

Service Design for Support Systems for Menopausal Women: A Case Study on Community-Empowered Product Experience Model

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Abstract.

This study aims to alleviate emotional distress among menopausal women and to support them in navigating the menopausal transition in a stable and sustained manner through the construction of a service-oriented support system. In response to the emotional isolation, fragmentation of health-related knowledge, and decline in self-worth experienced by menopausal women due to structural deficiencies in existing social support systems, this research proposes a community-empowerment-based service design strategy.

Based on three core pillars—emotional narrative, knowledge co-creation, and value circulation—this study constructs a supportive system model and, on this basis, develops the service project *Her Echo*. By integrating tangible products with a digital platform, the project establishes a coordinated intervention mechanism and forms a complete user journey encompassing emotional expression, experience sharing, and value feedback.

This research adopts a triangulation validation approach, examining the scientific validity and rationality of the *Her Echo* support system from three dimensions: theoretical effectiveness, practical feasibility, and structural scalability. *Her Echo* provides an extensible theoretical framework and a practical model for innovation in social support systems within the field of women's health.

Keywords: Menopausal Women, Support System, Product Experience Model.

1 The Lived Context of Menopausal Women and the Multiple Challenges They Face

Menopause represents a critical transitional stage in the female life course. According to statistics from the World Health Organization, approximately 47 million women worldwide enter menopause each year. [1] With the acceleration of population aging,

the continuous growth of the menopausal population and the increasing participation of women in social and professional domains[2], the significance of menopausal women within family structures, workplaces, and broader social systems has become increasingly prominent. Subsequent paragraphs, however, are indented.

However, within the current social context, menopause is still predominantly understood as a natural medical or physiological process.[3]Public awareness remains largely confined to hormonal changes and related physical symptoms, while insufficient attention is paid to the complex psychological experiences, social role transitions, and shifts in identity that women undergo during menopause. Due to the lack of systematic social support structures and open public discourse mechanisms, many women tend to interpret menopausal discomfort as an individual issue. As a result, they often choose to endure their emotions and feelings. [4]

Against this backdrop, the present study conducted a one-day observational survey involving 12 women currently experiencing menopause. (see Fig.1.1)

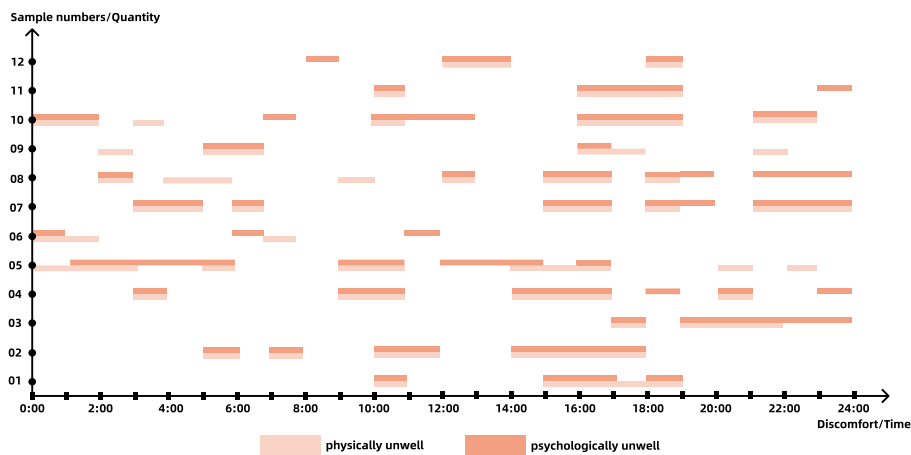


Fig.1.1 An analysis of 24-hour physical and psychological discomfort in menopausal women (n = 12)

This study systematically recorded the occurrence of physical and psychological discomfort in participants over a 24-hour period and visualized the data. The sample distribution showed that menopausal discomfort exhibited a clear temporal clustering characteristic.

Periods of The highest incidence of discomfort was concentrated in three time windows: early morning, afternoon to evening, and night. Among them, psychological discomfort showed a higher degree of concentration and persistence than physical discomfort, and exhibited a high degree of temporal synchrony in multiple samples. In addition, the significant overlap between physical and psychological discomfort in the afternoon to evening period suggests that the menopausal experience is not a simple

superposition of symptoms, but a complex state with simultaneous psychosomatic symptoms.

These observations suggest that the psychological distress experienced by menopausal women is not entirely determined by individual physiological changes, but rather exhibits clear social rhythm characteristics.

From a physiological perspective, the continuous decline in estrogen levels can lead to musculoskeletal discomfort[5], triggering vasomotor symptoms such as hot flashes and night sweats, and significantly increasing the risk of osteoporosis and cardiovascular diseases. From a psychological perspective, fluctuations in the neuroendocrine system are often accompanied by emotional instability, cognitive changes, anxiety, and depressive tendencies. [6]This continuous physical and mental change not only weakens an individual's sense of self-stability, but also easily leads to blurred identity and a decline in the sense of meaning in life. Previous studies indicate that approximately 71% [7] of menopausal women experience musculoskeletal discomfort, while about 40-60% [8] report that psychological distress has a noticeable impact on their daily lives and social functioning.

The Biopsychosocial Model (BPS model)[9], emphasizes that health-related issues should be examined through an integrated analysis of bio-logical, psychological, and social dimensions. The model indispensable role of social environments, support systems, and interpersonal interactions in shaping individual physical and mental health. However, when existing research findings are considered alongside field observations, it becomes evident that current social support systems are insufficient in providing adequate structural support for menopausal women. Within families and peer groups, knowledge about menopause is often limited and lacks authoritative sources; in workplace settings, menopausal topics remain highly concealed within certain cultural contexts; in medical encounters, misalignments in expectations and communication barriers persist between healthcare professionals and menopausal women; and in some countries and regions, public health policies related to menopause continue to receive insufficient attention. [10]

In summary, the challenges faced by menopausal women are characterized by pronounced multidimensionality and structural complexity. There is an urgent need to establish more systematic, sustained, and inclusive support mechanisms at the social, collective, and individual levels, and to develop corresponding intervention and design strategies tailored to the specific needs of menopausal women. (see Fig.1.2)

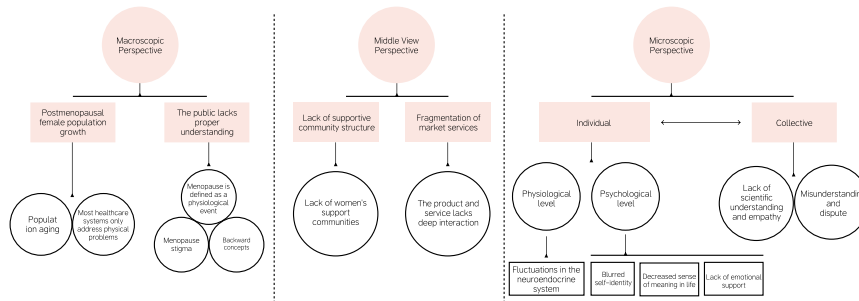


Fig.1.2 Chart analyzing the causes of structural defects in social support systems

2 Value Drivers of Emotional and Social Support Systems

Trends and survey data indicate a significant shift in the focus of identity among contemporary middle-aged women—from being centered on family and others to being centered on their own feelings, self-worth, and subjective needs[11]. During this period of overlapping social roles and life stages, menopausal women generally face multiple pressures, including physiological changes, emotional fluctuations, and the reconstruction of social roles, leading to a significant increase in their need for understanding, listening, comfort, and ongoing support. [12]They tend to find resonance in the experiences of their peers, building a sense of belonging through emotional exchange and experience sharing, and reconstructing a positive self-perception within collective narratives[13].

Against this backdrop, this study conducted a questionnaire survey on menopausal women's identity, self-worth, and emotional support needs, and then visualized the results. (see Fig.2.1)

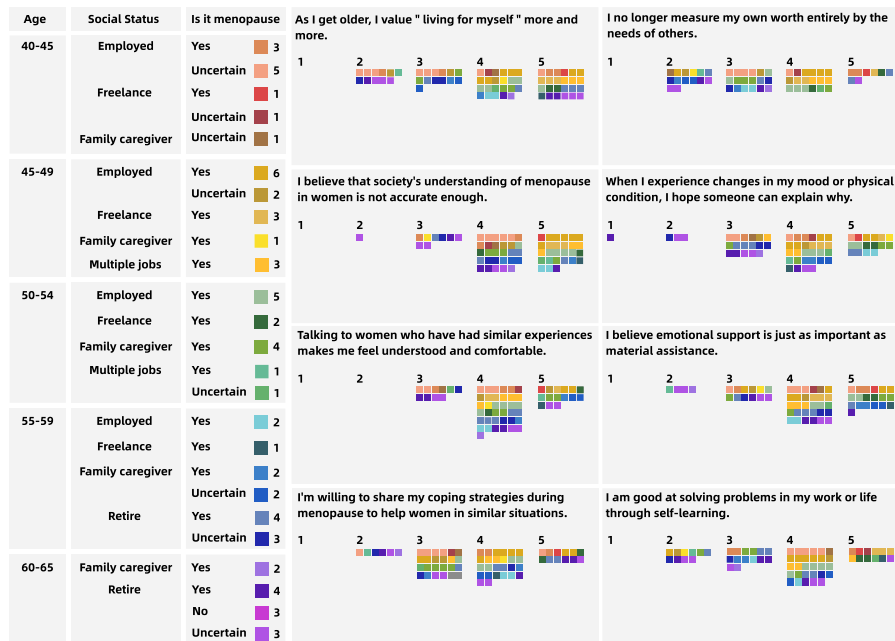


Fig.2.1 Analysis of Self-Worth and Emotional Support Needs of Perimenopause Women (n = 65)

The chart results show that menopausal women exhibit a highly consistent trend in terms of self-worth perception, emotional support needs, and willingness to share experiences, reflecting the possibility of this group shifting from an individualistic to a collective orientation, and providing a realistic basis for the design of community-based support systems.

At the same time, social media and digital platforms have provided important arenas for the expression and practice of this shift in identity and values.[14] [15]More and more middle-aged women are actively sharing their personal experiences, emotional states, and life feelings through online platforms, transforming the originally private and decontextualized menopausal experience into a public topic that can be discussed and empathized with.

The second set of questionnaire data in this study further confirms the open attitude of menopausal women towards emotional support and companionship services (Fig. 2.2): most respondents are willing to pay a premium for products and services that can bring positive emotional experiences, emotional connection, and psychological comfort. The consumption behavior of menopausal women is shifting from the traditional model centered on function and price to a lifestyle-oriented consumption model driven by experience, emotion, and relationship.[16][17]This change reveals the potential value of emotional support systems in contemporary society.



Fig.2.2 Consumption Attitude Trends of Menopausal Women (n = 65)

This change reveals the potential value of emotional support systems in contemporary society, providing a realistic basis and research support for service design centered on companionship, co-creation, and emotional care.(Fig.2.3)

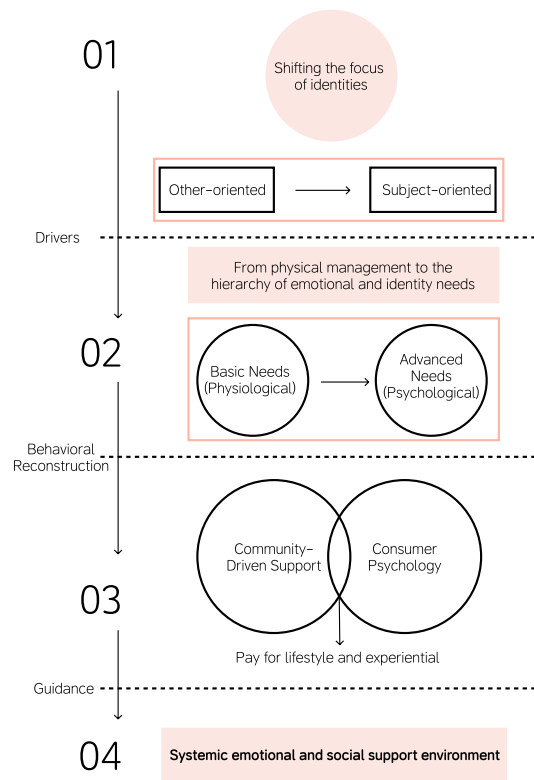


Fig.2.3 Value-Driven Approach for Menopausal Women

Based on cross-analysis and visualization of the survey data, this study categorizes target users into three typical user profiles to more clearly identify the core needs and potential design opportunities of women at different levels.

The first type of user is the "Emotional Expresser". This group typically has a clear self-awareness of menopausal changes, identifies with the value orientation of "living for oneself," and possesses a strong desire to express themselves and a strong motivation to share. In terms of consumption and service selection, this group highly values the experience process and emotional value, and has a high degree of recognition for systematic services that integrate information acquisition, emotional companionship, and community interaction. This type of user is suitable to become the core users and content creators of emotional support platforms, providing authentic experience output and gaining satisfaction.

The second user group consists of "Transition and Explorer". This group has some awareness of menopausal changes, but still has questions and anxieties regarding

emotional expression and self-interpretation. In terms of consumption attitudes, this group is receptive to internet-based services. Compared to authoritative or medical lectures, they trust the sharing and companionship of genuine individual experiences more. This user group represents a crucial entry point for emotional support products and services.

The third type of user is the "Family Center of Gravity Contributor". This group's self-worth is still highly tied to their family role, and they are often in a state of caring for others and suppressing their own needs. Their willingness to express emotions is relatively low, but this does not mean they lack the need for emotional support. In terms of consumption behavior, this group tends to make rational decisions, focusing on cost-effectiveness and a sense of security. Services with low barriers to entry, minimal interference, and an emphasis on safety and trust are more readily accepted.

The user segmentation results laid a practical foundation for subsequent design strategies centered around companionship mechanisms, emotional experiences, and co-creation relationships.

3 Building Supportive Communities: From Individual Coping to Collective Empowerment

Analysis of women's changing identities, emotional support needs, and user segmentation during menopause reveals that contemporary menopausal women are no longer content with simply receiving medical or informational services; they increasingly desire to participate in expression, experience sharing, and value co-creation. However, existing social support remains largely one-way and insufficient to address this changing trend. Based on these issues, this study attempts to shift menopausal support from a "one-way" approach to "collective empowerment" to help women obtain sustained emotional support, cognitive strength, and action-oriented capabilities during the later stages of menopause.

This study constructs a sustainable support model centered on community empowerment. This model helps women cope with the challenges of the menopausal transition and reshape their self-perception by establishing a participant-driven community environment. Its core objective is not simply to provide services, but to build a community system that promotes the long-term flow of knowledge, experience, and emotional support among users. The author names this entire community empowerment system "Her Echo" to emphasize the resonance, amplification, and regeneration of individual women's experiences within the collective. (Fig.3.1)

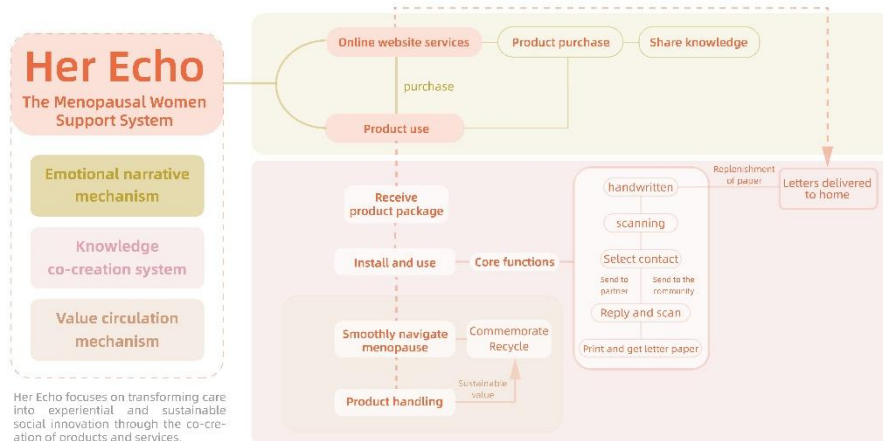


Fig.3.1 Her Echo - System Service Model

Within the Her Echo support system framework, the abstract community support structure is transformed into a digital website platform—menopause24h.cn—that can be directly used by menopausal women. This website serves as a public platform open to society, and its functions not only serve individual users but also aim at the public communication and social cognitive reconstruction of menopause issues.

The website systematically integrates product concepts, research methods, knowledge content, and community co-creation mechanisms, transforming individual experiences, response relationships, and support pathways into shared resources that can be understood, participated in, and reused by the public. Through a structured presentation of menopausal physical changes, psychological experiences, and social circumstances, the website provides users with de-panic-free and de-pathologizing cognitive support, alleviating the anxiety and isolation caused by fragmented information and a lack of experiential voice.

Meanwhile, as a public platform, the website sends a clear message to society: menopause is not a hidden or marginalized individual problem, but a public life stage that needs to be seen, understood, and responded to. Through the combination of knowledge dissemination and emotional narrative, the platform, in addition to providing individual support, undertakes the function of promoting social understanding and awareness, and facilitates the entry of menopause issues into the public discussion space.

Her Echo's support system revolves around three interrelated functional dimensions: emotional narrative mechanism, knowledge co-creation system, and value circulation mechanism. (Fig. 3.2) (Fig. 3.3)

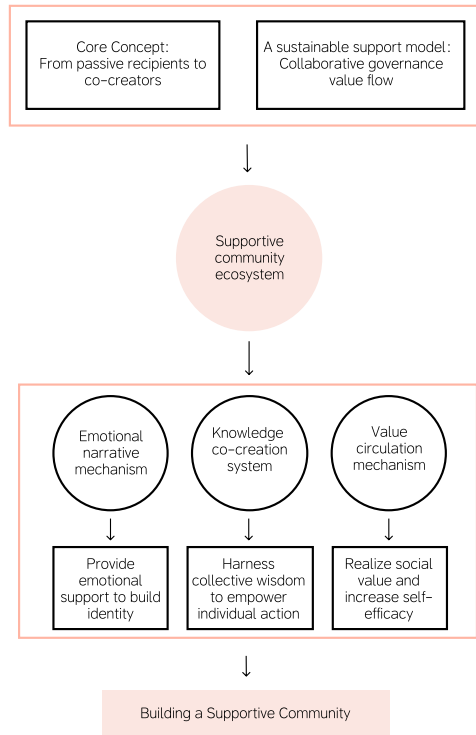


Fig. 3.2 Support system model built on three core pillars(1)

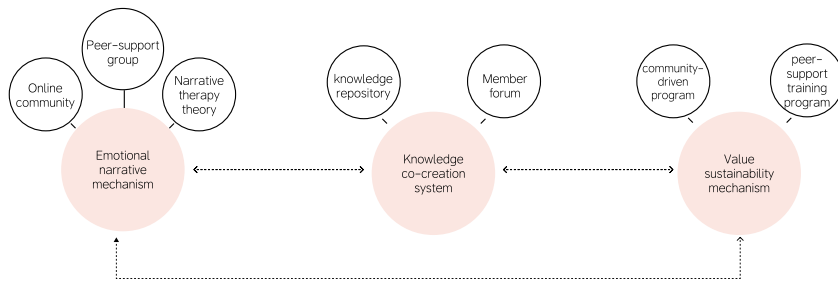


Fig. 3.3 Support system model built on three core pillars(2)

The emotional narrative mechanism helps individuals achieve self-affirmation through expression and rebuild their identity through the resonance of others by encouraging users to recount their own experiences, feelings, and changes[18]. This mechanism responds to the core needs of "Emotional Expresser" and "Transition and Explorer" in Part Two for understanding, listening, and companionship, transforming emotional support from an implicit individual behavior into a shareable social resource.

The knowledge co-creation system transforms individual experiences into accumulative collective wisdom. Women from different stages and backgrounds form complementary relationships within the platform, thereby compensating for the shortcomings of traditional authoritative knowledge systems in understanding contextual differences and responding to individual variations. This mechanism emphasizes that "experience is knowledge," transforming users from passive information receivers into knowledge producers and active agents.

The value cycle mechanism, through visible interactive feedback and a sense of community participation, enables users to gain a sense of self-efficacy and social value recognition while supporting others, forming a positive cycle. This process not only enhances individual psychological resilience but also strengthens the overall sustainability of the community.[19]

Through the coordinated operation of the above three dimensions, Her Echo has built a supportive community ecosystem that extends from individual emotional support to collective empowerment, realizing the long-term flow and sustainable renewal of support relationships.[20]

4 Practice: Extension of Her Echo's Sustainable Support System

Based on a preliminary analysis of social support systems for menopausal women, Her Echo serves as a complete case study, aiming to provide stable and comprehensive structural support and solutions through the coordinated operation of physical products and online communities. (Fig. 4.1)

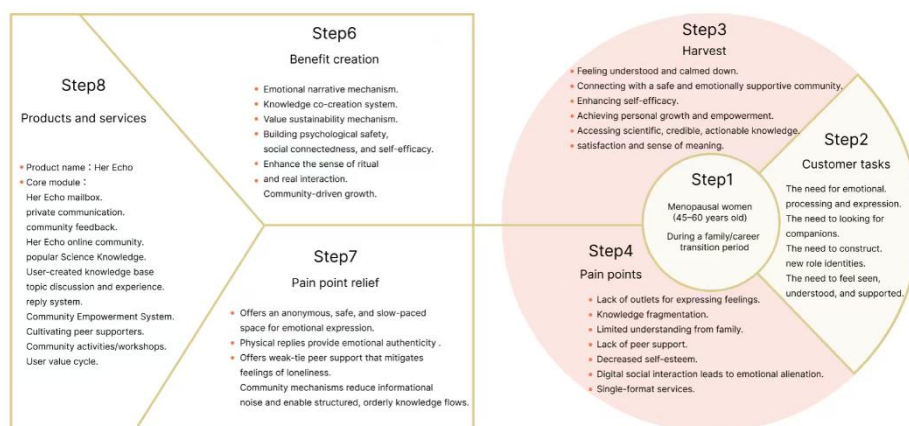


Fig. 4.1 Her Echo - Value Proposition Canvas

Her Echo Mailbox is an emotional support product designed for menopausal women, providing stable and warm emotional support through physical communication. Users order through the website and receive the physical mailbox, achieving both tactile and emotional comfort.

In an era where digital communication often leads to emotional alienation, Her Echo mailbox provides users with a focused and private space for emotional reflection by using handwritten letters and physical replies[21]: transforming the abstract concept of "community empowerment" into a tangible service experience, while balancing emotional needs and practical value.[22] (Fig. 4.2)

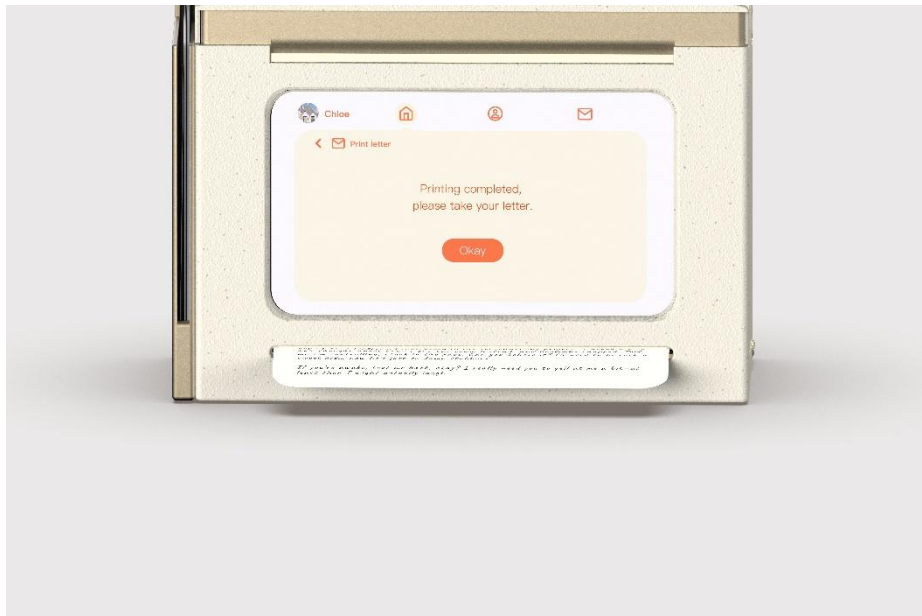


Fig. 4.2 Her Echo Mailbox products and handwritten letters

Considering that menopausal women do not use the internet frequently and that users are limited by age, the mailbox section introduces an age-friendly interactive design[23]: it does not rely entirely on high-frequency, instant online interaction, but introduces a mailbox mechanism centered on handwritten letters and physical replies, along with a simple and easy-to-use interface design. Users do not need to have proficient internet skills, nor do they need to participate in online interactions frequently, to obtain stable emotional responses and companionship support. (Fig. 4.3) (Fig. 4.4)



Fig. 4.3 Her Echo Mailbox - Mailbox and its functions(1)



Fig. 4.4 Her Echo Mailbox - Mailbox and its functions(2)

Compared to the information pressure and emotional drain brought by instant messaging, letter communication, with its time delay and sense of ritual, preserves more space for users to process their emotions, making the process of emotional expression itself a slow and safe psychological adjustment mechanism. This characteristic is particularly suitable for the "Family Center of Gravity Contributor" and "Transition and Explorer" groups summarized above. (Fig. 4.5) (Fig. 4.6)

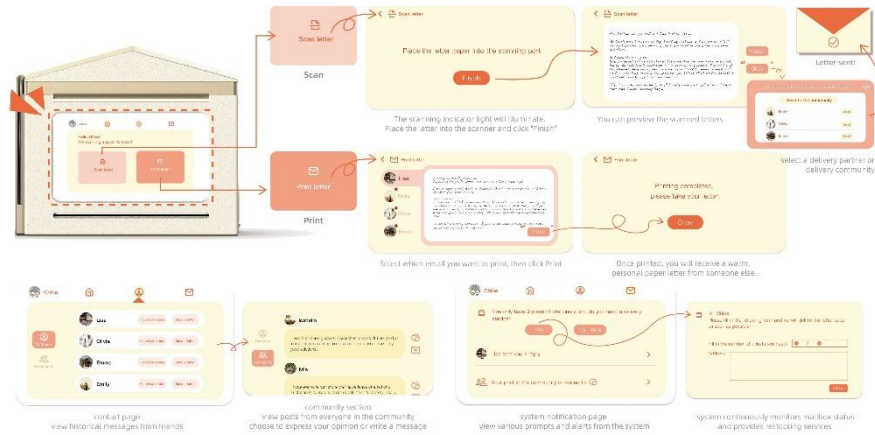


Fig. 4.5 Her Echo Mailbox - Mailbox user interface

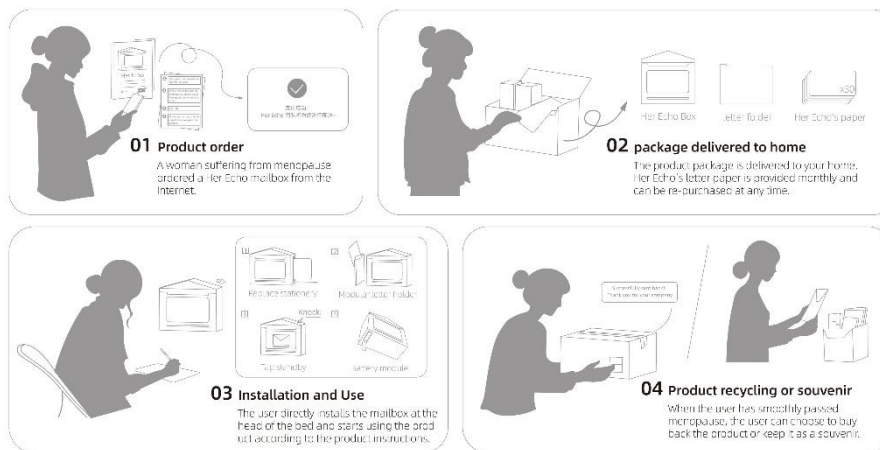


Fig. 4.6 Her Echo Mailbox - Mailbox Usage and Cycle Process

This design attempts to transform the abstract concept of "community empowerment" into a tangible service experience, satisfying emotional needs while also considering practical feasibility and long-term companionship value. Therefore, Her Echo's mailbox mechanism is not only part of the platform's functionality but also a self-contained, independently functioning support unit, enhancing the overall system's inclusivity and accessibility.

At the system architecture level, Her Echo is not a closed, single product, but a highly scalable support system prototype. The mailbox mechanism can serve as a core fulcrum to further extend more product and service formats suitable for menopausal women, enabling the system to flexibly adjust its service focus and narrative logic according to different user groups.

5 Summary and Research Prospects

The Her Echo project deeply integrates physical mailboxes with an online community, transforming the concept of "community empowerment" into concrete and actionable user experiences and service processes. This practice not only responds to the real needs of menopausal women in terms of physiological changes, but also intervenes in their emotional adjustment, identity reconstruction, and social connection processes, achieving a shift from physiological to life support.

As a sustainable supportive intervention model, Her Echo demonstrates the social innovation potential of emotional support systems in the field of health and well-being, providing a reference path and methodology for the design of supportive products and services for vulnerable groups in the future.

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Disclosure of Interests.

The authors have no competing interests to declare that are relevant to the content of this article.

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