

# Questions and Answers

**Q1. How do you reach out to older adults who resist using technology or don't have access to mobile phones or the internet?**

**Prof Theng:** To effectively reach out to older adults who resist using technology or lack access to phones and the internet, consider these strategies:

- (i) in-person engagement that fosters trust in discussing technology's benefits;
- (ii) leverage existing networks (identify champions in the community);
- (iii) tailor training programmes on use of technologies;
- (iv) address concerns directly such as costs, privacy concerns or usability issues, and provide clear, simple solutions that demonstrate the value of tech in enhancing their daily lives.

**Dr Zhang:** Thank you for the question. I think the most important step is to understand why older adults resist using technology or lack access to mobile phones and the internet, and then develop strategies accordingly. For example, we can offer hands-on guidance to those who have fear or lack of confidence in using technologies, or direct them to the Mobile Access for Seniors scheme under the Senior Go Digital programme if they would like to explore affordable or subsidised mobile devices/data plans. This is why involving "non-users" in the co-design process is crucial, as their insights can guide the creation of more accessible, inclusive, and relevant solutions. However, it's also important to recognise that technology may not be suitable for everyone, and we should avoid "forcing" its use. Instead, offering alternative options or complementary support for those who prefer non-digital approaches could ensure inclusivity and respect individual preferences.

**Q2. What makes ARISE's approach to promoting healthy aging through digital technology unique, and how does it complement existing community interventions in Singapore?**

**Prof Theng:** We work with community partners to understand the problems, develop use cases and interventions. An ideal case is when we can engage users early in the process, and work with stakeholders throughout the development: (i) define clear objectives; (ii) use diverse feedback methods such as exploratory interviews, surveys and polls, in-app feedback tools, (iii) collect use analytics and create feedback loop; (iv) iterative based on feedback; etc.

**Q3. Can you describe your experience with recruiting and co-designing with older adults? How do you overcome challenges such as language barriers, low literacy, and resistance from participants?**

**Prof Theng:** To involve inclusivity in participant selection for co-design with older adults, consider the following approaches: (i) Diverse recruitment, that is, include older adults from various backgrounds, abilities, and experiences to reflect a wide range of need and perspectives; (ii) Adapt recruitment methods to accommodate different levels of digital literacy and physical ability, using both online and offline channels to reach potential participants; (iii) build relationships; (iv) get feedback through iterative design and development processes.

**Dr Zhang:** Thank you for the question. The timing of my project coincided with the COVID-19 pandemic, which posed some challenges as most studies had to be conducted remotely. However, I was also lucky that the pandemic was pushing Singapore to promote digital health, resulting in older adults becoming more familiar with and capable of using digital technologies. This

shift made it easier to engage participants remotely, as many had gained access to mobile devices and developed the skills needed to navigate them. Yes, language barriers limited my ability to recruit diverse participants, as I am from China and not very familiar with dialects, and I did not have more resources to include other language speakers. As a result, I could only recruit those who spoke English or Mandarin, and I hope that I can address this in future research. To address low literacy levels among participants, I used simple language and avoided technical terms where possible. When technical terms were unavoidable, I tried to provide explanations with examples and constantly checked in with participants to ensure understanding.

**Q4. What are the key challenges when involving older adults in co-design, especially when they don't know what they don't know?**

**Prof Theng:** Similar comments in (3). In addition, we work with older adults throughout the design and development process, highlighting the positive and negative consequences of design ideas so they can make informed decisions on the final product.

**Dr Zhang:** Thank you for the question. Yes, it could be very challenging when participants are not aware of what they don't know. So my strategy is to use familiar analogies or simple wireframes/prototypes to give participants more concrete reference points. In addition, using some stories or peer sharing during the co-design, session can help participants feel that what we want to design can be beneficial and relevant to their daily lives.

**Q5. How do you address issues like competing technologies, costs, sustainability, and the scalability of your interventions?**

**Prof Theng:** To address competing technologies for older adults, focus on the following strategies:

- (i) inclusive designs;
- (ii) cost-effective solutions and best to work directly with industry partners from the outset, if possible;
- (iii) scalable solutions;
- (iv) community engagement throughout the design and development of the interventions;
- (v) raise the digital literacy levels and skills through training; etc.

**Q6. How do you ensure inclusivity in participant selection while achieving co-design goals? How do you reconcile conflicts between sponsors and co-designers?**

**Prof Theng:** Similar comments in (3) to have inclusivity in participant selection for co-design with older adults. To reconcile conflicts with sponsors and co-designers, consider these strategies:

- (i) establish clear guidelines on roles, responsibilities, and expectations early in the project, signing off requirements agreed upon with milestones identified;
- (ii) facilitate open communication; implement conflict resolution protocol.

**Dr Zhang:** Thank you for the question. I think it is important to involve a diverse range of older adults from different backgrounds, SES, demographics, health conditions, and digital literacies so that we can capture a broad spectrum of perspectives and experiences. This will help make the responses more comprehensive, inclusive and relevant to different

sub-population groups. In addition, involving non-users is also important to identify the barriers to accessing or using the intervention.

I have not encountered a situation where conflicts arise between sponsor goals and co-designers, but I think prioritising the end-users' needs is crucial, and we need to look for a balance between the goals of the sponsors and co-designers. Maybe looking for evidence in the literature and fostering open communication could be useful?

**Q7. What are best practices for involving older adults in product development, including sample size, feedback collection, and sustaining technology use?**

**Prof Theng:** Best practices include:

- (i) market validation;
- (ii) iterative development;
- (iii) user-centric design; and
- (iv) mechanisms for on-going user engagement even after post-launch.

**Dr Zhang:** Thank you for the question.

- **Sample size**  
I think recruiting a diverse representation is helpful, e.g., participants with different backgrounds, SES, demographics, health conditions, and digital literacies; users and non-users; older adults, caregivers, healthcare professionals, etc. For each session, we can keep a relatively smaller group (in general I involve no more than 6 participants per session, if time and resources permit) to allow for deeper insights, active discussion, and manageable duration.
- **Feedback collection**  
I think adopting multiple data collection methods could be helpful to validate the findings, e.g., observing participants' interactions with product prototypes, quantitative surveys, and qualitative interviews/focus group discussions can be adopted.
- **Sustained technology use**  
I think keeping participants interested and motivated is key to sustaining their technology use. To achieve this, the product should be user-friendly and effectively meet the needs of the target user group. Providing technical assistance is also essential to help participants feel supported when navigating any difficulties. Additionally, incorporating strategies such as gamification or rewards can further enhance engagement and encourage continued use of the technology.