

Title: Design for Next-Generation Technology-Enabled Elderly Care Models for Single female Chinese Nederlanders elderly

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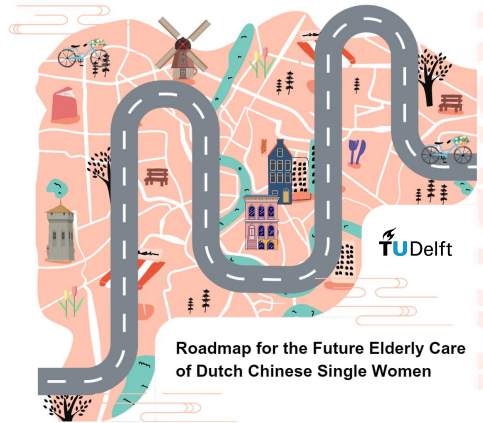
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Roadmap for the Future Elderly Care of Dutch Chinese Single Women

Master Thesis

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Abbreviations and used terms

- Technology-enabled care (TEC)
- Chinese Nederlanders elderly (Chinese elderly live in the Netherlands context)

Exclusive summary

This project explores innovative solutions for elderly care, focusing initially on the needs of single Chinese women in the Netherlands. It evolved to address broader issues, aiming to create a more humane and effective elderly care system applicable to diverse populations.

Objective and Approach

The project aimed to improve elderly care by integrating social support and advanced technology. It utilized a range of research methods, including literature reviews, interviews, trend analysis, and design roadmapping. The goal was to develop strategies that are technically feasible, desirable, and viable, providing a framework for future improvements in elderly care.

Key Findings

1. **Feasibility:** The project identified technologies with promising applications over the next 20-40 years. While these technologies are established in other fields, their use in healthcare is still emerging, indicating a need for further development and integration.
2. **Desirability:** The research highlighted the importance of addressing anxiety in elderly care. Feedback from participants showed high acceptance and expectations for the proposed solutions, though a larger sample size could provide more robust validation.
3. **Viability:** The strategies developed align with three time horizons—20, 40, and 60 years—and support the project's long-term vision. However, achieving full feasibility requires substantial resource allocation, continuous integration, and iterative development. Ongoing research and evaluation will be necessary to ensure the solutions' effectiveness and sustainability.

Chapter 1 General introduction

1.1. Background

The Netherlands is experiencing significant demographic shifts, characterized by a growing population of elderly individuals, particularly single female immigrants with a Chinese background, who face distinct challenges in accessing tailored care and support. [1] Within this demographic, single women represent a significant subset, grappling with issues of loneliness, social isolation, and cultural adaptation. [2] In response to these challenges, a project has been initiated with the aim of developing strategies and interventions to address the sense of separation and loneliness experienced by single female immigrants with a Chinese background in the Netherlands. [3] Through research, service design, and system design methodologies, the project seeks to comprehensively understand and address the multifaceted needs of this demographic, ultimately aiming to enhance their mental health and social identity. This project is driven by a recognition of the complexities inherent in providing elderly care, particularly for single immigrant women, and seeks to pioneer innovative, technology-enabled models to improve their quality of life.

1.1.1. Research question

How to design future elderly care (within 20/40 years) for single women in Netherlands with an immigrant background?

Keywords

Service Design

Single elderly care

Single Women

Aging-friendly design

Culturally inclusive design

1.2. Problem statement

In Dutch suburbs, older owner-occupiers express a preference for long-term independent living at home [1] and therefore require tailored care and support. However, the project acknowledges that women have a higher life expectancy, and older women, especially those with immigrant backgrounds, may experience more years of psychological problems or physical disabilities in their daily lives.[2] They face a multitude of challenges related to isolation, mental well-being, and access to culturally sensitive care. These challenges are exacerbated by factors such as language barriers, differing health expectations, and the desire for long-term independent living. [4] Traditional care models often fall short in addressing the unique needs of this demographic, highlighting the need for tailored solutions that foster inclusivity and promote social connection. [5] The final result aims to improve the accessibility of community-based elderly care services for those left alone by enhancing supply, delivery, and use, ultimately aiming to enhance their mental health and social identity.[3]

1.2.1. Design goal

The design goal is to enhance elderly care for single female immigrants of Chinese background in the Netherlands, addressing their unique cultural, social, and healthcare challenges.

1.2.2. Objectives

- Conduct user research to understand the needs, behaviors, and pain points of target users. Develop personas and roadmap to guide design decisions based on user insights. Iterate designs based on user feedback to ensure usability and satisfaction.

Future elderly care preference

- Design an intuitive digital platform that aligns with future elderly care preferences, considering factors such as accessibility, personalization, and adaptability to changing lifestyle choices.

Different generation living

- Create innovative living environments that foster intergenerational connections and mutual support, integrating diverse preferences and lifestyles to promote a sense of community and inclusivity.

1.3. Project approach

This project follows The Delft Design Guide Digital Health, including four phases, respectively preparation, problem-thinking, problem-solving, and implementation.

Preparation: The preparation phase including require and prepare, conduct thorough research to understand the challenges faced by elderly women with immigrant backgrounds in single elderly care. Define the scope and objectives of the project, focusing on addressing isolation and enhancing mental well-being. Develop a management plan outlining timelines, milestones, and resource allocation.

Problem-Thinking: The Problem-Thinking phase encompasses discovery and definition, considering three generations of target users aged between 20-40, 40-60, and 60-80. It involves developing a storyboard background that illustrates the challenges faced by elderly women with immigrant backgrounds.

Key Deliverables

- Research findings on challenges faced by elderly women with immigrant backgrounds.
- Co-created solutions through workshops and participatory design sessions.
- Service blueprints integrating AIoT and digital health solutions.
- Usability-tested digital solutions tailored for elderly women.
- Continuous evaluation system for feedback and improvement.

Problem-Solving: The Problem-Solving phase encompasses Design Concepts and Validation, involving the co-creation of brandstorming sessions and design concepts, prototype development, and user testing.

Implementation: The Implementation phase comprises Develop and Commercialize stages, focusing on establishing the technical foundation and business models for the project.

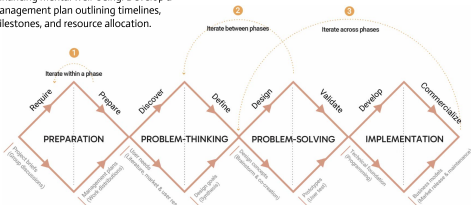


Figure 1.1. Design process from The Delft Design Guide Digital Health <https://thedelftdesignguide.digitalhealthframer.website/design-process/wanglingting>



Chapter 2 Contextual research

Chapter 2 Contextual research

2.1. Background

The Netherlands is grappling with demographic aging, characterized by a rising elderly population [4]. Cultural norms emphasize social welfare and familial caregiving [7], while policy frameworks prioritize independent living and quality care, exemplified by initiatives like the Long-Term Care Act [8].

However, within this context, Dutch-Chinese elderly, as a minority group, seem to be overlooked. Notably, women in this demographic have a higher life expectancy, yet older women, especially those with immigrant backgrounds, may face extended periods of psychological distress or physical disabilities in their daily lives [2]. What is the quality of life they experience within the Dutch context? What specific challenges and issues do they encounter in their old age?

2.2. Method

The method used in this contextual research is a combination of 1) literature research and desktop research, and 2) interviews with professionals of Dutch Chinese elderly care and Dutch Chinese elderly. The research results were viewed in a culture-sensitive way to conclude.



Figure 2.1. Methodological triangulation

The main research question answered in this chapter is:

What is the current context of elderly care in the Netherlands for Dutch-Chinese elderly?

Four sub research questions in the context research are as below:

- What are the primary focuses and cultural norms guiding elderly care in the Netherlands?
- What are the current care models and emerging trends in elderly care?
- Who are the key stakeholders engaged in elderly care initiatives?
- What are the pertinent issues that require discussion regarding cultural sensitivity in elderly care contexts?

2.2.1. literature research and desktop research

2.2.1.1. Elderly care in the new era

Elderly care in the Netherlands is undergoing a significant transformation, driven by several factors including demographic shifts, technological advancements, and evolving societal norms.

Demographic Changes: The world population is aging rapidly, with the number of individuals aged 60 and above projected to triple by 2050, reaching nearly 2 billion [4]. Similarly, the population of the Netherlands is also aging, albeit at a slower rate compared to other European countries. As Dutch society transitions from a welfare state to one emphasizing individual responsibility, financially stable and well-educated elderly individuals are seeking greater control over their lives [5].

Preventive and Proactive Care: In response to this aging population, there is a growing emphasis on preventive and proactive healthcare approaches. Medicine is transitioning from a reactive to a proactive discipline, characterized by predictive,

personalized, preventive, and participatory (P4) care [6]. Technologies such as wearable devices, remote monitoring systems, and predictive analytics enable early detection of health issues and proactive interventions to prevent complications.

Age-in-Place Solutions: With a preference for aging in place, older adults are increasingly seeking technologies and services that allow them to remain independent and comfortable in their own homes for as long as possible. Home-based care options that combine medical and pension benefits can enhance the quality of life for the elderly [7]. However, there is a need for a more comprehensive approach that includes support and education for informal caregivers to ensure the well-being of older adults and their families [8].

Personalized Care: Recognizing the diverse needs and preferences of older adults, there is a shift towards personalized care approaches. Technologies such as artificial intelligence (AI), machine learning, and data analytics enable the customization of care plans and interventions based on individual health profiles and lifestyle preferences. Personalization in social care can be achieved through service integration, community-based services, and consumer-directed care [9].

In summary, the future of elderly care in the Netherlands is characterized by a shift towards preventive and personalized care, facilitated by innovative technologies and responsive to the changing needs and preferences of both current and future generations of older adults. This transformation reflects a commitment to improving the quality of life and well-being for elderly individuals and their families in the Netherlands.

2.2.1.2. Cultural norms

In Dutch culture, elderly care is often viewed as a collective responsibility. Maintaining independent functioning, quality of life and participation of older people were recognized to be major challenges for Dutch society [10]. Several cultural norms and values shape the approach to elderly care in the Netherlands:

Family Support: Family plays a central role in providing care and support to elderly relatives. It is common for older adults to live independently for as long as possible, with family members providing assistance and care when needed. In general, family support contributes more to the life satisfaction of older adults than does friend support. While emotional support from family members is beneficial to life satisfaction of older adults regardless of individual differences in familism [11].

Respect for Autonomy: Dutch culture places a high value on individual autonomy and self-determination, even in old age [5]. Older adults are often encouraged to make their own decisions about their living arrangements, healthcare, and overall well-being.

Community Involvement: The Dutch have a strong sense of community and social cohesion, which extends to elderly care. Community-based services and support networks play an important role in providing care and companionship to older adults. Neighborhood initiatives, volunteer organizations, and senior centers offer opportunities for social engagement and participation in recreational activities [12].

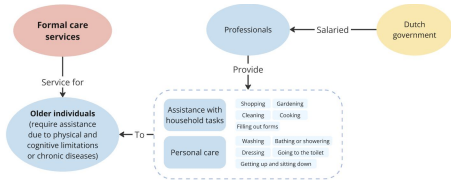


Figure 2.4. Formal care framework (made by author)

2.2.2.4. Nursing homes (verpleeghuizen)

Nursing homes (verpleeghuizen) in the Netherlands play a crucial role in providing clinical and ambulatory care for elderly individuals with multiple pathologies and disabilities. [44]

These institutions offer a broad range of services, integrating medical care through a continuum that includes family physicians for community care, nursing home physicians for institutionalized care, and clinical geriatricians for hospital care. [45] This integrated approach enhances the quality of care for disabled elderly individuals both in institutions and the community.

A recent trend is to extend nursing home care to aged homes through substitution projects and dependencies. [44]

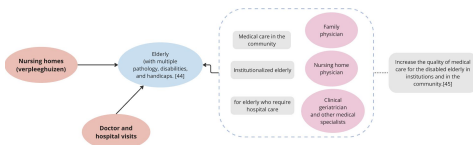


Figure 2.5. Nursing homes framework (made by author)

2.3. Stakeholders analysis

Community Carer

Interests: Providing culturally sensitive and personalized care to older women.

Values: Inclusion, respect for diverse backgrounds, and meeting unique health care needs.

Community Manager

Interests: Create a supportive environment that accommodates the cultural diversity of older residents.

Values: Community cohesion, inclusivity, and improving the overall quality of life for seniors.

Children of the elderly

Interests: Ensuring the health, happiness and cultural well-being of aging parents.

Values: Protection of cultural heritage, effective communication, and reliable, culturally competent care.

Relatives and friends of the elderly

Interests: Contributing to the social and emotional well-being of older women.

Values: Intercultural understanding, companionship and maintaining connections.

2.2.2.5. Emerging trends in elderly care research in the Netherlands

Dutch care policies favoring homecare have led to a decrease in informal care and residential care for cognitively impaired older adults, while formal homecare and community services remain the same [18].

Innovative approaches to creating age-friendly environments and facilitating aging-in-place within Dutch social housing communities. Rather than solely focusing on individual homes or occupational therapy, the emphasis is on building new communities that support older adults' needs as they age [19].

Continued research into technology-enabled care (TEC) solutions is crucial for improving elderly care delivery. TEC encompasses various services like telecare, telehealth, and digital health, which are increasingly seen as solutions to healthcare challenges posed by an aging population and chronic diseases. However, patient perspectives on TEC are vital for evaluating its effectiveness and acceptance [20].

2.4. View the contexts through a culture- sensitive lens

Viewing these contexts through a culturally sensitive lens reveals that while these policies and approaches may align with Dutch cultural values, they may not fully meet the needs of immigrants with different cultural backgrounds. Immigrants may have unique cultural values, beliefs, and preferences regarding elderly care, which may differ from those of the broader Dutch society. Therefore, it's important to consider cultural diversity and tailor policies and approaches to be inclusive and responsive to the needs of immigrants [21].

This involves providing culturally competent care, offering language support, and involving immigrant communities in the design and implementation of elderly care services.

2.4.1. Interviews with the manager

Literature and desktop research are enriched through firsthand experiential insights gathered via interviews with professionals associated with Stichting De Chinese Brug, a Senior Activity Center.

These interviews encompass a diverse range of perspectives, drawing from the expertise of individuals from both the Netherlands and China. Among them are:

- Two seasoned social workers
- Two single middle-aged women who volunteer in several elderly communities in Den Haag
- A young community coordinator for De Chinese Brug elderly activities,

all of whom possess extensive experience in catering to the needs of Chinese immigrants over numerous years. By synthesizing their collective wisdom and observations, a comprehensive understanding of the contemporary challenges faced by elderly immigrants in China is illuminated.

The interviewed social workers and volunteers, although they relocated to the Netherlands at a young age and pursued their education and careers within a Dutch context, generally possess lower levels of formal education. Primarily hailing from Guangdong, Zhejiang, and Hong Kong, they often engaged in manual labor upon immigrating, such as working in Chinese restaurants. Post-retirement, many of them opt to serve as volunteers within elderly communities, availing themselves of government subsidies and relishing complimentary lunch and dinner at De Chinese Brug every Tuesday and Wednesday.

Most Chinese elderly care institutions, such as this one, operate on a charitable basis and lack profit-driven motives. They primarily rely on government subsidies and financial contributions from benefactors and stakeholders.



Figure 2.6. Foundation Chinese Bridge (De Chinese Brug)

De Chinese Brug organization provides lunch and dinner for 4-5 euros every Tuesday and Wednesday, with these meals being complimentary for volunteers and social workers.

Moreover, the center regularly arranges health lectures and facilitates singing or dancing activities. These offerings create a conducive environment for elderly individuals to engage in recreation, socialize, and foster a sense of community. Such initiatives promote increased interaction among them, ultimately enhancing their sense of belonging within the center.



Figure 2.7. Entertainment activities held in De Chinese Brug

2.5. Findings

2.5.1. The realistic dilemma of Chinese senior activity center

During the communication with the community coordinator for De Chinese Brug elderly activities, the author discovered that the majority of overseas Chinese activity centers, similar to this one, can only offer Chinese activity venues for elderly overseas Chinese.

Unfortunately, due to a decrease in government subsidies, the range of activities they can organize is limited. Additionally, there's a decline in the number of such centers, resulting in reduced activity levels among the elderly. This situation perpetuates a vicious cycle, where fewer activities lead to decreased engagement among the elderly, exacerbating the issue further.

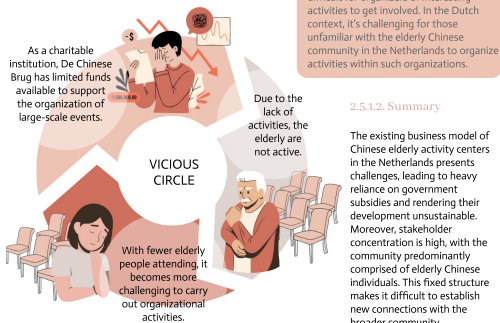


Figure 2.8. The realistic dilemma of De Chinese Brug (made by the author)

2.5.1.1. Main reason

Single Income Structure

Senior activity centers organizations such as De Chinese Brug operate with a single income structure, primarily relying on government subsidies and funds provided by their owners and shareholders, or collecting nominal fees from the elderly. This often results in such organizations struggling to make ends meet.

Lack of Diverse Event Organizers

The social circles of elderly overseas Chinese are relatively closed, making it difficult for organizers of interesting activities to get involved. In the Dutch context, it's challenging for those unfamiliar with the elderly Chinese community in the Netherlands to organize activities within such organizations.

2.5.1.2. Summary

The existing business model of Chinese elderly activity centers in the Netherlands presents challenges, leading to heavy reliance on government subsidies and rendering their development unsustainable. Moreover, stakeholder concentration is high, with the community predominantly comprised of elderly Chinese individuals. This fixed structure makes it difficult to establish new connections with the broader community.

2.5.2. Characteristic of Chinese elderly in the Netherlands context

Among immigrant groups in the Netherlands, women in the Netherlands generally have worse self-reported health than men [22]. However, through participant observation and in-depth interviews with five elderly Dutch Chinese individuals (including two men and three women) residing in The Hague, the author uncovered distinctive characteristics among this demographic within the Dutch context:

Women tend to be more active than men in senior communities

We organized two types of activities: lectures and workshops which the number of participants was around 15. Through participant observation, we noticed that in senior communities, women exhibit a greater inclination to engage in discussions related to the activities and demonstrate a higher degree of cooperation compared to men. Male participants, on the other hand, showed a stronger desire for self-expression and achievement and were less likely to cooperate. Considering the gender distribution of all participants, it's evident that among individuals aged 60-80, women participate more frequently in activities at activity centers and exhibit greater enthusiasm.

The Dutch-Chinese elderly aged 60-80 generally have a low level of education

The majority of Dutch-Chinese elderly in this generation migrated to the Netherlands from regions like Zhejiang, Guangdong, and Hong Kong, often through smuggling or marriage [23]. Many of them worked in Chinese restaurants during their youth. With lower levels of education, they are accustomed to speaking dialects. Some elderly individuals pursued further education upon arriving in the Netherlands, primarily through language training programs.

Pain points of Dutch-Chinese elderly

A huge gap between Dutch-Chinese elderly and their children

The significant cultural and linguistic differences between the elderly and their children, who have grown up in diverse language environments and hold different cultural values, lead to substantial intergenerational communication challenges.

Language barrier

As individuals age, they may gradually forget languages they have learned and revert to speaking only their mother tongue. However, nursing homes in the Netherlands often cannot provide them with a familiar language environment and native-speaking caregivers which leads to some elderly people even feeling being sent to nursing homes.

Risks of living alone

Many Dutch-Chinese elderly individuals opt to spend their later years alone following the passing of their partners, and they often lack close contact with their children. This frequently results in situations such as dying alone. During interviews, numerous elderly individuals mentioned that their friends lived alone and passed away at home without anyone knowing. In some cases, their bodies were not discovered by neighbors until 3-4 days later.

Uncertainty about the future

Most elderly individuals lack a strong sense of control over their future lives. While many are content with their current situations, they struggle to envision circumstances where they may be unable to care for themselves. They express reluctance to move into nursing homes, yet they understand that their children may not be able to provide care for them. Their preference is to remain in their own homes, but there is a shortage of home caregivers. At this stage, most seniors harbor pessimistic views about the future.

2.6. Discussion

After researching the context of elderly care in the Netherlands, including cultural norms, existing frameworks, emerging trends, stakeholder analysis and interviews with professionals and Dutch-Chinese elderly, it's evident that the Dutch elderly care system is highly regarded for its comprehensiveness and development. However, the applicability of this system to elderly immigrants with different cultural backgrounds may be limited.

Literature reviews, desktop research, and interviews with professionals and elderly individuals of Chinese descent are all directed towards comprehending the present circumstances of the elderly population in China within the Dutch context.

The existing framework may not adequately address the unique needs and challenges faced by immigrant elders, such as language barriers, cultural differences, and the lack of familial support networks. As a result, there may be limitations in how well immigrant elders can integrate into and benefit from the Dutch elderly care system. Therefore, there is a need for further exploration and adaptation of the system to ensure that it is inclusive and responsive to the needs of all elderly individuals, regardless of cultural background.

2.7. Conclusion

Chapter 2 delves into an exhaustive examination of contextual research on elderly care in the Netherlands. The Dutch elderly care system is generally esteemed for its comprehensiveness and advancement. However, apprehensions arise regarding its adaptability to elderly immigrants with diverse cultural backgrounds. Findings from actual interviews reveal that, when contrasting Dutch and Chinese elderly populations within the

While the Dutch system is generally regarded as robust, there may be disparities in access, quality, and cultural sensitivity for immigrant elderly individuals. What the author needs to discuss and research next is:

Recognition of Disparities: Despite the robust nature of the Dutch elderly care system, disparities exist in access, quality, and cultural sensitivity for immigrant older adults.

Understanding Immigrant Needs: To address these disparities effectively, a deeper understanding of Dutch people with immigrant backgrounds and their specific needs within the Dutch context is necessary.

Tailored Support: This understanding suggests a potential need for additional physical or psychological support tailored to the specific requirements of immigrant older adults.

Dutch context, Chinese elders frequently encounter challenges such as limited social interaction, communication difficulties, and insufficient familial and social support—discrepancies closely tied to their upbringing and cultural backgrounds.

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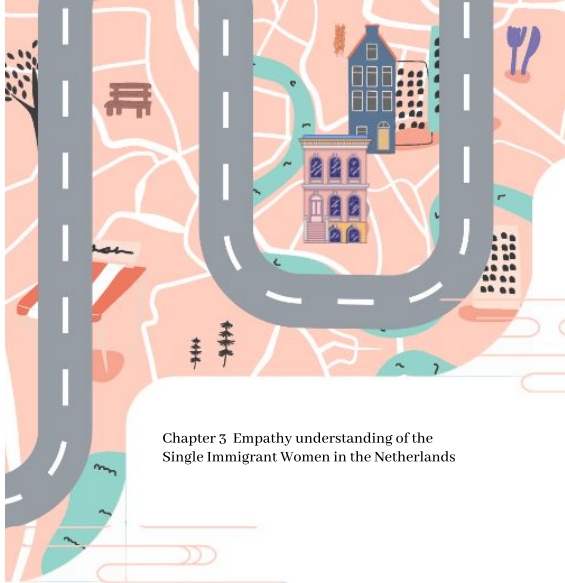
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Chapter 3 Empathy understanding of the Single Immigrant Women in the Netherlands

Chapter 3 Empathy understanding of the Single female immigrants with a Chinese background in the Netherlands

3.1. Background

In the preceding chapter, the author has garnered a comprehensive understanding of the context of elderly care in the Netherlands, encompassing cultural norms, existing frameworks, emerging trends, stakeholder analysis, and interviews with professionals and Dutch-Chinese elderly individuals. Before extending support, it is imperative to establish an empathetic understanding of elderly Chinese women immigrants. Previous desk research conducted by the author revealed that women have a higher life expectancy, and older women, particularly those with immigrant backgrounds, may encounter prolonged periods of psychological distress or physical disabilities in their daily lives [2]. By delving into their personal narratives and backgrounds, the primary research question in this chapter emerges as:

3.2. Method

In this chapter, the author employs two distinct research methods: Participant observation with a focus on thick description, and focus group study employing narrative research techniques.

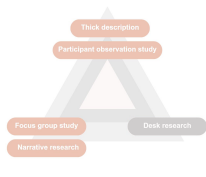


Figure 3.1. Methodological triangulation

How Chinese female immigrants navigate the complex process of emancipating from traditional constraints, assimilating into a new culture and language environment, and establishing their foothold in the Netherlands.

Interview & Workshop

In this chapter, the author conducted interviews and workshops to gather the growth stories and background details of nine single women across three distinct age groups: 20-40, 40-60, and 60-80. Through these accounts, we gain insight into the challenges, triumphs, and evolving identities of these women as they navigate the complexities of immigration and integration.

Participant observation / Thick description

Through these methodologies, the aim is to gain a comprehensive understanding of how Chinese female immigrants navigate the challenges of breaking free from traditional constraints, integrating into a foreign culture and language environment, and carving out their place within the Netherlands.

Focus group study / Narrative research

Women from diverse backgrounds and age groups will share their personal immigration journeys, shedding light on their experiences, identities, and encounters with cultural disparities between China and the Netherlands. These narratives will explore the most significant cultural differences perceived from various perspectives, along with reflections on whether they have found a sense of belonging or spiritual connection within Dutch society.

3.5. Procedure

Interviews and workshop with Dutch-Chinese elderly were conducted at the Stichting De Chinese Brug, the Hague. The entire research process is divided into three stages: 1) Describe the day's activity schedule; 2) Arrange the closeness and distance on the map based on the frequency of contact; 3) Select a photo of your life and explain the story behind it.



Figure 3.2. Daily schedule image (In Appendices)



Figure 3.3. Map of closeness and distance (In Appendices)



Figure 3.4. Workshop of Life-photo with elderly

3.5.1. Daily activity schedule

Describing a day's activity schedule:

Participants are asked to detail their daily routines, including waking up, meals, work, social interactions, leisure activities, and bedtime. Described from the following four dimensions:



3.5.2. Map of closeness and distance

Mapping out relationships based on frequency of contact in their daily activities.

Participants are requested to identify individuals they interact with regularly, occasional acquaintances, and those they rarely engage with. Using a map, they mark out the locations where these interactions occur, indicating the frequency and nature of the relationships.



Figure 3.5. Map of closeness and distance

3.5.3. Life-photo workshop

Choosing a personal photograph and narrating the story behind it:

Participants select a meaningful photograph from their life and share the story behind it. They discuss the experiences, memories, and emotions associated with the image, providing a deeper understanding of their life journey and personal development.

3.4. Analysis

All audio recordings from the interviews with Dutch Chinese single women were transcribed, deidentified, and corrected for grammatical accuracy to ensure clarity in the analysis. For conversations conducted in Chinese, translations to English were made for quotes, codes, and themes to maintain consistency across the dataset.

The data extraction process focused on three main areas:

Participants' Demographics: This included gathering information on participants' age, gender, job titles, work domains, and other relevant demographic details.

Attitudes and Values: This section explored the participants' personal beliefs, cultural values, and perspectives on being single women of Chinese descent in the Netherlands.

Future Vision: Participants shared their aspirations, goals, and expectations for the future.

The thematic analysis followed Braun and Clarke's six-phase method [23]. Initially, the author developed a coding scheme after familiarizing with the data. Three sample transcriptions were coded to refine this scheme, followed by group discussions to resolve any possible problem. Once a consensus was reached, the remaining transcriptions were independently coded by the author.

Regular group meetings were held to discuss ambiguous or newly generated codes, ensuring a comprehensive and nuanced understanding of the data. The final coding scheme was structured to maintain the original meaning of the texts while simplifying and clarifying the codes. Codes were generated as close to the original texts as possible and combined similar codes to minimize redundancy. English codes were used for both Chinese and English texts, and any ambiguous or newly generated codes were marked for later discussions.

3.4.1. Three age ranges

Based on the literature and theoretical framework, the author selected three age groups (20-40 years old, 40-60 years old, and 60-80 years old) to segment the intergenerational service system of single Chinese women in the Netherlands. The following is a detailed explanation of the reasons for selecting these three age groups and the characteristics and differences of the three age groups in different dimensions:

According to gerontology and aging research, there are the following generational differences in Health and Well-being Across the Lifespan divided into 20-40 years old, 40-60 years old, and 60-80 years old. [24]

- **20-40 Years Old:** Individuals in this age range are generally in good health and are focused on establishing their careers and families. They are often energetic and adaptable, which makes them suited for engaging in career development and social integration programs.
- **40-60 Years Old:** Middle-aged adults typically experience the peak of their careers. However, they may also start facing health issues and the dual challenge of supporting both their children and aging parents. This stage requires a balance of career advancement support and health maintenance programs.
- **60-80 Years Old:** Older adults are more likely to face significant health challenges and prioritize social connections and legacy building. Their needs include healthcare, social engagement, and opportunities to mentor younger generations.

According to sociological research, the three age ranges of 20-40 years old, 40-60 years old, and 60-80 years old represent important role transitions and different social roles. [25]

- **Young Adulthood (20-40 Years):** This phase involves transitioning from education to full-time work, forming partnerships, and starting families. The focus here is on career establishment and social networking.
- **Middle Adulthood (40-60 Years):** Individuals often reach the peak of their careers and may take on caregiving roles for elderly parents. There are significant shifts in social roles as children become independent. This period necessitates support for career advancement and managing familial responsibilities.
- **Late Adulthood (60-80 Years):** Retirement, grandparenting, and an increased need for healthcare and social support characterize this stage. Emphasis should be on providing healthcare, fostering social connections, and enabling these individuals to contribute through mentorship.

Based on economic and career development research, these three age ranges represent distinct stages of career progression and needs: [26]

- **20-40 Years Old:** Focus on building career foundations, skill acquisition, and achieving job stability. Programs should support career development and provide necessary training.
- **40-60 Years Old:** Emphasis on career growth, achieving senior positions, and mentoring. Support should address career advancement, work-life balance, and leadership development.
- **60-80 Years Old:** Focus on transitioning into retirement, legacy building, and mentoring. Services should include retirement planning, healthcare support, and opportunities for mentorship.

Summary

In summary, each 20-year age span represents a unique stage with specific developmental milestones, [24] psychosocial challenges, and health needs, necessitating tailored support [25]. Individuals' potential contributions and skills vary significantly by age, [26] from the energy and fresh perspectives of younger adults to the wisdom and mentorship capabilities of older adults. Sociological research highlights the shifting social roles and responsibilities across these age groups, reinforcing the need for customized services.

- For ages 20-40, the focus should be on integration, career support, and social networking to help individuals establish their careers and social lives.
- For ages 40-60, emphasis should be on career development, health maintenance, and support for aging parents, as individuals often balance peak career responsibilities with family caregiving roles.
- For ages 60-80, providing healthcare, promoting social participation, and creating mentoring opportunities is crucial, as these individuals transition into retirement and seek to share their accumulated wisdom.

By aligning intergenerational service systems with these well-documented stages and needs, it is possible to ensure that the model is both reasonable and effective, addressing the unique requirements of single Chinese women in the Netherlands across different life stages and fostering a supportive and collaborative community.

5.5. Findings

5.5.1. Summarizing comparison chart

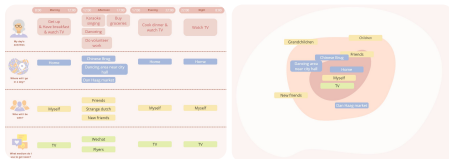
	Background Information	Attitudes and values	Future vision
Age range 20-40	Educational background Uneducated	Attitude towards family "Families need to be frequent, once a week" "My family on all in China are in the Netherlands" "Family is my spiritual harbor"	Ideal retirement model "When I think I need someone to help, I can have someone come to help me. If I don't need anyone, then don't be too intrusive. Also, I hope there is a way to get together and chat with friends from time to time."
	Motives for coming to the Netherlands Less work pressure No complicated social relationships Social inclusion Comfortable environment	Attitude towards eating "Food is for survival" "Have a good meal with friends" "Not used to eating Dutch food" "Like cooking but hate washing dishes"	Care needs "It is even said that I will find another domestic doctor in China, and then I will go back to China frequently to visit." "If I really can't take care of myself, I will perhaps need medical care 24-hour support."
	Personal experience Came to the Netherlands to study and choose to stay in the Netherlands after completing their studies	Help others "I will help people who will help me" "I think helping others builds connections by indicated to each other" "I will help people I can trust"	Community support "Currently, I live in student apartments and have no experience of community support." "I feel that community support is more about hardware and services, I don't know."
	Residence status Living alone in the studio or in an apartment with roommates	Life values "Work diligently and live modestly" "I can live well alone"	Smart technology applications "Electronic products are all too handy" "I'd I'm not sure if I will still be able to use it and I worry when I get older, but there will be new technology by then"
	Type of jobs Physical strength	Attitude towards death "Death is so far away from me that I have never thought about it." "I want to live a retired life, do things that interest me every day, and develop my own hobbies."	Family ties "The ideal situation may still be to have a family, that is, to have friends or relatives by your side, or to have a partner by your side." "If I were completely single, I would find it a bit difficult."
	Health status Unwell		Daily communication methods • Many social media such as WeChat, the Red, We, LinkedIn, etc., but also some other social software • Gather and chat with friends over dinner.
Age range 40-60	Educational background Uneducated	Attitude towards family "I live with my family and not together" "If my family needs me, I will be willing to contribute." "My children are grown up and have their own families, so they don't need me that much."	Ideal retirement model "In a Chinese environment, I can hang out with friends more, have work to do, and have a variety of activities."
	Motives for coming to the Netherlands Come to join relatives To make money and make a living Forced by the birth policy	Attitude towards eating "I make food for my family to have dinner together on special holidays" "I usually eat very healthily, and when buying food, I always look at food ratings." "I like cooking by myself"	Care needs "If I can still be the caregiver and take care of my child, I have to choose but to go to a nursing home. It can be quite unbearable in my own home." "I really can't take care of myself. I have to choose but to go to a nursing home. It can be quite unbearable in my own home."
	Personal experience Came to the Netherlands and work as a cook or waiter in a Chinese restaurant	Help others "I'm willing to help anyone who needs help, if I can" "I would like to share my experiences and stories"	Community support "I don't think much about it, but the neighbors see me in the same building and communicate with each other very well." "I will go back to Chinese Brng on Tuesday to have dinner and sing with them there."
	Residence status Lives in his own house and volunteers in nearby communities	Life values "Just live my life and stay healthy" "Let everything take its course, just accept it"	Smart technology applications "I know how to use WeChat, watch short videos, etc." "I usually make a lot of phone calls." "I can learn it with a simple app, just if I don't use it often, I'll forget it."
	Type of jobs Physical strength	Attitude towards death "Let everything take its course, just accept it" "Death is inevitable, so enjoy the present."	Family ties "My children are also busy, so I will help if they need help." "If I need care in the future, my children will definitely come. If they are busy, I can go to a nursing home."
	Health status Unwell		Daily communication methods • Contact us WeChat and phone call • Be volunteers in nearby communities
Age range 60-80	Educational background Uneducated	Attitude towards family "Family members are scattered far and wide, everyone should mind their own business." "My son and daughter mainly speak English, which I can understand, so we don't have much communication."	Ideal retirement model "It would be great if I could stay at home and have Chinese-speaking caregivers take care of me. It would be even better if my children could come and visit from time to time."
	Motives for coming to the Netherlands Forced by forced movements Come to join relatives To make money and make a living	Attitude towards eating "I usually stay at home alone and don't eat much. I just eat whatever I want." "I go to the community activity center every Tuesday (Wednesday, to eat with my friends. Sometimes it's hard to cook alone."	Care needs "Of course I will live with Chinese elderly people. How can I communicate if I can't understand the words? I don't want to go to that nursing home when I get old." "The government will surely send you to a nursing home to take care of you."
	Personal experience They were forced to go to Hong Kong due to political reasons in their early years, and then went to the Netherlands through marriage or came to the Netherlands to live with relatives.	Help others "It's in good health now, but I probably won't be able to help others in the future." "I don't feel comfortable when others help me. I like, but I may need help from others."	Community support "There are no other community activities here. They were organized in the past, but now the subsidies are gone and there are no more activities." "I come to the Chinese Brng Community Center every Tuesday and go to the library and the library together."
	Residence status Leave the house to their children and live in an apartment for the elderly.	Life values "Live one day at a time, enjoy the moment"	Smart technology applications "I don't understand how to use my mobile phone." "I only know how to answer the phone and I prefer if I could use my mobile phone."
	Type of jobs Physical strength	Attitude towards death "Every day I live in comfort. At my age, I could die at any time." "I want to live with dignity, if I am completely unable to take care of myself or become paralyzed, I would rather euthanize."	Family ties "My children are also very busy. They definitely don't have time to take care of me. They love to visit and take care of their own children." "We rarely get together, I will live by myself."
	Health status Unwell		Daily communication methods • Contact with friends and phone calls (only answers) • Office community party

Figure 3.6. A comparison chart summarizing the differences between the three generations of Chinese nederlanders (made by the author)

Classification reference: Mérove Gijbbers, Willem Huijck, Ria Vogels (2009) Chinese nederlanders - SCP repository.[22]

Persona 1

A 70-year-old woman from Hong Kong living alone in the Dan Haag



The elderly woman, when she was young, traveled to Hong Kong where she met her husband, who runs a restaurant in the Netherlands. She has been living alone since her husband passed away fifteen years ago. One of her two children stayed in the Netherlands, and the other went to Hong Kong. They rarely meet each other, mostly staying in contact via phone.

Currently, her main activities involve singing and dancing at the community activity center with her friends, but during winter, she rarely ventures out due to the weather. She usually spends her time watching TV and occasionally goes to the market to buy groceries. However, due to her age, she sometimes forgets how to speak Dutch. In such cases, she communicates with the Dutch in the Wenzhou dialect at the market.

She mainly cooks at home, seldom trying Dutch food, and sometimes has dinner and chats with friends at the community activity center every Tuesday and Wednesday.



Figure 3.7. Interviewee portrait (AI-generated)

Quotes

"I finally feel comfortable with care in my own language"

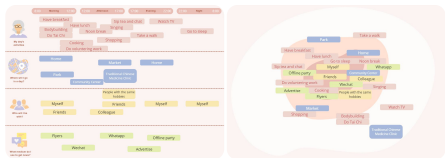
"After years of living in the Netherlands, I finally felt at ease when I received this care. My heart was filled with joy when I could finally communicate with the caregivers in my native language. I am very grateful to them for the care and attention they provide to me and would recommend this service to anyone looking for quality and trusted care in their native language."

- Due to physical limitations and lack of support, she seldom ventures far from home and typically confines herself to her immediate surroundings.
- As she has grown older and battles forgetfulness, the Dutch language she once mastered in her youth has slipped from her grasp, leading her to predominantly interact with fellow Chinese individuals.

Despite currently enjoying good health and self-sufficiency, she harbors a deep-seated fear of the inevitable day when she may no longer be able to care for herself. Aware that her children are unable to provide for her and lacking any other local relatives or close friends, she grapples with uncertainty. She shares a similar age with her peers, and reaching out to caregivers in the Netherlands seems daunting; even if she manages to do so, the language barrier impedes communication, making trust in caregivers an additional challenge.

Persona 2

A 55-year-old experienced volunteer cook woman divorced with two kids



After divorcing her husband two decades ago, she relocated with her two children to the Netherlands to work in a Chinese restaurant, where they made their living. Now that her children have grown and established lives in various European countries, she has chosen to reside independently in the Netherlands.

Devoting her time as a volunteer at the community activity center, she assists with cooking during downtime and lends a hand at local restaurants on weekends as needed.

Maintaining a strong focus on healthcare, she starts each morning with Tai Chi exercises in a nearby park and meticulously attends to balanced nutrition, resulting in excellent health.

While she and her family regularly communicate through WhatsApp group chats, they seldom gather in person unless it's for significant occasions or holidays.



Figure 3.8. Interviewee portrait (AI-generated)

Quotes

"It is unrealistic to ask my children to take care of me"

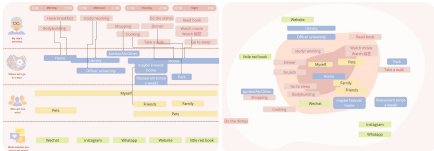
"I saw on the mobile phone (short video) that there are elderly people who live together as neighbors, and each person has a separate room. If he has any problem, other elderly can help him, so he does not have to be sent to a nursing home. That way it's fine for me."

"Women generally have a longer lifespan."

- She derives deep satisfaction from assisting others, wholeheartedly dedicating herself to their needs and finding fulfillment in the act itself, without seeking any form of reciprocation.
- Even in retirement, her passion for engagement remains undiminished. Rejecting the notion of idleness, she actively seeks purpose in her daily routine, eager to contribute in any way possible.
- Though her fluency in Dutch and English may be limited, she comfortably communicates on a basic level in both languages. With some of Dutch acquaintances, she eagerly embraces social interactions, finding joy in connecting with others and engaging in meaningful conversations.

Persona 3

A 25-year-old woman Design graduate living in the Netherlands with pet



Having resided in the Netherlands for two years to pursue her studies, she furthered her experience through an internship at a Dutch company. Enamored by the work-life balance ethos prevalent in the country, she made the deliberate choice to remain in the Netherlands for her ongoing professional development. Despite lacking proficiency in Dutch, she sought out roles where English served as the primary means of communication.

Preferring solitude, she currently harbors no inclination to seek out a romantic partner. However, should feelings of loneliness ever arise, she entertains the idea of cat companion into her life.

While she doesn't derive pleasure from cooking and dishwashing, fully embracing the Dutch diet remains a challenge. Nevertheless, daily culinary efforts serve as a necessary compromise for survival. Typically, she usually chooses to have breakfast and lunch together, and eat casually at night. Each dinner gathering with her Chinese friends serves as an opportunity for her to improve her food.



Figure 3.9. Interviewee portrait (AI-generated)

Quotes

"Once I learn Dutch, many problems will no longer be a problem."

"I hope there is some management to ensure that I don't die at home and no one knows about it, but they will not interfere too much in my life."

"There are some regular inspections or regular inquiries. I think it is a dual need both psychologically and physically."

- She aspires to foster deeper connections with older Chinese women in her community, believing that such relationships can help navigate life's complexities more efficiently.
- Growing up in a predominantly Chinese environment, she feels a profound disconnect from Dutch culture and society. Nonetheless, she strives to find common ground while respecting differences, yearning to forge meaningful connections with others in the Netherlands. As an immigrant, she dreads the thought of facing her twilight years alone and seeks solace in social bonds.

Her vision of an ideal retirement encompasses a balance between independence and security. While she values her autonomy, she also appreciates having a support system in place for when assistance is needed, without undue intrusion into her personal affairs.

3.5.2. Evolution of social touchpoints

Through meticulous desktop research and comprehensive analysis of a diverse array of interviews, the author has discerned significant transformations and recurring patterns in the social experiences of single women across three delineated age cohorts. This investigation reveals a discernible trajectory of development and continuity of touchpoints among single women across distinct age groups.

Noteworthy is the evolution and expansion of certain activities within these age brackets, fostering the organic formation of social circles. Concurrently, a subset of activities demonstrates resilience across age groups, while others are unique to specific stages of life. This nuanced understanding underscores the dynamic interplay between social dynamics and age-related experiences among single women.

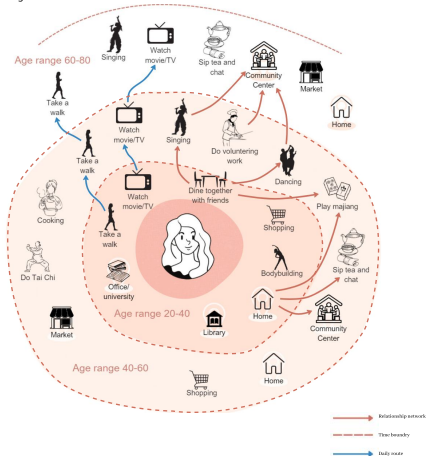


Figure 3.10. Evolution of social touchpoints among single Dutch-Chinese women elderly (made by the author)

Persona Storyboard 1



- When she was young, traveled to Hong Kong where she met her husband, who runs a restaurant in the Netherlands.



- After they got married, she chose to follow her husband to live in the Netherlands



- Her main activities are singing and dancing at the community activity center with her friends



- She has dinner and chats with friends at the community activity center every Tuesday and Wednesday.



- As she got older, she struggled with forgetfulness and socialized mostly with Chinese friends.



- She has been living alone since her husband passed away fifteen years ago.
- One of her two children stayed in the Netherlands, and the other went to Hong Kong.
- She rarely meet her children, mostly staying in contact via phone.



- But during winter, she rarely goes out due to the weather.
- She usually spends her time watching TV and occasionally goes to the market to buy groceries.



- She mainly cooks at home, seldom trying Dutch food.



- Due to her age, she sometimes forgets how to speak Dutch. In such cases, she communicates with the Dutch in the Wenzhou dialect at the market.



- Because of the language barrier, she could not fully trust the nursing staff and did not feel a sense of belonging in the nursing home.



- Although she is currently healthy and able to care for herself, she feels fear and the unknown that one day she may not be able to care for herself.
- She realizes that her children cannot provide for her in old age, and she has no other local relatives or close friends, and she faces the uncertainty of old age.

Figure 3.11. Persona Storyboard for the 60-80 age group (AI-generated images)

Persona Storyboard 2



- After divorcing her husband twenty years ago, she moved to the Netherlands with her two children and worked in a Chinese restaurant.



- She volunteers at the community center, assists with cooking in her free time, and helps out at restaurants on weekends as needed.

- She pays great attention to her physical health, practicing Tai Chi every morning in a nearby park and paying careful attention to balanced nutrition to achieve good health.



- She gets satisfaction from helping others, and she doesn't ask for anything in return, because she believes that one day the kindness will come back to her in other ways.

- Although her fluency in Dutch and English may be limited, she can communicate at a basic level in both languages.



- Along with some Dutch friends, she loves socializing and finds pleasure in interacting with others.



- After her children grew up and settled in various European countries, she chose to live alone in the Netherlands.



- Although she and her family communicate frequently via WhatsApp, they rarely get together unless there are important holidays.



Figure 3.12. Persona Storyboard for the 40-60 age group (AI-generated images)

Persona Storyboard 3



- She lived in the Netherlands for two years and further gained experience through an internship at a Dutch company.



- She prefers to be alone and has no current plans to find a boyfriend.
- If feelings of loneliness arise, she will consider cats as her companions.



- Every dinner party with Chinese friends is an opportunity for her to improve her food.



- She longs for a deeper connection with Chinese women in the Netherlands and believes that learning from their experiences can help her cope more effectively with the complexities of life.



- While she valued her independence, she also desired a support system that would be there when she needed help but not be too involved in her life.



- Her vision of an ideal retirement includes a balance between independence and security.

- Although she was not yet proficient in Dutch, she found a position where English was her primary mode of communication.

- She doesn't get pleasure from cooking and washing dishes, but eating a fully Dutch diet is still a challenge for her.

- She grew up in a Chinese environment and felt a deep disconnect with Dutch culture and society.



- Attracted by the Dutch ethos of work-life balance, she chose to stay in the Netherlands for continued career development.



- Normally, she would eat breakfast and lunch together and eat whatever she wanted in the evening.



- Nonetheless, she strives to find common ground while respecting differences, longing for meaningful connections with others in the Netherlands.
- As an immigrant, she fears facing old age alone and finds comfort in social relationships.



Figure 3.13. Persona Storyboard for the 20-40 age group (AI-generated images)



Figure 3.14. Needs & Contributions of three age groups (made by the author)

3.6. Discussion

In this part of the research, the author delved into the lives of Chinese single women living in the Netherlands across three distinct age groups: 20 to 40, 40 to 60, and 60 to 80. Through empathetic engagement and comprehensive analysis, the author aimed to understand their unique experiences, social touchpoints, and the contributions they make to their communities. By developing typical user portraits and storyboards, the author highlighted the distinct contributions and needs of each group (as shown in Figure 3.14)

3.7. Conclusion

Through the above research, the author concluded that dinner is an important social contact point for Dutch Chinese women across all three age groups. Despite each group having different interests and social habits, dinner socializing is a crucial activity for these women, enabling them to quickly establish emotional connections. This contact point serves as the foundation for subsequent social interactions.

As shown in the left figure, the contributions and needs of Dutch Chinese women across these age groups partially overlap. For instance, women aged 40-60 excel at organizing activities, those aged 20-40 are adept at providing innovative suggestions and new technology support, and those aged 60-80 are well-suited for sharing professional experience and guidance. Their needs for social network building, skills development, and mental health support can also be addressed within this framework. In summary, although Dutch Chinese women of these three age groups have diverse experiences, educational backgrounds, and industries, they share common touchpoints and needs. Strategic planning can effectively promote intergenerational communication and address the challenges faced by these three generations of Dutch Chinese women.



Chapter 4 Research synthesis

4.1. Review of research insights

4.1.1. Existing Dutch elderly care frameworks

First, through desktop research and a literature review of existing elderly care frameworks in the Netherlands, the author develops a framework (Figure 4.1) illustrating the roles played by stakeholders in four Dutch elderly care models: Informal Care (mantelzorg), Co-Housing (a complementary option in the care landscape), Formal Care Services, and Nursing Homes (verpleeghuizen).

Upon integrating these four elderly care frameworks, the author uncovers several interesting insights and challenges:

- Informal care (mantelzorg) and formal care services are substitutes, indicating that the elderly often choose one over the other.[43]
- The co-housing model can address some challenges associated with informal care (mantelzorg), such as:
 - Providing social connections and support from neighbors, which can mitigate social isolation among the elderly. [41]
 - Reducing public expenditure, thereby alleviating financial burdens. [41]
 - Partially relieving the physical and emotional strain on residents' adult children due to the intervention of community staff. [42]

However, some challenges persist, including:

- The disproportionate burden on women, who predominantly assume caregiving roles and dedicate more hours than men.[14]
- Co-housing may not fully address emotional loneliness, particularly for those who have lost a partner.[41]

4.1.2. Existing elderly care model for Dutch-Chinese elderly

Based on the author's user research and case study, which included interviews with six Dutch-Chinese elderly individuals aged 40-80, visits and observations at the Chinese elderly activity center De Chinese Brug in the Netherlands, and an interview with its director, the author concludes that the current elderly care model for Chinese elderly in the Netherlands is a little bit different from the general model (Figure 4.2 vs. Figure 4.1). The challenges faced by Dutch-Chinese elderly are more complex.

For Dutch-Chinese elderly who require informal care, their spouse is the primary caregiver. When the spouse passes away, their adult children are often too busy with work to provide care. Two elderly interviewees, aged 70-80, mentioned that their children primarily speak Dutch and have difficulty communicating with them, leading to low expectations for their children's involvement in their care. Due to a lack of understanding of the support system in the Netherlands, none of the elderly interviewed have sought caregivers, even though they are aware of such services.

For those requiring formal care, they typically visit hospitals only when seriously ill, preferring Chinese medicine clinics for minor ailments. When they can no longer care for themselves, they reluctantly move to nursing homes. Many expressed feelings of depression in nursing homes due to language barriers and a preference for living in a familiar language environment. Some who can speak Dutch and accept nursing homes still worry about future language difficulties, such as forgetting Dutch if they develop Alzheimer's disease.

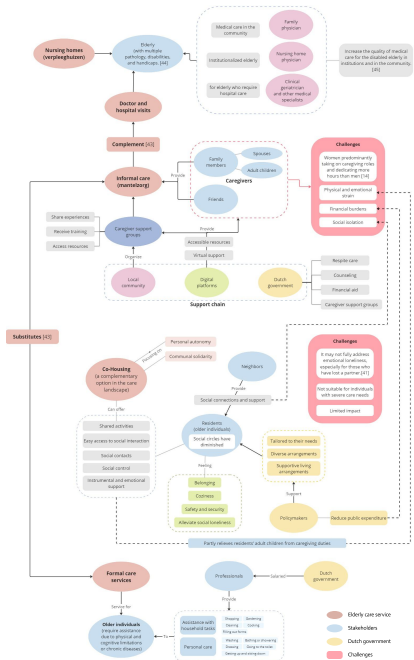


Figure 4.1. Existing Dutch elderly care frameworks (made by the author)

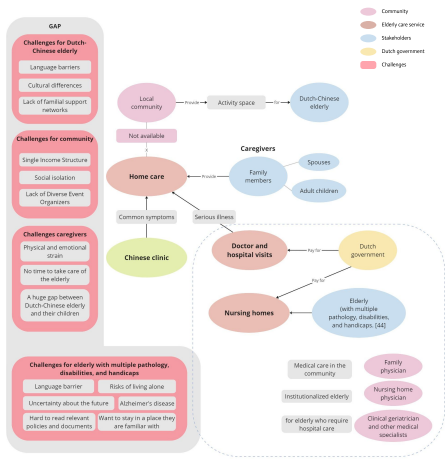


Figure 4.2. Existing Dutch elderly care framework for Dutch Chinese elderly (made by the author)

Regarding the Chinese community in the Netherlands, the interview with the head of De Chinese Brug and observations made while volunteering revealed that the community relies heavily on government subsidies and private investment. With a single income stream, there are insufficient funds for activities. Most activities are organized and run by elderly volunteers and are largely disconnected from Dutch society, serving primarily as self-entertainment for the Chinese elderly.

In addition, the author observed that women were much more active in the community than men during the interview process. In the knowledge lectures and singing activities, there were about 18 women and only one man. During the lunch activities, men hardly participated in the topic discussion and left after eating. Women also showed a higher tolerance for topics and were willing to actively communicate with researchers and answer questions positively. Male respondents often chose to avoid questions or only talk about topics that interested them.

4.2. Problem definition

Based on the contextual research on the Dutch elderly care framework and the current situation of Dutch-Chinese elderly care, the author found that Dutch-Chinese single women require special attention. Combining the findings from Chapter 3, it is evident that three generations of Dutch-Chinese single women have different concerns regarding elderly care, and there is a noticeable generational shift in these concerns over the past 20-40 years.



For the 20-40 age group



For the 40-60 age group



For the 60-80 age group

Social Isolation

They lack of family support and community networks which often leads to loneliness and social isolation.

Economic Uncertainty

They often face financial instability due to early career stages, potential educational debt, and the cost of living.

Work-Life Balance

Balancing work, personal life, and potential caregiving responsibilities can be challenging for them.

Midlife Health Concerns

They may begin to experience health issues that can complicate their ability to care for themselves.

Caregiving Burden

They are the primary caregivers for both their children and aging parents. This dual burden can lead to significant physical, emotional, and financial strain.

Financial Planning for Retirement

They may find themselves unprepared due to insufficient savings, investments, or knowledge about pension schemes.

Culturally Appropriate Care

There is limited availability of care services that are sensitive to cultural needs and preferences.

Limited Support

Decreased government subsidies and a reduction in the number of activity centers for overseas Chinese limit the range of activities and engagement levels for the elderly, creating a cycle of disengagement.

Health and Mobility Issues

Physical and cognitive health issues become more prevalent, they requiring more comprehensive healthcare and support services.

Language and Alzheimer's

Some of them will suffer from Alzheimer's disease and forget Dutch or English, only remembering their mother tongue.

Generational Shifts trend within 20-40 years

Tech-Savviness

Future generations will be more familiar with and open to utilizing digital technologies for their healthcare and daily needs.

Personalized Services

There will be an increasing demand for care services that are personalized and culturally sensitive, recognizing the diverse backgrounds of elderly individuals.

Unsustainable Business Models for community center



Chinese elderly activity centers heavily rely on government subsidies, making their development unsustainable. The high stakeholder concentration within the community hinders the establishment of broader connections.

Figure 4.3. Needs and generational transition trends of Dutch Chinese single elderly women (made by the author)

4.2.1 A tragic story of a single Dutch Chinese elderly women



Scene 1: An elderly woman collapses suddenly at home, clutching her chest in pain.



Scene 2: An ambulance arrives, and she is carefully loaded, surrounded by medical staff.



Scene 3: The old woman sits alone at the Nursing Home. She revisits cherished memories, surrounded by family and friends.



Scene 4: Friends who care about her come to the nursing home and ask about her condition.



Scene 5: She insists on going home, and her friends send her back to familiar surroundings. She sat in her favorite chair, lost in the past.



Scene 6: Her favorite chair is empty, as the sunlight pouring in through the window shines softly

Figure 4.4. A tragic story of a single Dutch Chinese elderly women (Drawing by the author)

4.5. Design strategy

Designing future elderly care for Dutch Chinese single women requires a thorough approach that considers changing demographic trends, cultural sensitivities, technological advances, and policy frameworks. Based on research into the Dutch elderly care model and in-depth analysis of Dutch Chinese single women across various age groups, several crucial strategies can be identified to ensure effective and inclusive care over the next 20 to 40 years.

4.3.1. Cultural Sensitivity and Inclusion

It is imperative to recognize and honor the diverse cultural backgrounds and specific needs of older women with immigrant backgrounds.

- Developing culturally appropriate care plans that integrate traditions, languages, and community values not only respects cultural diversity but also enhances comfort and engagement among elderly Dutch Chinese women [28]. This fosters a sense of belonging and trust between caregivers and recipients of care, essential for effective support. [29]

- Tailoring care plans to the unique needs and preferences of Dutch Chinese single women involves understanding their cultural norms, family dynamics, and traditional practices related to aging and healthcare. [30] This personalized approach ensures that care interventions are meaningful and relevant, improving overall satisfaction and outcomes in elderly care.

- To facilitate better communication, many elderly Dutch Chinese women prefer to communicate in their native language or dialect. Providing language-appropriate resources, interpreters, and multilingual staff members can significantly enhance communication and understanding, leading to improved care delivery and outcomes [31].

These approaches not only improve health outcomes but also promote dignity, autonomy, and a sense of belonging among this demographic, ensuring they receive the care and support they deserve as they age.

4.3.2. Community-Based Online Support Networks

Given the preference for aging in place, [32] there is a rising demand for technologies and services that enable older adults to maintain independence and comfort in their own homes for as long as possible.[6] Cultivating robust online community networks and support systems will be essential to meet the future needs of single older women. This includes promoting intergenerational activities, establishing online community, and organizing social events to foster connections and combat social isolation.[33]

4.3.3. Future Technology-Driven Solutions

Embracing advancements in technology-enabled care (TEC), such as telemedicine, remote monitoring, and smart home technologies, holds immense potential to enhance healthcare accessibility, safety, and support for independent living.[34]

- Telemedicine: Utilizing telemedicine allows healthcare providers to remotely deliver medical services, consultations, and monitoring. [35] This technology enables elderly Dutch Chinese women to access healthcare professionals without the need for frequent visits to medical facilities, thereby improving convenience and reducing barriers to timely care.[36]

- Remote Monitoring: Implementing remote monitoring systems enables continuous tracking of vital signs, chronic conditions, and overall health status from a distance. [37] This real-time data transmission enhances proactive healthcare management by enabling early detection of health issues and timely interventions, thus preventing complications and improving health outcomes, with potential for future advancements in contactless monitoring.[38]

- Smart Home Technologies: Integrating smart home technologies, such as sensors, automated alerts, and voice-controlled devices, creates an environment that supports independent living for elderly individuals. [39] These technologies can assist with daily tasks, monitor safety, and provide assistance in emergencies, promoting autonomy and peace of mind for elderly Dutch Chinese women and their caregivers. [40]

4.3.4. Business and Collaboration

Investing in research initiatives focused on understanding the evolving needs and preferences of older women with immigrant backgrounds is critical. Collaborating with stakeholders including Chinese community organizations, healthcare providers, policymakers, and businesses will facilitate the co-creation of sustainable care solutions and business models.

4.4. Design direction

Based on the above research synthesis, the design direction is derived:

Develop a resilient, inclusive, and forward-looking elderly care system for Dutch-Chinese single women within 20-40 years. Focus on culturally tailored care plans, intergenerational collaboration, telemedicine, smart home technology, and business partnerships to ensure comprehensive support while maintaining cultural identity and connections.

4.5. Design vision

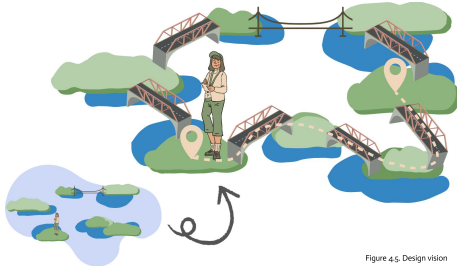


Figure 4.5. Design vision

Dutch Chinese of different generations living in the Netherlands have their own social circles and comfort zones, much like small islands floating in Dutch society, where they live peaceful lives. However, when they need help from the outside world, they find that the seemingly close distance between these islands is unreachable.

Thus, the design vision was proposed as:

“Build bridges for Dutch Chinese single women of different generations, enabling them to explore more possibilities for future elderly care.”

This bridge aims to connect their isolated social circles, providing accessible pathways to external support and resources. It encourages them to step out of their comfort zones and discover diverse elderly care options. With this connection, they can feel supported and empowered to proactively engage with available services, ensuring their well-being and enhancing their quality of life.

4.6. Design requirements

Based on the needs and generational transition trends of Dutch Chinese single elderly women as depicted in Figure 4.2, the following design requirements are identified for effective implementation:

1) Developing Culturally Appropriate Care Plans

- Care plans should integrate cultural traditions, languages, and community values to enhance comfort and engagement.
- Plans should be flexible to accommodate cultural preferences in diet, activities, and social interactions.
- Ensure that caregivers are trained in culturally competent care delivery to build trust and rapport with elderly Dutch Chinese women.

2) Tailoring Care Plans

- Customize care plans based on individual needs, preferences, and health conditions of elderly Dutch Chinese women.
- Conduct comprehensive assessments to understand cultural norms, family dynamics, and traditional practices related to aging and healthcare.
- Regularly update care plans based on feedback and changes in health status.

3) Providing Language-Appropriate Resources

- Offer multilingual support through interpreters and staff fluent in Chinese dialects.
- Translate essential documents, instructions, and educational materials into both Dutch and Chinese.
- Ensure clarity and accuracy in language translation to facilitate effective communication and understanding.

4) Telemedicine

- Establish platforms for remote consultations, diagnostics, and treatment planning.
- Ensure secure and reliable video conferencing capabilities for virtual healthcare visits.
- Provide training and support for elderly Dutch Chinese women and caregivers in using telemedicine platforms effectively.

5) Remote Monitoring

- Implement systems for continuous tracking of vital signs, chronic conditions, and overall health status.
- Ensure real-time data transmission to healthcare providers for proactive management.
- Design user-friendly interfaces for elderly Dutch Chinese women to interact with monitoring devices comfortably.

6) Smart Home Technologies

- Integrate sensors for monitoring daily activities, safety, and environmental conditions.
- Develop automated alert systems for emergencies to enhance safety and peace of mind.
- Enable voice-controlled devices for ease of use and accessibility for elderly users.

7) Business and Collaboration

- Conduct research to understand evolving needs and preferences of elderly Dutch Chinese women.
- Foster collaborations with Chinese community organizations, healthcare providers, policymakers, and businesses.
- Co-create sustainable care solutions and business models that address cultural sensitivities and technological advancements.

These design requirements aim to address the unique needs of elderly Dutch Chinese women by leveraging technological innovations, cultural sensitivity, collaboration, and personalized care approaches. They are essential for ensuring effective and inclusive care over the next decades.



Chapter 5 Design development

5.1. Ideation

5.1.1. Brainstorming

Based on the findings from previous research, the author conducted a brainstorming session to generate ideas. Considering the diverse stakeholders involved, strategies were formulated based on the primary needs of Dutch Chinese single elderly women. These strategies were aligned with anticipated future technology trends, evolving business models, and various stakeholders within the supply chain. Following the brainstorming session, Figure 5.1 outlines the criteria for selecting strategies.



Figure 5.1. Brainstorming of strategies (made by the author)

5.1.2. Criteria of Strategy Selection

MUST-HAVE (first priority)

- The strategy must effectively address the core needs and challenges faced by Dutch Chinese single women, such as access to healthcare, community integration, and emotional support.
- It should align with the cultural values and preferences of the Dutch Chinese community, respecting their traditions and promoting inclusivity.
- The strategy should be sustainable in terms of financial viability, resource availability, and long-term impact on the community.

SHOULD-HAVE (second priority)

- The strategy should have the potential to scale up or adapt to accommodate a larger number of participants or broader geographic areas within the community.
- There should be clear metrics to measure the success and impact of the strategy, such as improved well-being indicators or increased community participation.

COULD-HAVE (third priority)

- Strategies that incorporate innovative approaches or technologies to enhance service delivery or engagement within the community.
- Include opportunities for education and skill-building among participants, such as workshops or training sessions on relevant topics.
- Strategies that allow for flexibility in implementation, allowing adjustments based on feedback and changing community needs over time.

5.2. Strategy Proposal

Elderly Care Planning Guides

Implement early intervention programs by being proactive measures to prepare for elderly care needs before they become critical. Reduce stress and uncertainty about their future for Dutch-Chinese single women as they age. Develop and distribute comprehensive guides on elderly care planning, available in both Dutch and Chinese, corresponding to the life processes, needs, and key contacts.



Values

- Long-term Resilience
- Supplement Knowledge & Information
- Availability in Both Dutch and Chinese
- Key Contacts for Follow-up
- Step-by-Step Processes
- Concise and Informative Flyers

Support chain



Encourage Dutch Chinese single women Participation in Community Care Planning

Empower Dutch Chinese single women in the decision-making process to care services and community programs. Encourage them to take an active role in shaping their care environment. Research indicates that women in Dutch families often play a central role in decision-making, including long-term care decisions for their loved ones (20). However, when their partners pass away, these women often feel disempowered without a companion. Additionally, the existing cultural and social traditions, their emotional dependence (21) on a spouse might Dutch Chinese women by limiting them in the decision-making process for care services and community programs, thereby reducing their coping burden, alleviating anxiety about the future, and enhancing emotional resilience.



Values

- Tailored Services
- Enhanced Engagement
- Addressing Loneliness
- Sustainable Solutions
- Cultural Sensitivity
- Empowerment and Advocacy

Support chain



Elderly Care Community Support Platform

Use digital platforms to connect Dutch Chinese single women with office care services, community events, and social clubs, enhancing communication and accessibility to support networks. By implementing these initiatives, the aim is to create a supportive environment that empowers Dutch Chinese single women to access necessary care services, engage in community activities, and build meaningful connections with each other.



Values

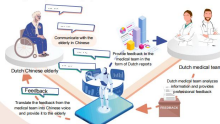
- Enhanced Participation
- Improved Communication
- Increased Social Interaction
- Convenience and Flexibility
- Broader Reach

Support chain



Smart Health Care Assistant Develop Tailored Health Care Plans

With the development of artificial intelligence, intelligent assistants play a key role in developing personalized care plans for single Dutch Chinese women, using advanced artificial intelligence capabilities to coordinate medical services, fill information gaps, and improve effective communication and decision-making processes. This approach can not only improve the quality of care, but also improve patient satisfaction and health outcomes by ensuring that care plans can seamlessly adapt to cultural differences and individual needs.



Values

- Personalization and Precision
- Enriching Information Gaps
- Enhanced Communication
- Continuous Adaptation
- Building a culturally sensitive information database

Support chain



5.2. Strategy Proposal

Facilitate Digital Storytelling

Create storage platforms to document and share the life stories and experiences of older Dutch-Chinese adults through digital platforms or oral history projects. This initiative not only preserves cultural heritage and personal memories but also fosters intergenerational connections between generations within the Dutch-Chinese community. It serves as a platform for education, empowerment, and the collection of diverse experiences and histories.



Values

- Preservation of Personal Histories
- Strengthened Family Connections
- Educational Value
- Cultural Identity
- Long-term Impact
- Technological Advancement

Support chain



Smart Home Care Assistant

A smart home care assistant enhances the quality of elderly care and convenience for individuals who require assistance at home. This assistant integrates various smart devices and AI to monitor, manage, and respond to the needs of residents efficiently, offering personalized support and ensuring quality of life for individuals in need of care. By leveraging smart technology and artificial intelligence, it transforms traditional caregiving into a more efficient, responsive, and supportive experience.



Values

- Enhanced Monitoring and Safety
- Improved Medication Management
- Enhanced Daily Living Support
- Remote Monitoring and Communication
- Personalized Medication Management
- Personalization and Adaptation

Support chain



Peer Support Groups

Form peer support groups where Dutch-Chinese single women can share their experiences and offer mutual support. This initiative aims to alleviate feelings of isolation and foster a sense of community. By implementing these strategies, peer support groups for Dutch-Chinese single women can effectively address isolation, foster community, and provide comprehensive emotional and practical support.



Values

- Alleviation of Isolation
- Emotional and Practical Support
- Targeted Discussions
- Mentoring and Guidance
- Sustained Engagement

Support chain



Intergenerational Support

Develop projects that encourage interaction between the younger and older generations of the Chinese community in the Netherlands. Strengthen community ties and enhance mutual support by implementing these strategies. Intergenerational support within the Dutch-Chinese community can be effectively promoted, leading to stronger community ties, mutual understanding, and the preservation of cultural heritage.



Values

- Strengthened Intergenerational Bonds
- Enhanced Support Networks
- Lifelong Learning
- Cultural Preservation
- Personal Histories

Support chain



5.2.1. Detail comparison

Smart Health Care Assistant Develop Tailored Health Care Plans



Focus

Personalized medicine: mainly targeting single Chinese women in the Netherlands, using advanced artificial intelligence technology to develop personalized medical plans.

Data integration and communication: using multiple data sources (such as electronic health records, wearable devices and patient reports) to fill information gaps and ensure effective communication between patients and medical teams.

Cultural sensitivity: designing care plans that can adapt to cultural differences and individual needs, providing Chinese communication, and feedback to the medical team in the form of Dutch reports.

Details

Data-driven: using big data and analytical tools to extract valuable information from various health data for optimizing treatment plans.

Preventive care: by identifying potential health problems early, providing active management solutions to prevent the condition from worsening.

Bilingual communication: communicating with the elderly in Chinese, and translating the professional feedback of the medical team into Chinese voice to provide to the elderly.

VS Smart Home Care Assistant



Focus

Home care support: Provide care and convenience services in the home environment, especially for the elderly who need help at home.

Safety management: Monitor safety risks in the home environment, such as smoke, water leaks and intrusions, and automatically alarm in abnormal situations to ensure timely intervention.

Emergency response: One-click call to emergency contacts or medical services, automatically send location information and health data to ensure rapid response.

Personalized reminders: Provide personalized reminders on medication, exercise and diet based on work and rest schedules and health needs. Voice assistant is always available to provide help and answer questions.

Health monitoring: Real-time monitoring of health indicators such as heart rate, blood pressure and activity.

Details

Health data: Real-time collection and analysis of health data, providing detailed health status reports.

Emergency handling: Provide one-click emergency call function, and automatically notify emergency contacts and medical services to ensure timely rescue.

Daily support: Provide daily life support through voice assistant, such as reminders to take medicine, plan exercise, and recommend diet.

Peer Support Groups



Focus

Relieve isolation: Establish peer support groups to allow single Chinese women in the Netherlands who are in the same age range to share their similar experiences and build a sense of connection.

Build a sense of community: Promote close connections between members and build a community of mutual support.

Details

Regular meetings: Organize group meetings regularly to provide members with a fixed communication platform.

Topic discussions: Set up discussions on specific topics to allow members to share and explore solutions to specific problems.

Emotional and practical support: Provide emotional support, such as listening and encouragement, as well as practical support, such as providing resources and advice.

Peer mentoring: Encourage experienced members to mentor new members and provide a learning mechanism for mutual help.

VS Intergenerational Support



Focus

Strengthening intergenerational connections: Enhancing community diversity and activity by promoting interaction between different generations in the Chinese community in the Netherlands.

Promoting mutual support: Encouraging communication and support between young and old, promoting each other and growing together.

Details

Community project cooperation: Organizing community projects to promote the participation of different generations, enhance understanding and cooperation, and explore more opportunities.

Mentoring projects: Implementing mentoring projects to allow the younger generation to learn from the experience of the older generation and provide technical and modern knowledge support to the elderly.

Intergenerational learning opportunities: Providing opportunities for intergenerational learning, such as participating in cultural activities or skills training together, to promote cultural inheritance and knowledge exchange.

Intergenerational dialogue: Encouraging dialogue between young and old to enhance mutual understanding and communication.

5.2.2. Values ranking

Based on previous research findings and viewpoints, the author has developed eight strategies for designers, each associated with five to six values. The author has ranked these values according to feedback from single Dutch-Chinese women across three age groups (20-40, 40-60, and 60-80 years) and organization managers. The ranking reflects the importance placed on each value by these different demographics and the managers.

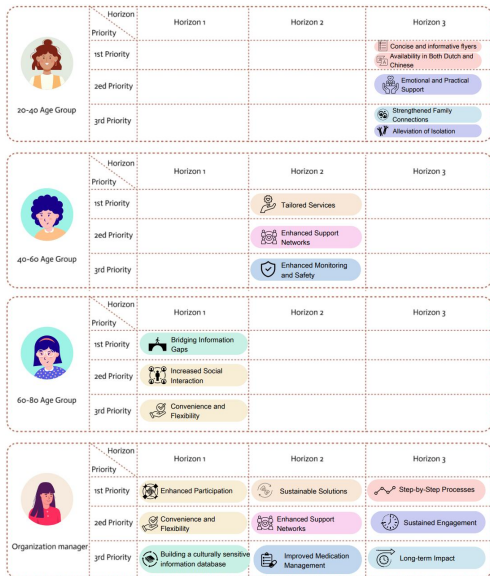


Figure 5.2: Values ranking

5.3. Strategies Synthesis

System roadmapping

"When implementing your vision, you put your trust in the fact that having the right people on board will give you the best possible outcome for the future." [46]

5.3.1. Three horizons model

The Three Horizons model, particularly beneficial in parallel storytelling, is a futures technique that involves three concurrent scenarios based on distinct life cycles of strategic business innovation. These life cycles overlap, facilitating continuous long-term innovation, as illustrated in figure 5.2.

Each life cycle conceptualizes new business development in the following ways:

- Horizon 1: focuses on current businesses, existing markets, and current technologies. The main goal here is to enhance design value.
- Horizon 2: serves as the intermediary, bridging the gap between the present and the future. This stage involves new user value segmentation or testing entirely new technological applications in existing markets.
- Horizon 3: envisions new value propositions within entirely new markets and employs new technologies.

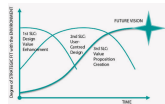


Figure 5.2: Strategic Life Cycles model of Three Horizons (Somnise, 2024))

These strategic cycles aim to ensure a smooth transition from one phase to another, maintaining business continuity and turnover. Effective management of these transitions is crucial for sustaining ongoing innovation.

Time pacing is an essential strategy within this model, determining the design clock for various types of innovation in each horizon. According to "Design Roadmapping," the time frames are as follows:

- Model year change: 1 year
- New platform generation: 3 years
- Radical innovation: 10-12 years [46].

In the context of this project, the three horizons are set for the years 2025, 2045, and 2065, respectively.

5.5.2. Alignment with the Future Vision

On the way to the final future vision, three horizons are defined in the process. To guarantee the coherency between strategies and the future vision, all the elements should be considerably synthesized. As time goes by, different horizons will demonstrate different development priorities, and corresponding strategies will also be matched in the appropriate context.

Horizon 1: Multimedia Empowering Elderly Care Planning (2025)

This horizon focuses on empowering Dutch Chinese single women with the necessary tools and knowledge for proactive elderly care planning. By providing comprehensive guides, facilitating digital storytelling, and establishing peer support groups, this phase aims to reduce uncertainty and enhance community support, preserve cultural heritage, and foster a sense of community.



Figure 5.3: Horizon 1

Horizon 2: Enhanced Community Engagement and Smart Home Care (2045)

This horizon focuses on promoting active participation of Dutch Chinese single women in community care planning, implementing smart home care assistants, and fostering intergenerational support. These initiatives aim to empower individuals, enhance the quality of care, and strengthen community ties.



Figure 5.3: Horizon 2

Horizon 3: Tailored Health Care and Comprehensive Community Support (2065)

In the third horizon, advanced technologies and community-based innovations will transform elderly care by creating tailored health care plans and establishing a robust support platform. This approach will integrate smart health care assistants with comprehensive community support, ensuring personalized care and fostering a strong, united community.



Figure 5.4: Horizon 3

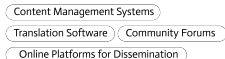
2025

Horizon 1: Multimedia Empowering Elderly Care Planning (2025)

This horizon focuses on empowering Dutch Chinese single women with the necessary tools and knowledge for proactive elderly care planning. By providing comprehensive guides, facilitating digital storytelling, and establishing peer support groups, this phase aims to reduce uncertainty and enhance community support, preserve cultural heritage, and foster a sense of community.



Technology Requirements



Support Chain



This horizon focuses on empowering Dutch Chinese single women with the necessary tools and knowledge for proactive elderly care planning. By providing comprehensive guides, facilitating digital storytelling, and establishing peer support groups, this phase aims to reduce uncertainty and enhance community support.

The strategies that could be positioned on this horizon are:

- Develop Comprehensive Guides: Detailed elderly care planning guides in Dutch and Chinese.
- Facilitate Digital Storytelling: Workshops and tools for recording and sharing life stories.
- Establish Peer Support Groups: Regular meetings, topic-specific discussions, and peer mentoring.

Among these strategies, the first three can be completely covered by existing technologies. For the strategy "Facilitate Digital Storytelling," digital platforms and social media are readily available, but continuous engagement and content updates will be essential.

On this horizon, actors that will play a role in the collaboration are elderly women aged between 60-80, community centers, healthcare agencies, digital platform developers, and volunteers to facilitate storytelling and peer support groups.

2045

Horizon 2: Enhanced Community Engagement and Smart Home Care (2045)

This horizon focuses on promoting active participation of Dutch Chinese single women in community care planning, implementing smart home care assistants, and fostering intergenerational support. These initiatives aim to empower individuals, enhance the quality of care, and strengthen community ties.



2 Participation in Community Care Planning

6 Smart Home Care Assistant

8 Intergenerational Support

Technology Requirements

(Safety Monitoring) (Online Collaboration Tools)
 (Real-Time Data Transmission) (Webinar Platforms)
 (Training and E-Learning Platforms)
 (Smart Home Devices)
 (Emergency Response Systems)

Support Chain

Community Leaders Event Coordinators
 Technicians Healthcare Providers
 Software Developers
 Educators Community Project Managers

This horizon focuses on promoting active participation of Dutch Chinese single women in community care planning, implementing smart home care assistants, and fostering intergenerational support. These initiatives aim to empower individuals, enhance the quality of care, and strengthen community ties.

The strategies that could be positioned on this horizon are:

- Encourage Dutch Chinese Single Women Participation in Community Care Planning: Organize workshops, encourage participation in health committees, and provide advocacy and leadership training for Dutch Chinese single women in community care planning.
- Smart Home Care Assistant: Install smart devices for home monitoring, implement emergency response systems, provide personalized reminders, and monitor health indicators in real-time.
- Intergenerational Support: Develop collaborative community projects, implement mentorship programs, create intergenerational learning opportunities, and facilitate cross-generational dialogues.

In 2045, innovative collaborations will be introduced into the community care service model, with community-based healthcare hubs established by mid-horizon. Patient groups and community workers will provide social support beyond the medical team.

The primary design strategy will be "Encourage Dutch Chinese Single Women Participation in Community Care Planning." Given the substantial time and cost of organizing and training, this will be ready by 2045. Other ongoing strategies will continue.

The strategy "Smart Home Care Assistant" will co-exist with community-based healthcare hubs in a hybrid model on this horizon, supplementing the limitations at the initial stage of the new model.

2065

Horizon 3: Tailored Health Care and Comprehensive Community Support (2065)

In the third horizon, advanced technologies and community-based innovations will transform elderly care by creating tailored health care plans and establishing a robust support platform. This approach will integrate smart health care assistants with comprehensive community support, ensuring personalized care and fostering a strong, united community.



1 Elderly Care Planning Guides

3 Elderly Care Community Support Platform

4 Smart Health Care Assistant Develop Tailored Health Care Plans

5 Facilitate Digital Storytelling

6 Smart Home Care Assistant

Technology Requirements

(Telehealth Platforms) (Health Data Integration)
 (Natural Language Processing (NLP))
 (AI and Machine Learning)
 (Virtual Consultation Tools)

Support Chain

AI Developers Healthcare Data Analysts
 Translators Voice Actors Volunteers
 Dutch medical team IT Support
 Software Developers Software Developers
 UI/UX Designers Chinese doctor Telemedicine
 Community Managers

In the third horizon, advanced technologies and community-based innovations will transform elderly care by creating tailored health care plans and establishing a robust support platform. This approach will integrate smart health care assistants with comprehensive community support, ensuring personalized care and fostering a strong, united community.

The strategies that could be positioned on this horizon are:

- Smart Health Care Assistant Develop Tailored Health Care Plans: Utilize AI for individualized health assessments, develop personalized care plans, adapt based on real-time data, communicate with patients in Chinese, and translate feedback from the medical team into Chinese voice messages.
- Elderly Care Community Support Platform: Create an online platform linking elderly residents to community resources, support groups, and services. Offer access to online consultations, educational materials, and health tools. Foster community engagement through virtual events and forums, and integrate smart home care systems for efficient monitoring. Promote collaboration among health professionals, community workers, and volunteers to deliver comprehensive support.

By 2065, the Dutch Chinese community will benefit from advanced technological innovations and a strong support network, creating a new era of personalized health care and community cohesion.

In 2065, advanced technologies and community support will seamlessly integrate to provide personalized elderly care for the Dutch Chinese community. AI-driven health plans and a centralized platform will ensure tailored and culturally sensitive care, fostering a united and resilient community through collaborative efforts of technology firms, health professionals, and community workers.



Chapter 6 Validation & Assessment

6.1. Evaluation Booklet

To further verify the value and usability of the solutions, an evaluation booklet is designed to collect data. Participants who have joined the interview sessions before are invited again to evaluate the strategies put forward in the previous chapter. Since the questions mentioned in the booklet involve the evaluation of the design quality, and the target audience of the final output of the project are designers who are interested in designing for the future teleconsultation experience, thereby, the evaluation process focuses more on participants with design backgrounds. As a result, five feedback questionnaires were returned. In the evaluation booklet, 8 strategy cards are presented separately together with an evaluation form (Figure 6.1) after the introduction page.

The evaluation dimensions include the following aspects:

- Value for improving single Dutch Chinese women situation (Q1)
- Future feasibility (Q2)
- Acceptance level of different age groups (Q3)
- Human-centered level (Q4)
- Design quality (Q5.1-5.6)

Evaluation Dimension	Score	
1. How valuable do you think this solution will be in improving the elderly care situation for single Dutch Chinese women?	<input type="radio"/> Not valuable <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> Very valuable	
2. To what extent is your willingness to experience this service/function?	<input type="radio"/> Not willing to <input type="radio"/> <input type="radio"/> <input type="radio"/> Very willing to	
3. To what extent do you think the solution is applicable in	2025	<input type="radio"/> Not applicable <input type="radio"/> <input type="radio"/> <input type="radio"/> Very applicable
	2045	<input type="radio"/> Not applicable <input type="radio"/> <input type="radio"/> <input type="radio"/> Very applicable
	2065	<input type="radio"/> Not applicable <input type="radio"/> <input type="radio"/> <input type="radio"/> Very applicable
4. To what extent do you think the solution is humanized/personalized?	<input type="radio"/> Very indifferent <input type="radio"/> <input type="radio"/> <input type="radio"/> Very humanizing	
	Unreliable / Reliable	<input type="radio"/> Very unreliable <input type="radio"/> <input type="radio"/> <input type="radio"/> Very reliable
	Unfriendly / Friendly	<input type="radio"/> Very unfriendly <input type="radio"/> <input type="radio"/> <input type="radio"/> Very friendly
	Uninvolved / Engaging	<input type="radio"/> Very uninvolved <input type="radio"/> <input type="radio"/> <input type="radio"/> Very engaging
	Worrying / Reassuring	<input type="radio"/> Very worrying <input type="radio"/> <input type="radio"/> <input type="radio"/> Very reassuring
	Overwhelming/ Simple	<input type="radio"/> Overwhelming <input type="radio"/> <input type="radio"/> <input type="radio"/> Very simple
5. To what extent do you think the solution is:	Uninformative/ Explanatory	<input type="radio"/> Uninformative <input type="radio"/> <input type="radio"/> <input type="radio"/> Explanatory

Figure 6.1 Strategy Evaluation Form

After participants complete the questionnaire, I will collect and analyze the feedback, analyze the feedback for each solution individually, and identify opportunities for improvement and iteration. At the same time, I will also evaluate the results from a global perspective to gain more macro user insights.

The evaluation booklet consists of an introduction page and eight strategy cards. The introduction page includes a 'Hi!' section with a welcome message and a 'Who are you?' section for personal information. The strategy cards are arranged in two columns. Each card features a diagram, a title, a brief description, and a table for evaluation. The evaluation tables have columns for 'Value for Improving Single Dutch Chinese Women Situation', 'Future Feasibility', 'Acceptance Level of Different Age Groups', 'Human-centered Level', and 'Design Quality'.

Figure 6.2 Evaluation Booklet

6.2. Result & Insights

The evaluation booklets were sent to 9 participants, and 5 of them sent feedback. Figure 6.3 provides an overview of the basic information of the participants in this stage.

Participants	Age	Gender	Living statement
1	20-40	Female	Single and living alone
2	20-40	Female	Single and living with pet
3	40-60	Female	Single and living with children
4	60-80	Female	Single and living alone
5	60-80	Female	Single and living with pet



Figure 6.3 Participants Overview

Figure 6.5 presents the combined evaluation results from the participants, showing the average scores for each strategy and each evaluation dimension. Strategies 3, 4, 6, 7, and 8 received generally high scores, ranging from 5.5 to 6.0. Specifically, Strategy 7 is positioned in the first horizon of the initial roadmap, while Strategies 6 and 8 are in the second horizon, and Strategies 3 and 4 are in the third horizon. In contrast, Strategies 1, 2, and 5 received relatively low scores, ranging from 4.5 to 5.0, and are assigned to the first and second horizons.

These results indicate that participants are more receptive to strategies planned for implementation in the second and third horizons. Therefore, it may be worth considering advancing the implementation timelines for these strategies.

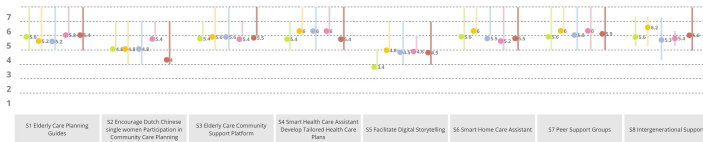


Figure 6.4 Evaluation results from five dimensions

Strategy	Participant 1	Participant 2	Participant 3	Participant 4	Participant 5	Average
S1 Elderly Care Planning Guides	4.5	4.5	4.5	4.5	4.5	4.5
S2 Encourage Dutch Chinese Single women Participation in Community Care Planning	4.5	4.5	4.5	4.5	4.5	4.5
S3 Elderly Care Community Support Platform	5.5	5.5	5.5	5.5	5.5	5.5
S4 Smart Health Care Assistant Develop Tailored Health-Care Plans	5.5	5.5	5.5	5.5	5.5	5.5
S5 Facilitate Digital Storytelling	4.5	4.5	4.5	4.5	4.5	4.5
S6 Smart Home Care Assistant	5.5	5.5	5.5	5.5	5.5	5.5
S7 Peer Support Groups	6.0	6.0	6.0	6.0	6.0	6.0
S8 Intergenerational Support	6.0	6.0	6.0	6.0	6.0	6.0

Figure 6.5 Statistical Table of Evaluation Results

6.5. Detailed analysis of each strategy

This section aims to analyze strategies with significant differences in scores. Through a question-and-answer format, the author discusses the questions and concerns raised by participants about the strategies and applies some of the insights to the final iterative roadmap.

Strategy 1: Elderly Care Planning Guides

- **Positive Aspects:** Provides valuable information and guidance for elderly care, which is crucial for caregivers and families.
- **Concerns:**
 - May lack personalization, as each individual's needs can be very different.

Strategy 2: Encourage Dutch Chinese single women Participation in Community Care Planning

- **Positive Aspects:** Promotes inclusivity and ensures diverse perspectives in community care planning, addressing the specific needs of a minority group.
- **Concerns:**
 - Cultural barriers and language differences might hinder participation.
 - Requires significant outreach and trust-building within the community.

Strategy 3: Elderly Care Community Support Platform

- **Positive Aspects:** Centralized platform for resources, support, and community engagement; facilitates easier access to services and peer support.
- **Concerns:**
 - Potential issues with user adoption and engagement.
 - Data privacy and security concerns.

Strategy 4: Smart Health Care Assistant Develop Tailored Health Care Plans

- **Positive Aspects:** Personalized healthcare plans can improve the quality of care and address specific health needs effectively.
- **Concerns:**
 - High cost and complexity of implementation.
 - Potential resistance from those who are uncomfortable with technology.

Strategy 5: Facilitate Digital Storytelling

- **Positive Aspects:** Encourages intergenerational communication and preserves cultural heritage; therapeutic for the elderly.
- **Concerns:**
 - Requires technical skills and resources that some elderly individuals may not possess.
 - Might not directly address urgent healthcare needs.

Strategy 6: Smart Home Care Assistant

- **Positive Aspects:** Enhances safety and independence for the elderly by providing automated assistance and monitoring.
- **Concerns:**
 - High cost of installation and maintenance.
 - Privacy issues and potential for technical malfunctions.

Strategy 7: Peer Support Groups

- **Positive Aspects:** Provides emotional support, reduces isolation, and fosters community among peers facing similar challenges.
- **Concerns:**
 - Challenges in maintaining active participation and engagement.
 - Need for skilled facilitators to guide the groups effectively.

Strategy 8: Intergenerational Support

- **Positive Aspects:** Promotes mutual understanding and support between different generations, enriching both the young and the elderly.
- **Concerns:**
 - Logistical challenges in organizing and sustaining intergenerational activities.
 - Potential differences in interests and communication styles.

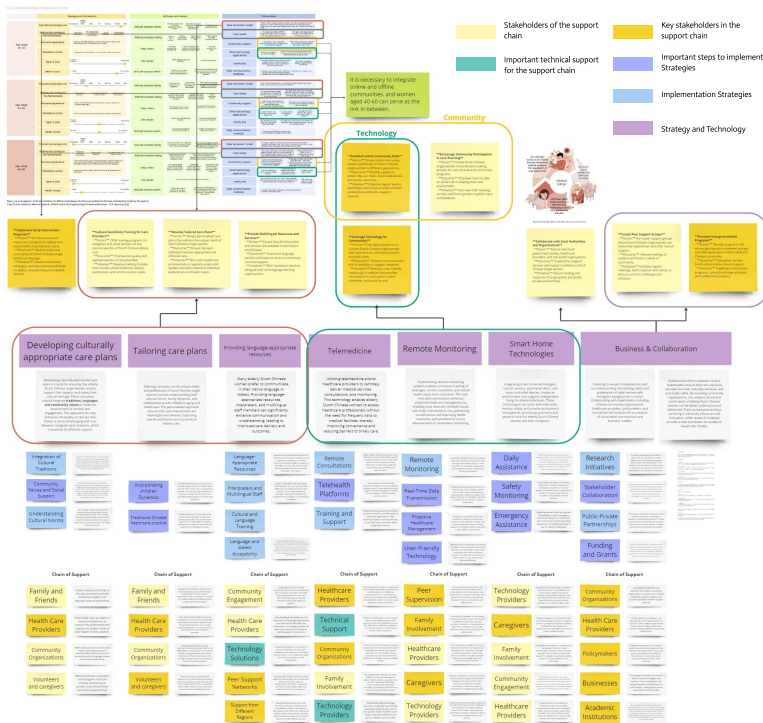
6.3.1. Analysis of strategies

This study explored the evaluation and feedback of participants on different strategies through booklet system analysis and question-and-answer format, thereby drawing out the advantages and disadvantages of each strategy and providing improvement suggestions for the final iterative roadmap. The specific analysis steps include:

Through questionnaires and interviews, the participants' scores and detailed opinions on each strategy were collected. These scores and opinions reflect the participants' acceptance of the strategy and specific concerns.

Based on the collected feedback, the advantages and disadvantages of each strategy were classified and summarized and the feedback was applied to the iterative roadmap.

Based on the above feedback, the analysis found that participants were more accepting of the strategies implemented in the second and third phases. Therefore, in the final iterative roadmap, these strategies were considered to be brought forward to better meet the needs and expectations of the participants. At the same time, for the strategies with lower scores, their feasibility and attractiveness were enhanced through adjustments and improvements.



6.4. Strategic Roadmap

Horizon time	2025	2045	2065	Future Vision
Values	<ul style="list-style-type: none"> Bridging Information Gaps Increased Social Interaction Convenience and Flexibility 	<ul style="list-style-type: none"> Tailored Services Enhanced Support Networks Enhanced Monitoring and Safety 	<ul style="list-style-type: none"> Concise and informative flyers Availability in Both Dutch and Chinese Emotional and Practical Support 	<ul style="list-style-type: none"> Alleviation of Isolation Technological Advancement Strengthened Family Connections
Themes	<p>Horizon 1: Multimedia Empowering Elderly Care Planning (2025)</p> <p>This horizon focuses on empowering Dutch Chinese single women with the necessary tools and knowledge for proactive elderly care planning. By providing comprehensive guides, facilitating digital storytelling, and establishing peer support groups, this phase aims to reduce uncertainty and enhance community support., preserve cultural heritage, and foster a sense of community.</p>	<p>Horizon 2: Enhanced Community Engagement and Smart Home Care (2045)</p> <p>This horizon focuses on promoting active participation of Dutch Chinese single women in community care planning, implementing smart home care assistants, and fostering intergenerational support. These initiatives aim to empower individuals, enhance the quality of care, and strengthen community ties.</p>	<p>Horizon 3: Tailored Health Care and Comprehensive Community Support (2065)</p> <p>In the third horizon, advanced technologies and community-based innovations will transform elderly care by creating tailored health care plans and establishing a robust support platform. This approach will integrate smart health care assistants with comprehensive community support, ensuring personalized care and fostering a strong, united community.</p>	<p>A highly-integrated yet personalized community-based elderly care model</p>
Scenario	<p>Dutch Chinese single women Peer group support</p>	<p>Dutch Chinese single women Intergenerational support Smart home care assistants Peer group support</p>	<p>Dutch Chinese single women Dutch medical team Telemedicine support Smart home care assistants Peer group support Community support</p>	<p>Integrated Care System Personalized Elderly Care Smart Home Technologies Cultural Sensitivity Peer Support Groups Intergenerational Connections</p>
Strategy	<p>Preparation</p> <ol style="list-style-type: none"> Elderly Care Planning Guides Facilitate Digital Storytelling Peer Support Groups 	<p>Preparation</p> <ol style="list-style-type: none"> Participation in Community Care Planning Smart Home Care Assistant Intergenerational Support 	<p>Iteration</p> <ol style="list-style-type: none"> Elderly Care Community Support Platform Smart Health Care Assistant Develop Tailored Health Care Plans 	<p>"In the future, Dutch Chinese single women will benefit from an integrated and personalized elderly care system. Proactive planning, smart home technologies, and strong community support will enable them to lead dignified, healthy, and fulfilling lives."</p>
Technology Requirements	<ul style="list-style-type: none"> Content Management Systems Translation Software Community Forums Online Platforms for Dissemination 	<ul style="list-style-type: none"> Safety Monitoring (Online Collaboration Tools) Real-Time Data Transmission (Webinar Platforms) Training and E-Learning Platforms Smart Home Devices Emergency Response Systems 	<ul style="list-style-type: none"> Telehealth Platforms Health Data Integration Natural Language Processing (NLP) AI and Machine Learning Virtual Consultation Tools 	<p>Support Chain</p>
Support Chain	<ul style="list-style-type: none"> Community Volunteers Graphic Translators Community Centers and Libraries Digital Platforms Healthcare Professionals IT Support Platform Managers Facilitators Community Engagement Specialists 	<ul style="list-style-type: none"> Community Leaders Event Coordinators Technicians Healthcare Providers Software Developers Educators Community Project Managers 	<ul style="list-style-type: none"> AI Developers Healthcare Data Analysts Translators Voice Actors Volunteers Dutch medical IT Support Software Developers Software Developers UI/UX Designers Chinese doctor Telemedicine Community Managers 	<ul style="list-style-type: none"> AI Developers Healthcare Data Analysts Translators Voice Actors Volunteers Healthcare Professionals Event Coordinators IT Support Software Developers UI/UX Designers Software Developers Community Managers Healthcare Providers ...

6.5. Business Model

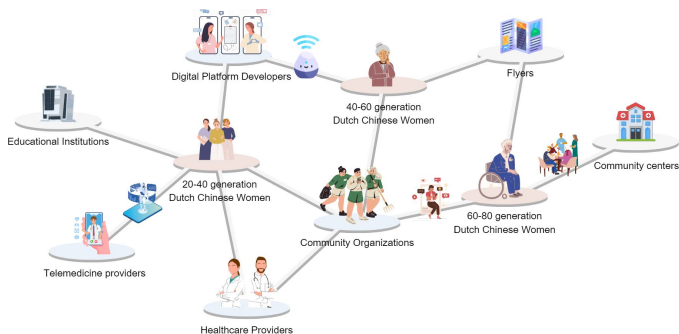
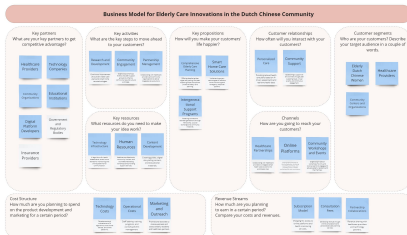


Figure 6.4. Business Model



6.6. Conclusion

The proposed roadmap and business model outline a comprehensive approach to addressing the unique challenges faced by Dutch Chinese single women in elderly care. By leveraging advanced technologies and fostering community engagement, the three-horizon plan aims to create a robust and culturally sensitive care system.

The roadmap consists of three horizons:

Horizon 1 focuses on proactive care planning through guides, digital storytelling, and peer support groups. Horizon 2 promotes active community participation and smart home care technologies, establishing healthcare hubs with patient groups and community workers. Horizon 3 transforms elderly care with AI-driven health plans and a centralized support platform, integrating smart health assistants to foster a united and resilient community.

Business Model emphasizes strategic partnerships and community engagement to create a sustainable and competitive elderly care solution. Collaboration with healthcare providers, technology companies, community organizations, educational institutions, and regulatory bodies is crucial.

By 2065, advanced technologies and a strong support network will create a new era of personalized health care and community cohesion for the Dutch Chinese community. The proposed roadmap and business model provide a clear path to achieving this vision, enhancing the well-being and quality of life for elderly residents.



Chapter 7 Conclusion

7.1. Answer to the design question

This chapter will comprehensively address the research questions (RQ) and sub-questions (SQ) outlined in the project brief, drawing insights from both research findings and the implementation process. Each sub-question will be examined in detail, supported by empirical evidence and practical observations gathered throughout the study.

RQ: How to design future elderly care (with/in 20/40 years) for Dutch Chinese single women?

SQ - 01 What are the key influencing factors of elderly care needs for Dutch Chinese single women?

- Social Network and Belonging
 - Community Integration: The extent to which Dutch Chinese single women are integrated into both the Chinese and Dutch communities can affect their social support networks. Strong community ties can provide emotional support, practical help, and a sense of belonging.
 - Family Dynamics: The presence or absence of family members in the Netherlands significantly impacts social networks. Those without nearby family may experience greater isolation and have a higher reliance on community organizations.
 - Cultural Activities: Participation in cultural and social activities within the Chinese community can reinforce a sense of belonging and reduce feelings of loneliness and isolation.
 - Peer Support: Engagement with peer support groups tailored for elderly Chinese women can provide mutual support and shared understanding, enhancing their social network.

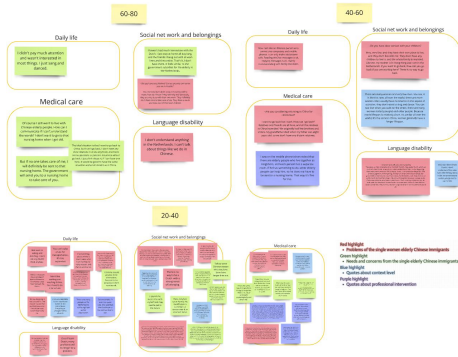


Figure 21. Interview findings

- Daily Life
 - Living Arrangements: Housing situations, such as living alone, with family, or in a communal living setting, greatly influence daily life. Single women living alone may face challenges in managing daily tasks and require more external assistance.
 - Transportation: Accessibility to reliable and affordable transportation affects the ability to maintain an active daily life, including attending social events, medical appointments, and shopping for essentials.
 - Physical Mobility: Physical health and mobility limitations can impact daily activities, requiring adaptations such as home modifications or personal assistance.
 - Access to Services: Proximity to and availability of elderly care services, including meal delivery, housekeeping, and social activities, are crucial for maintaining an independent and fulfilling daily life.
- Medical Care
 - Chronic Health Conditions: Prevalence of chronic diseases among elderly Chinese women necessitates regular medical care, monitoring, and access to specialized healthcare providers.
 - Healthcare Preferences: Preferences for traditional Chinese medicine (TCM) versus Western medical practices can influence their choices in medical care and the types of healthcare providers they seek.
 - Preventive Care: Attitudes towards and participation in preventive healthcare practices, such as regular check-ups and screenings, impact overall health and well-being.
 - Healthcare Access: Economic constraints and availability of health insurance affect access to necessary medical services. Those with limited financial resources may face difficulties in affording adequate healthcare.
- Language Disability
 - Communication Barriers: Limited proficiency in Dutch can hinder effective communication with healthcare providers, leading to potential misunderstandings and reduced quality of care.
 - Access to Information: Language barriers can limit access to important healthcare information, resources, and services. This can affect their ability to make informed decisions about their care.
 - Dependence on Interpreters: Reliance on family members or community interpreters for medical appointments can pose challenges in ensuring privacy and accuracy in communication.
 - Culturally Sensitive Care: The availability of bilingual and culturally competent healthcare providers can mitigate language barriers and improve the overall care experience for elderly Chinese women.

SQ - 02 How can technology be used to enhance elderly care for Dutch Chinese single women? / Where do the design opportunities lie?

Technology can significantly improve elderly care for Dutch Chinese single women by enhancing health monitoring, reducing loneliness, promoting social engagement, and addressing cultural and linguistic needs. Emerging technologies offer personalized care opportunities, enhancing their quality of life.

- Current Effective Technological Solutions
 - Telemedicine: Provides remote healthcare consultations.
 - Wearable Health Devices: Monitors vital signs and physical activity.
 - Mobile Health Apps: Offers medication reminders and health tracking.
 - Emergency Response Systems: Ensures quick access to help in emergencies.
- Improving Health Monitoring and Management
 - Remote Monitoring: Continuously tracks health metrics and transmits data to healthcare providers.
 - AI Diagnostics: Analyzes health data to predict and manage health issues.
 - Personal Health Records: Consolidates medical history and treatment plans.
 - Virtual Consultations: Increases accessibility to regular check-ups and specialist visits.
- Reducing Loneliness and Promoting Social Engagement
 - Social Networking Platforms: Connects elderly users with family and community.
 - Virtual Communities: Engages users in cultural activities and support groups.
 - Digital Storytelling: Allows sharing of life stories and cultural heritage.
 - Interactive Entertainment: Provides cognitive stimulation and virtual experiences.
- Integrating Cultural and Linguistic Needs
 - Multilingual Support: Offers interfaces and support in Chinese and other languages.
 - Culturally Relevant Content: Includes traditional Chinese medicine, recipes, and event calendars.
 - Bilingual Virtual Assistants: Provides assistance in multiple languages.
 - Community Platforms: Connects users with culturally similar groups.
- Opportunities for Personalizing Care with Emerging Technologies
 - AI and Machine Learning: Provides tailored health recommendations and predictive care models.
 - Smart Home Technologies: Enhances safety and comfort with automated devices.
 - Voice-Activated Assistants: Assists with daily tasks and provides companionship.
 - Robotics: Aids with daily activities and offers social interaction.

SQ - 03 How to align ideas/concepts with the desired future vision for elderly care?

This question is discussed in Chapter 5 Design development. The method introduced in the book Design Roadmapping is applied to address this question. Three stages leading to the final future vision are defined according to the time pacing strategy. [46]



Figure 7.2. Time Pacing Strategy details

7.2.Limitations

This project aimed to introduce innovative design ideas for the healthcare industry, but several limitations need to be addressed to improve its results. Firstly, the evaluation of strategies was somewhat limited. Including a wider range of experts, particularly from the medical field, as well as insights from design students, could enhance the evaluation process. More diverse input would lead to better discussions and stronger strategies.

Secondly, there was a challenge with participants' technical knowledge. Many had doubts about the practicality of advanced technologies like artificial intelligence due to a lack of understanding. Improving designers' technical skills through targeted training and resources could help bridge this gap and increase the adoption and effectiveness of these technologies. Additionally, addressing the digital divide for elderly users, who may struggle with new technology, requires significant investment in user-friendly designs and training.

Finally, the project's success relies on several key factors. Adapting solutions to meet different cultural and language needs is important but can be resource-intensive. Ongoing investment and a stable regulatory environment are essential for the long-term success and growth of the solutions. Strong data protection measures are also necessary to keep sensitive health information safe. Effective feedback mechanisms are crucial to ensure all users' views are considered. Combining this with in-depth evaluations and long-term studies will provide a fuller understanding of the impact of these care solutions. Addressing these limitations will need ongoing adaptation, innovation, and commitment from all involved parties.

7.5.Recommendations

This project initially focused on single Dutch Chinese women but has developed solutions that are broadly applicable to other Dutch Chinese as well. The aim is to create a more humane future for elderly care in the Netherlands.

Throughout the project, several related research topics emerged. For instance, as discussed earlier, reconciling high connectivity with privacy remains a challenging issue for designers. Whether to empower elderly to control their own data or to involve trusted third parties in overseeing data sharing are critical considerations. These are important issues that need to be addressed.

Additionally, the project integrates social support with cutting-edge technology to offer elderly care solutions for single Chinese women in the Netherlands that cater to different generational needs. The goal is to develop a reasonable future elderly care model. However, this perspective is just one approach. There is an urgent need to explore and propose other innovative solutions for the elderly population in the Netherlands, including ethnic minorities who require additional support.

7.4. Personal Reflection

This project has been a significant learning journey, particularly in honing my skills in literature research and fieldwork. My initial goal was to enhance my ability to systematically extract and apply knowledge from various sources. Utilizing academic papers, books, news articles, websites, trend reports, and previous theses allowed me to gain a deep understanding of the research context. Early in the project, I created a structured reading plan and engaged in detailed discussions with Dutch Chinese individuals to understand their experiences in the Netherlands. This approach proved invaluable, helping me to better integrate and address the needs of this "silent" group.

Throughout the project, I employed a variety of research methods, such as literature reviews, interviews, trend analysis, storyboards, future visioning, thematic analysis, evaluation questionnaires, and design roadmapping. The combination of analyzing elderly care systems and conducting user interviews was particularly effective. However, some aspects of the evaluation phase were conducted online due to the absence of volunteers and elderly people in community centers during summer, which limited the engagement compared to in-person meetings.

Feasibility

From a technical perspective, the technologies discussed in the trend analysis and the strategic proposal have strong potential for the next 20-40 years. While these technologies have proven feasible in other sectors, their application in healthcare is still emerging. This suggests both potential and a need for further development in this area.

Desirability

The project underscored the need to address anxiety among Dutch Chinese elderly individuals. This was supported by the literature review and participant feedback, which showed high levels of acceptance and expectation. Increasing the sample size could further validate these findings.

Viability

The proposed strategy aligns well with the three generational phases (20-40, 40-60, 60-80) and supports the project's ultimate vision. The roadmap and business model offer a structured approach for designers to achieve desired outcomes. However, full feasibility will require substantial resource allocation, ongoing integration, and continuous iteration of the roadmap. Long-term research and evaluation are necessary to ensure the solution's viability.

Managing this large project independently was a valuable experience. Initially planned for 20 weeks, the project faced delays, particularly in user research. These challenges highlighted the importance of detailed planning, including setting checkpoints and allowing buffer times before major milestones.

The project also revealed areas for improvement in my communication skills. I consulted various experts, including PhD students, professors, and professionals in related fields. While online communication expanded access to experts, it also limited face-to-face interactions. This balance underscored the need to further develop my communication abilities, especially at an academic level. Overall, this experience has significantly improved my project management and research skills, and I continue to work on enhancing my communication and coordination abilities.

7.5. Acknowledgement

I would like to extend my heartfelt thanks to everyone who has contributed to the success of this project. My journey began with a focus on the future of retirement for single women in China, a topic I was deeply engaged with before arriving at TUD. However, my experiences in the Netherlands, particularly meeting elderly Dutch women while setting up stalls in Delft, provided a new perspective. Their stories and experiences inspired me to explore the retirement experiences of Chinese women in the Netherlands, an issue that also holds personal significance for me.

I am profoundly grateful to my Chair, Lianne Simonse, and Mentor, Tingting Wang, for their exceptional guidance, support, and constructive feedback throughout this research. Their deep knowledge, insightful advice, and unwavering encouragement were crucial in shaping the project's direction and ensuring its quality. Their commitment to my academic and professional growth has been truly inspiring.

I also wish to express my sincere appreciation to the experts and professionals who generously shared their insights and knowledge. Special thanks to the coordinators and community volunteers from The Chinese Bruge, whose expertise and perspectives were invaluable in refining the project's methodology and ensuring its relevance and applicability. Their input was essential in bridging gaps and enhancing the project's impact.

A heartfelt thank you goes to the members of the Chinese community in the Netherlands who participated in interviews and shared their personal experiences. Their willingness to open up about their lives and needs added significant depth to the research and greatly enriched the project's findings. Their contributions have been instrumental in highlighting the unique challenges and opportunities in elderly care for this community.

I am also deeply appreciative of my classmates, whose support, assistance, and feedback were invaluable throughout the project. Their collaborative spirit and constructive critiques helped me navigate various challenges and refine my approach. Their camaraderie and encouragement were crucial in maintaining momentum and achieving the project's goals.

Lastly, I want to express my profound gratitude to my family and friends. Their unwavering support, patience, and understanding throughout this journey have been a constant source of motivation. Their belief in my abilities and their encouragement have been instrumental in driving me forward, even during challenging times.

This project would not have reached its current stage without the collective effort and support of all these individuals. Each contribution, whether large or small, has played a vital role in shaping the project and bringing it to fruition. I am deeply grateful for their support and am honored to acknowledge their invaluable assistance.

Wenhan Yu
5th August 2024



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