

“Remarkable Technology, Easy To Use”

Tips to prepare longitudinal technology studies

Implementing longitudinal studies is a time-consuming process, involving a significant amount of planning that can still leave you unprepared for unforeseen circumstances. Through our experience on implementing such studies at Fraunhofer AICOS (e.g. GoLivePhone¹, SmartBeat², Clockwork³, Lifana⁴) the HCD⁵ researchers leading these studies gathered a set of challenges and lessons learned which they consider relevant to share with fellow researchers. Below is a brief overview of some topics discussed in our paper *Challenges and Lessons Learned from Implementing Longitudinal Studies for Self-care Technology Assessment*⁶ that you can read for more in-depth information.

Preparing Recruitment

When recruiting senior participants seek the cooperation of gatekeepers such as family members, caregivers or institutions that work directly with this audience. At Fraunhofer we used this method to build a network of volunteer participants (colaborar.fraunhofer.pt) that allows us to currently have a much easier recruitment process.

Equipment delivery

To kick-off a study and provide participants with all the necessary equipment and information you can plan workshop or one-on-one sessions. Workshops can be more efficient, but you need to consider participants' heterogeneity and its implications. One-on-one sessions might not be appropriate for studies with a large number of participants or budget and time restraints.

Ongoing Collecting data and maintaining software updated

To remotely collect data, you can use commercially available solutions or develop your own. At Fraunhofer we have our own tool to monitor participants during longitudinal studies (<https://www.aicos.fraunhofer.pt/en/publications/theses/trialmonitor.html>). In addition, make sure that participants

¹ https://www.aicos.fraunhofer.pt/en/our_work/projects/SmartCompanion.html

² https://www.aicos.fraunhofer.pt/en/our_work/projects/smartbeat.html

³ https://www.aicos.fraunhofer.pt/en/our_work/projects/clockwork.html

⁴ https://www.aicos.fraunhofer.pt/en/our_work/projects/lifana.html

⁵ https://www.aicos.fraunhofer.pt/en/scientific_expertise/human-centred-design.html

⁶ <https://dl.acm.org/doi/10.1145/3341162.3344863>

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have access to a Wi-Fi connection or provide them with a data/communication plan and implement a system for remote updates and encourage participants to give continuous feedback

Maintaining contact with participants

Maintain a direct and personal contact channel with participants. This way, participants are listened to and might feel more engaged with the study.

Wrapping up

Transparent data management

Guarantee that all data are managed in accordance with legal frameworks and to what was stated in the informed consent.

Wearing technology off

Inform participants since the beginning that at the end of the study the provided equipment needs to be returned. Implement a transition phase and help participants in replacing the technology if they wish so.

For more information please refer to:

A. Vasconcelos, I. Lopes, J. Ribeiro and A. Barros, "Challenges and lessons learned from implementing longitudinal studies for self-care technology assessment", in proceedings ACM International Joint Conference on Pervasive and Ubiquitous Computing (UbiComp), 2019, pp. 893-898.