Design Report #2 - Refining your Problem Space

MIE 1080H, Group 5

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Demographic

Age Range: 75 - 84 (middle-old)
Individuals in this age group are likely experiencing a mix of independence and the onset of age-related limitations. Solutions should focus on maintaining and enhancing mobility and cognitive functions, with features that support daily living activities and health management. The design should incorporate easy-to-use technology that doesn't assume prior technical proficiency but acknowledges some familiarity with technology. Health monitoring features, reminders for medication, and interfaces that adapt to possible sensory and motor skill declines are critical.

Location: Urban
Urban environments offer a wealth of resources and services but also present unique challenges such as noise, crowdedness, and safety concerns. Solutions should leverage the proximity to healthcare facilities and social opportunities, integrating with urban infrastructure like public transportation systems for those who still travel. The solution could also include navigation aids that account for the busy and sometimes overwhelming urban environment.

Education: Minimum postsecondary education
This educational background suggests a degree of familiarity with complex information and possibly with technology. Solutions can therefore incorporate more sophisticated features or customization options without overwhelming the user. Educational content on health management, digital literacy, and safety could be more in-depth, assuming a higher baseline of comprehension. However, it's still essential to ensure clarity and accessibility in instructions and support materials, avoiding technical jargon.

Income: Upper Middle Class ($100K - $200K in family income - including equivalent financial support from their family) This financial level affords greater flexibility in the cost of solutions, allowing for investment in higher-quality, more feature-rich products or services. Solutions can incorporate advanced technologies such as smart home devices, wearable health monitors, and emergency response systems with more comprehensive services. The solution should offer value for money and demonstrate a clear benefit to the users' independence and safety.

Example Persona:

Name: Margaret Sinclair
Age: 78
Location: Victoria, BC (two-bedroom apartment close to Beacon Hill Park)

Profile:

- Retired school teacher who dedicated over 40 years to education
- Active member of her local community center where she participated in weekly book clubs
- Values her independence but noticed a decline in her mobility and overall physical capabilities, which is starting to affect her daily routines
- She is comfortable using a smartphone to stay connected with friends and family
- Her family lives in different parts of Canada, so they cannot be there for her on a day-to-day basis
- She is becoming increasingly concerned about her safety when she is home alone

Needs:

- Tools that allow her to monitor her condition in real-time with automatic alerts for people concerned
- She wants to stay in her own home for as long as possible and avoid relying on others for daily tasks.
- She wants to have easy access to everything at her home

Pitch Story

Story 1: John's Struggle with Mobility and Safety in the City
John, a 78-year-old retired businessman, has lived in his urban neighborhood for decades. With his wife recently moved to a care home and his children living in another city, John's once vibrant daily routines have become a challenge. He struggles with the mobility and safety concerns that come with age, especially when using public transportation or walking in crowded areas, which has led to a few falls in the past year. John, with his postsecondary education, is open to technology but needs a solution that addresses his mobility and safety concerns without overwhelming him.

Story 2: Alex's Difficulty Managing Wellness and Staying Active
Alex, an 81-year-old former university lecturer, prides himself on his intellectual curiosity and active lifestyle. However, recent health issues have made it challenging to keep up with his fitness regimen and social activities, crucial for his mental and physical health. Living in an urban area provides him access to amenities, but Alex finds it increasingly difficult to manage his wellness routine independently. With a pension that affords him comfort but demands value, Alex looks for a solution that blends his need for support with his desire to remain engaged and active.

Story 3: Elena's Journey to Regain Confidence in Mobility
Elena, a 77-year-old retired librarian, lives in the vibrant heart of the city. Her passion for literature and community events has always kept her active. However, recent falls and a growing fear of getting lost have shaken her confidence, making her reluctant to step outside her apartment. Elena, who has always embraced learning and technology, seeks a solution that can help her navigate the urban environment safely and independently. Recognizing her struggles, Elena's children, who are deeply concerned about her well-being, are eager to finance the right technology that can provide her with the safety and confidence she needs to continue her lifestyle.

Market and Gap

Solutions and Competitors:

- **Personal Emergency Response Systems (PERS):** wearable devices designed to alert family members or emergency services with the push of a button in case of a fall or medical emergency. Companies like Life Alert and Philips Lifeline are prominent players in this space. **Limitations:** PERS devices are reactive rather than proactive. They do not address daily living assistance, health monitoring, or social isolation issues, which are crucial for enhancing quality of life and independence.
- **Assistive Personal Robots:** Companion robots designed for older adults, offer conversation, medication reminders, and can suggest content to keep the user engaged. Example is Care-O-bot, a service robot designed to assist in daily tasks. **Limitations:** While these robots offer companionship and basic task assistance, they often lack advanced physical assistance capabilities for users with significant mobility challenges. The focus tends to be more on social interaction and less on comprehensive health monitoring or physical aid.
- **Mobility Assistance Robots:** Devices such as Toyota’s Human Support Robot (HSR) are designed to help with mobility and carrying out tasks. HSR can fetch items, open doors, and assist with other simple tasks. **Limitations:** These robots are primarily designed for specific tasks and may not offer the broad range of services needed for a fully independent lifestyle. They also require a certain level of user mobility and cognitive function to operate effectively, which may not be feasible for all older adults.

Market Gap

- **Accessibility and Usability:** Many existing technologies are not designed with the older adult user in mind, presenting barriers in terms of usability and accessibility. There's a need for solutions that are intuitive, easy to use, and require minimal technical literacy, specifically designed for the older adult demographic.
- **Integrated Health and Lifestyle Management:** There is a gap in solutions that integrate comprehensive health monitoring (including non-emergency health management) with daily lifestyle management. Older adults need solutions that not only react to emergencies but also proactively manage their health and wellness through medication reminders, fitness tracking, and dietary guidance.