement

Usability
 Autonomous successful shopping

Usefulness
 Navigation with optimized routine
 "Secretly" process tracking

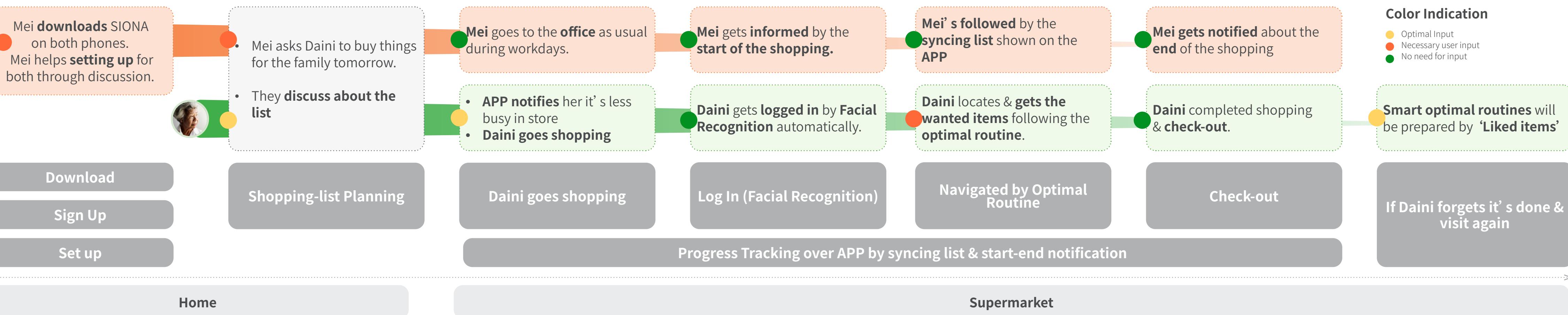
Products
Family App + Smart Module for Shopping Cart



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.**

CONCEPTUALIZATION: User Flow & Service Touch-points

User Flow: Bridging Family Care with Autonomy Support



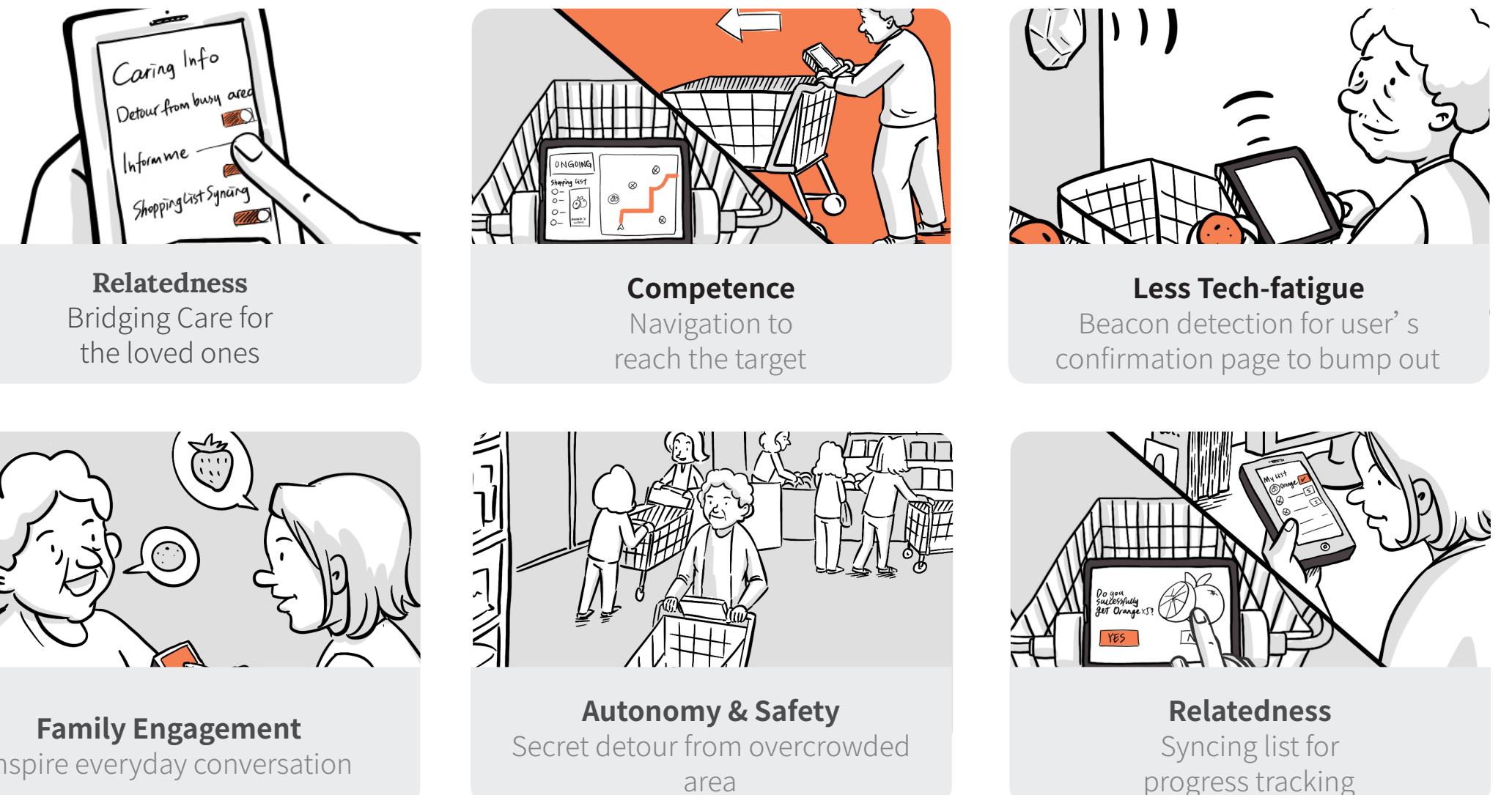
Home Supermarket

Metrics

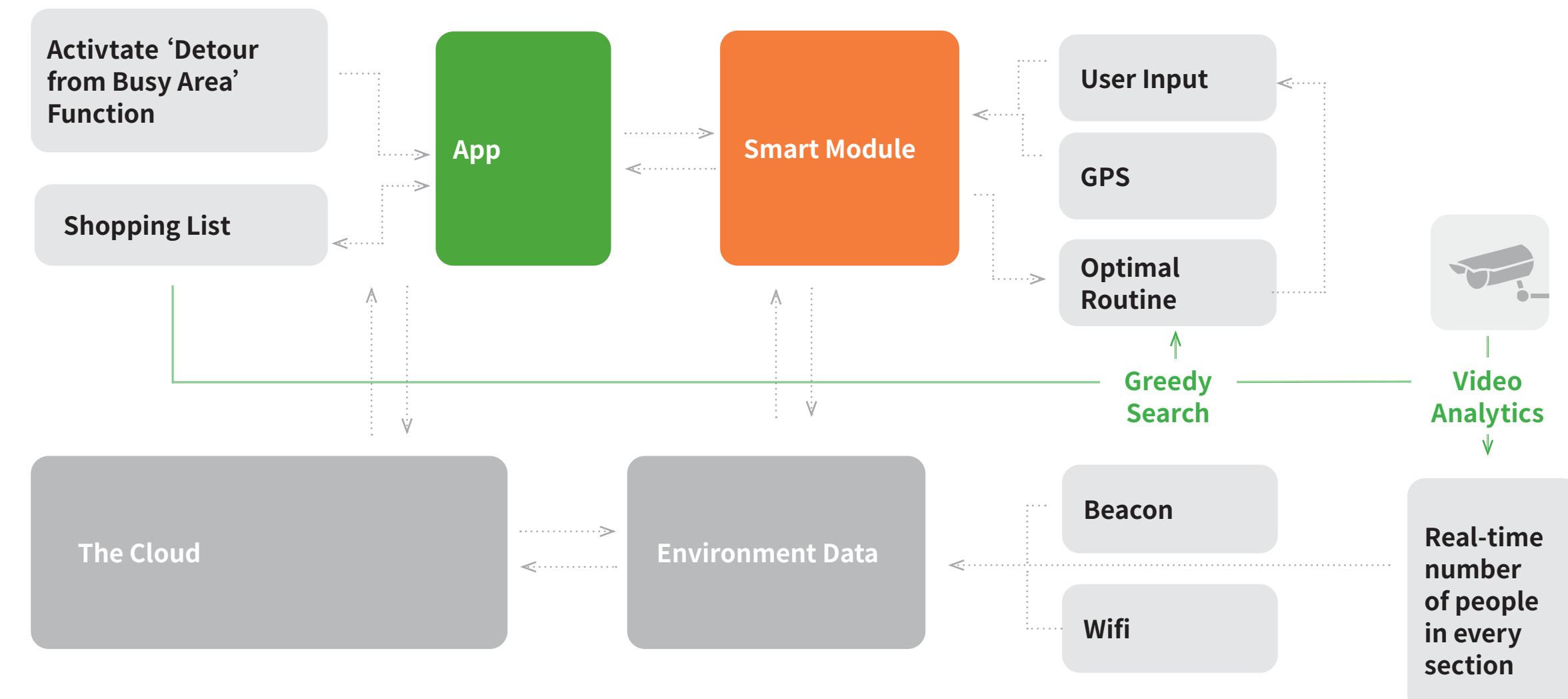
Less
 Less chances to get agitated

More
 -More successful completion of product locating&purchase
 -More family-engaging occasions
 -More notification of progress-tracking for carers

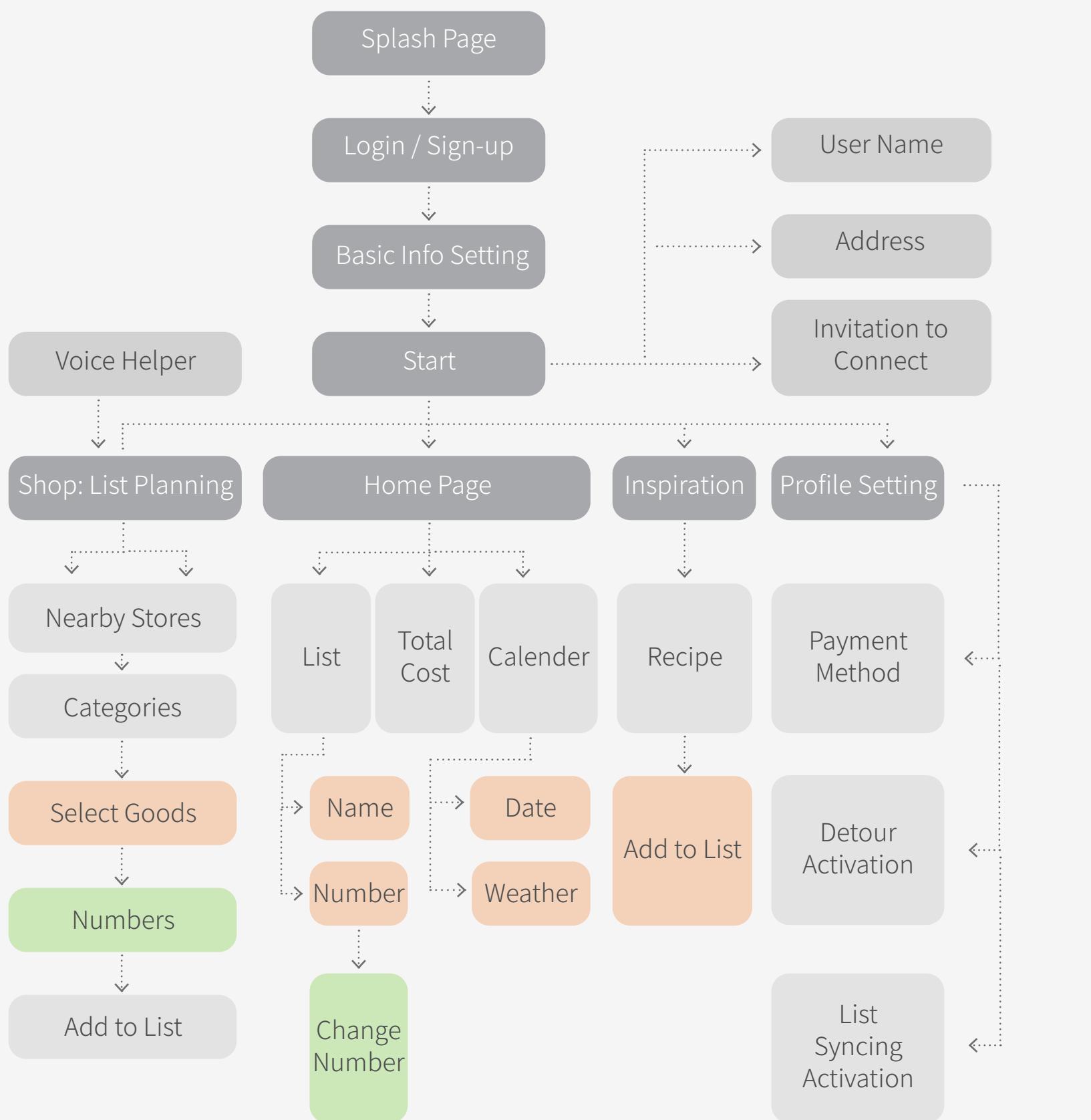
Service Touch-points



SIONA System Diagram



CONCEPTUALIZATION: Site Map



Key Design Principles for Dementia

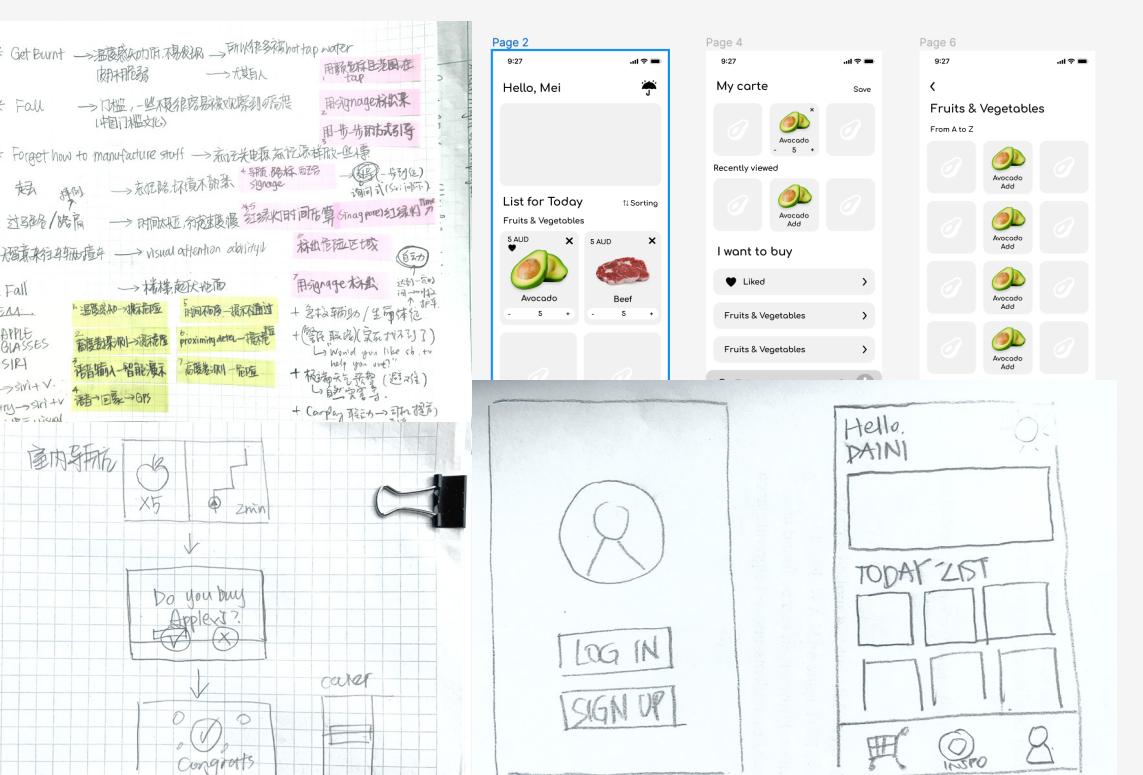
1. Familiar
2. Distinctive
3. Legible (visual contrast / brighter color & heightened color contrast-less agitation) (Koss&Gilmore, 1998)
4. Accessible

(Halsall & Macdonald, 2015)

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PROTOTYPING: Visual Identity System

Lofi-prototyping & WIP



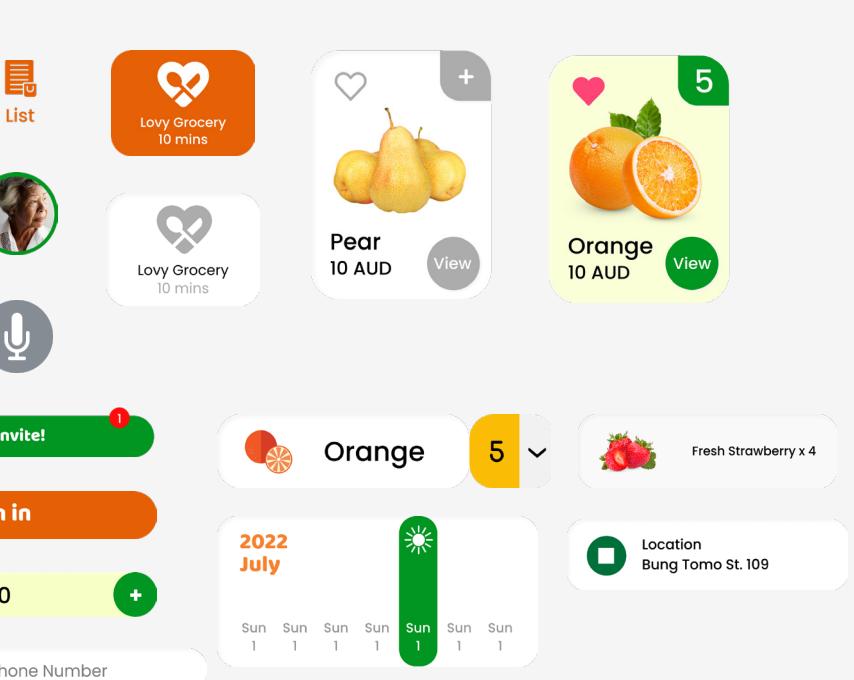
Visual Identity System

'Green' & 'Orange' as the main colors theme to be further extended, as they represent fresh, happiness, positivity. With this combination, the contrast of color is strong, ensuring the legibility.

Typeface:
Kabel Black

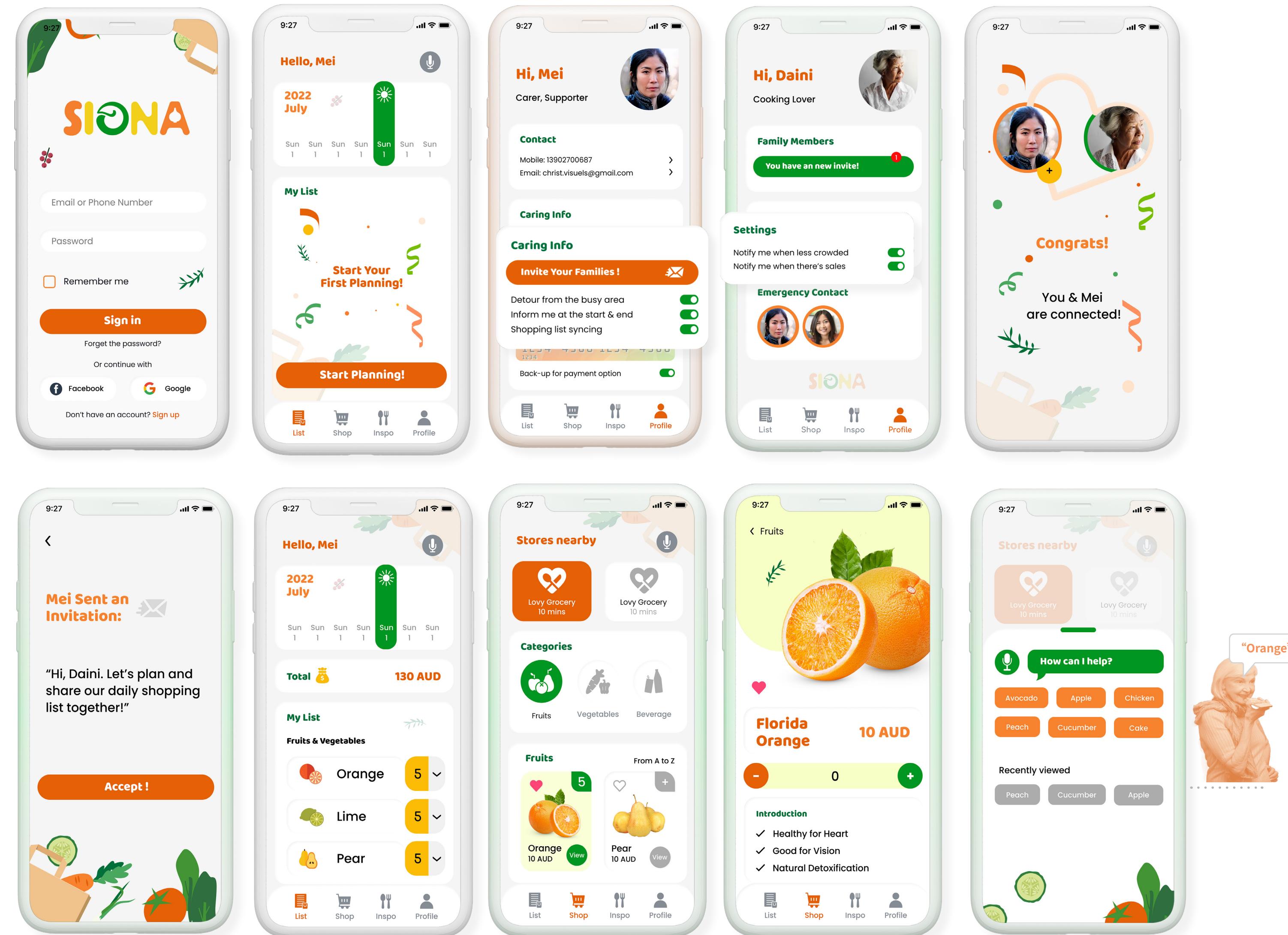


UI Element



PROTOTYPING: Hi-fi App Mock-up

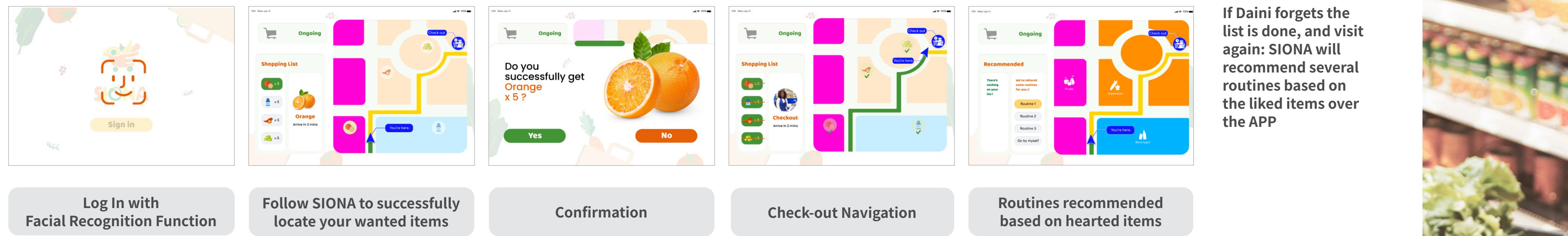
Hi-fi UI Wireframes



SIONA: Shop Independently Oriented and Autonomously

PROTOTYPING: Smart Module

Smart Module User Interface



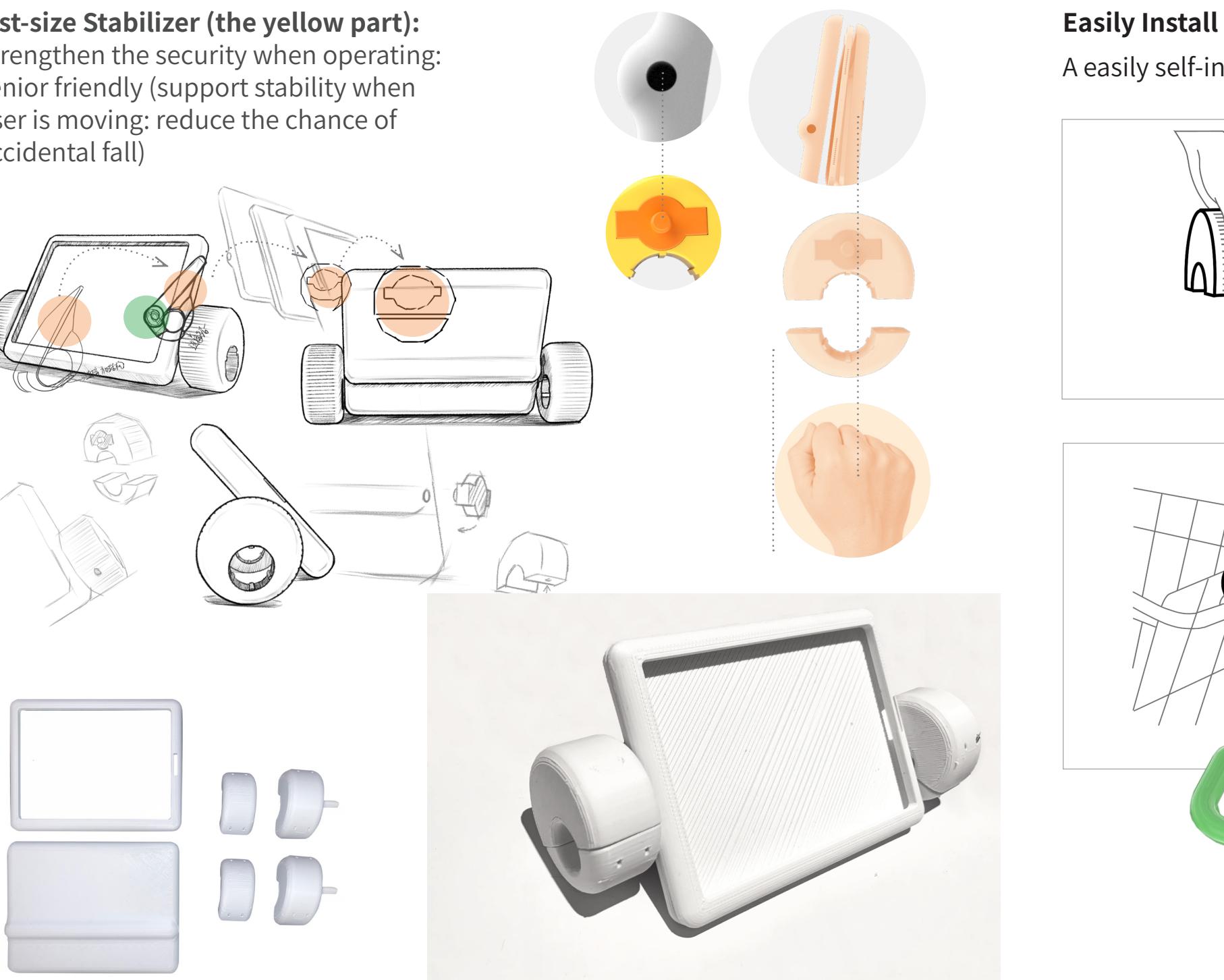
If Daini forgets the list is done, and visit again: SIONA will recommend several routines based on the liked items over the APP

Product Development

Damper:
To rotate & spare the stress



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



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

