# Video prototype study

This study evaluated the user experience of adaptive user interfaces when used in mitigating interpersonal privacy violating scenarios. This study used video prototypes as the stimulant to elicit user responses where each video prototype demonstrated how different variations of adaptive user interfaces can be used to mitigate different variations of interpersonal privacy violating scenarios. Here interpersonal privacy violations refer to privacy violations that happens between smart home users due to sharing smart home devices among themselves. There are two main variations of interpersonal privacy violations explored in this study:

* Interpersonal information privacy: Privacy related to information disclosures caused by shared smart home devices,
* Interpersonal physical privacy: Privacy related to disturbances caused by shared smart home devices.

Nine scenarios were developed covering different adaptive user interface variations, interpersonal privacy variations, smart home contexts, and different user preferences. Table 1 shows the nine scenarios used for each video prototype and Table 2 shows the scenario allocation details of each participant. Participants are named in the format of PXN, where PX standards for user experience study participant, and N standards for the number of the participant (i.e., fourth participant would be PX4). It also important to note that twentieth participant (PX20) did not participate in the study even though initially signed-up for it.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Scenario name and [tag]** | **Interaction channel and privacy violation type** | **User preferences**  **(privacy and user interface)** | **Possible privacy violating incident** | **User interface adaptation solution** |
| Meditation Scenario [MED] | Audio-output  Disturbance | Your co-occupant does not like to get disturbed while they are meditating. | You try to play music loudly via your smart speaker while the co-occupant is meditating. | The smart speaker automatically plays the music at a low volume while providing the reason for the adaptation on your phone. You are also given a set of alternatives to play music. You pick the Bluetooth headset option to play music. |
| Health Information Scenario [HLT] | Audio-output  Information  Disclosure | You do not like to share your health data with anyone.  Your most preferred user interface choice is the smart speaker and then your smartphone. | You try to access your health data via the smart speaker. At this moment a co-occupant who is not authorized to listen to that information comes into the room. | The health information stream is diverted to your smartphone while letting you know the possible privacy violation that was avoided. |
| Slide Scenario [SLD] | Video-output  Disturbance | Co-occupant doesn’t like to get distracted while studying.  You prefer the smart TV, then you would prefer your smart tablet to view photos. | You are about to go through your holiday photos on the smart TV while the co-occupant was studying in the living room. | When you try to view the photos on the Smart TV, a notification pops up about the possible privacy violation that is about to happen and guides you to use your tablet. |
| Netflix scenario [NFX] | Video-output  Information  Disclosure | You do not like to share your Netflix view history with anyone else at home. | You are viewing your Netflix account on the Smart TV. There are suggestions generated based on your view history. Then a co-occupant enters the room. | Smart TV adapted the sensitive sections by filling it with non-sensitive movie suggestions when the co-occupant came into the room. |
| Open Sesame  Scenario  [OPN] | Gesture-input  Information  Disclosure | you would not want anyone to access your secret cupboard other than yourself. | your secret cupboard door can only be opened by a specific secret gesture. One day you are about to open the cupboard while a co-occupant came to the room. | Smart home ignores the gesture knowing the co-occupant is in the vicinity and sends a message to your smart watch with the reason for ignoring the gesture. |
| Friend  Scenario  [FND] | Video-input  Disturbance | Your friend’s co-occupant does not like to get disturbed by others when they are home on a weekend. | You speak to your friend via a video call. When you are on the video call, his co-occupant (who is also a mutual friend of yours) was about to walk across the camera’s view. | When your friend’s co-occupant was about to walk across, the background was blurred in the video call. This avoided an unnecessary conversation that the co-occupant might have had to have with you. |
| Safe Scenario  [SFE] | Video-input  Information  Disclosure | Your friend’s co-occupant doesn’t want anyone to know the passcode to their safe. | You were in a call with your friend. While you were on a video call, his co-occupant was about to open the safe. The safe was in the vicinity of the video call. | The background of the video call was blurred covering the pin code of the safe. |
| Football  Scenario  [FBL] | Audio-input  Disturbance | The co-occupant doesn’t like to get disturbed while they are studying  You like to use a smart speaker to get sports updates, if it is not possible, you would your smart phone. | You try to check the sports news on the smart speaker, when the co-occupant was studying in the room. | When you asked the smart speaker for sports news, the smart speaker reminded you that your co-occupant was studying and guided you to use the smartphone. Smart home also explained the reason for the adaptation. |
| Bank Scenario  [BNK] | Audio-input  Information  Disclosure | You would not share your bank pass code with anyone. | There is a smart speaker skill to log in to your bank account. When you initiated the smart speaker skill for bank feature, a co-occupant entered the room. | Smart home did not prompt you for the passcode over the smart speaker, instead sent a message to your smart phone with the bank account control. Smart home also explained the possible privacy violation that was avoided. |

Table 1: Scenario descriptions

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Participant ID** | **First video presented** | **Second video presented** | **Third video presented** | **Fourth video presented** |
| P1 | Meditation | Football | Open | Bank |
| PX2 | Safe | Bank | Meditation | Slide |
| PX3 | Meditation | Friend | Netflix | Open |
| PX4 | Netflix | Safe | Meditation | Football |
| PX5 | Meditation | Slide | Netflix | Safe |
| PX6 | Slide | Friend | Health | Bank |
| PX7 | Slide | Football | Netflix | Safe |
| PX8 | Open | Bank | Friend | Football |
| PX9 | Health | Open | Friend | Football |
| PX10 | Health | Bank | Friend | Football |
| PX11 | Safe | Bank | Slide | Football |
| PX12 | Health | Safe | Slide | Football |
| PX13 | Health | Open | Meditation | Friend |
| PX14 | Netflix | Bank | Slide | Friend |
| PX15 | Meditation | Slide | Health | Safe |
| PX16 | Meditation | Football | Health | Safe |
| PX17 | Meditation | Friend | Open | Bank |
| PX18 | Meditation | Friend | Health | Netflix |
| PX19 | Netflix | Open | Slide | Friend |
| PX21 | Safe | Bank | Meditation | Football |
| PX22 | Slide | Friend | Health | Netflix |
| PX23 | Open | Bank | Slide | Friend |
| PX24 | Meditation | Football | Open | Safe |

Table 2: Order of scenario allocations

This study was approved by the Open University’s Human Research Ethics Committee (**HREC/3588/Wijesundara**).

# Post scenario questionnaire

Participants were provided with a post-scenario questionnaire (§2.1) and they were prompted to think out aloud when answering. Then they were further inquired to understand the reasoning behind their answers. After the four scenarios participants were asked questions based on all the four scenarios viewed (§2.2). These interview data were transcribed presented in section 3.

## Post Scenario - Questionnaire

Please explain what you saw in the video and describe your experience of the smart home.

-------------------------------------------------------------------------------------------------------------------------

Please underline the top five words which defines the “privacy aware adaptive user interfaces” in the video you reviewed last. Imagine you are the person who is experiencing the system.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Entertaining | Patronizing | Irrelevant | Predictable | Organized |
| Innovative | Impersonal | Poor quality | Effective | Inviting |
| Convenient | Trustworthy | Professional | Stressful | Confusing |
| Cutting edge | Annoying | page1image3773184Familiar | Straight Forward | Efficient |
| Essential | Flexible | Powerful | Dated | Exciting |
| Attractive | Approachable | Simplistic | Difficult | Clean |
| High quality | Complex | page1image3680208Engaging | Dull | Desirable |
| Unrefined | Comfortable | Time-consuming | Unpredictable | Intimidating |
| Inconsistent | Satisfying | Fast | Exceptional | Useful |
| Easy to use | Comprehensive | Inspiring | Overwhelming | Unattractive |
| Consistent | Advanced | Busy | Undesirable | Friendly |
| Relevant | Personal | Rigid | Helpful | Reliable |
| Unconventional | Creative | Collaborative | Ineffective |  |

*Developed by and © 2002 Microsoft Corporation. All rights reserved.*

**Please explain why you picked those reaction cards?**

-------------------------------------------------------------------------------------------------------------------------

Please consider the following statements and rate how much you agree with those statements.

1. Privacy aware adaptive user interfaces protect privacy of smart home users.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Strongly Disagree |  | Don’t agree or disagree |  | Strongly Agree |
| 1 | 2 | 3 | 4 | 5 |

1. I did not feel that I am in control while using the smart home

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Strongly Disagree |  | Don’t agree or disagree |  | Strongly Agree |
| 1 | 2 | 3 | 4 | 5 |

1. I expected the user interface adaptation before it happened.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Strongly Disagree |  | Don’t agree or disagree |  | Strongly Agree |
| 1 | 2 | 3 | 4 | 5 |

1. If I were the person experiencing these user interface adaptations, I would not have accepted them.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Strongly Disagree |  | Don’t agree or disagree |  | Strongly Agree |
| 1 | 2 | 3 | 4 | 5 |

1. I understood why the user interface adaptations happened.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Strongly Disagree |  | Don’t agree or disagree |  | Strongly Agree |
| 1 | 2 | 3 | 4 | 5 |

1. User interface adaptation obstructed the user experience of using the smart home.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Strongly Disagree |  | Don’t agree or disagree |  | Strongly Agree |
| 1 | 2 | 3 | 4 | 5 |

## Post-Study Semi Structured Interview Script

Overall, how do you feel about adaptive user interfaces being used in protecting privacy of smart home users?

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Did any of these scenarios resonate with your daily activities? If the answer is yes, could you please elaborate?

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Did any of these scenarios inspired you to think of other scenarios in your daily activities? If the answer is yes, could you please elaborate?

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

COVID-19 lockdown and working from home made us spend more time sharing our home with co-occupants. Has the current situation created any privacy violating scenarios that could have been avoided by adaptive user interfaces? Please elaborate on your answer.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

# Video prototype study Interview Transcripts

## P1

|  |  |  |
| --- | --- | --- |
| Index | Tag | Transcription |
| 1 | Interviewer 0:00 | Er, Good! Thank you very much for joining my study. Before we start, let me give you a brief introduction to the study. The purpose of this study is to answer the research question. |
| 2 |  | How do users perceive the.. |
| 3 | Other 0:34 | [Fixing the audio problem] |
| 4 | Interviewer 0:43 | So the purpose of this study is to answer the research question, how do you users perceive the usability and privacy preserving capabilities of user interface adaptations in a smart home, so let me unpack that a bit. In the study, you'll be shown four videos demonstrating Smart Home scenarios with possible risks of privacy violations. Smart Home user interfaces could adapt their behaviour in order to avoid or minimize those privacy risks. So this study focused on two types of privacy violations. The first type relates to information disclosures. Second type relates to disturbances caused by smart home devices. So the two videos I've sent earlier examples of those two scenarios, variations. Does that make sense up to now? |
| 5 | PX1 1:31 | Yes, it does. |
| 6 | Interviewer 1:33 | If you have any questions, please ask. The videos you see next are recorded from first person point of view. This is because I would like you to imagine that you're the person who's experiencing scenario yourself. After each video, you'll be given a questionnaire to answer it's important that you answer this questions as if you have experienced the scenario yourself. In the end, I'll ask you some summary questions as well and I will be recording this conversation. The recording will be deleted as soon as I've transcribed the session, transcriptions will be kept securely until I have completed my analysis and any information extracted from them will be anonymized before being used in any publications. If that is all right with you, we can get started. |
| 7 | PX1 2:15 | That's fine by me. |
| 8 | Interviewer 2:16 | Great! |
| 9 |  | Go to the first video and watch it and then uhm, answer the question. |
| 10 | PX1 2:25 | Just opening it up now. |
| 11 | Other 3:16 | [Fixing audio issue] |
| 12 | PX1 3:17 | I'm starting to watch the video |
| 13 | Other 3:24 | [Audio from the video playing] |
| 14 | PX1 4:04 | Okay, I'm done with the first video. |
| 15 | Interviewer 4:06 | Great! you can move to the first question, which is to explain out loud what you saw in the video. |
| 16 | PX1 4:12 | Okay, so from the main users point of view, they wanted to listen to.. |
| 17 | Other 4:19 | [Disturbance caused by the video being re-played] |
| 18 | PX1 4:22 | the first person, sorry, the main user, wanted to listen to music. And when they activated, Alexa, which is the smart speaker, I think, it sent a message or a prompt to the main user's phone with all the various options, you can do it, because that action they were about to perform was going to disturb somebody else in the house and was gonna violate that privacy. So that's from the main users point of view |
| 19 | Interviewer 4:59 | So, what do you think about from the second users point of view who was not in the video, but like, the person was meditating? |
| 20 | PX1 5:06 | Um, that's a bit of a hard thing to explain because you really can't see the action as such. |
| 21 |  | But if I were to put myself in their shoes, I think it's a very considerate approach. |
| 22 |  | But again, I wouldn't know how to react even if I was in that situation. Because I don't know that action was taken on behalf of me. |
| 23 | Interviewer 5:31 | Okay, |
| 24 | PX1 5:32 | [if?] that makes sense. So say somebody did something very nice. keeping me in mind, I still wouldn't know to actually acknowledge it. I think yeah, that's where I'm coming from, you won't be able to ack... acknowledge, that somebody else did something very considerate on their behalf. Yeah. |
| 25 | Interviewer 5:50 | Okay. You can move to the next question. |
| 26 | PX1 5:56 | Please type, So I am typing, not calling it out? |
| 27 | Interviewer 6:00 | Yeah first typing, then there's, the next question is to explain out loud what., why you picked those words. |
| 28 | PX1 6:06 | [Reading the quiestion out loud] |
| 29 |  | Okay, so umm, I picked the five words, innovative, advanced, helpful, friendly and exciting. |
| 30 | Interviewer 7:53 | Okay, great! You can move to the next set of questions. |
| 31 |  | ummm, And why I picked those words is I've never seen this kind of technology before. So it seems very innovative, advanced and quite exciting. |
| 32 |  | And being in, I guess, trying to put myself in that second person's view. I think it's very helpful and friendly that a software or a tool is able to make those decisions on behalf of me, so it doesn't interrupt my way of life. |
| 33 | PX1 8:29 | Am I able to ask clarifying questions? |
| 34 | Interviewer 8:32 | Yes, definitly. |
| 35 | PX1 8:34 | When you said I expected a user interface adaption before it happened. Does it mean that I expected the, that software to work in that way? Is that what you're asking? |
| 36 | Interviewer 8:46 | Er Yes. So initially I sent you two videos, right? I mean, that's like the initial understanding and, so knowing that, that's how the system works. Do you think like, in this scenario that you expected this kind of a change? |
| 37 | PX1 9:00 | Because it's right now it's relative to my technical knowledge, because that scenario is very different to, so it's not a dismission of the capability of it. It was just my knowledge of how these tools work. |
| 38 |  | Okay, I have completed section one. |
| 39 | Interviewer 9:45 | Okay, I've got a few questions on that, so in the first. First question you said like, the smart home protected the privacy of its users, you put a four. Is there a reason why you didn't go for five or maybe |
| 40 |  | like what? what do you think is lacking in this scenario? |
| 41 | PX1 10:04 | Um, I think just my unfamiliarity with the tool, because again, how this video responded was very different to your, like the example videos you sent. So I think it's just an apprehension of just not knowing the full capability of what the tool does, I think it was, what was driving a four, That's from what I saw. Yes! But beyond what I was able to see what the tool was able to do. Yeah, that's why I gave a four. |
| 42 | Interviewer 10:34 | Okay, |
| 43 |  | so can you think of a scenario where like, |
| 44 |  | where, I mean the same scenario, a situation where you would rate it as one instead of four or five? Like for the first question, like how would be that scena.. how would that be? how, how that scenario would be like? |
| 45 | PX1 10:53 | so basically, where it didn't protect the privacy of the users? |
| 46 | Interviewer 10:57 | Yes. |
| 47 | PX1 11:00 | Well, so if the software really didn't exist, |
| 48 |  | even like in a normal scenario, but I'm just trying to take out the, what was sold to me as part of the study and try and assess this question. |
| 49 | PX1 11:17 | I think if it prob.. probably sent, maybe a notification to the person meditating, asking for permission or something. |
| 50 | PX1 11:28 | I think that may have been a violation of privacy or just disturbing the the intention, I guess, of having the privacy in the first place. |
| 51 | Interviewer 11:38 | Okay. |
| 52 |  | So in the fourth question, you said, you would accept them, like strongly dis.., disagree with the statement. So what do you think would be a system that makes you rate it as four five in this case? |
| 53 |  | Like what sort of an adaptation you wouldn't have accepted? |
| 54 | PX1 12:03 | Uhm.perhaps if it actually showed what kind of music I was listening to, and along with what application I was using, |
| 55 | Interviewer 12:20 | So you mean, |
| 56 |  | the person or just...? |
| 57 | PX1 12:23 | Sorry |
| 58 | Interviewer 12:24 | I mean, |
| 59 |  | I wasn't bit clear about what you said, is it about like showing that information to me or sending that information to other person? |
| 60 | PX1 12:32 | sending the information to another person. |
| 61 |  | Yeah. Because right now, I would accept it in its current state. I would |
| 62 |  | Did I interpret that question correctly? |
| 63 | Interviewer 12:49 | Yeah, I think so, |
| 64 |  | the question is about, if this happens to you, would you have, like accepted it? So, would you have not accepted it, so like, it is a double negatives? Oh, So you you say |
| 65 |  | that you would.. |
| 66 | PX1 13:03 | Well? Yeah. I don't do well, too well with the. double negatives... |
| 67 |  | Okay. all, good. |
| 68 | Interviewer 13:11 | Okay, so is there anything else you'd like to add to this scenario? Like something you wished there was? or anything else? |
| 69 | PX1 13:17 | Oh, well, I've never thought to this extent, what technology is capable of? |
| 70 |  | Yeah, cuz all I think of to preserve privacy is to put headphones on. not listen to the music at all. Or do.., |
| 71 |  | I thought that last option was interesting, where you give the user the option to actually listen to it out loud, which is almost like a moral dilemma on the end users part on, you know, and the possibility being, is that it could happen, um, which in a weird way, actually like about system it's not entirely restricting you? But it also contradicts the purpose of the software as well. |
| 72 |  | Uhm. so is there a reason behind why that option was still given? |
| 73 | Interviewer 14:13 | Yeah, so it's coming |
| 74 |  | from the previous study I did, like some some of the users said like, there should be the option for people to to break the rules if it's needed. Because otherwise it would be enforcing, A.I. enforcing too much control over the user, which is, some people might find it annoying and fairly so. So rather than enforcing. the reason was to actually give the options and give a reason why this is happening and give all the possible options to the user to make a decision. So that was the reason behind given all these scenarios. |
| 75 | PX1 14:51 | I thought that was a very, very considerate approach to doing that to kind of break up the the automation of that I guess, Yeah, |
| 76 | Interviewer 15:02 | great! so you can move to the next scenario. |
| 77 | PX1 15:10 | Just opening it up now. |
| 78 |  | Okay, I have finished watching the video. |
| 79 |  | So can I explain what I've seen? |
| 80 | Interviewer 16:23 | Yeah. |
| 81 | PX1 16:24 | So the, from a main user's point of view, they want to know the scores of the Football World Cup. And they call to the smart speaker to pretty much say out the results out loud. But it recognizes that there is another occupant in the room, who does not want to be disturbed as a result they sent rather than verbalizing the results, it sends a notification to the main users mobile device, so it doesn't disturb |
| 82 |  | the conditions that the second user has basically put in while he's studying. |
| 83 | Interviewer 17:02 | Okay |
| 84 |  | you can go to the next.. |
| 85 | PX1 17:05 | And from the secondary.. point of, users point of view is |
| 86 |  | Yeah, I think that kind of summed up in my first response didn't it? like what it was requested. Okay cool! |
| 87 |  | [Excusing for some background noise] |
| 88 |  | So you can see the five words I've used. I'm supposed to sepearate by a comma, I apologize. |
| 89 | Interviewer 18:37 | No worries, I can do that. |
| 90 | PX1 18:41 | Okay. Um, |
| 91 |  | yeah, I thought it was unconventional, mainly because I'm not a football fan as such. So I struggled to kind of associate with the scenario. |
| 92 |  | And it's a very unusual scenario as well. I felt like |
| 93 |  | Yeah, because you had to verbalize so that's why I said it's inspiring and like, yeah cuz I've never seen it done this way before and quite helpful as well and effective getting the notification to your.., I guess mobile device, but |
| 94 |  | yeah |
| 95 | Interviewer 19:26 | yeah, |
| 96 | PX1 19:35 | cuz cuz I where struggled a bit was |
| 97 |  | you know the user was there, in a normal scenario would you.., like because because you have to verbalize your response to Alexa anyway, right? like to me like, it's almost like you disturb that person anyway, even before you asked Alexa to verbalize the response so, |
| 98 |  | I think when maybe the main user literally at "Hi Alexa", because whatever you asked whether it was football results or whatever, right? Alexa should not respond to you full stop, right? So in my head, Alexa should have almost stopped to. I don't know, some kind of prompt should have gone at pretty much "Hi Alexa", maybe, I don't know, rather than letting you actually scream out the question. |
| 99 |  | Yeah. Does that make sense? |
| 100 | Interviewer 20:31 | Yeah. So you're suggesting, like to, to initially possibly stop the user from asking the question itself. |
| 101 | PX1 20:37 | full stop. Yeah, exactly. Right. |
| 102 | Interviewer 20:40 | Okay. |
| 103 |  | You can move to the next question. |
| 104 | PX1 21:21 | Okay, I have responded. |
| 105 | Interviewer 21:38 | Yeah. So in the fourth question, so what do you think, be a scenario that you would have rated as 1 or 2? |
| 106 |  | where, you would have accepted the adaptation. |
| 107 | PX1 21:53 | I think it's going back to the point that I mentioned earlier. |
| 108 |  | I think if it just stopped Alexa from getting activated full stop, I would have given it a disagree. |
| 109 | Interviewer 22:04 | Okay. |
| 110 |  | So is that the same reasoning behind question, answer to the question six as well? |
| 111 | PX1 22:11 | Correct? Yes. |
| 112 | Interviewer 22:12 | Okay. Okay. |
| 113 |  | Anything else you'd like to add to this scenario before we move to the next one? |
| 114 | PX1 22:20 | No! None |
| 115 | Interviewer 22:22 | Cool, we can go to the next scenario. |
| 116 | PX1 23:24 | First of all, that was very cool. |
| 117 |  | I would not have thought about that kind of a scenario |
| 118 | Other 23:33 | [Audio from the video being replayed] |
| 119 |  | but I think that's fantastic, especially for users with a disability who may not be able to verbalize commands. So I think to preserve their privacy what was considered was fantastic. |
| 120 | PX1 23:34 | And what I basically saw from my main point, user point of view is there was a gestural, I guess passcode to get to access them medical cabinet. And they did use it, when Alexa triggered the command to say that it's due to use them. The time's right to take up that medication. And then they got an alert saying that, and the user performed, I guess a gesture. And then the smartwatch got an alert saying that the user, another person is present in the room. And because of that Alexa ignored the command, basically. Yeah. |
| 121 | Interviewer 24:36 | from the secondary users point of view, what do you think? It is a very hypothetical question, because he was not in the room. |
| 122 | PX1 24:42 | Yeah, exactly. I'm just trying to think. |
| 123 |  | I think I'll be a bit |
| 124 |  | confused if I was the secondary person as trying to figure out |
| 125 |  | but I also would feel a bit awkward that I witnessed something quite private. That's happening and that stopped awkwardly because I walked into the room. That could be a more emotional response that gets triggered. |
| 126 |  | Yeah, so I used the words creative, satisfying, powerful, helpful, useful. Especially from a user with a disability perspective, that I think is a very [helpful?] to preserve their privacy. I thought was, yeah, pretty much the reason behind me selecting those five words. |
| 127 |  | Okay. |
| 128 | Interviewer 27:04 | Could you explain your answer for the first question why you put disagree there? |
| 129 |  | disagree? Yeah. Cuz, to me, the alert from Alexa came only after that secret gesture was done, right? So it doesn't matter that Alexa didn't open the cupboard, I still exposed my password basically to someone else in the room who could have seen it and then used it later on. |
| 130 |  | If anything, I should have gotten that, when it said, your medicine is due. And then, because what I didn't see was how the secret passcode was activated. Like if that. if you're doing it at a sensor or cupboard or something, to me, like I think when Alexa says your medicine is due and you go up to the sensor and start to kind of, it start to notice a gesture Alexa should go on, then you should get a message saying that's somebody was in, within your vicinity rather than after you performed the password. Does that make sense? |
| 131 |  | Yeah, |
| 132 | Interviewer 28:08 | yes. Yes. Um |
| 133 |  | so |
| 134 | PX1 28:17 | and that kind of influenced the, my other responses basically, other than for the question number six. |
| 135 | Interviewer 28:25 | Yeah so what's, what's your sort of reasoning behind question number six. and |
| 136 | PX1 28:30 | yeah, why disagreed with it is, it didn't obstruct the user experience from an end users point of view because it didn't expose the medicine cabinet to somebody else, right. It's partly that, because because like the hand gesture might not have been easily interpreted by someone else perhaps. So that triggered me to kind of go. Yeah, like the ex.. didn't really stop their experience from using the Smart Home device basically, if that makes sense. |
| 137 |  | what it was meant to do, for what it was programmed for. |
| 138 | Interviewer 29:16 | Uhm So, |
| 139 |  | So what sort of an adaptation that you would have accepted? Like following up with the fourth question? |
| 140 |  | In this kind of scenario? |
| 141 | PX1 29:31 | [Reads the question to herself] |
| 142 |  | Yeah. So it goes back to my original response. It should have not let me do the full gesture to actually open the cupboard, uhm [...] at start of the gesture rather than finish it and then say, hey, there's somebody in the room. If it stopped me from doing it. I would have accepted it. |
| 143 | Interviewer 30:00 | Anything else you'd like to add to this before I move to the next one? |
| 144 | PX1 30:05 | No! |
| 145 | Interviewer 30:08 | Cool, we can go to the next question. |
| 146 | PX1 31:15 | Okay, I have watched the video. And basically, the main user wants to check the bank [balance?], their own bank balance, and it activates Alexa to say the bank balance out loud. But then at that same time, the second, a secondary user walks in, basically, and the rules of the software state that you can't share your login details when somebody else is in the room. So because of that Alexa does not respond, but then trigger your mobile device to instead |
| 147 |  | do it. Yeah, via phone basically. |
| 148 |  | And from the second users point of view, I like that, in a weird way, |
| 149 |  | from a main user point of view, I don't think the secondary user heard anything, it was pretty much stopped even before Alexa triggered anything or, you know, you were in a situation where the secondary user was already in the room where they would have heard your intention anyway. So I like that there was a clean separation. Because otherwise, I think with tools like this, there may be tensions that are caused with people in the same household, perhaps, where people feel like they are hiding things from each other, if they heard something, and they didn't. Whereas in this scenario, I don't think that tension would have existed, because the secondary user was not in the physical vicinity of that other person. Before, I guess this whole thing was triggered. So in that sense, I think that this scenario was helpful |
| 150 | Interviewer 33:02 | Great, next question |
| 151 | PX1 34:00 | Yeah, I know. I feel like I picked some contradictory words in there. Yeah, but the reason why I pick these words, creative is, creative and unconventional. So I'll start with unconventional first. I would not verbalize, like for me bank details are something. So, like a very, very, very private, right like, it's not something I would scream out to a device Sorry, I shouldn't say scream, call out loud to a device to access it, because of that. It just felt very unconventional to me.  But also at the same time, I thought it was quite creative because I would have never thought to use a smart device to do stuff like that.  Um, but also I thought it was quite helpful and useful again, for somebody with a disability or you know, somebody who's had, Even a short term injury, like if they can't use the.., and their phones not within their vicinity, for example, and they can't use it, I thought in that sense, it was quite good. |
| 152 |  |  |
| 153 |  |  |
| 154 |  |  |
| 155 |  | But also at the same time, I thought it was quite intimidating. In the first instance that you could just ask a smart device for things as personal as as you know, your bank balance, for example. So those are the first five things that came into my head. |
| 156 | Interviewer 36:36 | The last question |
| 157 | PX1 36:38 | ah, that was a bit, I think just, hard one because of, I guess like I said, with me using the five words, just the unfamiliarity with this, the situation of why I would use it but |
| 158 |  | but I don't think in this instance it didn't obstruct the user experience of the person using the smart home. Because, again, I'm just at a juncture with like how I traditionally would check my bank balance, which is like, what what, like, why wouldn't you have just gone to your phone in the first place? Because I wouldn't scream out my password out loud, regardless of them by myself or anything. It's just a personal mentality thing I'm trying to get past but |
| 159 |  | yeah, I guess in this instance, I don't think it obstructed. The user experience, it did what it was intended to do, for this purpose. |
| 160 | Interviewer 37:47 | So in the fourth question, you said like you would have accepted. |
| 161 |  | So what do you think would be a scenario that you wouldn't have accepted? |
| 162 |  | what sort of an adaptation? |
| 163 | PX1 37:58 | I think like with the Similar scenarios. |
| 164 |  | I think if the person was already in the room. And then the question was verbalized, like something as sensitive as bank. That's my main concern with this stuff. Because it's very awkward to walk into a room and you know, when people stop talking, that says, Is that because of me? And then what are the the human like the emotional triggers post that right? Like, what do you accumulate? I think would be, I think any of the scenario somebody was already in the room and is triggered, is what I would think where I would not have accepted it, but right in this scenario, because the person did not even enter the room and was prevented like much earlier than when it happened. I thought that was quite useful. |
| 165 |  | Yeah. |
| 166 | Interviewer 38:58 | Okay. |
| 167 | PX1 38:59 | Yeah. Think of, Go on. |
| 168 | Interviewer 39:04 | Yeah. So what do you say? |
| 169 | PX1 39:06 | No, I think it kind of comes to the summary questions [with?] my general feedback that I wanted to give? |
| 170 | Interviewer 39:11 | Yeah, so that's the end of the four scenarios. |
| 171 |  | So you read through the questions and speak out your answer, the summary questions. |
| 172 | PX1 39:25 | Um, do I have to address each and every one of them? |
| 173 | Interviewer 39:29 | Not necessarily, |
| 174 |  | like, |
| 175 |  | how you resonate with... |
| 176 | PX1 39:34 | Okay, uhm, |
| 177 |  | [PX1reading out loud the first question] |
| 178 |  | I think it's something I, with the first question, how do you feel about adaptive user interfaces being used to using protecting the privacy of home users? I, I really like it because it's something very new I haven't seen before. Um, |
| 179 |  | I think if used, I think, If triggered at the right time, the technology can be very useful, |
| 180 |  | especially to preserve privacy and keep the peace in a home in an office area, you know, so that you don't get those microaggressions that you would normally get in a situation, |
| 181 |  | I think where it would get a bit messy in terms of things like trust issues, for example, that in an office is, you know, the areas where I disagreed with some approaches where somebody was already in a room. And then this person was asking a question, |
| 182 |  | but in some of the scenarios where a person was not in a room, it almost felt very like, like very predictive almost like the other the secondary user, especially because we don't get to see their reaction in the videos. You can almost anticipate what it is because it happens so invisibly, that they're not, nowhere near you, that they don't even know when it's happening. |
| 183 |  | I think that's the beauty of some of the scenarios, that I think two of the scenarios, whereas, the two others where people already in the room, I thought it didn't make sense that you will already verbalizing something to a device when that person has kind of said, I don't want to be disturbed full stop. Right? So those scenarios contradicted the intent of from a secondary user point of view. |
| 184 |  | Did any of the scenarios resonate with your daily activities? I really like the first scenario with the music because I do have people in our household who operate at different rhythms and people who do work on very deep work. And I have family members who meditate and take part in religious activities that they don't want to be disturbed, but I listen to music out loud sometimes. So I found that really very useful. So that was I think the one I resonated with the most |
| 185 |  | [Reading out loud the third question] |
| 186 |  | So this the third question is more relating to privacy, right? |
| 187 | Interviewer 42:18 | Yes. Where you |
| 188 |  | sort of like share devices with users and like how these smart devices could disturb other people. [....] like video calls like things like that, like other than the four scenarios that you saw an like the |
| 189 |  | two scenarios before that, are there any other scenarios like that, that disturbs privacy of users? |
| 190 | PX1 42:38 | Can I use the examples you shared with me previously? |
| 191 | Interviewer 42:43 | Yeah, definitly. |
| 192 | PX1 42:57 | I can't think of any others actually. |
| 193 |  | [not in?] daily activities. |
| 194 | Interviewer 43:05 | I mean, doesn't have to be daily activities, just any activity that you come across, you heard about or just |
| 195 |  | any kind of thing that you might have seen. And it's fine if you don't remember. |
| 196 | PX1 43:16 | Yeah, I can't think of anything from a privacy perspective. |
| 197 | Interviewer 43:23 | In terms of daily activities, yeah. |
| 198 | Interviewer 43:17 | Yeah, you can go to the next question. |
| 199 | PX1 43:35 | Yes, hundred percent. I can think of many. I think you just witnessed one where I was, you know, on the call and somebody just walked into my room. Ideally, you know, it's almost like if you could like mute the background noise, for example. I think that would have been a very I don't know how you do that. |
| 200 |  | Especially working from home as well, you know, there are screaming kids and all that stuff that happens. |
| 201 |  | From a privacy perspective, I think that'll be very cool. |
| 202 |  | I think there is an option right now, with a lot of off the shelf software anyway, to blur backgrounds or customize backgrounds. I thought that was the cool to have. What else? |
| 203 |  | And I liked that what are scenarios you sent me before the study where it automatically blurs the background depending on like the user agreement, I don't know whatever that was had. I thought that was very innovative because I could choose to have my background shown, but at specific times, to just switch it on and off. And I think that's what I really like about this tool is that it's able to preempt those things. |
| 204 |  | But again, I go back to the music one I thought that was quite, very useful. |
| 205 |  | And the last scenario as well.And the other one I can think of is because right now I just saw, I guess, the reaction to the Alexa speaker and the interaction with a mobile phone, right? |
| 206 |  | What I didn't see is from a desktop view, because you know, working from home, you work on your laptop or your desktop or whatever, what that was capable of doing, for example, like getting alerts on your laptop, for example, something you know, someone's going to come into your vicinity or something, and they like blur your screen or something and I don't know, like change the contrast or like something like that, I think would have been helpful. |
| 207 |  | Not just now I think even potentially post COVID as well to preserve privacy of people |
| 208 |  | Potential like, especially like I work in HR. So, you know, sometimes you put up people's salaries and things like that right now we'll rely on hardware to do it like one of those like, screens to stop people from peering in. But I think it'd be very cool. The device can actually do like a false screen of sorts, almost divert people, |
| 209 |  | but that might also lead to other issues. when I say it out loud. where people could pretend to work. And then you know, like the boss or somebody can see something else. So those are the negatives of doing something like that. So, so that's how am I am. Yeah, scenarios and ideas. Sorry! |
| 210 | Interviewer 46:44 | Have you heard |
| 211 |  | about the boss button? |
| 212 | PX1 46:47 | No. |
| 213 |  | Sorry, I can't hear you. |
| 214 | Interviewer 46:54 | One of the participants mentioned like back in like 1990s, can't remember |
| 215 |  | in Windows, there's about Like to press when the when the boss comes it switches like if you're playing games or something. It switches to like a more like.. |
| 216 | PX147:07 | I am just looking at it, and it is call the boss key, Oh my god, I love it.That's awesome. Okay, cool. |
| 217 | Interviewer 47:21 | Yeah. So those are all the scenarios. Ah, I think we can stop the study now. |

## PX2

|  |  |  |
| --- | --- | --- |
| Index | Tag | Transcription |
| 1 | Interviewer 0:06 | Great. Ah, yeah. So thank you very much very much study. Before we start, let me give you a brief introduction to the study. The purpose of this study is to answer the research question, how do users perceive the usability, and privacy preserving capabilities of user interface adaptations in a smart home? Let me unpack that a bit. In the study, you'll be shown four videos demonstrating Smart Home scenarios, the possible risk of privacy violations. Smart Home user interfaces could adapt their behaviour in order to avoid or minimize those privacy risks. So the study focus on two types of privacy violations. The first type relates to information disclosures. The second type relates to disturbances caused by smart home devices like visual, auditory, etc. The two videos I've sent earlier examples for those two variations. Does that make sense? Up to now? |
| 2 | PX2 0:58 | Yep. |
| 3 | Interviewer 1:00 | Great. The videos you will see next are recorded from first person point of view. This is because I would like you to imagine that you experiencing the scenarios yourself. After each video, you'll be given a questionnaire to answer. It's important to answer these questions as if you have experienced them yourself. And in the end, I will ask you some summary questions to wrap the study. And I'll be recording this conversation, the recording will be deleted as soon as transcribed the session. transcriptions will be kept securely until I have completed my analysis. And any information extracted from them will be anonymized before being used in any publications. If that's alright with you, we can get |
| 4 | PX2 1:38 | Yes. |
| 5 | Interviewer 1:40 | Great . Go to the first section and watch the video, there is a video to watch, then can start answering.. |
| 6 | PX2 2:36 | Okay, I have watched the video |
| 7 | Interviewer 2:38 | Great, you can move to the first question, er choose.. |
| 8 | PX2 2:43 | [PX2 reading out loud the question] |
| 9 | PX2 2:50 | From the main users point of view, I am talking to, "to you" right? in the video. I'm having a call and then another person comes into the room and opens the safe. But the pin pad area of the safe is blocked out. And the safe is opened. |
| 10 | Interviewer 3:13 | Okay, so from the user's point of view, like there are two users as well, so, from their point of view. |
| 11 | PX2 3:20 | So |
| 12 | PX2 3:23 | from the person I'm having the video call with, which is "you", I guess that, in the video feed, "you" also can't see if it's only because you're looking forward. It's straightforward at all times. So the only thing you'll be able to see would be the little reflection of your video. And presuming that the blurring occurs somewhere in the video feed, I guess that is blurred for you as well. So the privacy is preserved. That's why I would assume that Yeah. |
| 13 | PX2 4:07 | From the safe user's point of view, well, they they're just going to come in and use the safe, nothing's blurred for them because they're just in real life. But I guess that they are confident that the privacy preserving technology means that they can come in and use the safe without it being without their pin pad being broadcast. |
| 14 | Interviewer 4:25 | Great. You can move to the next question. |
| 15 | PX2 4:36 | So it looked like it loaded some blank pages for a second and then it all and then it all appeared. Okay. So please type the top five words which best describe your experience of the Smart Home interfaces in the video you reviewed last. Imagine you are the person who is experiencing the system. So just a bit so again, it's From the point of view, like I was wearing a head cam in that case, so I was |
| 16 | PX2 5:05 | [the person who was on the other end?] |
| 17 | Interviewer 5:06 | Yeah. |
| 18 | PX2 5:08 | So best describe your experience of the smart interfaces. |
| 19 | PX2 5:14 | Although sorry, you're not asking about my experience of the privacy or anything, just the interfaces. So in that case, is that the laptop use |
| 20 | Interviewer 5:26 | the Skype call so in general so which is the video call? |
| 21 | PX2 5:30 | Right? If it Yeah.To order the top five, five, so I think, Yeah, I've got I've got five. Yeah, but I might add another and delete one, yeah, but I might add another and delete one |
| 22 | PX2 5:50 |  |
| 23 | PX2 5:58 |  |
| 24 | PX2 6:47 |  |
| 25 | PX2 6:51 | but I might add another and delete one |
| 26 | Interviewer 6:54 | yep |
| 27 | PX2 6:55 | yeah |
| 28 | PX2 7:14 | No, I'm happy with those |
| 29 | PX2 7:21 | do you want me to write it down? |
| 30 | Interviewer 7:22 | No, just speak out. |
| 31 | PX2 7:24 | Just tell you so, video calling is very easy to use now. I find it very easy to use. I have a reasonable number of personal interactions with video calling now |
| 32 | Interviewer 7:44 | Yeah, sorry maybe |
| 33 | Interviewer 7:45 | I misinterpreted |
| 34 | Interviewer 7:50 | so it's not just a video call but like this, this video call where you have this privacy preserving capability so, so |
| 35 | PX2 7:58 | Oh, yes. Okay, so yeah. |
| 36 | PX2 8:02 | Maybe I need to change a few of them. And |
| 37 | PX2 8:07 | although I did sort of have that in mind still, because all set, Yeah. So it was easy to use because it did it automatically and I didn't need to do anything |
| 38 | PX2 8:20 | personal because it is purse that the safe combination is sort of like or so video calls are personal things. |
| 39 | PX2 8:35 | And so but the privacy and the privacy protection, PASHI-framework then is sort of it's growing into my personal life, and I'm giving it access to my personal life, and I'm trusting it to perform the tasks that I want it to and only the tasks that I want it to |
| 40 | PX2 9:00 | I might change, or might change, comfortable, effective for effective, because it did exactly what I wanted it to do. But nothing more. I wonder if there's a better one than |
| 41 | PX2 9:48 | so I'll say that it's useful because that is what, again, what I would expect the tool to achieve and I could imagine lots of scenarios where blurring out personal or private information in a video call would be useful. That more so than just blurring your background by default. |
| 42 | PX2 10:21 | Like I think if you were trying to show [the person on the other end] something in particular then having a blurred out background we know from experience if other calls that if you blur your background and then you go Oh, have you seen this by the way, [Shows an object and waves it] |
| 43 | PX2 10:29 | then that its just blurred so it's so it's useful. So. So it was, it would be good technology in that in that sense. |
| 44 | PX2 10:47 | And I'll swap out the last one. So familiar for cutting edge because I think that actually such a technology would be cutting edge to be able to identify.. identify privacy risks like this on the fly, dynamicly as they occur, I think it will be a very challenging problem to solve. |
| 45 | Interviewer 11:15 | You can move to the next question |
| 46 | PX2 11:21 | please consider the following statements and rate to how much you agree with those statements. |
| 47 | PX2 11:30 | This is based on the previous scenario? Yeah. So, |
| 48 | PX2 11:42 | do you want me to talk at all while I do this so, just |
| 49 | Interviewer 11:44 | I mean, if you have like ideas speak out, I mean, I will ask some questions at the end as well. But if you have any... |
| 50 | PX2 11:52 | okay |
| 51 | PX2 12:01 | Trying to remember what the |
| 52 | PX2 12:04 | what the description said. |
| 53 | PX2 12:08 | Oh, okay. |
| 54 | PX2 12:10 | Sorry, I'm now playing the video |
| 55 | PX2 12:19 | today expected before happenign... So this |
| 56 | PX2 12:21 | is difficult because because of what we've previously talked about I sort of expected the [inte..?] I sort of expected this to happen. |
| 57 | Interviewer 12:33 | You expected? |
| 58 | PX2 12:34 | Yeah, but only because we've had a discussion about you blurring out certain portions of a video. |
| 59 | Interviewer 12:40 | I see |
| 60 | PX2 12:41 | when I read that when I heard this scenario, I thought this is what he wanted that for. |
| 61 | Interviewer 12:47 | I see. Okay. So, I mean, yeah, I'll do like sort of a [hardspin?] |
| 62 | PX2 12:52 | I can tell. I can tell you that this. If we hadn't had that discussion. I would not have expected you to show me a video where he came in then |
| 63 | Interviewer 13:01 | Yeah. |
| 64 | PX2 13:05 | If I were the person experiencing these use of interface Oh, I would not have accepted them. |
| 65 | PX2 13:14 | I understood why they use interface. |
| 66 | PX2 13:16 | I think I understand why it happened. |
| 67 | PX2 13:21 | User Interface adaptation instructed the user experience of using smart.. |
| 68 | PX2 13:31 | okay. |
| 69 | Interviewer 13:32 | Yep. So in the fourth question he wants to test that you would accept that adaptations. So, what, so what would be an adaptation that you wouldn't have accepted for the fourth question. |
| 70 | PX2 13:48 | uhm |
| 71 | PX2 13:49 | I suppose a total loss of functionality so if.. |
| 72 | PX2 13:55 | if the moment the other co-occupant has entered the room screen and audio had both been killed or the Skype call have been canceled. That would be like an example of like an extreme adaptation that seriously affects my experience, I think I think blackening out the whole screen. If it darkened the whole screen that would be right on the borderline for whether or not I think that would be an acceptable adaptation for a video call. I would probably just accept that if it was a short while. If it did something like yeah, can't cancel the call, or it turned off video until I turned it back on again or something like that. But I think those are adaptations that I wouldn't be happy with. |
| 73 | Interviewer 14:48 | Could you explain the reasoning behind the second questions? Answer? There's three. |
| 74 | PX2 14:54 | So I gave a sort of neutral answer because It, I didn't get a prompt or anything to say would you like to darken this you know, it was just fully automated and presumably I would set presumably these preferences have been set in the past at some point. So I was was in control of setting those preferences but in the very moment I, it was fully automated |
| 75 | Interviewer 15:25 | so |
| 76 | Interviewer 15:28 | yeah any other feedback on this scenario that you wish to that there was or any other |
| 77 | PX2 15:36 | no, no! |
| 78 | Interviewer 15:38 | Okay Are we can move to the next |
| 79 | PX2 16:06 | Smart speaker |
| 80 | PX2 16:12 | Oh without you. |
| 81 | PX2 16:49 | Okay, |
| 82 | PX2 16:49 | so from the main users point of view |
| 83 | PX2 16:54 | I I'm trying to check my bank balance. |
| 84 | PX2 17:00 | And before I, myself give out private information, the system stops me from doing it even though I'm not aware of the violation is going to take place. |
| 85 | PX2 17:17 | And I guess from other user's point of view, |
| 86 | PX2 17:22 | they walk in the room and they may or may not have been aware that I was using a smart speaker. And that's about it. |
| 87 | Interviewer 17:35 | Cool. Er you can go to the next question. |
| 88 | PX2 17:39 | Please type the top five words which best describe your experience in the smart home interface in the video.. |
| 89 | PX2 17:47 | Okay, Okay, |
| 90 | Interviewer 19:07 | yeah. Er, you can go to this question. Oh, |
| 91 | PX2 19:12 | please explain why you pick this reaction cards so |
| 92 | PX2 19:17 | useful again, if it does something that I wanted to do, or attempts to do something that I wanted to do, which is to preserve my bank details, login, my, my bank login details |
| 93 | PX2 19:35 | it's.. |
| 94 | PX2 19:36 | [sorry I kicked the dog] |
| 95 | PX2 19:39 | it was it was effective. So it accomplished exactly what I wanted. What I would have wanted it to do, which it stopped me before I was gonna say out loud or my password details. I think is quite powerful, in the sense That it is performed quite a complex task, and it's done it well. So even though I know it so even though I don't know that there's someone else that's going to overhear my bank password, the system is aware of that. And it has sort of like prevented me from doing something silly. So I think that's why I sort of said it was powerful.  I think is quite powerful, in the sense That it is performed quite a complex task, and it's done it well. So even though I know it so even though I don't know that there's someone else that's going to overhear my bank password, the system is aware of that. And it has sort of like prevented me from doing something silly. So I think that's why I sort of said it was powerful. |
| 96 | PX2 20:31 | unconventional because in the form of, |
| 97 | PX2 20:44 | [sorry..] |
| 98 | PX2 20:44 | , the form of prevention that it takes is quite innovative, I think. So, sometimes if you're going to do something silly, you might maybe expect like a little antivirus warning come up, or like a little windows thing where it's just like, yes, no, or you know, like the cookies stuff, right? You just get bored and tired of clicking customize my cookie options and then unselect them all and stuff. And so in the end, you don't do it. But I think that is sort of unconventional because it just it takes action for you, based on something you've told it to do. |
| 99 | PX2 21:31 | Yeah, and it performs it well. |
| 100 | PX2 21:36 | And again, cutting edge I think this, I don't know what technology you're supposedly are proposing or the smart speaker to realize that there's another person, but I guess that there is some kind of [...], it would have to be some kind of like Bluetooth detection or Wi Fi detection. Running a lot of the time or maybe there's door sensors or something like that. And again, although I'm vaguely familiar with those sort of detection methods I think whatever you did would be quite cutting edge don't think something, I don't think there's something pre existing that performs this sort of function for you already. |
| 101 | Interviewer 22:23 | Er, great you can go to the next question |
| 102 | PX2 22:28 | Okay. |
| 103 | PX2 22:31 | Please consider that.. |
| 104 | PX2 22:32 | [you know, if you hit enter, it moves things on my screen.] |
| 105 | Interviewer 22:44 | [Oh, I see?] |
| 106 | PX2 22:45 | Yeah, I |
| 107 | PX2 22:49 | agree with this. Okay. |
| 108 | PX2 22:51 | Ah |
| 109 | PX2 22:56 | yeah, did that well. |
| 110 | PX2 22:59 | Did not feel that I'm in control while using a smart home. |
| 111 | PX2 23:08 | so I'll say this now, because I fear I'll forget in two questions time. But in comparison to the last question about control from the previous scenario, I think so naturally, I feel. I feel more in control of this scenario. And, you know, just in my gut, and I think that that is because this scenario was about protecting my privacy, and it was something I set up. So I feel a bit more in control than in the previous scenario when the smart home was taking action to protect someone else's privacy |
| 112 | Interviewer 23:52 | were you trying to put 2 here? |
| 113 | Interviewer 23:55 | it's an negative question. |
| 114 | PX2 23:57 | Oh, |
| 115 | PX2 23:59 | sorry. Sorry. |
| 116 | PX2 24:01 | I did not. |
| 117 | PX2 24:15 | So I did sort of expect that because I think partly based on what the scenario explained before it happened I thought the only way it's going to prevent you from |
| 118 | PX2 24:28 | doing this is by pinging your phone. |
| 119 | PX2 24:37 | I would not have |
| 120 | PX2 24:39 | no I think I'd be quite happy to well, very happy for it to prevent me from taking action like that, that I've already told it not you know, |
| 121 | PX2 24:51 | I understand what the user interface adoption |
| 122 | PX2 24:56 | Yeah, I am gonna hope I understand |
| 123 | PX2 24:59 | user interface adaptation obstructed the user experience of using the smart home. I mean, in some sense, it did, but only in a minor way that I had sort of asked it to already. And the overall I guess the same was accomplished. And so I'm just going to put it in the middle. I think that |
| 124 | Interviewer 25:28 | question on the fourth one, so similar to the previous one, what sort of adaptation that you wouldn't have accepted? |
| 125 | PX2 25:38 | I think if it hadn't pinged the phone, I think if it if it just been like, someone has entered, I'm going to like you cannot log in right now somebody else's in earshot. When I want to know my balance, especially if I was as wealthy as I, as the person who checked their balance. I think they had quite a lot in there. Then I would probably wouldn't be sensitive about having, having the money. I think if it, again, if it like just blacked out and not told me anything if it just turned the smart speaker off or made like a small noise or something I might not have noticed. And then Am I given my password anyway, if someone entered at the wrong time, and that would be a very bad adaptation because it was, I would still have given up my privacy, and I wouldn't have reached the goal I wanted. So I think it's quite important that, you know, the phone would notify you instantaneously that, hey, there's a, you know, stopped doing what you're doing. |
| 126 | Interviewer 26:45 | So, in the first question you said like it protected the privacy of the user. So what do you think? The alternate like, what sort of a scenario that you would have rated as one in this case, that you would disagree with this statement? |
| 127 | PX2 27:01 | Oh, well in the context of that scenario, if it had let me continue, then it would have been a failure. |
| 128 | PX2 27:13 | Well, like I say, if it had |
| 129 | PX2 27:18 | if it had just closed the banking application on the smart device, but not given me any notification, then you know, depending on where it chose to do that, if it was like, you know, what, what is your pin and then someone enters and the smart home just goes, Oh, I better turn this device off because someone's entered. without notifying me. I'm still going to give away my personal information. It's just no one's listening now, but you know, the other person the other user, the other human in the smart home is listening. |
| 130 | PX2 27:51 | Yeah. |
| 131 | Interviewer 27:52 | Ah, any other comments on this scenario? |
| 132 | PX2 27:59 | No, that makes sense. |
| 133 | PX2 28:20 | Music smart speaker while your friend is meditating and |
| 134 | PX2 28:26 | meditating, like to use Bluetooth headsets now he can't use |
| 135 | PX2 29:06 | I like the song choice |
| 136 | PX2 29:21 | so |
| 137 | PX2 29:24 | I, |
| 138 | PX2 29:25 | I thought to myself, this will be really cool if when I put the headphones on the volume goes up. So, I mean, that's that attention to detail is really good. I really like that. |
| 139 | PX2 29:39 | Okay. |
| 140 | PX2 29:40 | Please explain out loud what I saw in the video. Oh, so I from the main users point of view, I wanted to play some music. I asked a smart speaker to play some music. But it didn't do do my request because somebody was meditating in the area and they have a preference That music doesn't play. So it then notified me of that and gave me other options to play the music on an app. I selected the headphones and then I put headphones on. From another user's point of view, I guess they would have heard you, they would have heard somebody asked for the, for music to be played. And then that's it. That's the beginning and the end of their disruption. Okay, |
| 141 | PX2 32:58 | So |
| 142 | PX2 33:02 | I think lots of these might be around the same sort of theme but convenient. So I did used to have a smart device I used to have an Amazon Alexa that sat on my desk. The basically the only thing I used it for was to play music. And I did that because it's quite convenient just to say out loud to tell something to play music rather than load a tab and get the radio playing or or any of the other things |
| 143 | PX2 33:34 | and so to then couple that with |
| 144 | PX2 33:38 | Oh, okay, here are your music options like I think that's quite convenient to be like oh can you play music and for for it to get back to you and be like, Oh no, you Well, I can sort of play music but you can't maybe don't put it where you want to put it sort of thing. I thought that was quite convenient. I thought the, it gave Really, the app that appeared on the phone gave really clear... that I forgotten what all the options I think it was headphones and like low volume and stuff like that. Like, there wasn't any. There wasn't like lot didn't look right there were gonna be a lot of button clicks, no matter what I clicked, it was just gonna be like, here are the alternatives, choose one, single button push. Effective, it was obviously very effective at preserving my other person's privacy |
| 145 | PX2 34:36 | friendly. So the other scenarios were a bit more about like what I would call cold items, you know, there's like my banking and an a safe pass code. They're like quite cold items. But like this is so I was looking I took a long time I was looking to see if you had something like compassionate in the grid square, which is that because this is an adaptation that is like kind and caring and compassionate that you don't want to disturb your, your friend and so you're slightly inconveniencing yourself, or and the Smart Home is facilitating that. So that you can be respectful and kind to the other person. Whereas Yeah, the other scenario is of respect. Yeah, I don't, I wouldn't have associated like respectful kind and friendly with those others. scenarios. Just Yeah. and straightforward. Yeah, it was very, it looked very easy to use. And one of the things so while the scenario was happening, or from the description, I thought, initially Oh, that that might be inconvenient, or it might not feel nice. Like if all it does is it starts playing on the headphones. I have expected that that's what was going to happen. So then when it came up, and just gave you some options of what to do? And I thought Oh yeah. Oh, actually that's much nicer than I anticipated it was gonna be. Yeah. |
| 146 | Interviewer 36:16 | Did you also see the option about the last option? Just just thought of.. |
| 147 | PX2 36:22 | the last option, |
| 148 | Interviewer 36:24 | like four options, the last option |
| 149 | PX2 36:28 | in the video? Yeah. So I think I've already forgotten them. I think it was like, low volume. Yeah, hadphones I've pulled out now I can see it's play later and high volume. So |
| 150 | Interviewer 36:45 | yeah, just just just, just asked. Great. You can go to the next question. |
| 151 | PX2 36:52 | So, so from that, I think the answer is yes, I saw it but they didn't make a big impression of enough of an impression. To remember that as I think I can |
| 152 | PX2 37:06 | Oh, okay, |
| 153 | PX2 37:07 | so |
| 154 | PX2 37:09 | smart home protected the privacy of its users |
| 155 | PX2 37:19 | did not feel that |
| 156 | PX2 37:22 | it gave me lots of options or gave me the options to |
| 157 | PX2 37:27 | do whatever I wanted in the end, didn't it? So suppose I can't, you know, you were I was in full control. I didn't expect that adaptation. I expected a far less and more dictate dictatoriol or something. Yeah. Then it was gonna to tell me what to do not I was going to get to choose what to do. |
| 158 | PX2 37:53 | By the person experiencing the user interface adaptations I would not have accepted them No it seems good. I understood why the user interface the.. |
| 159 | PX2 38:05 | user interface adaptation... |
| 160 | PX2 38:16 | Okay, |
| 161 | Interviewer 38:17 | yeah. Could you explain why you picked two |
| 162 | Interviewer 38:19 | there, the last one. |
| 163 | PX2 38:24 | [PX2 reads to himself] |
| 164 | PX2 38:26 | So |
| 165 | PX2 38:28 | I mean, it did. |
| 166 | PX2 38:29 | It did obstruct me, in a.., It did a part like a single barrier, I suppose, of telling me exactly what, you know preventing me from doing exactly the thing that I wanted to do. And I guess it's like a bit of an, it's a bit of [...] , even if I, even if I'd seen that someone else was meditating and ah you know, I could have put that music on and then later said, oh sorry, I didn't notice what you were doing or whatever. And I still would have got what I wanted. But I can't plausibly deny that. If I put that music on anyway, my app has told me that I shouldn't do that sort of thing. So there's sort of an extra layer there of, you know, are you sure you want to disturb your cohabiting friend? And if you do, he's going to know that you chose to ignore this warning message because we all know that he's meditating now and you're going to do that do it anyway. So from that sense, it obstructed me from doing the exact thing that I wanted to do. |
| 167 | Interviewer 38:31 | So in the fourth one, so what's the adaptation that you wouldn't have accepted in this scenario. |
| 168 | PX2 39:53 | Yeah, it tells me that headphones were too loud. It said like, you can't use the headphones either. because it is too loud? So if it just been sort of oh no you you can't do it right now somebody is meditating, then yeah that that would have been something I didn't accept  Oh,  maybe if it had been prescriptive about the headphone volume as well and being like oh you can only have it on a low volume on the headphones as well. They've been like Oh come on, come on, man. Like let's meet in the middle here. |
| 169 | Interviewer 40:33 | Sure. In the first question, you went for four Is there a reason why, Iike didn't go for a five like what's the reasoning behind that? |
| 170 | PX2 40:47 | just so I could the the option was still there for me to be pretty inconsiderate, you know, I could have chosen the loud volume or or the play anyway, I suppose. And So in that in that particular in that exact scenario that we just watched, I suppose it did protect the priv.., but protect the privacy of the user. So if that's the question, then of in that exact scenario, did it protect the privacy of the user? Then I guess the answer is five. Beyond the question said, |
| 171 | Interviewer 41:24 | the snapshot, not the snapshot of that specific scenario, but like, |
| 172 | PX2 41:28 | yeah, |
| 173 | Interviewer 41:28 | so that the reasoning, right, yeah, |
| 174 | PX2 41:30 | yeah. So yeah, that's, that's how I interpreted it that in all future scenarios where you use this technology, will it protect the privacy of its users? Four Yes, most mostly it will, but sometimes some people will still be jerks. and screw it. Let's play the music anyway. On loud voice. |
| 175 | Interviewer 41:51 | Great. Okay, we can move to the next section. |
| 176 | PX2 41:56 | Okay, Okay |
| 177 | Interviewer 43:00 | you can go to the first question. |
| 178 | PX2 43:03 | So. |
| 179 | PX2 43:03 | So I want to look at the smart.. Look at my holiday photos, and I want to put them on the TV. But the Smart Home tells me that well, I can't do that. So distract somebody else who's nearby. |
| 180 | PX2 43:20 | And so I look at them on my phone instead. |
| 181 | PX2 43:26 | And from the secondary users point of view, |
| 182 | PX2 43:30 | I guess something, something was on that screen about holiday photos, like you know, you'll look at the holiday photos. But I mean, obviously it's it doesn't it doesn't change at any point. So I don't think I you know, that, he's not distracted. |
| 183 | PX2 43:47 | So he doesn't know that much of what's going on or anything so |
| 184 | Interviewer 43:49 | you can go to the next question. |
| 185 | PX2 45:24 | You have overwhelming but you don't have underwhelming |
| 186 | Interviewer 45:32 | Oh yeah, this is like a miniature version of the list it had like 128 so this is the 60 something version. |
| 187 | PX2 45:42 | Wow. |
| 188 | Interviewer 45:44 | Yeah, you might not have the exact word |
| 189 | PX2 45:46 | just wondering if there's a word that's a bit like underwhelming |
| 190 | Interviewer 45:54 | unactrative, intimidating, dull |
| 191 | PX2 46:00 | Yeah, maybe dull is the... Okay. |
| 192 | PX2 46:09 | Yeah. Would you like to know, why I did this? |
| 193 | PX2 46:13 | so easy to use? Obviously, people are or people are always people who are already very used to looking at photos on their phone. So the adaptation is telling you not to do something that you know not to use them on the screen, but to use them on a device you're already very familiar with. And there's nothing, there's no other options or anything. So I persume you look at your gallery like you would as a normal person. So easy to use. Again, simplistic, there's no there's no real options. There's no technology that people might not be familiar with here. A television and a phone, a very standard normal things and looking at photos is a very normal thing. predictable Yeah, I thought this was pretty much the only thing that could happen in this and it was effective because it meant that somebody else wasn't being distracted because the screen wasn't changing. And yes, so I, I felt a bit underwhelmed. It felt like of the other scenarios, they were more creative. And maybe provided a better user scenario. But like, I already know that I can look at photos on my phone, presumably I wanted to watch look at them on the TV because the TV's bigger or the colors are nicer or things like that. So you know, so by comparison, like if I want to listen to music on my previous scenario, I'd be like, yeah, hey, smart speaker, play some music because what I really want to do is listen to music. and that experience is widely similar whether or not whether it's playing from a speaker I have headphones on. But when, if I want to look at photos on a big screen, and if you say, Oh, look at your phone instead, it's a bit like being like, Oh yeah, I really want to go and see the new Marvel film, cinema. And instead, when I get to the cinema, they say, Oh, no, there's no seats left. Why don't you go home and watch it on your television? And you'll be like, oh, but dude there, there was no big speakers there and then, I feel like it's a bigger step down than in the other scenarios. That was a bit woefully enjoy transcripting transcribing.. |
| 194 | Interviewer 48:45 | you can move to the next |
| 195 | PX2 48:48 | Ah, which is ,okay, tables again. |
| 196 | PX2 48:54 | Please consider the following statements and ... |
| 197 | PX2 48:58 | Smart Home protected privacy issues. |
| 198 | PX2 49:01 | Yeah, definitely. Definitely did that. |
| 199 | PX2 49:04 | I did not feel that I'm in control while using the smartphone, the smart home. |
| 200 | PX2 49:10 | Yeah, somewhere in the middle again. |
| 201 | PX2 49:16 | I did not feel |
| 202 | PX2 49:21 | or did not feel |
| 203 | PX2 49:26 | I expected the |
| 204 | PX2 49:30 | expected the user interface adaptation before it happened. Yeah. |
| 205 | PX2 49:34 | If I were the person experiencing these user interface adaptations, I would not have accepted them. |
| 206 | PX2 49:41 | I put that in the middle |
| 207 | PX2 49:51 | understood why the user interface |
| 208 | PX2 49:55 | obstruct the user experience using the smart home.. Okay? |
| 209 | Interviewer 50:01 | could you explain the last question? |
| 210 | PX2 50:06 | sorry, explain the answer for the last one.? |
| 211 | Interviewer 50:09 | Yes, the last one so |
| 212 | PX2 50:10 | and |
| 213 | PX2 50:13 | so like I said, I think in this scenario, it, it felt like the biggest compromise out of them. You know, if I really wanted to look at my photos on the TV, then yeah, and also, I think something about this scenario. You know, the other guy should be able to sit in a quiet room and not look at the TV screen. Assuming I'm just doing photos and not videos, if I'm just putting different photos of you, and that other guy should suck it up and do his work or whatever it was he was trying to do. So I feel like almost the adaptation went a little bit too far. preventing me from doing what I really wanted to do in the in the. in the home. |
| 214 | Interviewer 51:02 | also like going from the fourth question as well, is there, a better adaptation to resolve this kind of problem. Like if you think it's a problem. |
| 215 | PX2 51:14 | Um Yeah, I guess this is the one that I I accepted the least. So I might have accepted. |
| 216 | PX2 51:32 | So if the screen could have tilted or something like that, or in some way blocked the other person's vision of it, if it had like a narrow viewing angle and it tilted, if it could maybe could have darkened the screen a little bit or something like that, so maybe it didn't bother the other person so much. I think those sort of adaptations I would have been happier with |
| 217 | PX2 52:02 | Yeah, I mean, I guess if there was a TV in another room or somewhere else than equivalent experience, then I guess it, you know, it could have told me to go to another room to watch them or something. But I guess I could have worked that out myself if it said I'll, you know, look at him on the phone. And I would have been like, Oh, no, I don't want to do that. And I could have got up and left maybe so maybe if there was another television if the app said why don't you go to the billiard room and you know, look at them and said, but my preference would probably be for a screen that in some way shields itself or moves itself. So I can still do what I want to do where I want to do it, and without disturbing the other person. |
| 218 | Interviewer 52:45 | Awesome. So those are the all the four scenarios, you can go to the summary questions and read them through and speak out your answers. |
| 219 | PX2 52:52 | Okay, so overall, how do you feel about adaptive user interfaces being used in protecting the privacy of smart home users? I'm |
| 220 | PX2 53:03 | generally quite positive |
| 221 | PX2 53:04 | I think that |
| 222 | PX2 53:08 | the scenarios were quite good at demonstrating why you might actually want them. And yes, I am left with like a positive impression of what maybe a smart home could do for me if everyone in it. So what when I'm thinking about when I was thinking about the scenarios, I was trying to think about a time when I lived like at university with other people who, although you did ask each other what you wanted and stuff, like it wasn't the same as living with family, you live with my wife now, if I want if she's doing something annoying, then I'll ask her not to do something like that. But I was trying to imagine a different scenario. Where, oh you know We all have sort of competing interests at times. And I think that actually, it would have been good if when my housemate at university always used to watch South Park in the living room. If sometimes when I, sometimes if I was already working in there, and he went in there and turn the television on, something told him, he should be more considerate, and not put southpark on while I [am working?]. Yeah. So, did any of these scenarios resonate with your daily activities? If the answer is |
| 223 | PX2 54:36 | yes, could you elaborate So? |
| 224 | PX2 54:43 | So that's a very difficult question to answer. Partly because I do just live with my wife, and partly because I haven't really left the house in six months. So |
| 225 | PX2 54:56 | if |
| 226 | PX2 54:58 | so, So I don't have many interactions with people where I can just ask them to do something else. Like I say I can, I can definitely feel that certain aspects of this resonate with life I used to live when I was at university. |
| 227 | PX2 55:17 | When |
| 228 | Interviewer 55:18 | you can read the next two questions as well, I think it's pretty much similar so maybe you can.. |
| 229 | PX2 55:25 | think of other scenarios and |
| 230 | PX2 55:26 | although I was so gonna say so that I think this is still to do with, two which is like the blurring out of the PIN code. So there's times when I am on a call and [my wife] wants to like come in ask me if I want tea and stuff like that. And she's not sure where to stand, and things like that. And so sort of this adaptive blurring technology stuff, I could sort of think that that's the one that we most applicable to my life so my maid or wife can come in and serve me drinks and food without her privacy being violated and appearing on a call. With maybe 30 other people, which sort of happens, sometimes I did any of these scenarios inspire you to think of other scenarios in your daily life. Well, yeah, so that's that one. COVID-19 locked down and working from home made us spend more time sharing our home with co-occupants as current situation created any privacy violating scenarios that could have been avoided by adaptive user interfaces. So I mean, this sort of is one which is me and [my wife] don't always know when each other are on calls. And so I'll start playing music or something and then I'll hear my wife got to shut her door because she's on a call and she can't shout, hey, I need to turn the music off. And so like vice versa, we'll have to like close the door and things like that. Just have a remark quick reminder, remind myself of which what the scenarios were Its not gonna, doesn't actually really give any clues away in the document |
| 231 | PX2 55:28 | as to what the scenarios were, |
| 232 | PX2 56:35 | So we had, we had meditating. sound volume we had talking out pin out loud. We had visually blocking the pin. And we had that. The last one, which is the Sorry, I can't hear you, but it's the photo phone photo gallery. Yeah, so that was the four. So I guess the thing is in Yeah, in my house, I very rarely have privacy that, like a personal privacy issue of data and things like that. But yeah, I guess that the volume one is, is worth doing and blurring my wife when she comes when she comes through and that but that is that is unique to COVID. Really, if that's the sort of thing you're interested in as well. Very rarely did me and my wife both work from home simultaneously, pre COVID. So if you want to write something about why the smart home is more relevant now than that's, that's the thing. And and again, it's similar both of those adaptations that I sort of talked about actually the the volume and the playing of music and stuff like that, between the rooms. And now that wasn't an issue beforehand, because my wife wasn't here very often, or we were, we co located. We work from home, both of us So, so rarely is to say we never did almost. Yeah. |
| 233 | Interviewer 58:41 | Right. That's the end of the study. |

## PX3

|  |  |  |
| --- | --- | --- |
| Index | Tag | Transcription |
| 1 | Interviewer 0:06 | So, yeah, you can hear me, right? |
| 2 | PX3 0:09 | Yeah. |
| 3 | Interviewer 0:10 | All right. So this is more introduction now. So we'll do that so you understand the study. So thank you very much for joining my study. Before we start, let me give a brief introduction to the study. The purpose of this study is to answer the research question, how do users perceive the usability and privacy preserving capabilities of user interface adaptations in the smart home? So let me unpack that a bit. So the study you will be shown for videos demonstrating Smart Home scenarios with possible risk of privacy violations. Smart home interfaces could adapt up their behaviour in order to avoid or minimize those privacy risks. This study focused on two types of privacy violations. The first type relates to information disclosures. The second type relates to disturbances caused by smart home devices. The two videos I sent earlier were examples for those two variations. So if you have any questions about that you can ask now like with regard to this, up to now |
| 4 | PX3 1:14 | it's clear |
| 5 | Interviewer 1:15 | or cool. |
| 6 |  | The videos you will see next are recorded from a first person point of view. This is because I would like you to imagine that you experienced the scenario yourself. After each video you will be given a questionnaire to answer. It is important to answer these questions as if you have experienced the scenario yourself. In the end, I will ask you a few summary questions to wrap up the study. |
| 7 |  | are the instructions be up now? |
| 8 | PX3 1:42 | Yep. |
| 9 | Interviewer 1:43 | All right. |
| 10 |  | So I'll be recording this conversation the recording will be deleted as soon as I have transcribed the session, the transcriptions will be kept securely until I've completed my analysis. And any information extracted from them will be anonymized before being used in any publications. If it's All right with you, we can start the study. |
| 11 | PX3 2:02 | Yeah, let's start. |
| 12 | Interviewer 2:03 | All right. |
| 13 | PX3 2:05 | So go straight to the scenario. And so in the Doc you can press click to play |
| 14 |  | Yeah, I watched it. |
| 15 | Interviewer 7:41 | Okay. So the first question is to like, explain out loud what you saw in the video. So from the menu, so |
| 16 | PX3 7:49 | yeah. |
| 17 | Interviewer 7:50 | Yeah. So you read the question, right? |
| 18 | PX3 7:53 | Yeah. So basically, you would like to, I mean, the user would like to To listen to music, but you know, he doesn't want to start with his friend who's meditating. And therefore, this smart speaker recognize that his friend is meditating. And so you can, it's basically warning you. And he lets you choose a second option to hear the music. |
| 19 | Interviewer 8:22 | Right, |
| 20 | PX3 8:22 | and you choose the user choose headphones, and the music was reproduced on the headphones. |
| 21 | Interviewer 8:30 | Okay. |
| 22 |  | So what do you think from the second user's point of view would have been like? So the person who was meditating. |
| 23 | PX3 8:39 | From his point of view, |
| 24 | Interviewer 8:41 | yeah. |
| 25 | PX3 8:45 | It's better. I mean, from his point of view is better like that because he's |
| 26 |  | meditating and he doesn't want to listen to the music of his friends, and so is the optimal solution for him. |
| 27 | Interviewer 8:59 | Okay, cool. Till you can move to the next question, which is to pick five words from this list. So can you type five words. So I have in front of the laptop typing. |
| 28 | PX3 9:13 | Yeah, |
| 29 | Interviewer 9:13 | otherwise I can |
| 30 |  | type in if you even say the words. Okay. See? Yeah. So from the list of words speak five words which describes experience |
| 31 | PX3 10:56 | Sorry |
| 32 |  | I would see |
| 33 |  | say five right?. |
| 34 | Interviewer 11:05 | Yeah, |
| 35 |  | yeah, just five words. |
| 36 | PX3 11:08 | And |
| 37 |  | we must |
| 38 | Interviewer 11:38 | great |
| 39 |  | So, could you explain why you picked those each like each? |
| 40 | PX3 11:45 | Ah, yeah. I mean, is effective. |
| 41 |  | Which is, I mean, |
| 42 |  | I'd say it's |
| 43 |  | a good solution for this kind of problem |
| 44 |  | and |
| 45 |  | You have good, good results, basically, this convenient and easy to use is, yeah, it's pretty intuitive. And you don't have to do a lot of passage. Because this, I mean, is the speaker that recognize everything and you just have to tap once, right? And so it's also fast for this reason. And it's, I mean, collaborative, I mean, in the sense that |
| 46 |  | it's, |
| 47 |  | like in In this scenario, you can, it's sold solves problems of |
| 48 |  | sharing spaces and all this kind of problem, you know, so, |
| 49 |  | you keep better. |
| 50 |  | Avoid problems with |
| 51 |  | other people, right? So, it could be useful in this kind of scenario where you have to Share, place or something like that |
| 52 |  | with someone else? Yeah. Okay, cool. |
| 53 | Interviewer 13:09 | So could you move to the next question? So the next question is about not the next one, the one after |
| 54 | PX3 13:17 | this one, the 2.2. Now, |
| 55 | Interviewer 13:21 | after that you just explain your words. So I think the next question |
| 56 | PX3 13:24 | Yeah, exactly. |
| 57 | Interviewer 13:25 | Yeah. The next |
| 58 | PX3 13:25 | Yeah. |
| 59 |  | Wait, how much should we... |
| 60 |  | protected the privacy of its users? |
| 61 |  | Yeah, you mean the users are both? |
| 62 |  | Yes |
| 63 |  | both of them. Right. |
| 64 | Interviewer 13:44 | Yeah. |
| 65 | PX3 13:44 | Or just so i |
| 66 | Interviewer 13:46 | so in this question from the second users point of view. |
| 67 | PX3 13:51 | the second user |
| 68 | Interviewer 13:53 | the person who was meditating in this scenario. |
| 69 | PX3 14:04 | What do you mean by privacy? |
| 70 | Interviewer 14:07 | So, so privacy when I mean privacy there are either it could be Information Privacy, or it could be the privacy there whether that person is not disturbed. So that's also another type of privacy. |
| 71 | PX3 14:20 | okay. Isn't it not just about informations? |
| 72 | Interviewer 14:23 | Yeah. |
| 73 | PX3 14:29 | But wait, I changed my opinion on this one. Okay. |
| 74 |  | What do you mean? What does he mean? Sorry? I expected the user interface adaptation before it happened?. |
| 75 | Interviewer 15:28 | So it's like, |
| 76 |  | it's a question like whether you were like surprised by that adaptation. So that kind of a question So, so, because so given the scenario, would you have not expected it to happen? So does that make sense? |
| 77 | PX3 15:51 | I strongly disagree |
| 78 |  | because I don't expect that. I didn't expect it So, right? |
| 79 | Interviewer 16:01 | Yeah. |
| 80 | PX3 16:37 | Yeah, my understanding. Yes. |
| 81 |  | All right. |
| 82 | Interviewer 16:58 | Okay, so I have a few Questions on your answer? So, so in the first one you said protected the privacy of users, you agreed for? So what do you think? What would be this the system that you would have not agreed? Like |
| 83 |  | that you would have rated as one in this scenario? |
| 84 | PX3 17:18 | Not Sorry, I didn't hear it, what did you say? |
| 85 | Interviewer 17:23 | So what would be the system that you would have rated one like what? What kind of system you would have rated one? Given the same scenario? |
| 86 | PX3 17:33 | From the point of view of the second user, |
| 87 |  | like the smart, the smart speakers that are currently on the market, not preventing these kind of privacy, like Echo or home and all these kinds of speakers. Because if I say that, like now I Alexa to reproduce music it just |
| 88 |  | played out loud. No.? |
| 89 |  | So From the point of view of the meditating person |
| 90 |  | his privacy is not protected protected in okay.? |
| 91 | Interviewer 18:09 | So in the fourth question, you said you would you would have accepted so the fourth question so are you what sort of adaptation you wouldn't have accepted but I think |
| 92 | PX3 18:29 | I would not have ever accepted, I don't know |
| 93 |  | Like just stop just don't reproduce music for example is not |
| 94 |  | would would not have been a solution right.? |
| 95 |  | You know, if you if you just don't play the music, |
| 96 | Interviewer 18:52 | yeah. So anyhow, before I move on to the next one, any other comments on this one, like anything? |
| 97 |  | You wished that there was something better. |
| 98 | PX3 19:05 | Sorry?, |
| 99 | Interviewer 19:06 | some feature that you wished it was, I mean, what? If you, if you were given the chance to like, sort of conceptualize the scenario? Is there a better way to do it like in your opinion? |
| 100 | PX3 19:20 | No, I don't think so. I mean, it's quite. |
| 101 |  | It's, it seems like a quite good solution for this kind of problem. I don't understand how it works. I mean, how do you how do you know that the other person is meditating, |
| 102 | Interviewer 19:36 | too, I'll explain at the end like how the |
| 103 | PX3 19:39 | Okay, okay, |
| 104 | Interviewer 19:40 | yeah, yeah. |
| 105 |  | Or Ah, cool. We can go to the next one. |
| 106 | PX3 19:46 | Yeah. |
| 107 |  | Can I play the video? |
| 108 | Interviewer 19:51 | Yes. |
| 109 | PX3 20:52 | All right, |
| 110 | Interviewer 20:55 | questions are the same so |
| 111 | PX3 20:58 | okay |
| 112 |  | Yeah, from the me the main users is just talking with the with the Friends of him. Right? Why the second series A colleague of the person in the whole, and he doesn't want to be disturbed during the weekend, so he would prefer not to be seen probably. And yet, that's the thing. |
| 113 | Interviewer 21:30 | Okay. |
| 114 |  | So |
| 115 |  | you can go to the next question to pick five words. Yeah. |
| 116 | PX3 21:48 | All right. Wait, I didn't see. |
| 117 |  | I mean, the system was hiding the person behind. |
| 118 |  | Right.? |
| 119 | Interviewer 21:55 | What is that? Yeah. |
| 120 | PX3 21:58 | Sorry. I thought it was just For the purpose of this video, he doesn't want to be in the study but now actually that's what that's was the point right? He was a hided. Okay. Okay, now I get I go, okay. |
| 121 | Interviewer 22:14 | You saw that bluring aspect, right? |
| 122 | PX3 22:16 | Yeah, |
| 123 |  | yeah. I thought it was blured it for... |
| 124 |  | Just a moment |
| 125 | Interviewer 25:24 | take your time |
| 126 | PX3 26:42 | I mean, |
| 127 |  | should I should I not use the same words as before |
| 128 | Interviewer 26:48 | you can use him whereas before |
| 129 | PX3 26:49 | all right because I mean |
| 130 | Interviewer 26:55 | for each scenario you can use use them again Yeah, |
| 131 |  | it's not a word game. |
| 132 | PX3 27:07 | But I mean, I think that's the |
| 133 |  | Collaborative. |
| 134 | Interviewer 27:29 | Cool, |
| 135 | PX3 27:29 | right? |
| 136 | Interviewer 27:30 | Yeah. Just explain why you pick those words. |
| 137 | PX3 27:35 | Yeah, basically for the same reason as before, this looks more advanced. |
| 138 |  | Because I mean, you don't even have to interact with the speaker right? You just do it all everything on his own. And yes, it is effective, even if in this case, we I mean It could be I mean, it looks like if that is your room, I mean housemate. Probably your friends would know about... |
| 139 |  | anyway. I see what's, |
| 140 |  | what's the aim of this |
| 141 |  | a technology like that. And it's very easy to use and convenient. So you don't have to do anything. Right. You just speak with your friends and don't worry about anything else. And it's also cool. For the same reason as before. Okay. |
| 142 |  | Yeah. |
| 143 | Interviewer 28:35 | Okay, we can move to the next question. |
| 144 | PX3 28:40 | All right. |
| 145 |  | smarthome protected privacy of its user. |
| 146 |  | Say? |
| 147 |  | I would say |
| 148 | Interviewer 29:31 | is there a reason why you pick three? |
| 149 | PX3 29:35 | Yeah, because I think he's, he could I mean, it depends on the situation you know, probably, like if it was in an office |
| 150 |  | that would be |
| 151 |  | a really good kind of |
| 152 |  | solution but before like for example if it was, you right passing by Behind me, right behind the view, I would recognize you anyway, you know, even if you're blur, |
| 153 |  | right? |
| 154 | Interviewer 30:06 | Okay. So what do you think could be a better solution for this? |
| 155 |  | In this case, given that the person doesn't want to get distracted, disturbed? |
| 156 | PX3 30:19 | Oh |
| 157 |  | no, no, maybe something like |
| 158 |  | completely hide it. Right? Without blurring. I mean, it looks like you can recognize the person anyway. |
| 159 | Interviewer 30:37 | Okay. |
| 160 | PX3 30:38 | You |
| 161 |  | know what I mean? |
| 162 | Interviewer 30:39 | Yes, I understand. Yes. |
| 163 | PX3 30:42 | So, if you don't know who the person is, it's a is an optimal solution. But if you know who is it, you who you could recognize him anyway. |
| 164 | Interviewer 30:53 | Yeah. Okay. So |
| 165 | PX3 30:54 | like in this scenario is |
| 166 | Interviewer 30:59 | Yeah. totally understood. Great. |
| 167 | PX3 31:01 | I feel I am in control while using the smart home, I would say. |
| 168 |  | Ah, yeah. Yeah, I |
| 169 |  | mean I'm not in control but you shouldn't be in control. Right. |
| 170 |  | So |
| 171 |  | that's good. |
| 172 | Interviewer 31:29 | Yeah. |
| 173 | PX3 31:31 | The user interface adaptation.. |
| 174 |  | of course not, what do you mean? No All right. |
| 175 | Interviewer 32:13 | Great. I've got a couple of questions on this. |
| 176 | PX3 32:17 | Yes. |
| 177 | Interviewer 32:17 | Yeah. So you use said you would act in the fourth question, you read it, you'd accept them. So what do you think? What sort of adaptation you wouldn't have accepted? |
| 178 | PX3 32:36 | adaptation that I would not have accepted? |
| 179 |  | No, actually, I am not sure. |
| 180 |  | I have no idea. To be honest, I don't know because I mean, I the current state of, |
| 181 |  | of the technology, you don't I mean, |
| 182 |  | you don't hide anyone. No. And we, yes, still accept it. So, |
| 183 | Interviewer 33:03 | yeah, |
| 184 | PX3 33:04 | I don't see how you can.., you know? Yeah. |
| 185 | Interviewer 33:08 | All right. So in the sixth question you said he did not obstruct to anything, what sort of adaptation would obstruct your use experience? |
| 186 | PX3 33:18 | Probably something like hiding all the screen, like, you know, I didn't everything would be too much |
| 187 |  | probably. I mean, or |
| 188 |  | not too much by that it would be bit stressful. It wouldn't it wouldn't be a good experience. Right.? |
| 189 | Interviewer 33:37 | Okay. All right. We can go to the next scenario. |
| 190 | PX3 33:43 | Yeah, |
| 191 | Interviewer 33:44 | yep. |
| 192 |  | Section |
| 193 | PX3 34:36 | Yeah, |
| 194 | Interviewer 34:37 | okay, so you came up with the questions? |
| 195 | PX3 34:42 | Yeah. |
| 196 |  | Uh, yeah, from the main user point of view, you don't want to anyone else know that you're watching, that you like watch cartoons. |
| 197 |  | And |
| 198 |  | so the system just protective of privacy basically. And the secondary. The secondary user doesn't know that you were watching cartoon basically, so you just enter and see some other kind of recommendation. |
| 199 |  | Yeah. |
| 200 | Interviewer 35:17 | Okay, great. You can go to the next question. |
| 201 | PX3 38:32 | yeah. |
| 202 | Interviewer 38:33 | Could you explain why you picked those words? |
| 203 | PX3 38:37 | Yeah, I would say is helpful and effective yeah, because you are I mean. It's a good solution for the problem. So you just basically hide |
| 204 |  | your cartoon suggestions. So |
| 205 |  | it's really good. |
| 206 |  | It's easy for us, of course, because you are nothing to do you it just do everything for you. So it's also convenient. And it also comfortable I think, because you can I mean, it makes you comfortable, right? Because you can watch whatever you want without worrying that someone enter the room. Right. and discover your passion for cartoons, basically in this case, right? |
| 207 | Interviewer 39:33 | Yeah. |
| 208 | PX3 39:34 | So it's, you would watch cartoons without to worry about anyone else. |
| 209 | Interviewer 39:44 | Yes, so you can move to the next set of questions. |
| 210 | PX3 39:48 | Yeah. |
| 211 |  | In this case, we are talking about the users that Yeah, person one with a recommendation. |
| 212 | Interviewer 39:59 | Yes. |
| 213 |  | So, in the fourth question you mentioned you accepted them. So what do you think what sort of system you wouldn't have accepted? |
| 214 | PX3 41:23 | Turning off the TV, for example, |
| 215 | Interviewer 41:27 | okay. |
| 216 | PX3 41:28 | Something like that. Or log-out of Netflix or something something more private? I think this is a good solution. |
| 217 | Interviewer 41:39 | So in the last time you meant you give a two, what do you think? What, what sort of system you would rate as one like whether you that you did not obstructed us experience? |
| 218 |  | How to improve the system? |
| 219 | PX3 41:54 | I would say something. I mean, if it's |
| 220 |  | I mean does it recognize when the user, the other person go out and go back to my to my recommend cartoons recommendation? something like that? |
| 221 | Interviewer 42:16 | Sorry, |
| 222 | PX3 42:16 | I would like to change it back when? When I am alone, Right?. |
| 223 | Interviewer 42:22 | Okay. |
| 224 |  | So when a person leaves you would like to reverse it back to your previous recommendation. |
| 225 | PX3 42:33 | Yeah. Okay. |
| 226 |  | Did it?, I mean, he was doing that? |
| 227 |  | Now I know |
| 228 |  | he did it? |
| 229 | Interviewer 42:46 | No it did not, it did not. |
| 230 | PX3 42:48 | So okay, |
| 231 | Interviewer 42:49 | because he didn't |
| 232 |  | in the video didn't have time to like for him to leave the room, he just went to the back of the room. |
| 233 | PX3 42:55 | Okay. Yeah. |
| 234 | Interviewer 43:01 | Great, we can move to the final scenario yeah |
| 235 | PX3 44:23 | Yeah, all right. |
| 236 |  | So |
| 237 |  | so they okay so I have to take the user had to take his medication and with these secret gesture he could open the locked cupboard. Right. But since his friend was in the room without him knwoing, the smart speaker ignored the gesture right? |
| 238 | Interviewer 44:56 | yeah |
| 239 |  | So what do you think from secondary users point of view would have been this? |
| 240 | PX3 45:16 | This user just enter, but he sees the other guy doing the gesture, right? |
| 241 | Interviewer 45:22 | Yes. Yeah. |
| 242 | PX3 45:26 | But he probably he doesn't know. The point is he doesn't know what the gesture is for. |
| 243 | Interviewer 45:33 | Okay. |
| 244 | PX3 45:34 | No!, I don't know. |
| 245 |  | I mean, I'm not sure about these one. |
| 246 | Interviewer 45:38 | Yeah, I mean, just just you point. I mean, there's no right or correct. Right or wrong answer. Great. You can move to the next question. |
| 247 | PX3 45:46 | All right. Yeah, |
| 248 | Interviewer 49:40 | okay wait could explain why you pick those words? |
| 249 | PX3 49:47 | I would say |
| 250 |  | essential because it's I mean it address one of the |
| 251 |  | the subjects |
| 252 |  | Is aim to protect some valuable information and so its essential yet but it seems to be complex and ineffective. Because I mean |
| 253 |  | if some |
| 254 |  | if your friends entered the room and so you |
| 255 |  | you will have to change the gesture, right but and they lock, they lock the cupboard. It doesn't open. I mean what's the point, if you can, I mean you could open and then, I mean what was the point of not opening the cupboard because you're seen, you already made the gesture, right? so, at this point you can open the cupboard and then changed the gesture maybe. |
| 256 |  | Okay And that's |
| 257 |  | annoying to me, I think because you have at this point you have to change the gesture and waiting for your friends to exit and then do the gestures to open the cupboard right? |
| 258 | Interviewer 51:12 | Yeah. So that's that's an interesting question. What do you think would be a better |
| 259 |  | solution for this scenario? |
| 260 |  | Your friend enters the room. |
| 261 | PX3 51:25 | I want I mean, I want to be |
| 262 |  | I want to be warned before he entered the room, maybe |
| 263 | Interviewer 51:40 | can move to the next question. Yeah. |
| 264 |  | So could you expand on some of the first question the smarthome protected the privacy of its users? So why you rated it's strongly agree, |
| 265 | PX3 53:25 | yeah, I mean, it does protect the privacy of the user because in the end, the cupboard was not open. |
| 266 | Interviewer 53:33 | okay, |
| 267 | PX3 53:34 | the main information was protected, and of course, I mean, the secret gesture is barred at this point, but you can change it, so I would say in the end the privacy is protected, yeah. |
| 268 | Interviewer 53:49 | Okay, great. Okay. |
| 269 |  | Anything else to add to this scenario in your point? |
| 270 | PX3 54:00 | Sorry, |
| 271 | Interviewer 54:01 | any solutions for these kind of scenarios? in your point of view? |
| 272 | PX3 54:07 | Ah, no. I mean, |
| 273 |  | yeah, my point is just that. |
| 274 |  | I don't see I don't see why you have to lock the, mean locked cupboard. Or if me there, I can just not show what is inside, right? If someone else is in the room, and also, I mean, maybe I want to, I don't care if someone that someone is in the room, maybe its my wife, and I'm fine with that. So I want the cupboard to open Anyway, you know, and so I'm not totally I'm not really in control of the of the system. |
| 275 | Interviewer 54:49 | Okay. |
| 276 |  | Great. So those are the four scenarios. So there are four other questions. You can read them and speak out loud your answers. |
| 277 | PX3 55:02 | Yeah |
| 278 |  | yeah the first one, I mean |
| 279 |  | is |
| 280 |  | in favor of using this kind of |
| 281 |  | adaptive user interfaces to protect privacy. I would say we need something to to solve this problem with smart, smart homes So yeah, I in favor of that. |
| 282 |  | Then did any Oh |
| 283 |  | Ah, no, actually no, it doesn't resonate with my daily activities. |
| 284 | Interviewer 56:28 | Okay |
| 285 | PX3 56:37 | and the third one |
| 286 |  | No, no. No. And |
| 287 |  | and not |
| 288 |  | not even for the third one. I would say no. I mean, it could be but, since. |
| 289 |  | No, I would say no. |
| 290 |  | We were just two people during the lockdown and we were pretty organized to not disturb Do Not Disturb each other. |
| 291 | Interviewer 57:33 | So, okay. |
| 292 |  | Yeah, so that's the end of the study, I will switch off the recording. |

## PX4

|  |  |  |
| --- | --- | --- |
| Index | Tag | Transcription |
| 1 | Interviewer 0:39 | thank you very much for joining my study. Before we start, let me give you a brief introduction to the study. The purpose of the studies to answer the research question, how do users perceive the usability and privacy preserving capabilities of using device adaptations in a smart home? Let me unpack that a bit. In this study, you will be shown four minutes demonstrating smart home scenarios with possible risks of privacy violations. Smart home interfaces could adapt their behaviour in order to avoid or minimize those privacy risks. This study focuses on two types of privacy violations. The first type relates to information disclosures. The second type relates to disturbances caused by smart home devices. The two videos I've sent earlier examples for those two variations. Does that make sense? |
| 2 | PX4 1:31 | Yes. |
| 3 | Interviewer 1:34 | If you have any questions you can ask. |
| 4 |  | The videos you see next are recorded from a first person point of view. This is because I would like you to imagine that you are experiencing the scenario yourself. After that you will be given a questionnaire to answer. It's important to answer these questions as if you have experienced this to yourself. In the end, I will ask you a few summary questions as well? Is the procedure clear for you? |
| 5 | PX4 2:05 | Yes. |
| 6 | Interviewer 2:06 | Okay. So I'll be recording this conversation the recording will be deleted as soon as I've transcribed the session, the transcriptions will be kept securely until I've completed my analysis and any information extracted from them will be anonymized before being used in any publications. If that's all right, we can get started. |
| 7 | PX4 2:29 | that's fine. I've just clicked a button on Skype, hold on. Yep. |
| 8 | Interviewer 2:40 | go to section one. There's a video to watch and after watching that video, you can see there's a question after that. |
| 9 | PX4 3:38 | Okay, I've watched through the video okay. |
| 10 | Interviewer 3:45 | There was audio right I mean, just to be |
| 11 | PX4 3:48 | yes I heard the audio, so just to explain out loud what I saw and from my perspective I was looking at the |
| 12 |  | the television screen of |
| 13 |  | Showing Netflix and with different shows that I could potentially click on to watch probably from my, predicted to me by Netflix, and that included cartoons. |
| 14 |  | Then |
| 15 |  | somebody approached the door and they came into the room. And the example in the video it looked like it switched the predictions on Netflix to a different set of content. That was what I thought I saw in the video. uhm so |
| 16 |  | also might as well |
| 17 |  | as well go on to describe |
| 18 |  | an experience I've had it in my home? is it just according to the video? |
| 19 | Interviewer 4:54 | Yeah, just the, so the next next thing used to like go to the second question. where you have to pick five words. |
| 20 | PX4 5:04 | Oh, actually no, I didn't answer. The second that was from I couldn't resist |
| 21 | Interviewer 5:10 | that means the person came in. |
| 22 | PX4 5:13 | So from from their point of view, they, before they got through the door, [...] sorry from that person's point of view they stepped through the door and they saw that a person was looking at Netflix screen and that the predicted, well the content on there was the film's I think it was and they said that they looked and thought about it and then talked about them having had experience watching one of those films. Okay, so, scroll down to the next question. |
| 23 | Interviewer 7:39 | So the next question is to explain use choice please explain why you pick those reactions |
| 24 | PX4 7:47 | so thinking |
| 25 |  | from the perspective of the person |
| 26 |  | experiencing the system |
| 27 |  | it I thought |
| 28 |  | that it was comfortable Because then the initial interfaces what they are used to, and that it was convenient and |
| 29 |  | effective, because it |
| 30 |  | it successfully followed their preferences to keep privacy around watching cartoons. And convenient because somebody was actually going into the door at that moment and effective because it switched the output that makes it helpful |
| 31 |  | and relevant actually, |
| 32 |  | that actually came to mind more to do is relevant to what we're looking at |
| 33 |  | in the study. |
| 34 |  | So that might not actually be entirely what you're looking for. |
| 35 | Interviewer 8:56 | Oh, cool. Ah, great. |
| 36 |  | In the next question, which is to., there are six questions. |
| 37 | PX4 9:35 | I'm certainly agreeing |
| 38 |  | here and just adding a little bit of commentary on the basis that, the preference was to keep watching cartoons private. And the the fact that it switched to films was something that was a topic that was the user had agreed, from my perspective it was okay to, to be not kept private. Let's say that it didn't just pick something completely random, that [...]. I mean. |
| 39 | Interviewer 10:09 | So in this scenario, what do you think like for this question, what would what would be the system you'd have rated as one like, if you like, what sort of a scenario |
| 40 | PX4 10:20 | a system that picked another |
| 41 |  | uhm |
| 42 |  | picked another category of my watching that I also wanted to keep private. |
| 43 |  | And I suppose and also probably a two would be picked another category at complete random, randomly. That wasn't one of my categories, but also was somehow embarrassing that say, so if the system would pick I don't know I'm going to make this up but |
| 44 |  | picked romantic comedies or something |
| 45 |  | you don't like maybe you like the most. |
| 46 |  | So I'm disagreeing here on the basis that the user would have had to |
| 47 |  | knew that this function existed. |
| 48 |  | That's an assumption of mine, |
| 49 |  | which is quite relevant to point 2 |
| 50 |  | I've selected four here because I wasn't sure exactly what the adaption would be, but I was expecting an adapt |
| 51 |  | an adaption. |
| 52 |  | So in other words, was it going to just blank the whole screen or was it going what was it going to do? |
| 53 |  | six is a difficult one |
| 54 |  | getting in the middle because |
| 55 |  | the |
| 56 |  | if the goal was to watch cartoons, and the person coming in with a friend that you didn't mind wanted to know cartoons then you've been obstructed. |
| 57 |  | Watching cartoon |
| 58 |  | But it protected the privacy. |
| 59 | Interviewer 14:06 | okay. |
| 60 |  | So what sort of adaptation you wouldn't have accepted, So you mentioned like a couple of things like picking something in random or something which is also embarrassment. It's not the cartoon, but something else. So like, Was there anything else that you might not have accepted? adaptation or even not normal adaptation, just seeing it as it is a system that you would not have accepted? |
| 61 | PX4 14:36 | So if |
| 62 |  | I think what would affected the news a lot more would be if the system had just turned off. So blanking the screen, |
| 63 |  | I think that would have been |
| 64 |  | more confusing. Okay. |
| 65 | Interviewer 14:56 | Okay, you can move to the next one. |
| 66 | PX4 15:02 | I'm gonna play the next video |
| 67 |  | So I'm |
| 68 |  | just checking the perspective that you're coming from. So I, I was on a video call with a friend and so from so I am you in this case. Yeah. And so my understanding of why so it was that I was on a call with a friend and behind me was a co-occupent of my office operating the safe and the video, the system covered up the pin number and the secondary users point of view, it, that is the in this case the person operating the safe. |
| 69 |  | They |
| 70 |  | interestingly probably don't know. So from |
| 71 |  | their point of view, they're operating the safe on a computer and they met. So they're operating the safe PIN code that they may or may not be aware that |
| 72 |  | presumably they are aware that you're on a video call. |
| 73 |  | And if they were to look over to the video call, they would have seen that their pin had been protected. |
| 74 |  | But they may. |
| 75 |  | Yeah, well, their experience is just using the safe, isn't it? |
| 76 | Interviewer 17:35 | Yeah. |
| 77 |  | Go to the next question. |
| 78 | PX4 19:56 | Step 512345 yep So here I'm thinking from the perspective of without this. So I'm explaining the experience here is that the technology meant for me from the perspective of being on the video call that was efficient and efficient, in the sense that without it, it was probably likely that I would have been interrupted in order to either put myself stop the video call in order for the person to use the safe behind or afterwards have to deal with the fact that potentially they've found out that the pin number gone down the video call or had been recorded or something like that. Therefore, I see it as essential to avoid that. And therefore desirable helpful as well. And then effective because it stopped the pin number being recorded |
| 79 | Interviewer 21:16 | you can go to the next |
| 80 |  | so in this case what do you think would have been a system you would have rated one like in this question |
| 81 | PX4 21:43 | so |
| 82 |  | a system that I would have rated one would be some systems that black blank again blank the video cool. So, in other words you |
| 83 |  | The whole picture went black |
| 84 |  | and therefore I lost the ability to talk to my friend anymore. |
| 85 |  | So therefore, |
| 86 |  | I thought in this example I, I did remain |
| 87 |  | mostly in control. |
| 88 |  | So |
| 89 |  | I |
| 90 |  | did feel in control that I'm going to mark this low |
| 91 |  | this is to me, it was a llogical solution to the problem. |
| 92 |  | This easy to answer because I don't think it affected user experience really at all. |
| 93 |  | Yeah, that's a good thing. Yeah. |
| 94 | Interviewer 23:49 | Yeah, we can move on next section. |
| 95 | PX4 25:08 | just goinna review part of that one [...] |
| 96 |  | Sure. Just to clarify that the ping is your mobile phone alert sound is that right? |
| 97 | Interviewer 25:27 | Yes, yes, I |
| 98 |  | think. So it's basically like, indicates there's an adaptation notification. |
| 99 |  | On the phone. Yes. |
| 100 | PX4 25:41 | Okay, so here |
| 101 |  | from the main users perspective, there was a amazon echo and some headphones. And they, the main user asked Alexa to play some music, then the notification sound was played, which meant that the main user use their mobile phone to interact with the system which said that there was a person who was meditating was it saying I can't remember Yeah. And and therefore gave the user a choice, the main user a choice of what to how to adapt the system. |
| 102 |  | And then the secondary user |
| 103 |  | would, I would have thought |
| 104 |  | possibly have heard |
| 105 |  | could only have heard Alexa being asked the question. |
| 106 |  | Sorry, asked to play music, but wouldn't have had any music because it was adapted and played to the headphones. |
| 107 |  | So, here I selected |
| 108 |  | these reactions as |
| 109 |  | well it's firstly effective and to basically avoid interrupting your housemate. You're |
| 110 |  | the person that |
| 111 |  | you didn't want to be disturbed and therefore it's helpful to |
| 112 |  | to avoid |
| 113 |  | That interruption flexible because you can choose the different options and you have a choice to override it if possible. And I therefore thought it was easy to use because you had quite a few options what big buttons to select them |
| 114 |  | and collaborative was |
| 115 |  | because it allows you to be |
| 116 |  | collab.., work together with your housemate or your.., or the person who may be sharing the house with you. |
| 117 | Interviewer 31:39 | Go to the next question. |
| 118 |  | Two points. What's that a bit like? |
| 119 | PX4 32:11 | So, say that again. |
| 120 | Interviewer 32:13 | could you explain this? You answer to it, like and err to the first question. |
| 121 | PX4 32:19 | Okay, so, |
| 122 |  | um, so I'm selecting that and that it |
| 123 |  | almost fully |
| 124 |  | protected the privacy of the. |
| 125 |  | ah yeah. |
| 126 |  | And so I was thinking that it provides almost fully protects the privacy of the person who doesn't want to be in interrupted and |
| 127 |  | and |
| 128 |  | maybe incorrectly I haven't selected five because there is the possibility that you could have continued and select an option that's still interrupted the person meditating. Yeah. |
| 129 |  | But I'm just checking this. Yeah. |
| 130 |  | And then for question two I'm gonna select the and I'm going to disagree and I did not feel that I'm in control and because ironically what that what number two means is that I am given the option to override it I want to therefore I'm in control |
| 131 |  | so that on number three on the basis that I know that I live with a housemate who |
| 132 |  | or somebody that meditates and |
| 133 |  | then I suppose I I'm thinking that I would I would expect |
| 134 |  | expect it because I know that I'm with |
| 135 |  | that housemate. |
| 136 |  | But I guess you can never be sure. |
| 137 | Interviewer 34:46 | So let's see. |
| 138 |  | For this question, what, what would be a system you wouldn't rate it as four or five like agree with this statement. |
| 139 | PX4 35:00 | Let's say |
| 140 |  | I was |
| 141 |  | on |
| 142 |  | a site on holiday in a in a retreat where I know there's no one else around and I thought that I escaped everything and I that I'm on my own and then be interrupted. Okay. Oh, I suppose if I'd said that I certainly |
| 143 |  | didn't like if I |
| 144 |  | set up time if I'd said I want to override all adaptations or I don't care about people's lives. |
| 145 |  | And for number five, I strongly agree because it made it clear why the |
| 146 |  | It tells you why the adaptation happened. |
| 147 |  | But here six is difficult one because in order to satisfy the |
| 148 |  | the privacy of the house but |
| 149 |  | it does obstruct the use of the Smart Home somewhat because |
| 150 |  | you have you have to change how you use it. |
| 151 |  | Going down the middle here again because I can I can still use it. |
| 152 |  | I just can't use it in the way that |
| 153 |  | that I would normally use it. |
| 154 | Interviewer 36:57 | Okay, so is there anything that you would like better in this specific scenario like |
| 155 |  | change or upgrade |
| 156 | PX4 37:07 | Yeah, I |
| 157 |  | mean, this might be |
| 158 |  | like to see the potential for |
| 159 |  | an option to have possibly through the Alexa user interface, ie the voice to be able to |
| 160 |  | interact with it. |
| 161 |  | So for example, if I didn't have the smartphone handy, |
| 162 | Interviewer 37:47 | okay, so I think the choices are given to Alexa so you get to pick to that. |
| 163 | PX4 37:52 | Yeah. I'm saying that |
| 164 |  | carefully because I appreciate that that will lengthen what's good about the smartphone Is that I said that there are four clear options. And it's quick. And it's true that through Alexa wouldn't be that |
| 165 |  | as quick. |
| 166 |  | But it may be for |
| 167 |  | you could do it in an efficient way where you offer the, the option that the user selects most for example, via voice. If not you go to the app or something like that. |
| 168 | Interviewer 38:42 | Yep, you can go to the next |
| 169 | PX4 40:02 | So, in this case, I saw a person who wanted to check the sports myself. For my perspective, the main users perspective, I wanted to check the sports results through Alexa. And when I asked to for the sports results, I got the notification and when I looked at my smartphone, it said that the my co-occupant wanted not to be disturbed by sports results, and therefore I could check them on my smartphone, which was my preference for when voice isn't available. And the secondary users point of view they only heard me asking Alexa for sports results and they weren't disturbed |
| 170 |  | by the sports results. |
| 171 |  | Yeah, so I thought it was predictable because the react, |
| 172 |  | reacted in the |
| 173 |  | in in the correct way |
| 174 |  | given that my colleague was in the office and it was efficient and easy to use because that notification immediately told you what had happened and why and then provided the smartphone as an alternative. And, and that's helpful because you don't want to |
| 175 |  | disturb your colleague. |
| 176 |  | And I'm saying reliable because I could I from that system, I feel like I could just ask Alexa and I can rely on the fact well be certain In the fact that if there's anyone to be disturbed that will be avoided, because it will just take care of it for me. |
| 177 | Interviewer 43:25 | in this question. What do you think would be system scenario? You would have rate it as one like in this specific scenario, what would be the case? |
| 178 | PX4 43:38 | So, yeah, |
| 179 |  | the obvious first one would be to just continue to read the sports without.., I.., not change behaviour at all. But if there was an adaptation that didn't work, ironically here. I would say that if like In my previous example, if Alexa starts asking you questions over the voice, rather than the app, in this case, |
| 180 |  | that wouldn't have been |
| 181 |  | good. So, for example, in the previous part of the study, I said there might be good for Alexa to give you an option as part of the voice command. Now, I thought that was appropriate because the user then didn't want to be disturbed by music, whereas, which can have bass and carry through the house and, and you might hear it through walls and things. Whereas in this example, it's the, the just the audio of reading out the results and not the other person not wanting to be interested in sport, and that leads the adaptation. Therefore, I thought it was really good. In this case, the Alexa just didn't continue to say anything. It all got transferred to the |
| 182 |  | app. |
| 183 | Interviewer 45:04 | Okay. Great. |
| 184 | PX4 45:21 | So I'm considering number two |
| 185 |  | is it it's a |
| 186 |  | real balance. And this is such an interesting topic |
| 187 |  | that |
| 188 |  | you |
| 189 |  | that that the fact is transferred to the application through the notification fulfills everything in the scenario in that my second option, if I couldn't use the speaker is to use the app. |
| 190 |  | So I think |
| 191 |  | it's following the control.. the options that are already set. I suppose there's no.., in this case there's no override |
| 192 | Interviewer 46:13 | so do you think like it's good to have override as well? Like, just like in the previous scenario? |
| 193 | PX4 46:19 | Yeah. So there's no I'm thinking of |
| 194 |  | is okay. |
| 195 |  | And feel free to adapt this how you see fit that and |
| 196 |  | if you |
| 197 |  | ask permission of the person at that moment okay. |
| 198 | Interviewer 46:43 | So yeah, rather than |
| 199 |  | without technological intervention, you directly communicate with the person. |
| 200 | PX4 46:49 | Yeah. |
| 201 |  | Sorry. Like, you turned to your colleague. I'm really sorry. But this is really important to me because my best foot my football teams just won the League Cup. do you mind if I put this on and sometimes you might, |
| 202 |  | you might come to an agreement verbally, |
| 203 |  | that's different. |
| 204 |  | So I'm putting number two because I'm mostly in control. I'm just giving that example of maybe where I would want a bit more control. |
| 205 |  | Otherwise I.. yeah. |
| 206 |  | I'm |
| 207 |  | saying that I would have expected it because of the preferences that I set which was if somebody didn't want to be interrupted they then my secondary thing was the use this |
| 208 |  | mobile phones and smart phones. |
| 209 |  | It was obvious to somebody in the room that might be interrupted. |
| 210 |  | Third disagree here because then |
| 211 |  | I would have accepted them because |
| 212 |  | they're totally reasonable given that the person is there. And this is the preference that I set |
| 213 |  | I'm playing almost strongly disagree. Number two, the user interface adaption obstructed these interfaces using a smart home and I'm just need to consider it a little more. |
| 214 |  | I'm going to attach that to a disagree because you fully use the interface. |
| 215 | Interviewer 49:49 | Okay. |
| 216 |  | What do you think like would have obstructed user experience in this scenario |
| 217 |  | given that all these rules exist. |
| 218 | PX4 50:02 | So |
| 219 |  | an example of it obstructing it would have been you. |
| 220 |  | You can't get these results for another half an hour until the person has left the room. |
| 221 | Interviewer 50:22 | Okay. |
| 222 |  | Any other comments on this scenario? |
| 223 | PX4 50:30 | I |
| 224 |  | guess my other comment would be this, I thought it was very successful at achieving the objective of giving the user the ability to still get the information, telling them why it wasn't coming through the speaker and to protecting the other person I thought that was successful in it. |
| 225 | Interviewer 50:58 | Those are the all the fours Now, there are a few questions you can read them and speak out you answer. |
| 226 | PX4 51:24 | I think  I think overall  it's it it is protecting privacy well,  quite successfully. Because in in the scenarios other than maybe this small comments about, say, for example, in the first scenario, how it would choose what to display as an alternative, and there's no doubt in that the original requirement was not to to keep private watching cartoons. And therefore I would say that it was a it was very effective  at that, and that |
| 227 |  | the last example as well, was completely protected the preference/privacy to not be interrupted by the by the person, the example of the protect protecting the pin number. Again, it's completely effective. It blurred out. There's no there's no other way of saying it other than I think I think all these are really good at protecting the privacy. That Yeah, |
| 228 | Interviewer 52:49 | cool. |
| 229 | PX4 52:55 | Yeah, so Ironically, the |
| 230 |  | Netflix and |
| 231 |  | what what it predicts is quite |
| 232 |  | resonates. |
| 233 |  | And part of the reason is I've got quite a few friends who've got children who have their Netflix with a mixture of their kind of what they want to watch and what their children watch on Netflix. So, so or any kind of streaming service. And that resonated to me there where you, you could potentially adapt that for children, although it might become a little disruptive when they're coming in and out the door. That ultimately, you could get that to help there. |
| 234 |  | And the pin number in the background, I mean, I don't know how much you can see what's behind me. But over this side, I can't see myself but I've got Kind of, let's call it mess. And so I can understand not wanting to give away too much about what's behind. And I thought that the, effectively kind of blurring out one side of the image or if I had a housemate through that door who may be like might want to be, sort of have some anonymity, I understand that sort of manipulating the image to protect people's privacy is a really good idea. |
| 235 | Interviewer 54:37 | Cool, |
| 236 |  | so. you can go to the next one. |
| 237 | PX4 54:42 | I sorry, I just gotta say one thing. |
| 238 |  | I would probably check the sports results much more on my phone anyway. I know that's just an example. And that that one didn't. |
| 239 |  | Well, because I don't have an Alexa, |
| 240 |  | I not quite sure whether I'd use it for the sports results, but I understand the scenario. |
| 241 |  | So did any of these scenarios inspire |
| 242 |  | you to think of |
| 243 |  | other scenarios in your daily activities? |
| 244 |  | I guess I've covered some of those. |
| 245 |  | In my examples, I'm |
| 246 |  | trying to think, well, what would be |
| 247 |  | Yeah, the music, the music one is, I can relate to that that more that I have neighbors, which I suppose I tell you tell you what I mean. It could be adapted for that. It could be that it could remind me that my neighbors put their kids to bed at whatever time and I'm friendly with the neighbors. I want to stay that way. I'm sure they won't appreciate me. blasting music through. So So Almost rip. I could register my my times based on the neighbors as well just in the same way as maybe the housemate could register their preference around not being disturbed. And |
| 248 |  | - |
| 249 |  | - |
| 250 |  | yeah, I think the video call is probably going to come up in number four COVID |
| 251 |  | lockdown working |
| 252 |  | Yeah, so for I can totally imagine where this might have come about, but I at the moment don't have a housemate. So, so far that hasn't been a problem. But um, no, this is not true. No, my I don't have a housemate but my dad has come out a few times. And there have been work calls where I'm going to work on my dad's sort of passing by behind doing, like, DIY or something on my house. And actually, that falls into the this category. Exactly. And because I didn't have a virtual background on, you know, he's just, I mean, no one really minds, but ultimately, he's just in the image like anybody else. Also being in the house, everyone's in the house so much more.  And I think that keeping people's privacy in terms of not being wanted to be disturbed is even more important, because my neighbors are in more than they ever were before. And so I think it's useful. Certainly useful there. And |
| 253 |  | - |
| 254 |  | - |
| 255 |  | I run it Yeah. I suppose. Just trying to think through Yeah, and we do more video we do. Let's face it, we do more video calls, in just just to take you back to the example questionnaire. Part of thinking through that was  whether, however this, if you're also, it might be slightly different if you are also friends with your your colleagues and as to whether you need something to be sort of private or not, or sort of adapted or not. But I think if it gives you the options for preferences, then I think it's absolutely fine. |
| 256 |  | - |
| 257 | Interviewer 58:50 | Thats interesting. You think like the relationship that you have with other people in the home is also like would |
| 258 |  | influence these kind of adaptations or get impacted, |
| 259 | PX4 59:03 | I think. And so for example, if these probably smaller scenarios, but if your housemate is also a colleague, then it It might not matter so much that they're in the background of an image with another colleague on the video call anyway, if you certainly. But the pin number example is perfect in the sense that there's no doubt that that needs to be kept private. Nobody should be sharing pin numbers around. |
| 260 |  | So that that would apply anyway. |
| 261 | Interviewer 59:41 | Cool. Yeah. And that's |
| 262 |  | all the questions and just one, one, minute |
| 263 |  | so yeah, so I'll stop the recording |

## PX5

|  |  |  |
| --- | --- | --- |
| Index | Tag | Transcription |
| 1 | Interviewer 0:14 | The purpose of this study is to answer the research question users perceive the usability and privacy preserving capabilities of user interface and other adaptations in smart homes. Let me unpack that a bit. In this study, you will be shown four videos demonstrating Smart Home scenarios. Possible privacy risks, privacy, possible risk of privacy violations, smart home user interfaces could adaptive behaviour, in order to avoid or minimize those privacy risks. So this study focused on two types of privacy evaluations. The first type relates to information disclosures. The second type relates to disturbances is caused by smart home devices. The two videos I sent earlier, those two examples of those two variations. Did you manage to see those |
| 2 |  | two? |
| 3 | PX5 1:16 | Yeah, pre-question. right? |
| 4 | Interviewer 1:19 | Yes. So Is everything clear up to now? Is it? Are there any questions? |
| 5 | PX5 1:22 | Oh, yeah. My, my understanding was that one is more physical like interference, and the other one is like a data disclosure. |
| 6 | Interviewer 1:31 | Yeah, that's totally true. So it's like information disclosure, personal information. disturbances could be like, noise, or like other types of disturbances caused by smart home devices. And so the videos you will see next are recorded from a first person point of view. This is because I would like you to imagine that you're experiencing the scenario yourself. After each video you will be given a questionnaire to answer. It's important to answer these questions as if you have experienced the scenario yourself. |
| 7 | PX5 2:01 | Okay. |
| 8 | Interviewer 2:02 | In the end, I will ask you a few summary questions to wrap up the study. |
| 9 |  | Is everything okay? up to now, |
| 10 | PX5 2:08 | yeah, yeah make sense. |
| 11 | Interviewer 2:10 | So I will be recording this conversation the recording will be deleted. As soon as I've transcribed the session, the transcriptions will be kept securely until I have completed my analysis. And any information extracted from them will be anonymized before being used in any publications. |
| 12 | PX5 2:26 | Make sense? |
| 13 | Interviewer 2:27 | All right. So everything's fine, we can start the study. |
| 14 | PX5 2:32 | Okay, |
| 15 | Interviewer 2:32 | so go to section one and first, watch the video by clicking there. And after that, you can go through the questions |
| 16 | PX5 2:45 | I am on the first video, just one sec. |
| 17 |  | Should I share my screen or do you prefer.. |
| 18 | Interviewer 2:52 | No! that is fine. |
| 19 | PX5 3:44 | The sound gradient is really nice. |
| 20 | Interviewer 3:53 | read the question and, self explanatory. |
| 21 | PX5 3:58 | Okay, so basically, the.., I was interacting with the Alexa system. And I wanted to play music but another person in the room was meditating. So the application gave me some other options instead of playing the music directly, and so that the possible choices were playing later or using a different device, or |
| 22 |  | should I explain the whole thing? |
| 23 | Interviewer 4:31 | No, just what what you sort of saw, I mean that that's |
| 24 | PX5 4:33 | ah, okay okay. So, basically, in the end, the choice was to use a safer device that didn't disturb the other person. |
| 25 | Interviewer 4:44 | So what do you think from the secondary user's point of view, who was meditating? |
| 26 |  | What's the experience? |
| 27 | PX5 4:52 | so the second person probably heard the first person speaking to Alexa, initially But then it was no disturbance whatsoever after that |
| 28 | Interviewer 5:07 | to the questionnaire, |
| 29 | PX5 5:09 | okay, top five words which describe your experience. |
| 30 |  | Okay, |
| 31 |  | should I write these here directly? |
| 32 | Interviewer 5:19 | Yeah, pick from like five from the words given below and type it there. |
| 33 | PX5 5:27 | I will say convenient for sure. |
| 34 |  | Easy to use as well. |
| 35 |  | Trust or esteem |
| 36 |  | and effective |
| 37 |  | is one more |
| 38 |  | helpful. |
| 39 | Interviewer 6:05 | Okay, so we can go to the next question, which is to explain why you pick thos reaction... |
| 40 | PX5 6:10 | Okay, so basically the first thing was that is very easy to use and design wasn't too crowded. So it was very easy to understand. And then the, there wasn't much to interpret like the the question was really clear. It was directly say what the issue was and how to solve it. And also, it's convenient because I might not have noticed that there was a second person meditating, for example, but directly it was detecting that for me. So that would be a cool feature to have, and trustworthy because in the process, I didn't have to disclose anything with the person meditating and the result was as expected |
| 41 |  | - |
| 42 |  | - |
| 43 |  | - |
| 44 |  | And then |
| 45 |  | Okay, did smart home protected the privacy of its user? |
| 46 |  | Well, uhm, well it didn't protect [the co-occupant]'s privacy. |
| 47 |  | I protected the privacy of the user like picking the choice, basically. |
| 48 | Interviewer 7:29 | Okay? |
| 49 | PX5 7:31 | I mean, I'm not sure how to interpret this because on the one hand, I can observe myself that the other person is meditating. |
| 50 | Interviewer 7:39 | Okay? So, I when I mean privcy, it's, either it could be Information privacy, or it could be physical privacy, so, either of it so in this specific scenario, |
| 51 | PX5 7:49 | okay. |
| 52 | Interviewer 7:51 | So, could you explain a bit more like I understand like, what's your reason behind.. |
| 53 | PX5 7:56 | so |
| 54 |  | I'm thinking because, there was no privacy infringement from from the point of view that I did not disturbed the other person privacy wise. |
| 55 |  | But at the same time, |
| 56 |  | if it, was the second person in the same room? |
| 57 | Interviewer 8:16 | So, in this scenario, that's a good question. I didn't think about that. So you can imagine he's in another room, which I can't directly see. |
| 58 |  | but the sound would be played, it could infiltrate to other room. |
| 59 | PX5 8:31 | Yeah. So on the one hand, I know the other person's activity, which I might not know otherwise, but at the same time, it's preserving its activity. So I guess if there's an agreement at the household level, let's say, I would agree that the privacy is protected here. |
| 60 |  | I would rate it two |
| 61 | Interviewer 8:52 | two, it means you disagree. Is it? |
| 62 | PX5 8:55 | Oh, no, sorry. Oh, sorry. My |
| 63 | Interviewer 8:59 | questions are a bit tricky. |
| 64 | PX5 9:01 | No, no, don't worry, this was my mistake. |
| 65 |  | I didnt... in control while using the smart home. |
| 66 |  | No! I will disagree, because the user had choice in this case. |
| 67 |  | I expected the use interface adaptation before it happened. Yeah, I strongly agree because it happened as expected in the end. |
| 68 |  | If I were the person experiencing this user interface adaptations, I would not have accepted them. |
| 69 |  | No, I disagree. |
| 70 |  | And I understood why these interface optation happened. Definitely. Yeah. The user interface adaptation obstructed the user experience. No, I would strongly disagree. |
| 71 |  | Okay, |
| 72 | Interviewer 9:56 | So I've got three questions on this. So, so the fifth question you rated as five, you strongly agree., what do you think would be a scenario where you would rate it as one like, what sort of situation would be in the same scenario, but the adaptation is different. |
| 73 | PX5 10:14 | Okay. So |
| 74 |  | for example, if the, then the headphones wouldn't start, it would be a type of adaptation that conflicts with my choice on the interface. So anything that is not directly explained on the graphic interface? I would not expect. So yeah, |
| 75 | Interviewer 10:39 | sure, like elaborating on that the sixth one as well. So you say they didn't obstructed the user interaction. So can you think of a.., situation where it would have obstructed your experience? |
| 76 | PX5 10:52 | for example, if there was a huge latency or delay in applying the changes or again If there was something that was unexpected, and I didn't understand similarly to the previous one. |
| 77 | Interviewer 11:07 | All right, great. You can move to the next question. |
| 78 |  | So Similar question just explain.. |
| 79 | PX5 12:02 | Yeah. So basically, I was trying to visualize some pictures on a bigger screen, but there was another person studying in the same room. So the interface the your framework notified me just before starting that another option was to watch the pictures directly browsing them on my smartphone. So that's what the user went for in the end, and the other person didn't seem to notice anything. So the I would say the interaction was unobtrusive |
| 80 |  | in the meantime. |
| 81 |  | So |
| 82 |  | I honestly, I would say the same things as the same scenario than if I can just copy and paste but.. |
| 83 | Interviewer 12:52 | you can do that. |
| 84 | PX5 13:17 | Well, I think in this case I even more agree that the privacy was privacy was protected because the person was the same room so I would rate it even one point more than before. |
| 85 |  | No, I disagree. Now I'm not in control. |
| 86 |  | I expected the interface adaptation. |
| 87 | Interviewer 13:53 | So question on the first answer. So what do you think like to be situation, the privacy wouldn't have been protected in this kind of a situation. |
| 88 | PX5 14:06 | For example, if the notification that I received on my phone was broadcasted aloud, it would have been, one, breaching the privacy of the person studying and to be breaching the privacy about my own activity. And also, like there weren't any details shared about, you know, personal details about the two users. So I would say it was all privacy safe. Then same applies for the interface adaptation. I think, very similarly to the previous scenario, actually. |
| 89 |  | Yeah, so it goes for |
| 90 |  | I am just checking agree, agree, disagree. Okay. |
| 91 | Interviewer 15:07 | So, so the last question the answer like why do you think, what sort of us situation would have obstructed your user experience in this scenario? |
| 92 | PX5 15:19 | Well, |
| 93 |  | I guess, except for like extreme situations where, for example, there's no broadband on my phone and I can't use the alternative, like in a scenario where everything goes well, and I can simply browse the pictures directly on my phone. It wasn't obstructed because, there wasn't, there weren't any delays as well. And the whole process was really straightforward. So yeah. |
| 94 |  | - |
| 95 | Interviewer 15:57 | So like |
| 96 |  | in the fifth question you rated like that you understood why the adaptation happened. And so what do you think like, a situation where you wouldn't have understood why the ataption happened? What would be a situation be like? |
| 97 | PX5 16:16 | Well, I guess if it didn't explain the motivation why he was redirecting me to my phone, or if I even had the opportunity to choose myself. It would feel less in control in the process, so yeah, |
| 98 | Interviewer 16:32 | okay. |
| 99 |  | You can go to the next one. |
| 100 | PX5 17:17 | Okay, interesting. |
| 101 |  | Well, in this case, there was no filter and no notification about another person entering the room. |
| 102 |  | So |
| 103 |  | compared to the other one |
| 104 |  | it was more stressful, let's say, like putting myself in the shoes of a person who doesn't want to disclose this information. |
| 105 |  | And |
| 106 |  | also it felt a bit unpredictable because the there wasn't a way to adapt the interface |
| 107 |  | and |
| 108 |  | ineffective |
| 109 |  | undesirable for the same reasons. And |
| 110 |  | I would say simplistic as well, because there weren't some of the privacy preserving features or I don't know compared to the first scenario. |
| 111 | Interviewer 18:29 | could you explain why you picked those words? |
| 112 | PX5 18:33 | Well, I would say stressful more from the user point of view. Because he wasn't preserving the preferences of the user. It was unpredictable because |
| 113 | Interviewer 18:49 | Sorry, it wasn't clear. What do you mean? It was not protecting the preference of the user? |
| 114 | PX5 18:55 | So because it seems the user didn't want to share the information that I mean, let's say that I want [the co-occupant] to know that I'm watching cartoons. |
| 115 | Interviewer 19:06 | Yeah. |
| 116 | PX5 19:07 | That information was out there and there was no notification that another person was approaching the same room. |
| 117 | Interviewer 19:14 | Sorry, I thought it was done like it was switched before [the co-occupant] entered. Sorry. |
| 118 | PX5 19:22 | Ah, okay. Ah, |
| 119 |  | no, no. |
| 120 |  | That basically Okay, I should have explained the video a little bit better. I skipped that part actually. So what I saw in the video was that the there was a Netflix page with some cartoons and films. And then [the co-occupant] entered the room and the TV stayed the same and [the co-occupant] said oh, I really enjoyed that movie. I'm sure you like it too. |
| 121 | Interviewer 19:50 | The TV did not stay the same. So that's that's the part, it switched. |
| 122 | PX5 19:58 | Ah okay, |
| 123 | Interviewer 20:00 | Sorry. Maybe! it is the same video right?. So, |
| 124 | PX5 20:05 | okay, let me check, Ah okay, from Sonic and dragon trainer, it went to movies. Okay. Okay, that's more subtle than I thought. Okay, sorry. Because I thought, you, the idea was to mask the use of Netflix in general. |
| 125 | Interviewer 20:25 | No, in this scenario switched from cartoon suggestions to more generic suggestions. |
| 126 | PX5 20:35 | Oh, I see. But that's interesting, I guess in like, okay, so |
| 127 |  | it wasn't as straightforward as I thought then. Yeah. It was more unpredictable. I would keep that word, because there was no clear notification. Yeah. But I wouldn't say it was ineffective. desirable anymore because in the end, the effect was preserved. |
| 128 |  | - |
| 129 |  | It was just more. |
| 130 |  | Okay, let me find the right word confusing. |
| 131 |  | And |
| 132 |  | well, it was easy to use, but simplistic at the same time because there was no input from the user. So it was really working in the background. So that's a pro but it's also the con that there wasn't much control. |
| 133 |  | - |
| 134 |  | - |
| 135 |  | - |
| 136 |  | So, as the fifth one, I would say |
| 137 |  | That it was a bit rigid too because there wasn't a choice of adaptability. But the application was directly applying a filter to a different type of Netflix show, let's say. Yeah. |
| 138 |  | So hhould I move on to the questionaire? Okay. |
| 139 |  | Well, I agree that it protected the privacy of its user. I wouldn't agree strongly agree just because there wasn't another. There was another scenario where I want to switch off net, Netflix completely. Okay. And that was not something that was included. |
| 140 |  | Well, I also agree that there wasn't as much feeling of being in control as the previous application. And obviously, I did not expect the interface adaptation from my reaction. So yeah, I would say just that I disagree. No, this I think, I don't agree or disagree because I don't have the full picture. Like if my user preference was just to hide the cartoon option, this would have been 100% acceptable. So I think it's okay. Well No! I understood why the adaptation happened in the end, I'm just saying that in a strongly agree scenario, I would have had more options of adaptations. |
| 141 |  | - |
| 142 |  | - |
| 143 | Interviewer 23:55 | Yeah. So that's interesting point to what do you think like, you know, in a like, Quick situation like this where the, like so the other aspect is you get a choice to like, pick what adaptation is. But it's very time sensitive change that you need to do like when someone is coming. So what do you think is the best? |
| 144 |  | Like adaptation, or the change that is required? |
| 145 | PX5 24:21 | No, that's why I'm saying it all depends on how the user preference interfaces like, because if I have more options in my preferences and is more nuanced, as you say, then yeah, I would say that all of this is 100% acceptable. By just without the full picture. It took me a while to understand but yeah, it could be just due to the scenario. Well, it didn't obstruct the user experience at all, because as you said is it was really time sensitive. So In that regard, I would say it did not obstruct the user experience at all. |
| 146 | Interviewer 25:09 | So So what do you think? |
| 147 |  | Yeah, for that one, what would be the alternate like what would be the situation where it obstructed the user experience? |
| 148 | PX5 25:19 | Well, |
| 149 |  | for example, if there was no application applied at all, no adaptations sorry applied at all. So there was a privacy breach in the end. Or if it if it took too long to make the adaptation or if there was a failure in recording that someone else was coming in. |
| 150 |  | - |
| 151 |  | Okay. Scenario four, right. Yeah. |
| 152 |  | Okay, this will be mega cool |
| 153 |  | work like this, by the way but yeah, so basically there was a video call going on between me and another person and then a third person enters the room and tries to open a safe, but the area of the image containing the sensitive PIN code is blurred automatically as the The person tries to open the safe. So from the secondary user, the person calling or the person opening, |
| 154 | Interviewer 27:11 | there are three people, so what do you think from different people's point of view, |
| 155 | PX5 27:14 | okay from the person like receiving the call, of course, they would know something such as that another person is trying to open a safe and there's a safe there in the first place. However, they wouldn't know like, the code of the safe and things like that. And the person opening the safe is aware that there's a call going on and still decides to open the safe, its own risk, so to speak. |
| 156 |  | So thing I was most struck about is the innovative part of this interface because is not straightforward to deploy something like this and it was for the same reason I would say it was cutting edge |
| 157 |  | - |
| 158 |  | it was flexible as well because there was adapting to the scenario having a different portion of the image being blurred and it was a efficient too because the there wasn't there weren't any slowdowns in the call and things like that. And then I would say was useful as well because, of course, it prevented privacy breach from happening. |
| 159 |  | Ah, |
| 160 |  | Okay, so I would say this protected the privacy of its users, except from the face of the person opening the safe. Everything is sensitive was protected. So I would say I agree. |
| 161 | Interviewer 29:15 | Do you think like, his face also should be covered.? |
| 162 | PX5 29:21 | Well, |
| 163 |  | well, I guess so if it's true that the person is entering at its own risk. |
| 164 |  | But at the same time, like, |
| 165 |  | one could just blur the entire background if a person is entering as well. |
| 166 |  | Well, I will not say I didn't feel in control, because in this case, I would prioritize the sensitivity to time it needs to happen really flexibly, so I disagree that there was no control. I mean, there wasn't control but it was necessary for the application. |
| 167 |  | I didn't expect the user interface adaptation to happen. But I'm not sure if you mean like first time user or like |
| 168 | Interviewer 30:32 | lets assume the second time you see this sense like, you know, these kind of features, are there |
| 169 | PX5 30:37 | okay okay No, then I must expect the adaptations to happen. |
| 170 |  | No, I disagree. I would have accepted the adaptation in this case, it's safer to have the information taken out of the picture. |
| 171 | Interviewer 30:57 | So what do you think like |
| 172 |  | what sort of adaptations, you wouldn't have accepted? |
| 173 | PX5 31:03 | Okay. So, for example, closing the call, |
| 174 |  | abrupt all of a sudden. |
| 175 |  | But another example of what I would accept is putting the call on hold, and notifying that a person is entering as well. I understood why it happened. So I would agree that it was I actually would strongly agree that it was really clear. |
| 176 |  | - |
| 177 |  | And |
| 178 |  | it didn't obstruct the user experience at all in this case. And one case where it would have obstructed the user experience is again, if the call was automatically interrupted, or to a minor degree, if there was some delay to choose a possible adaptation. |
| 179 | Interviewer 31:59 | Okay. Awesome. |
| 180 |  | we have like four questions well, but it's scenarios are over |
| 181 | PX5 32:18 | Okay, I'm glad then |
| 182 | Interviewer 32:20 | some general questions which is the below so you can read them and speak out your answers. So |
| 183 | PX5 32:29 | okay, overall How do you feel about adaptive to user interface being used in protecting the privacy of smart home users? Okay, so I think it's something that is needed and is still of the subject of research as your example. So and I think it should be a priority because more and more we're sharing spaces with other people, but these devices are some times are designed for just being used by one person. And, and also sometimes they're not easy to tailor to your own preferences, if at all. So what I like about all these scenarios is that there was an idea of having some knowledge about the user preferences beforehand and react, reacting very quickly to the presence of other people in the same house to or using shared devices and things like that. What about the how I resonate with this scenarios in terms of daily activities? Question two. Yes, I think especially the video call, I resonated with a lot due to the current situation because it's normal to just be in a video call, and worrying about you know, I think about colleagues as well like if you have a kid at home, and then they are entering the call and you want to preserve the child's priv., privacy, you might need an application like that. But also, I think all of them really because I have a smart TV at home so I can relate to not wanting to share my preferences as well. And I think another cool feature to have would be to have different, you know, to have a way to cover the history of what you've been watching if the TV's been used by different people |
| 184 |  | - |
| 185 |  | - |
| 186 |  | - |
| 187 |  | - |
| 188 |  | or things like that. |
| 189 |  | Yeah, and in terms of disturbances, I can relate as well, because maybe you might not realize that you're making noise so that that's another scenario I can resonate with. Did any of these scenarios inspire you to think of other scenarios? Well, one is the TV example that I just mentioned. |
| 190 |  | Yeah, I'm trying to think. |
| 191 |  | I'm trying to think because I have Home and I have this smart TV. So that's the two scenarios that I'm thinking about. And, I mean, it would be really cool if there was a feature also to let's say, You're about to play music. And there was kind of a recording of the noise levels in general. Just to not disturb neighbors as well or things like that. |
| 192 | Interviewer 35:42 | Yeah. |
| 193 | PX5 35:44 | And |
| 194 | Interviewer 35:46 | so what do you mean by record levels is like.. to give you feedback about the impact, or what what do you mean exactly?, |
| 195 | PX5 35:53 | yeah, like let's say I say, I don't know. Play song XYZ, increase volume. And then it goes above a certain threshold. And the interface warns me that above a certain threshold might disturb the neighbour. But again, it could be something that's just my preference and I can switch off if it's to |
| 196 | Interviewer 36:18 | Annoy them? |
| 197 | PX5 36:18 | invasive. Yeah. |
| 198 |  | Okay, COVID-19 lockdown and working from home, made us spend more time sharing our home with.. Yeah, that's true. Has the current situation created any privacy violating scenarios that could have been avoided by adaptive user interfaces? Well, noise levels is a huge one because I mean, if we all work from home and we have different work styles. And while one person is studying maybe I am cooking and things like that. These ideas of getting a sense of what other users are doing. in the same house, and it will be very helpful. Again, as I said during the questionnaire, it would be ideal to have a sort of agreement where I'm okay to share that I'm meditating or doing something else. Or maybe I just declare my activity when I'm about to do you know, an activity that requires silence or things that... I am not comfortable with all my roommates knowing what I'm doing all the time. |
| 199 |  | - |
| 200 |  | That's a bit of a paradox. |
| 201 | Interviewer 37:28 | Yes, that is an interesting point |
| 202 | PX5 37:31 | but yeah, maybe if there's, if there's any opportunity to flag some activities out. And then be more aware about you know, like, they do not disturb sign in front of the |
| 203 |  | door. |
| 204 |  | [do you want to say Hi to AK..] |
| 205 |  | Yeah, like, like right now. |
| 206 | Interviewer 37:59 | Sorry, I thought it was done like it was switched before [the co-occupant] entered. Sorry. |
| 207 | PX5 38:29 | Oh, that's a good idea to mention, like just disclosing enough to not the disturb but not too much. Yeah. |
| 208 | Interviewer 38:38 | Cool. |
| 209 |  | Yeah, so I think that's it for the study. |
| 210 |  | Yeah, thank you very much and done like, really fast. So I think this is the fastest into, like, really. |
| 211 | PX5 38:56 | I hope it was enough. |
| 212 | Interviewer 38:58 | Because I think the, You sort of use the first one's words for a second and I think a lot of people spend time like picking up unique words for each scenario. I think that sort of speed, sped you up. Yeah. |
| 213 | PX5 39:11 | Okay. Yeah. |
| 214 | Interviewer 39:14 | All right. I'm gonna stop recording now. |

## PX6

|  |  |  |
| --- | --- | --- |
| Index | Tag | Transcriptions |
| 1 | Interviewer 0:52 | Okay, cool. So I will try to do it fast so I have the script [..]. So thank you very much for joining my study. Just checking the recording. Before we start, let me give you a brief introduction to the study. The purpose of this study is to answer the research question, how do users perceive the usability and privacy preserving capabilities of user interface adaptation in the smartphone, which is a mouthful. I know, let me unpack that a bit. In the study, you will be shown four videos demonstrating Smart Home scenarios with possible risks of privacy violations. Smart Home user interfaces could adapt their behaviour in order to avoid or minimize those privacy risks. This study focused on two types of privacy violations. The first type relates to information disclosures. The second type relates to disturbances or excitement, which is about like somebody getting disturbed due to a smartphone device. The two videos I sent earlier were examples of those two variations. Does that make sense up to now? |
| 2 | PX6 1:51 | Yes, and |
| 3 |  | I really like the acting skills involved. |
| 4 | Interviewer 1:57 | So if there's, anything is not clear, you can ask questions. So the videos you're will see next are recorded from a first person point of view. This is because I would like you to imagine that you are experiencing the scenarios yourself. After each video you will be given a questionnaire to answer which is in this document. It's important to answer these questions as if you have experienced the scenario. So just assume that in the end, I will ask you a few summary questions, to wrap up the study and I will be recording this interview, and the recording will be deleted. As soon as I have transcribed decision. The transcription will be kept securely until I've completed my analysis and any information extracted from them will be anonymized before being used in any publications. And if that is all right, we can start. |
| 5 | PX6 2:43 | Yeah. |
| 6 | Interviewer 2:44 | Great. So I think the documentation is a bit self explanatory, but I'll guide you, the first one is like, go to section one and pick play the first video and there are questions afterwards. Let me know when you finish watching the video. |
| 7 | PX6 2:58 | Do you want me to share the screen?, is it better? |
| 8 | Interviewer 3:01 | Ah no, that is fine. Just watch it. |
| 9 |  | great. Go to the first question which is |
| 10 | PX6 3:53 | okay, do you want me to explain aloud what I saw? |
| 11 | Interviewer 3:55 | Yes. |
| 12 | PX6 3:57 | So um, okay. What saw is that, I'm trying to okay. I mean, the [picture?] does not really, I think the |
| 13 |  | the interesting part is that |
| 14 |  | I, I immediately felt it a bit |
| 15 |  | annoying, to be honest, because that was |
| 16 |  | to me, from my, as a main user, I felt that was like, I want to do something. And then that stopped me. My first impression was that it was annoying. |
| 17 | Interviewer 4:33 | Yeah. |
| 18 | PX6 4:33 | But then like, of course, I rationalized it a bit and then realized that the person is next to me and he's studying and he doesn't want me to do that. So, okay, but especially for pictures, I found it a bit over the top. Because there's no noise, there's just visual disturbance. So I found it a bit, too much. So like the other person if the other person is disturbed by pictures, on the screen, I think you should just watch the other side... I don't know, I don't know, if I felt a bit, it was a bit too much. That's okay. |
| 19 |  | All right, can I go down? |
| 20 | Interviewer 5:13 | from secondary users point of view? what do you think just like |
| 21 | PX6 5:17 | I Well, I mean, restating the same for this, I think I appreciate the issue. I don't feel it should be an issue that user that, like, if the pictures are not disturbing or anything, I don't think there should be an issue of someone doing something else been disturbed by a screen with pictures, but maybe I'm being I don't know. That's my feeling like, yeah, I feel it's a bit it's a bit like, it's nice, but if it is a bit too much in the sense, it is a very nice feature that might be a bit, step further. That might be |
| 22 | Interviewer 5:59 | yes. You may go to the next question. Okay. |
| 23 | PX6 6:07 | Do I need to type and there's a certain suggestions |
| 24 | Interviewer 6:10 | Yes, I mean pick five from from the like then. |
| 25 | PX6 6:26 | So, Patronizing is probably one. |
| 26 |  | I think it's really cool to be honest is innovative is probably the right word. |
| 27 |  | Probably, approachable |
| 28 |  | from the second person |
| 29 |  | it's kind of convenient. |
| 30 |  | And so maybe another one would be |
| 31 |  | rigid |
| 32 |  | alright, now need to explain. |
| 33 |  | Okay, now I found the |
| 34 |  | I think like the potential of it is really good, is really powerful. |
| 35 |  | So yeah, |
| 36 |  | yeah so I think this explain now |
| 37 | Interviewer 8:28 | yeah explain route type just speak out. Explain. |
| 38 | PX6 8:31 | Yeah right so yeah, I said patronizing and rigid in the sense that I found the it a bit as I say before I found it I found that it's a level too much like it's kind of going a bit too much over over protecting the privacy of the other person because it wasn't watching pictures if it was something else some might be more open to it, but just watching only the pictures If I felt a bit it was a bit too much over the over the what it should be done. That's my feeling. And about innovative and convenient and powerful. On the other end, I think that these are great potential, it's a really good idea to have any, it's a really good idea this this could be configured in ways where the presence of other people will determine, determine, how I react on stuff and how this smart, devices around me react and stuff. So that's how I found it that way. So that may be a specific use case, no, but like in general, the system and the the interaction was really great. |
| 39 |  | - |
| 40 | Interviewer 9:44 | Thank you. The next set of questions, okay. |
| 41 | PX6 9:48 | Protected privacy, of its users, |
| 42 | Interviewer 9:51 | just to clarify when I mean privacy both, like whether it's Information privacy or disturbances, I mean, both |
| 43 | PX6 10:01 | So protected the privacy, I |
| 44 |  | guess no really strong opinion about it |
| 45 |  | Don't feel in control... |
| 46 |  | I disagree mostly |
| 47 |  | with Oh, okay. |
| 48 |  | I mean, but wait, now I expected the user interface before it happened because I saw the video the other day. So I knew the ping what was happening. So how do I how do I react to this like? |
| 49 | Interviewer 10:49 | Yeah, so yeah, that's a good question so, so its part of the study to show you those two videos to try prime you to this, the smart home system, so you can assume you watched this and like whatever the feelings that you have is it's fine. I mean you don't have to assume different things. |
| 50 |  | It's part of the studies. |
| 51 | PX6 11:09 | I kind of, I expect to be a bit |
| 52 |  | Accepting is difficult like I would accept it if if the other person was telling me you're invading my privacy by showing pictures. I would accepted it but if it was just a random you can't do then someone that has done it just because then I would have struggled to accept it so I don't know exactly |
| 53 |  | as it was don't agree and disagree is the right answer. |
| 54 |  | Obstructucted the user experience of using the smart home! |
| 55 |  | Well, you actually reached the user experience probably. |
| 56 |  | Okay. |
| 57 | Interviewer 12:08 | Yeah, just just one clarification, the first question you mentioned, like smart home, protected the privacy of the users. You don't disagree.., don't agree or disagree. Could you explain a bit more like why you gave it a three? |
| 58 | PX6 12:22 | So because I feel |
| 59 |  | I didn't have strong feel.., because of the specific scenario, I didn't have strong feeling about what kind of privacy was protected? I feel there was no, because the scenario was showing only the pictures on screen. |
| 60 |  | So they |
| 61 |  | I don't think that there was much danger on the privacy as you meant privacy for the student. |
| 62 | Interviewer 12:50 | Yeah, |
| 63 | PX6 12:51 | as I don't think that there was much danger for me to show in there. Already pictures that, so because of this scenario, I don't think there wasn't any strong danger to privacy to be that's why I put three., |
| 64 | Interviewer 13:05 | so like, why do you think like, overall in this specific scenario? A change would make you've been rate it better? |
| 65 |  | What sort of change? |
| 66 | PX6 13:19 | Um, in this specific scenario |
| 67 |  | like, |
| 68 |  | I don't know, like as I said this, the |
| 69 |  | the idea behind it and the way it happened is is good. but, but my problem now is that I didn't consider that as a privacy issue. Yeah, like that makes me the question that like, why do we do we need to add that in that specific case? So that's how Yeah, it's a bit tricky in this case, because I'm I'm questioning this scenario instead of questioning the smarthome solution as opposed. |
| 70 | Interviewer 14:05 | Yeah, so me, that's fine. It's how you how you perceive it so still be cool. Great. You can move to the next question. |
| 71 | PX6 14:46 | It is really nice. |
| 72 |  | I wanted to know more about the guy who went to Sri Lanka. |
| 73 |  | In the question, okay, so in this case is that I, I get it, in a sense, some people don't like to be visible on camera, so it's perfectly fine. And it's a really smart way to do it. The someone walking behind you, you blurred the screen, probably I would have found it a bit less, like found out it a bit hard the only half of the screen got blurred. |
| 74 |  | But I mean, I suppose is a technical thing more than.. |
| 75 |  | so because I don't know, I felt like I was when it blurred, there was like, okay, it's gonna blurr now. And then he appeared on your half and I was like, oh, okay, that's a bit unexpected for me. What else? Yeah, I mean, the other sense is correct. I think that the other user was., know nothing about his privacy was factored and its perfect. like if someone walks out of the shower like this is non visible even |
| 76 | Interviewer 16:09 | we thought about it like took it off |
| 77 | PX6 16:13 | should have made something |
| 78 | Interviewer 16:16 | do you think like, So you mentioned his interesting point like the half of the screen blurring, would you prefer something else with that kind of adaptation? |
| 79 | PX6 16:27 | So, I don't know, the first approach I found it that having only half of the screen blurred was a bit visually strange. While like, I kind of is my brain was processing it was expecting that to happen, but I was instead betting that to happen fully blurred or having something on the person only, he said they half of it may be kind of like surprised me. It wasn't the one who was protecting. |
| 80 | Interviewer 16:59 | Okay. You can move to the next question. |
| 81 | PX6 17:04 | So |
| 82 |  | I think you innovative and then |
| 83 |  | convenient |
| 84 |  | clean in a way |
| 85 |  | I don't know, because I was thinking about the guy with shower but clean, come on |
| 86 |  | and |
| 87 |  | suppose easy to use could work |
| 88 |  | one, two, three, four |
| 89 |  | I think pretty straight forward for me Yeah, |
| 90 | Interviewer 18:25 | yeah. So could you explain a bit as well like why you picked those words? |
| 91 | PX6 18:29 | so innovative because nobody else is doing this so is quite innovative as are, and is a really, is a really a nice adaptive technology to use, that it doesn't, it protects everybody, but its not, it's not a blanket, it has a bit more is adaptive towards something, like the person entering the room. So I like that, that's a nice innovation. convenient for the same reason. So for the same reason you probably At the moment you would turn off your screen your camera, if you don't want someone working on your back. While this way you have a possibility to be in the camera but getting the person blurred behind you gives you gives you and the others protection about it, same as clean and easy to use because I imagine this these to be automatic and these to be just just matching on your camera, so that would be perfectly usable by anybody by by switching a button or something as opposed to, I imagine this to be a quite a nice feature for everybody to have in their in the camera directly. So I feel it is same as straightforward, What happened was was given the context what happened was what I was expected. Okay, I was surprised about the blurring but in general, what was, that's what when I was in a context saying okay, this person doesn't want to appear on camera. I Immediately I expected that. So I like I like that too, because sometimes, and he didn't disturb the conversation. So you, I mean, the first time I would see something that is that will be like, Whoa, whats that?, but it doesn't impact too much on the conversation because you are still the face is there and everything works around it. So it's pretty good. |
| 92 |  | - |
| 93 |  | - |
| 94 |  | - |
| 95 |  | - |
| 96 |  | Yeah. It's great. |
| 97 | Interviewer 20:23 | You can move to the next set of questions. |
| 98 | PX6 20:26 | protected the privacy of the user. |
| 99 |  | Yes. I agree. Did not feel that I am in control when using the... |
| 100 |  | No!! feel I am in control. |
| 101 |  | I expected the user interface adaptation before it up |
| 102 |  | happened. I agree. If I were the person... I would not have accepted them.... No, I would have accepted them. I understood why the user interface adaptation happened? Yes, user interface... |
| 103 |  | Okay, any questions for this? Oh, can I continue? |
| 104 | Interviewer 21:06 | Yes, I've got some questions, so. What do you think like you mentioned, the first question, what change? what different system would make you rate one like, strongly disagree to the first question. |
| 105 | PX6 21:19 | okay |
| 106 |  | well, I mean what you mean like it for two, it did not protect the privacy of the user? [...] did the opposite way where instead of doing that you you actually know the person |
| 107 | Interviewer 21:41 | Yeah, so just just asking like what, what is the system rate it one Yeah. |
| 108 | PX6 21:47 | I think yes, there are for example, there are some some cameras that follow. Follow movement for like these new, smart home and stuff like that and that's potentially a risk for privacy because They could pick the movement of the person behind me and focus on someone else. And that person maybe doesn't want to be on camera. So this is the opposite of what I'm thinking when this one is going to the other direction and say everything stayed the same, but I have some measures for protecting the privacy.. |
| 109 | Interviewer 22:20 | so |
| 110 |  | get in the fourth question, if you're the person experiencing the adaptations, so what do you think? What are the other spectrum? Like, where you would agree with this statement? |
| 111 | PX6 22:33 | Well, one of the possibility would be, you're doing okay, for example, you're doing you're a teacher and you're showing your whiteboard behind you. And the person like, and the person walk on a small corner, there's people walking, I don't know, out of the window or something and the, the application will blur half of my screen. Like, if there's a meaning to the screen that is not just a person, this could be probably a problem. That will be probably something that would be a bit more difficult to accept, like, for a teacher doing a lesson on a whiteboard, you might have moments where the screen is blurred for no reason, and there will be a problem, I suppose. |
| 112 | Interviewer 23:20 | Okay, so going along with the same kind of questioning the last question you strongly disagree. So what do you think? What system would make you rate it five? |
| 113 | PX6 23:33 | What that means that there you're you want to reverse the question. So, |
| 114 | Interviewer 23:39 | So so the question is like, what sort of system do you think you would rate it, as strongly agree in this question? Yeah. Which would actually obstruct your user experience? |
| 115 | PX6 23:51 | Well, for example, if there was a big, red alert popping up and blinking on the screen on everything, saying this person doesn't need to be there. panic, panic panic, that is something that obs.. will obstruct the user because your chat will be interrupted. This case, I think he's, I agree like he did no obstruct to me didn't struct at all. But I could see how for in specific condition, this could be an issue. Because as I say before with the teacher example, you could get that the blurring becomes distracting. And when you're chatting, you just see someone coming. The thing blurs and you're like, oh, what's that? what's that? so that, at least for a certain amount of time on the start of the introduction, this functionality, you might have some kind of instruction? I didn't felt it at the time, but I could see that that could happen. Okay. |
| 116 |  | - |
| 117 | Interviewer 24:48 | Yeah. That's a good point. Thank you. Yeah, you can move to the next question. |
| 118 | PX6 25:44 | okay. That's really smart. That's like what I would expect is smart home to be It's okay. It's, it works out really well. But I think there is a possible challenge there on On the usage of it, like I'm imagining not like the user will need to define who can enter who cannot in the house or something like that. Like I would expect if, like my partner to enter I don't mind if my partner enters. But if, like, I see that it could be it could be annoying. Not annoying, annoying probably is the wrong word. He could be over-protective sometime when you don't need it. That's my, what I was thinking. |
| 119 |  | - |
| 120 | Interviewer 26:41 | So like, |
| 121 |  | why do you think if you don't want your partner to know your health information? |
| 122 | PX6 26:47 | Yes. What if you don't want to, that's perfectly fine. But if it's applied as a blanket, you get you get this situation where like, you know, It depends how, how the interpretation would it be if it's applied to everybody that enters the room? Or like even if you dog enters the room? Because I can totally see Alexa mismatch dog and a person? So if something like that happen, then I could find the the problem. It goes a bit overcautious. I feel it could be overcautious. Yes. |
| 123 | Interviewer 27:25 | So from secondary users point of view , what do you think? who came into the room? |
| 124 | PX6 27:30 | well, for the secondary user point of view, I think is great like it just, it doesn't need to hear anything about the other person is and it's, it's really seamless for them because it just it's a beep. You either question you open the door and nothing nothing up and it's all seamless. So it's that there's no impact on the other person is great for them in that sense, |
| 125 |  | - |
| 126 | Interviewer 27:57 | can go to the next question. |
| 127 | PX6 28:05 | convenient. |
| 128 |  | comfortable in a way. |
| 129 |  | far fetched, I guess okay |
| 130 |  | personal |
| 131 |  | really effective |
| 132 |  | Suppose helpful? |
| 133 |  | So, yeah, I mean, I think he's convenient because like, there is no action from the user like once its set, there is no action from the user to be able to do that. And that's, that's great. same as comfortable like your your interaction is seamless. It just works perfectly and you get a notification on your, on your smartwatch as opposed if he's not smart watch, it is a phone still works perfectly fine so you don't have |
| 134 |  | - |
| 135 |  | - |
| 136 |  | - |
| 137 |  | - |
| 138 |  | too much of a step to go after it. |
| 139 |  | On the other end, I'll like because I'm lazy. If I if I must If I ask Alexa usually because my phone is not around me, or my smartwatch is not around me. So it could be that on the other end, just realizing now even if I didn't have any comment there, it could be down the other end there might be |
| 140 |  | in a position where this could be a bit. |
| 141 |  | Like if it if it happens that it works, it works properly in the sense I don't want that person to listen about my blood sugar level, that's fine. But if it works, if it doesn't work that properly that the, I don't care about that person because, you know, they already they already know it and whatever. I may find it annoying that Alexa will stop me to... They will will stop telling me I need to reach out for my phone, for example, because I'm lazy. |
| 142 |  | Okay, more. Yeah, |
| 143 | Interviewer 30:56 | I think I mean to just just a question |
| 144 |  | on that. Like I think if like, if the system is possible to like, specifically pick out like the user's preferences. And also to understand what's around like, for example, as you mentioned, like smartwatch or smartphone not being around. But if it can take like, if I'm wearing a smartwatch or a smartphone, and like depending on that making the decision, do you think that something |
| 145 |  | like that? |
| 146 |  | That will be there will be great if you could do something that you can do? Because then yeah, but still, like, it's a really tricky position. Because the question the rule would be if if I'm away from my phone, and the person entering is a certain person, because I wouldn't want to have if I'm away from my phone, anybody could hear it, then it kind of defeats the purpose of the privacy. Yeah, so I suppose these are really tricky, fine balance of rules. And it's really tricky to ever user interface to represent these rules as well. I don't know exactly how you could do it, it's a tricky situation. |
| 147 |  | I'll explain after this. |
| 148 |  | So Yeah, you can go to the next question. |
| 149 | PX6 32:12 | Okay. Smart home protected the privacy of its users... |
| 150 |  | Yes, indeed. |
| 151 |  | ? user interface adaptaion obstructed the UX. |
| 152 |  | Yep. Partially. Yeah. Okay. |
| 153 | Interviewer 33:03 | Yeah to just to pick out on the first answer like, So, what is the alternative? What do you think like, would have rated it differently? If, like, |
| 154 |  | disagree with that statement. The first one? |
| 155 | PX6 33:16 | Well, if the speaker was saying it out loud raising the volume, that probably would have make me feel uncomfortable. |
| 156 |  | Yes, yeah. |
| 157 | Interviewer 33:32 | Okay. So the other question is the fourth one where you sort of mentioned. Like, you'd have strongly like, you would accept the adaptations so. What adaptation Do you think you would not have accepted like what change |
| 158 |  | or system? |
| 159 | PX6 33:55 | Oh, |
| 160 |  | I wouldn't I would not have accepted The system telling me like Alexa, telling me. |
| 161 |  | I can't tell you now because there's a person there. |
| 162 |  | So if we were stopped me to do the interaction just because there's another person coming in, that will probably be a bit too much while having the phone or the smartwatch, fix that because its just, you know, yes, of course its not your best scenario. But its the closer to the best. |
| 163 |  | So I would accept that. |
| 164 | Interviewer 34:28 | So what about the next question, which is about you understood why that adaptation happened to. So if that adaptation happened and but what do you think you would disagree with this statement, like what sort of a system disagree? |
| 165 | PX6 34:47 | ahh.. |
| 166 |  | Well, because it was quite clear that the person was opening the door. So it was clear that that interaction was happening because the person who was entering the room that's nice and understandable. If this would happen when, for example, on the opposite, if this would happen only when the person was around the three meters radius, there will be a tiny bit less understandable because it kind of it makes it a bit more unpredictive. Like you don't really have a cons like you don't know what is going to happen or not. So it's a bit more surprising while in this case we did or is clear, is straightforward. |
| 167 |  | - |
| 168 |  | - |
| 169 |  | - |
| 170 |  | - |
| 171 | Interviewer 35:38 | Great. Yes. So you can go to the final section, |
| 172 | PX6 36:21 | your password is only three characters |
| 173 |  | come on all this stuff about privacy and then your password |
| 174 |  | Okay, I mean you're working on ABC bank so |
| 175 |  | that's a train tickets mobile |
| 176 |  | seven pounds only for a movie ticket. |
| 177 |  | Anyway okay. So okay this one is is different for me this one I am not sure I will be ever comfortable to give my password to Alexa? So I like saying out loud my password, first of all because of my Italian accent and secondly because I don't I don't feel like saying a password as it should be secret telling as smart speaker your password the kind of feel really wrong. So to me this one was a bit more exciting in the sense I it's another case a case where I think this smart home went a bit too far. While on the other end. I would've like if this is seamless, like for example, HSBC accounts now you don't need the password like you can set it up. You don't need the password to see your bank or your balance or you need just your fingerprint or whatever. So on the other hand, I would expect if there's a such an interaction with this smart speaker then I would like but I'd never gonna tell the password to the smart speaker I would feel like there is for, possibly some other ways like you know, a fingerprint reader somewhere that I could just put my finger there and it will speak that will be okay. And then if I apply to something like this these things stopping when another person arrive and it will make sense. And like is exactly the same as the health like, my bank data is private. I want me to have full control over who listen to that or not. |
| 178 |  | - |
| 179 |  | - |
| 180 |  | But yeah, so yeah. |
| 181 |  | Yeah, secondary user point of view is the same as before, like, the secondary user is super happy because he doesn't have to hear all my stuff. So that's, I think that's great. anything else? |
| 182 | Interviewer 38:58 | No, you can move to the next one. |
| 183 | PX6 39:00 | Okay, so |
| 184 |  | I suppose convenient in a way |
| 185 |  | bit stressful in a way this case because just, oh my god someone's gonna hear my password panic! |
| 186 |  | See, innovative would also work |
| 187 |  | And helpful as well |
| 188 |  | and |
| 189 |  | I mean effective I suppose |
| 190 |  | so yeah convenient because |
| 191 |  | he's expecting what? if I was going to tell a password to say a password that's exactly what I would I would expect the smart speaker to do so to me it's it's good convenient that this happened otherwise [the co-occupant] will listen to my password, stressful in a way because I don't know maybe it's me but like money stuff to me ever be more Like, I don't know why this one was more stressful than the one of the health to be honest. But like I don't know I got it. I get about being more stressed about someone hearing my password than someone hearing my blood sugar level. |
| 192 | Interviewer 41:15 | Yeah, I think yeah |
| 193 |  | it's a personality factor the bank? Yeah it's for you. So I think that's the reason |
| 194 | PX6 41:22 | innovative, of course we talking about I think it's it's a really cool idea. And helpful and effective because I mean effective is similar as convenient, helpful. helpful is nice because is the proactivity of it is nice. I like that is really small. The interaction worked out really well in the sense. The notification on my phone is immediately like, it didn't give me the chance to say the password. That's I think is important because I, would've, another possibility would have been please say your password and then they would have entered. I would said my password anyway probably, instead how the video went. It worked out better because there wasn't that chance. So it made me feel that it was the right the right moment to do that. Although, and I'm just now realizing that there's a possible issue there because what if I'm in the middle of this or saying my password? |
| 195 |  | - |
| 196 |  | That's an issue. |
| 197 | Interviewer 42:35 | That's, yeah |
| 198 |  | you need high predictability for the smarter to predict when [the co-occupant] is coming. |
| 199 | PX6 42:45 | Yeah, you need to predict the future is it? Yeah. I mean, like, I'm pretty sure that if I go to that room, I gonna see [the co-occupant] coming from the door every time. |
| 200 |  | Like the predictability is really high. |
| 201 | Interviewer 43:01 | Yes, you can go to the next questions. |
| 202 | PX6 43:03 | Okay. |
| 203 |  | protected the privacy of the user? Yes, In deed. |
| 204 |  | I did not feel in control while using the smart home.. |
| 205 |  | no, I feel I'm in control. Expected user interface adaptation before it happened? |
| 206 |  | yes. |
| 207 |  | If I were the person whose experiencing these user interface adaptaions... |
| 208 |  | accepted? Yes, I agree. |
| 209 |  | obstructed the user experience? |
| 210 |  | I disagree, but that will be. |
| 211 | Interviewer 43:51 | Yeah. So just just to clarify, on your third question, the expectedness, so you rated |
| 212 |  | two, that you disagree? |
| 213 |  | Could you explain a bit more like why you picked? |
| 214 | PX6 44:08 | Oh, wait, I started using.., can I change it?. I expected the user interface adaptation before? |
| 215 | Interviewer 44:16 | You're supposed to, I think you were going to put four. |
| 216 | PX6 44:19 | Yes. |
| 217 |  | Yes, it was a. I was expecting it. but I wasn't expecting it at that moment. But my expectation was Alexa starting to reply to me and saying something else. And then it said it happened earlier than I was expecting. I think its just your editing of the video, but that's how I felt it like, I would expect the Alexa to reply to me and say you're bank balance, Please enter your password or do you really want to do this and stuff like that? While it happened to be earlier than that? |
| 218 | Interviewer 44:56 | Yeah. |
| 219 |  | So what about this Fourth question like you said, like you would have accepted it and like what if what sort of an adaptaion? Would you have not accepted? |
| 220 | PX6 45:16 | Okay, |
| 221 |  | No, I think its the same as before we health things. If, Especially if Alexa would have said something like, Alexa whats my bank state,bank balance, and Alexa said will be your bank balance is... Oh, [the co-occupant] is entering the room. I am not gonna say your bank balance. Now. There will be worse, I am not sure, if, I may have accepted it already. But just the fact that when [the co-occupant] enters will know that I was checking my bank balance. And he will know that this stoped because of him. I feel it's a bit it's a bit it goes a bit bad, it goes a bit worse than now. |
| 222 | Interviewer 46:19 | Yeah, I think like, it's interesting point where like, it's important for us to know why that adapation happened, but the modality is crucial as well, like it should come in a private way rather than in public user interface. I think that's interesting distinction. So that's it for this scenario. So I've got four questions. You can read and like explain... |
| 223 | PX6 46:50 | I think is really cool. So how do you feel about adaptive user interface been used in protecting the privacy of smart home users?, I've never seen such a, such a thing. Apart from doing your, haha. Your test, I think it is really cool. And I think it is something that is needed. There's a gap there, because people from the internet era, people are slowly relaxing, more and more, they're, the, on oneside they become aware of privacy issues. While on the other side there's lots of people that just relax it and give it out without considering it and without having any protection. So by adapt.. by creating something like this, you give back to these users the chance to get control again. And not sure that everybody will do it. Like some people just don't care or like, there's gonna be the new Facebook that will ask you even more privacy things. But, but that's a really nice way to give back control to the user that at the moment it is a bit lost. Like I, if I want to use a smart home I already need to agree, I already need to agree over a certain loss of privacy. That is okay, like I'm okay with it but I see that that is already me given out to [Company X], [Company Y] or whatever giving out something that is probably more valuable than what they give me. So having something like this will protect me to get to that there, all like, at least give me some control back. Probably not all the control back because I'm ready [Company X] already has my soul but some of the control will get back to me and I be able to at least control my immediate privacy around me. Maybe not the bigger one, but its does, it feels nice. |
| 224 |  | - |
| 225 |  | Okay, does, did any scenario resoante with my daily activities? |
| 226 |  | For that really weird reason. I think the one that resonates the most was the first one with the pictures. Because two hours ago, I was just looking at pictures. And if I wanted to look a picture on the screen and there was someone stopping me to do it, it would really piss me.. |
| 227 |  | I don't know, maybe it's not a great a great answer. But |
| 228 |  | I think |
| 229 |  | like, I |
| 230 |  | don't know, I will be relaxed about my privacy and stuff like that. I, I know that time already wasted it. But I'm also like, I think that you need awareness. But the awareness you also need to can allow people to be, you know, what?, I don't care. Or you know what?, I think I value this less than you think I do than you do, or something like that. So, like, I totally see the health one, the bank one and then the Skype chat to be really, really valuable, because it's just a tool that you give to people that have different set of values than me. So I really like them as a concept. Would I use it? Maybe some of them, not all of them but like I would, I would totally consider it and just me having the possibility is better than me not having diversity. |
| 231 |  | - |
| 232 |  | And |
| 233 |  | okay, . think of other scenarios, in your daily activities? |
| 234 |  | Oh, |
| 235 |  | no, particularly, I'm.. my use of smart home is for now it's just watching Netflix and like, asking Alex or Siri stupid questions, but I don't really use it that much that I feel. I mean, I probably already losing moods, like I'm giving them everything, but I don't feel that There's no activity that I feel like it. I don't know. Yeah, I mean, like, I can't think of anything in my daily activities that |
| 236 |  | does it? |
| 237 |  | What maybe Okay, actually, maybe the one of the video, the video call, because I'm having calls at home. And that's like exactly the time when it's probably replying to the next question. Like if Julie works from home, sometimes I have these moments of, sometimes I have the moment that she arrives at home. And then I want to say hello to her and also speak to the people. And I mean, I am okay, I don't care. But I could see that there is a, there place to be the system, imagining the system recognizing that this is happening, and me saying hello Julie would be blurred over, it will automatically mute me or do something to protect that part of my life to the other one. That's probably something I would consider. Like, |
| 238 | Interviewer 52:10 | I think they take into the connect with the next question as well. Which is about COVID |
| 239 | PX6 52:20 | Yes, that's perfectly it. |
| 240 |  | What else I could think of? |
| 241 |  | I mean, I think one of the |
| 242 |  | one of the only things that is like adaptive technology at the moment that is already available is the, the blurring of the screen that the teams and a lot of people do. That is actually not bad. Because it gives a gives a possibility of people to be, look, you need only my face. You don't need the rest. |
| 243 | Interviewer 52:54 | Yes. So the interesting thing about them is that it |
| 244 |  | gives the control to the main user. And there's no power to the secondary user who's going behind. The other one, their privacy could be, like, violated if you're not careful. So I think that's the other part of the argument. |
| 245 | PX6 53:15 | And there's another really weird thing that our colleague of mine a friend of mine is a is a software engineer, that they use discord and they connect at nine they know discord it is a is a chat. They use it mostly for video gaming. |
| 246 | Interviewer 53:33 | discord, yes, yes, yes. |
| 247 | PX6 53:35 | Yes. Yeah. They connect with headphones at nine and they stop at five and they always connected to the same room., that people can talk to you like you are in the office. |
| 248 |  | Yes, |
| 249 |  | that's something that is really terrifying. I like I don't think that your framework |
| 250 |  | This is really bad. |
| 251 |  | but I mean, potentially do it like it could there could be some way of recognizing, selectively muting. Like you could, for example, if you speak on a certain direction, the microphone will pick up your voice. But if you realize that you're looking somewhere else, for example, look in that side, you then muted that could be something that could be done for example. That's for your next PhD. There's, there's lots of things I could totally see that COVID is opening. A new, new big part of remote remote work is a there's a lot of it, |
| 252 |  | that it will be |
| 253 | Interviewer 54:44 | exactly so like I added this question later, like, because I realized, because like when I talk to people on like, being on this calls I've seen like a lot of these problems, people going behind calls like so I think the interesting problem to be solved Yeah, yeah, I mean, so that's it for the study. |
| 254 |  | Thank you very much. I'll stop the recording |

## PX7

|  |  |  |
| --- | --- | --- |
| Index | Tag | Transcription |
| 1 | PX7 1:06 | Okay holiday photo, |
| 2 |  | very topical. Okay, |
| 3 | Interviewer 2:58 | awesome. So Go to this question, which is like, good. Explain what you saw. |
| 4 | PX7 3:04 | Yeah. So I saw that. Sorry. I saw that. This guy, [the co-occupant] was reading a book. That was the first thing I saw. And then I heard the ping sound. And it was a question on the phone. which was like, Oh, do you want to.., [the co-occupant] is reading? Do you want to switch this photo or video to the phone? And then the TV screen switched over to the phone screen. |
| 5 | Interviewer 3:34 | So from a secondary users point of view what do you think? |
| 6 | PX7 3:38 | yeah. So from so the secondary user, is that [...]? |
| 7 | Interviewer 3:38 | Yes. |
| 8 | PX7 3:38 | Okay, from [the co-occupant]'s point of view. He was looking at his Book. He was reading and then he heard, maybe, I don't think he was, probably not aware of the big screen in front of him, but he heard this like Bing sound and that probably distract him, distracted him a little bit, because the thing is with the big screen it wasn't changing so I don't know whether he would have seen so much, [he must have] been disturbed but the sound was pretty like interrupted. So he would have seen that and then that was it be carried on reading. He would have heard and that was it for me. |
| 9 |  | - |
| 10 | Interviewer 4:24 | You can go to the next question. |
| 11 | PX7 4:28 | Please type the top five words which best describes your experience. |
| 12 | Interviewer 4:34 | so pick word from the |
| 13 | PX7 4:38 | person who's experiencing the system so I'm Person A Yeah, okay. Yeah, |
| 14 | Interviewer 4:42 | the main |
| 15 | PX7 4:43 | the main user |
| 16 |  | In some of these it's like, the question is things like |
| 17 |  | huh |
| 18 |  | inconsistent and consistent they was, those would be |
| 19 |  | I'd have to have used it more than once. So I'm kind of assuming this is the first time I used it, but this is, is this somebody uses it often. Maybe |
| 20 | Interviewer 6:14 | I didn't get you |
| 21 | PX7 6:19 | say I like, things like that caused you would have to have used that a few times to know that. So I am assuming that it's the first time I've used it or, Should I just because I, yeah, I'd probably just ignore those ones. I probably just go new ones. Well, |
| 22 | Interviewer 6:36 | yeah, I understand. So I think you can ask for that. You can sort of like think |
| 23 |  | in specific to this interaction. What do you think? so I think? |
| 24 | PX7 7:04 | I think I'll just change that actually to |
| 25 |  | rigid, I think I don't think it gave me the option to not do that, okay. |
| 26 | Interviewer 7:24 | single button |
| 27 | PX7 7:42 | I say that the single button interaction to switch it made it very simple and the way it like came onto my phone made it personal and it was easy to use a straightforward because it was like it kind of told me what to do it kind of did a lot work for me. So I and I just have to press the one button. And it was helpful because it prevented me from having to switch the TV off and then switch to my phone. And ah, quite like, to swipe to take and change one of them if that's okay, so it's quite straightforward and easy to use. So I'm gonna go easy to use, I'm gonna go straight forward, and I'm gonna put actually patronizing, which seems a bit extreme for it is this idea that it doesn't really give me a choice. It's like telling me, you're gonna switch to your phone And it's like, not letting me decide that for myself. And it's not giving me the option not to do that. So, and that's why I say rigid as well. Okay, there we go. Because it doesn't give me the choice to say no. |
| 28 |  | - |
| 29 |  | - |
| 30 |  | - |
| 31 | Interviewer 9:18 | You can go to the next. |
| 32 | PX7 9:23 | Yeah. Because of the following statements right? How much do you agree with the statement? put an X and do a choice. Smart Home protected the privacy of its users strongly agree. I did not push. |
| 33 | Interviewer 9:40 | So in that question, so like, you rated five. So what would be the system? You would rate it one like imagine in this scenario, what be the system you would rate it as one. |
| 34 | PX7 9:55 | one would be a system that did nothing Or it would be a system that actually that would probably be low on this but for something to do the opposite of protecting it would actually like purposefully disrupt users. So it would all or and it depends you saying is the user suppose if it's the first person or the second person or |
| 35 | Interviewer 10:30 | the second person like so the focus is on the second person |
| 36 | PX7 10:33 | Yeah, I would go with |
| 37 |  | strongly agree because it, it forced me not to disrupt them. So that would be my reasoning and I did not feel I'm in control while using this smart home. Yeah, I don't I didn't feel, I wouldn't say I strongly agree cuz they could have just, you know, it didn't completely forced me but it didn't give me the option to uhm, to disagree with it didn't give me the option to like continue to look at my photos on on the TV. But then it then again, it depends how I was supposed to be viewing the photos. I don't know whether I was supposed to be in control of that. |
| 38 |  | - |
| 39 |  | Okay. And |
| 40 |  | because if the photos had come up on the TV, and if I had done nothing with the phone, I don't know what would happen if I'd have just just not pressed on the button. Would the photos have continued to show on the TV or not? I'm not sure based on on the scenario. Okay. I expect but my assumption is that, you know, I wasn't given the option so that's what I'm saying. I expected the user interface adaptation before it happened. Okay. |
| 41 | Interviewer 11:54 | Urghm, I expected.. the user interface adaptation. |
| 42 | PX7 11:58 | Ah, |
| 43 |  | Yeah, based on what you said in the introduction, I was thinking, yeah, this could be could be some kind of interv.., intervention, and based on the videos that you showed the other day, so I wasn't sure exactly how it was going to do it. But it kind of followed, followed the pattern of the other examples that you gave in the video, preparation video, where they got an A message on the phone, and we can help switch. |
| 44 |  | if I were the person experiencing these user interface adaptions I would not have accepted them. I disagree. I think I would have accepted it. But it depends on how disruptive it is for the person. And I can only make sense of that by talking with the person, the screen, you know if it's a big loud sound when you read it that's going to disrupt. But reading is a task where you're really focused on on the book. And actually like, stuff that, visual stuff that goes on around, you can be zoned out. Like, if you're on a train, and you're reading you're not necessarily aware of what's going on around you so much. I understood ...? |
| 45 |  | - |
| 46 | Interviewer 13:03 | Yeah, so the |
| 47 |  | other aspect of that argument is like, so why do you think if the content on the photos is personal to you, and if it something that would interest you. |
| 48 |  | yeah, |
| 49 | PX7 13:41 | yeah. Yeah. But then that yeah, that. |
| 50 | Interviewer 13:46 | So you have to assume it in that sense, and is not necessarily implied so that is the thing. |
| 51 | PX7 13:51 | Yeah. And I don't know whether I want to put those photos on a big display anyway, in first place. Because I have the intention of doing it, and then the system is telling me No, don't do that do do something more private, so and so yes, and interesting question. |
| 52 |  | All right, I understood why user interface adaptations happened. I strongly agree. |
| 53 |  | Well, basically what I was just saying about the reading thing, and not really knowing exactly whether it was disrupting the person and I'm going to put four for that, user interface adaptation obstruct the user experience using the smartphone home. |
| 54 |  | Hmm, Mm hmm. |
| 55 |  | I firmly disagree. Because it does a little bit, you know, maybe I would have wanted to see them on the big screen and then they stopped me from doing it. But the compromise was enough. I could still look at my photos. Okay. All right. Number two, so move on. |
| 56 |  | Yeah, |
| 57 | Interviewer 14:59 | just one question. On the last time, so why did..in that sense.. |
| 58 |  | so what would be a system that would, that would like fully obstructed your user experience, like in this kind of scenario? |
| 59 | PX7 15:14 | where I couldn't even engage with the content I thought so if it said to me, instead of adapting, it obstructs it so it was..okay, somebody in the room they're reading, do you?.. you cannot watch.. you cannot look at these photos. That's all. Yeah. So the adaptation is a compromise that I welcome. |
| 60 | Interviewer 15:49 | We can go to the next question. |
| 61 | PX7 16:34 | first of all I saw the smart speaker. And because this I either thought about, oh I want to see the football scores first or I saw the smart speaker and then thought about it. But I also probably saw [the co-occupant] because the smart speaker, the person, the second person, because the smart speakers right next to them, and whenever I ask the smart speaker to do something, I usually look at it first I usually address to the smart speaker. I don't just looking at different you know, I'm not just thinking about it and saying I'm looking at it and then directing my command or question towards it. I see the smart speaker. I asked the question then I've probably already seen [the co-occupant] and then the Bing sound I hear the Bing sound. And then I know that that means Ah look at the phone. Because I'm I'm aware that this this this is the way my system work, my Alexa works that it's going to ask me to adaptive if I'm disrupting somebody and then I look at the screen the phone and I see the football scores. And let me just go back a second. Oh yeah asks me if I want to open it again. And then I do okay. So the secondary person's point of view [the co-occupant] is reading way and he is hears the sound of me saying about talking about football scores and asking about for the football News. And then he hears the Bing which I think is probably pretty big disruptive for him. Okay. |
| 62 |  | - |
| 63 |  | - |
| 64 |  | - |
| 65 |  | - |
| 66 |  | I do you think this is an innovative thing, I'm gonna put that but that would work for all the examples that we are going through. I'm not sure that is necessarily |
| 67 |  | this one specifically. |
| 68 |  | Hmm |
| 69 |  | I'm aware that Alexa already does this kind of stuff, it does say to you, we've sent some information to your phone sometimes don't know what context but okay. |
| 70 |  | I say that the previous one was probably more, |
| 71 |  | innovative. Anyway. Let's go to |
| 72 |  | hmm |
| 73 |  | the question What was the question again? It was like.. I said watch some football news. So |
| 74 |  | great. exceptional. |
| 75 |  | I'm gonna say ineffective. Okay. And the reason for this, is that the system didn't give me football news. He gave me football scores. Okay. So, it didn't. It gave me an alternative which was through the phone, but not What I was really looking for, which was news, so that could be more than just scores that could be lots of different things. |
| 76 |  | - |
| 77 |  | I am gonna say fast is one of the examples, I would say. Easy to use again, or yeah easy to use again. |
| 78 |  | I don't find it that annoying. I think |
| 79 |  | personal again. |
| 80 |  | I'd say rigid again. That's my |
| 81 |  | those are my word. So yeah, I explained them, I explained effective already. And fast. It's really fast, you know, to just switch from One interface to the other and immediately give me information as fast, the rigidity is, in, that it doesn't give me all the information that I want and it doesn't give me the option to refuse or access different, you know, information it is only scores is going to give me and then it's personal and easy to use again, because it just, it just says it's just, it's giving stuff to me as an individual. Okay? |
| 82 |  | smart home protected the privacy of its users. |
| 83 |  | Yeah, I think this time |
| 84 |  | I think this time it was actually very effective because Cuz now now I think it was less effective. sorry! Because the.., the sound like in the first place, Alexa has to be spoken to. And actually sound is more disruptive for someone who's reading for if I was reading and somebody started talking, I'm more disrupted, distracted than if they're doing visual things in the background. So I'm, I don't like that. |
| 85 |  | I did not feel that in control while using the smart home. |
| 86 | Interviewer 23:33 | do things like the Smart Home is responsible for someone else asking questions, like, for example, as I mentioned, like, voice is disturbing, |
| 87 |  | but Alex did not done anything. so do you think?.... |
| 88 | PX7 23:51 | Well, why I would say? |
| 89 |  | Yeah, I'd say that the smart Sorry, I sorry. |
| 90 |  | Carry on. |
| 91 | Interviewer 23:59 | Yeah, the alternative, I mean, in that scenario alternative? I mean, is that Alex just speaking up. So the other option is Alex did not speak and send information to the smartphone. So do you think in in that |
| 92 |  | situation? |
| 93 | PX7 24:16 | So my alternative is that instead of the use of pre emptive privacy protection, so it actually, like I said at the beginning, I said that the first thing that I do when I'm about to ask Alexa, a question is I look at Alexa. So I would say that if Alexa is aware that there's a potential privacy breach because there's somebody else very nearby, Alexa, then it could show some kind of visual indication that there is somebody nearby and that it's going to ask me to do, make a privacy move. So it could be like, I may not even ask the question because I see it and I go, okay, Alexa is already telling me that there's a problem here, and I shouldn't actually disrupt this person. So a little reminder. |
| 94 |  | - |
| 95 | Interviewer 25:09 | even before I speak up sort of Alex reminds you of the possible privacy violation |
| 96 | PX7 25:14 | You could have just like sort of ambient light on somewhere on the display that indicates that it's got privacy concerns before anybody's you know, said anything. That would be my take on it. I did not feel that I'm in control while using the smart home. |
| 97 |  | Yeah, I didn't feel that in control actually. Because it didn't let me look at the sports news, didn't let me see and see the sports news only show me this because. I expected the user interface adaptation before it happened. No! |
| 98 |  | Yeah, because I because the The person was right next to Alexa. So look, like I said, I would look at Alexa, I'd see the person and then I think about, so I've already aware that I'm probably gonna breach their privacy when I talk to it, if I were the person experiencing the adaptaion.., but I would not have... |
| 99 |  | and I probably |
| 100 |  | not sure about that one. I think I'd be reasonable. If I if it said that to me, you know, it showed me that the scores rather than maybe I'd be willing to accept that compromise depends. I rather, when it showed me the scores rather than the the news I was looking for. I personally, I think I would be willing to accept it because because I've I think I would have been willing to accept it because I want to be respectful towards, you know, people's privacy. Once again, I don't know whether they're bothered, it's but given that it is audio, they may they may be more likely to be bothered. I understand what I understood why the user interface adaptations happened. Yeah. Yeah, I strongly agree with that. I mean, it's someone's reading that it's gonna be really disrupted. The user experience obstruct the user preference of using smart home. Yeah, did didn't give me what I wanted, which is the football news. |
| 101 | Interviewer 27:43 | yeah. Just Just question on the last one, too. What do you think like, what's the alternative to you mentioned that he obstructed so, How do you think so you mentioned interesting point about lighting up so it's the type of |
| 102 |  | change you would expect from the system. |
| 103 |  | experiences |
| 104 | PX7 28:05 | for the user? for the primary user.? |
| 105 |  | Yeah, I think like an adaptive interface like this part of it would be machine learning and understanding what kinds of information people are interested in, that the user is interested in and slowly learning what they mean when they ask a certain question, things like this. So it's a pretty blunt interpretation. I wonder, I want the sports news. Here's some football scores. It's but then if on the other hand, if you said I want some sports news, and it went to the general sports news page, It may not be that useful. And then they have to start, you know, cycling through different pages and things like this. So I focus on both accounts like if even if it's audio or visual, like having some way to adapt the information to what the user is interested in as well is key and it.. because that's why I say, That's why I say about the obstruction is to deal with the information that the user is being given and how much its personalized for them, you know, what they were looking for? |
| 106 |  | Okay. Before answering the questions below, please explain out loud what you saw in the video and describe the experience of the smart home from.. So what I saw was |
| 107 |  | Huh, let me just try again. |
| 108 |  | Hmm, that's quite cool. So the the the system is letting me know that somebody is about to come into the room. So I'm scrolling through looking at things on my watch that lets me know that someone's about to enter ther room with the Bing, this time, to determine that someone's coming in and then |
| 109 |  | - |
| 110 |  | I can change, and then changes that did I select that? I'm not sure It didn't let me select it. So it just happened. That is just switched. The second user just comes in, they see the this the videos, the second set of videos on on the screen and they sort of comment on them. And that they just imagine that that's all that there ever was that they don't think I was looking at something else, So I think this is quite, quite cool. It's quite innovative way to protect privacy. And in a way, you know? |
| 111 |  | Yeah. Okay. So I'd go for innovative. And my hmm, my concern with it is the inconsistency. So, I would say that the I'd say that it's inconsistent because the Bing the Bing sound is the same this time, but it's doing something very different and it's not giving me any control over it. So compared to the other examples where it was a similar thing and asked me a question, it was it's just done something very different with the same Bing kind of thing. And it's just intervened automatically. So I would say |
| 112 |  | - |
| 113 |  | rigid because it's not letting me change anything. And what I would say is that the other ones were less rigid compared to this, This is the most rigid because there's no choice or there's no control over it. |
| 114 |  | Fast. Yeah, that was super fast and |
| 115 |  | useful |
| 116 |  | as an idea, okay, I've explained all those. Please consider the following statements and rate Smart Home protected the privacy of its users. Yeah, I suppose it did, because it just completely obscure what I was looking at. did not feel that I'm in control. Yeah, strongly agree. That's basically what I've just been saying. I expect the user interface adaptation before it happened. |
| 117 | Interviewer 34:00 | Go ahead. Yeah. So like, yeah, in the second one, you mentioned like, you didn't feel you were in control. But so what what if? What would be the alternative that you would think should be? |
| 118 | PX7 34:12 | It would give me? Well, in this example, there's not really time to, for me to tell it whether I wanted to change the information or not. But what I would say is that there could be a setting where I could set it up to change under certain circumstances, so May... if I had already set it up that way, there is an element of control there. But the scenario didn't say that I just said that they just they just changed automatically when, without asking me. So that's why I say I strongly agree that I feel not in control. And he kind of wants to again, goes back to that thing of the system, understanding maybe preferences needs and for this kind of like really simple, really fast, reactive risk response, it needs to know what I like, because otherwise it does start to feel like I'm out of control. And so there's some kind of relationship between control and my preferences. I got the perception of control, I maybe have the perception of control, if it's doing things that I like, even if it I'm not really controlling it. I expected the user interface adaptation before it happened. No, I didn't really expect it because it was very different to previous ones. And it happened very sudden. I would not have accepted them... urgh No! I disagree. I think even though I was out of control and |
| 119 |  | - |
| 120 |  | - |
| 121 |  | - |
| 122 |  | and maybe didn't ex. expect It was it was pretty good. You know, I, you know, in a scenario like that, where I may be looking at stuff that I don't want other people looking at, you know, information, you know, videos and stuff. I'm interested in being one of those and this felt the series and stuff, then then yeah, I'd go i'd agree with that. Maybe would have accepted it for it to do. I understood why it happened. Yeah, I not I don't disagree or agree because I don't know how it's been set up. |
| 123 |  | - |
| 124 |  | I i understand. I don't Yeah. Does it do that every time somebody comes in and why did they go to those particular videos, the second set of videos, those were questions I would ask, you know, have I set it up to do that?. So I don't really know, user interface... obstructucted? Yeah I suppose it, no! i think is a compromise I was willing to accept |
| 125 |  | I may Can I go back through and like like modify once I've seen everything and I can give it a bit more of a balance thing or should I just because the first ones maybe I said things in my scale of rating a which and don't represent the full set, the third one is much more rigid than the first two, but I did put the other two as rigid for example. So I've said all three are rigid but then the third one is really rigid |
| 126 | Interviewer 38:01 | Oh Should I just keep it? |
| 127 |  | you can keep it, like to because he said that I can extract what you said. Yeah. |
| 128 | PX7 38:34 | while you're on a video call your friend that he was about to open the safe in the vicinity of the video call's view co-occupant does not want anyone to know the pin to open the safe, hmmm interesting. I |
| 129 |  | Yeah, so the user is looking at the video. Sorry he's on a video call. He's discussing things with his friend or my supervisor in this case. It could be somebody else, you know, friend or, contacting me. And then they didn't really see anything. I think that they're focused on the other person. |
| 130 |  | They may on the periphery see that there's a sort of faded look whether the |
| 131 |  | the this.. where the lock is.. but |
| 132 |  | they probably more likely to notice the person coming in in the background |
| 133 |  | than anything because he's moving around. But then there is a sound of the lock. So the sound it makes when he's pressing the buttons probably draws their attention a little bit one of my things would be that the the the, the little, little display showing their friend if it was in a different area of the screen, and then they may not notice as much because it's so close to the object. It may be that they They're already focusing on that bit of the screen and then they see the lock the the the lockbox or the safe. |
| 134 |  | it's pretty effective though. I think he don't really I don't think they see, I don't think it becomes much of a distraction, because there's blurdness and so kind of fades in, okay. And then then but then you've got the, the secondary person, they come in, they see the person who's talking, they go towards say press the buttons and, and they can hear the person talking on person a talking to person, see who's in the room as well. Okay. And then you've got person C and their perspective they can |
| 135 |  | - |
| 136 | PX7 42:04 | see that |
| 137 |  | this glare they can.. they got a very |
| 138 |  | okay I've got this the wrong way around Person A actually the |
| 139 | Interviewer 42:23 | video is from the 3rd person point of view from the other end |
| 140 |  | - |
| 141 |  | yeah I'm understand right now so, so person C they are the one who is who can see everything okay so Person A they've got a very small little screen in the corner which shows them so they're very unlikely to be able to see what the keypad is showing she's person C who is the least concern and they've got this big screen of Person A, so they see what's going on with the bleeping and everything and they are probably likely to have seen it because it's kind of unexpected. You see this other person come in, and they don't have that same sort of spatial awareness that person A has either someone coming through the door and it's just somebody I know, and it's a familiar surroundings, Person C it's unfamiliar. So they really do actually see what happens but they don't see the number that goes in because of the blurrdess and it doesn't become too much of an obstruction. Okay, so let's go on to the... so I think this is innovative again, this is really innovative, this is really cool. |
| 142 |  | - |
| 143 | PX7 43:43 | I would say it's very convenient. |
| 144 |  | Very |
| 145 |  | powerful. |
| 146 |  | helpful. There is no reason why I would person C to see that number on the safe as it being bashed in |
| 147 |  | I don't know about reliability and things but I'm going to say superfast as well as that one that's |
| 148 |  | fast. |
| 149 |  | and change that. Yeah, hour |
| 150 |  | and a half blows those man's word so in his case because it it's something I haven't seen before, way of automatically protecting people's privacy while you're in a call which is could be could be useful can imagine some scenarios when particularly I don't know whether I would have a scenario as extreme as this one, this safe, but I definitely have walked past the my, my wife's Skype when she's in a business call people. And I don't want to be seen she doesn't want me to be seen, so having a blurred thing in that scenario could be really powerful which is why I use the word powerful. The convenience comes from how it automatically does it, I don't have to press any buttons are anything to to blow someone out, it recognizes using some kind of visual recognition that what's going on. And it's super helpful, because that's linked to the powerful thing and fast, happens immediately. There's no moment where you know, it's you can still see a bit of what's going on, immediately goes to blurd, right? Smart Home this smart home... really agree with that strongly predicted I did not feel that I'm in control.. ? I don't disagree or agree, I don't think control is something here you don't really want to be in control you want to be able to focus on the conversation |
| 151 |  | - |
| 152 |  | - |
| 153 |  | - |
| 154 |  | - |
| 155 | PX7 46:23 | don't feel in control while using smart home?. It's the interaction, isn't it? and |
| 156 |  | no!I would, I go into the middle. I expected the user interface adaptation before it happened.? |
| 157 |  | No! I didn't expect that. |
| 158 |  | I have trouble with this question because if it says if I don't know whether I've done this before or not, you know it might, what kind of a.. I might experience to use an inexperience.. but I am gonna put strongly disagree or agree. If I were the person experiencing these user interfaces adaptations I would not have accepted them? No, I would really have accepted that, definitely. I understood why the user interface ..has happened? strongly agree. User Interface adaptation obstructedd the user experience...? |
| 159 |  | Strongly.. |
| 160 |  | No! strongly disagree!. There we go! |
| 161 | Interviewer 47:28 | In the fourth question you mentioned like you would have accepted them strongly agree with that. So what is the other end of the argument like what is the system you would not have accepted? |
| 162 | PX7 47:43 | The opposite is something that highlights or even gives out the number but it's someone's typing in on the on the on the safem this did precisely what I would wanted it to do, which was to protect. |
| 163 |  | - |
| 164 |  | not show the number to the person C. |
| 165 | Interviewer 48:05 | So what do you think what sort of system would have obstructed usser experience? I think I think only from the third person's point of view. |
| 166 | PX7 48:20 | person, the the okay the person who's on like, |
| 167 |  | Okay, and |
| 168 |  | so what would have obstructed the userer experience, so something where the whole display switched off, so I couldn't even look at the person. It blurred out a very small section of the screen where the where the activity, the privacy violation was happening. It didn't stop the activity, that I was engaging in, the smart home activity at all. It just completely, It just made a small tweak, a small adap.. to, adaptation to the activity, which kind of makes this one stand out from the other ones where there is a big a big compromise, you know that this is more seamless. It is a a small shift, I can still carry on with the activity I was doing with this smaller shift. Yeah. |
| 169 |  | - |
| 170 |  | - |
| 171 | Interviewer 49:31 | summary questions.. |
| 172 | PX7 49:35 | overall, how do you feel about adaptive user interfaces being used in protecting the privacy of smart home users? So my opinion is that |
| 173 |  | this is a really good thing. I think this We're, we're approaching the time where these interfaces, these smart home interfaces are having increasing relevance, and maybe I already adapt my behaviour and the way I would use them. And I just don't use them if I'm in a situation where there might be a privacy violation, but this kind of these kinds of interventions may increase the likelihood that I would use these kinds of interfaces at all times, because I'm not anticipating that I'm anticipating the system will adapt and protect my privacy. And |
| 174 |  | - |
| 175 |  | - |
| 176 |  | my my only thing is that the system should Give people control and where they are unable, where they're able to make some decisions it should give them control. But in some scenarios, this the speed of the intervention needs to be so fast to be effective, like in the keypad example, or in the knocking on the door example, that having control is not really an option there. So, but I would like to have control over the setting up of those scenarios and when it intervenes, okay, did any of these.... And the reason I say about control is in been important is because we need to learn to be respectful and to protect the privacy of others as people first of all, and then these things can help us to do that, rather than do it for us. Did any of these scenarios resonate with your daily activities? If the answer is yes, could you please elaborate? |
| 177 |  | - |
| 178 |  | - |
| 179 |  | - |
| 180 |  | And let me think, just go back through was the first one it was the holiday photos. Yeah, not not aindaily activities, but sometimes I do. Show photos on the big screen, but it's generally in a sharing situation. So it's not really a perfect personal, personal photo sharing photos. Like I said, the one that really does resonate is the video conferencing one and it's not, not where I would be showing where it where it protects the privacy by not showing somebody, A no, say for. I mean like that, it's more people and things that are moving and happening in the background that I may want to fade out. So that would be the one the over two, the football. I don't tend to ask Alexa about the news. And I don't tend to, what was? that was the third on?, the the looking of videos on the shared screen, I don't tend to |
| 181 |  | - |
| 182 |  | - |
| 183 |  | I don't tend to like, have a situation, where I need to hide the videos and things I'm looking at. But I would say that in some circumstances, I'll be watching something on the TV or I'll be browsing and on Netflix, like through videos. And the might be stuff with an image on it or a trailer will pop up, which is like an 18 or 15. And then my my children will..... |
| 184 | Interviewer 54:28 | Could you repeat the last part about a trailer popping up so I sort of Missed that but |
| 185 | PX7 54:34 | yeah, sometimes with Netflix when your, your your browsing through the films and series, a trailer will stop, okay? And sometimes they'll be violence and scenes which might be quite explicit forms associated with like an 18 or a 15 rated show and then My children will walk across, and then I'll think, Oh man, right!, I'll have to go back. And because I don't really want them to see that kind of thing. So I'll switch to a different screen or I'll press back or quickly go up to the children's section in on Netflix. That's something and then yeah, the last one is is just one on one doing using Skype. things happening in the background and sometimes very conscious of that and particularly go pass mine or my wife's business call. |
| 186 |  | - |
| 187 |  | Did any of this inspire scenarios inspire you to think of other silos in your daily activities at the end? Could you please elaborate? |
| 188 |  | I'm |
| 189 |  | not really I haven't. These these examples. Actually. It's quite hard to think of the examples because the examples you've given us actually really ever to dig deep to think about how they relate to my own life. And what what would I say? So, one, they only have a Philips Hue system, and I only have control over it. And sometimes, you know, my wife wants the light on or off when.. and she has to ask me to do it. That's a bit of a privacy violation in a sense in the second sense that you've given, disturbing an activity like she wants to go to sleep and she can't do it because the lights are on and she can't switch the lights off and I have to do for my phone. Okay, number four COVID-19 lockdown, and working from home ad spend more time sharing a home with co-occupants. Has the current situation createed any privacy violating scenarios that could have been avoided by adaptive user interfaces? |
| 190 |  | I did a lot of Skyping My only thing is that and this is a bit of a funny one, but like when we were on Skype, my children would come in and they would be talking over everybody. Okay? And it was impossible to do, you know, say okay, this is when this person thought was this one is, because we're not in the same space we cannot like, interact who's who? previously had like either shut them down or take them somewhere else. You know that Oh, and it made it quite difficult. You know, I have two children, my sister has a child, we've got maybe like three or four different families parties, of all in the same sort of virtual Skype slash whatever the app was called that everyone was using space, and Wish was having some way to maybe pay for people to protect the privacy like |
| 191 |  | - |
| 192 |  | and control who they were listening to. And particularly time would be good because you can just switch off the system and switch it on. You know, you can switch off audio or switch on or switch on and microphone or switch off, but not individual people. So you've one of the things you've done with fading out is you've picked out a particular object, and I'm wondering if you can like, pick out particularly voices, for children because he can grind. I know it sounds pretty harsh, but just to have that conversation with our family here, it is difficult. |
| 193 | Interviewer 59:09 | That's a really interesting point, I think. So like, just like we do input like audio input can be separated and like if we can be blanked out I think that's a really interesting point. And I think being we'd like Alex or you have these kind of features to understand like different kinds of voices and I think that's really cool feature. Yeah, I like that.. |
| 194 | PX7 59:30 | like looking ahead to the future. You can imagine if we have like, always on implants or headphones, they're, you know, that we're constantly wearing, we could actually start to switch on and off sounds around us. Quite well, you know, that's the future scenario. But at the moment, you can't switch your ear off. So a lot is difficult but with smart homes, you can do some elements. |

## PX8

|  |  |  |
| --- | --- | --- |
| Index | Tag | Transcription |
| 1 | Interviewer 0:03 | Great. So I'll start from the beginning. So, so the purpose of this study is to, to answer the research question, how do users perceive the usability and privacy preserving capabilities of user interface adaptations in a smart home? So let me unpack that a bit. In this study, you will be shown four videos demonstrating smart home scenarios with possible risks of privacy violations. So the smartphone user interfaces could adapt their behaviour in order to avoid or minimize those privacy risks. So this study focuse on two types of privacy violations. The first type relates to information disclosures. The second type relates to disturbances caused by smart home devices like the noise or the visual disturbances. So the two videos I've sent earlier were examples of those two variations of privacy. So does that make sense? So the videos you will see next are recorded from a first person point of view. This is because I would like you to imagine that you experience this scenario yourself. After each video you will be given a questionnaire to answer. It is important to answer these questions as if you have experienced scenario yourself. And I'll be recording this conversation the recording will be deleted as soon as I've transcribe the session. The transcriptions be kept securely, until I completed my analysis. And any information extracted from them will be anonymized before being used in any publications. If that is all right, we can start the study. |
| 2 | PX8 1:37 | Yeah, but I have a question before we start. So the question that relate to the video, relate to that specific scenario, right? Because when I was answering the previous, the last video, I was thinking about the, similar scenarios but not quite the same question but I would have selected a different degree of the scale. |
| 3 | Interviewer 1:59 | Yes, yes. That's true. So the scenario is specific. So the questions are specific to that specific scenario. |
| 4 |  | Okay, cool. |
| 5 |  | You can go to the first question section there's a video to watch and after that, there's a question to answer. |
| 6 |  | I click on the video, right? |
| 7 |  | Yeah. |
| 8 | PX8 2:35 | Should I play the video? |
| 9 | Interviewer 2:36 | Yes, watch it and there is.. |
| 10 | PX8 3:22 | Okay, |
| 11 | Interviewer 3:26 | so the first question you can get the first question |
| 12 | PX8 3:37 | explain out loud what I saw on the video right? |
| 13 | Interviewer 3:39 | Yeah. |
| 14 | PX8 | And and the person the video, right? Yeah. So I'm getting information, I'm getting reminded that I have to get my medication with my smart device, or whatever and so that I go to the secret place, and I do my secrete gesture to open the door. But one of my friends is close to me. And it's been detected by this device so that it is ignoring my.. |
| 15 | Interviewer | From second users point of view. So who's not in the screen? |
| 16 |  | Well, it depends, if they are, if they arrive. Once I'm finished doing my magic tricks, my gestures are not bad. |
| 17 |  | Okay, that's fine, |
| 18 | Interviewer | So. You can go to the next question. |
| 19 |  | For example here, |
| 20 |  | I can do two different things. So I can think of five words. imagining that I'm that person. And considering that it is important for me to do that. But on the other hand, I'm the type of person who has a secret cupboard, with that it's open with a secret gesture. So, I don't know which type of answer I should be giving here. |
| 21 | Interviewer | Sorry, I didn't get your question. So so what you had to do is like, so because what is on the video, like, from your point of view, if you're that person, like how would you feel about that then? then pick five words, is that clear? |
| 22 |  | Yeah, I mean, the only thing is I understand the scenario but it is a kind of extreme where you have like a secret cupboard with a secret gesture. |
| 23 |  | But I can see okay. Okay, |
| 24 | Interviewer | great, you can go to the next question |
| 25 | PX8 7:32 | Okay. |
| 26 |  | Well the first four were actually quite easy for me |
| 27 |  | more or less in the same context. You can think of this interaction or what's happened in the video is something that is convenient so that, I'm, so something secret is not being told to my friend It's effective because it's, it's serving its purpose. It's useful because the same reason. helpful because it's helping. It is not something that I maybe need right now. So when my friend is gone, I can start again the process so he knows when to stop. And engaging maybe because of the interaction between myself and the device, and because it was the last one was quite difficult to find the last one. Okay, |
| 28 |  | - |
| 29 | Interviewer | great. You can go to the next question. |
| 30 |  | Okay, I know I'm asking a lot of questions. I'm so sorry. |
| 31 | Interviewer | Please ask. |
| 32 |  | So, question one, Smart Home protected the privacy of its users by sending the message and preventing from someone seen because the video started by the device saying, hey, it's time for your medication. Maybe I don't want anyone to know I'm taking medication. And I don't know if that's part of the question or not. |
| 33 |  | - |
| 34 | Interviewer | That's a really good question. Nobody asked. |
| 35 |  | Well, in this scenario, that I mean, okay. |
| 36 |  | That's actually not a point I thought about when I made this scenario. I mean, you can I mean, because you told that be part of the analysis. But but you have to, when you answer, try to focus on the interaction, the secret gesture about which is I think the focus is |
| 37 |  | like I'm trying to evaluate your system. So let's say that Alexa, say you need a medication is something that goes by default. Yeah, yeah. |
| 38 |  | Okay, I have a question sorry. So for example, when you get the message on your smartwatch, I don't know if you can reply or do something such as Oh, it is not a friend It is my partner so they know I take this medication or the secret yes here so that you are in control or it's something that you cannot you cannot do the secret gesture with someone in the room with you. |
| 39 | Interviewer | So, for this question, just assume that you only saw on the video, so |
| 40 | PX8 10:56 | Okay, you're right. |
| 41 | Interviewer 11:56 | Okay I have some questions on the So, the first first question you answer the smart home protected the privacy. So what would be a system that apart from the smart speaker thing, what would be a system that you would have rated as one in this case like that, you [...] protected the privacy of the user. |
| 42 | PX8 12:17 | I would say, |
| 43 |  | in this particular scenario, the same case but without a device that actually finds out if somebody is in the room with you, and stop stops the cupboard from being open. |
| 44 | Interview: | So in the fourth one, you rated it as three. |
| 45 | Interviewer 12:24 | The, Is there something change you would expect for you to read it as one where you would accept this? |
| 46 | PX8 : | Yeah, so the thing is with this question is It's kind of difficult to guess you have to think of the scenario as you've been there. And so it is not. I mean, you are not in total control. But that's actually the whole point of the smart home, isn't it? So, is you have given the Smart Home, not not that you're not in control, but you're given some sort of control so that there are certain things you might not know. And these devices know, so that they actually are actually being upheld. So that's what I mean, in this case, it depends on how the scenario finishes. That's why I said, agree or disagree. If you have, you can actually say, I'm okay with this person or Okay, now, let's stop the secret [..] for half an hour until these people leave. So it depends on how the scenario that's why that's |
| 47 |  | - |
| 48 | Interviewer : | great. |
| 49 |  | Anything else you want to add to this scenario before we move to the next one? |
| 50 |  | No, and it's the same with with question. In three for example when they say I expected the user interface, it depends on when I get the message. I don't know what the vicinity means. So I don't know if my friend is here and it's actually seen it. He or she have seen the secret gesture or not. So it depends on this. |
| 51 | Interview : | You can go to the next one. |
| 52 | PX8 14:20 | Oh it's [...]. |
| 53 |  | Scary. |
| 54 |  | I thought I was seeing your password was. |
| 55 |  | Okay. |
| 56 | PX8 15:27 | So they're the same questions, right? |
| 57 | Interviewer 15:31 | Yeah, same set of questions. |
| 58 | PX8 15:36 | Okay, so I'm trying to access my bank account using the smart speaker. And when I'm about to enter the passwords, [the co-occupant] gets in the room so that I get a message on my phone that says, hey, guys in the room, so please |
| 59 |  | don't say your password out loud. |
| 60 |  | From [the co-occupant]'s point of view, |
| 61 |  | He's getting in the room and |
| 62 |  | he's, he I don't know if, he scares me, or you see is that I'm about to do something maybe that that I don't want to share with him, but I mean, he might, he might have heard something of the other conversation with the speaker so that he knows I'm just doing some banking stuff. So you would understand that I don't want to share my password to him. |
| 63 | Interviewer 15:54 | Okay. Okay. You can go to the next question. |
| 64 | PX8 18:19 | Okay, okay. |
| 65 | Interviewer 18:22 | So could you explain? |
| 66 | PX8 | Yeah, I would say that for example, useful, effective and convenient. |
| 67 |  | - |
| 68 |  | Err.., match what I said in the previous questions. So, it is something that |
| 69 |  | so if you're going to |
| 70 |  | log in your bank account through a smart speaker is really useful. Effective, convenient to have this kind of device from this architecture that allows from or prevents from someone listen to your password and the essential and reliable in the sense that, well maybe this should be the only way of having, of allowing people to input their details, sensitive details. In the case that there they can. There's a smart device that can stop or prevent from getting these data heard out. |
| 71 |  | - |
| 72 |  | - |
| 73 | Interviewer | Okay. |
| 74 |  | you can go to the next question. |
| 75 | PX8 19:42 | Okay. |
| 76 |  | Okay |
| 77 | Interviewer 20:54 | in the fourth question like you said you would have accepted the adaptation, what would be a scenario that you wouldn't have accepted the adaptation? |
| 78 | PX8 21:20 | could be.., I don't know.., maybe. |
| 79 |  | So for example, I think that a cool thing is that the message is being sent to me, in this case to my phone so that I can only read it. It is not that the speaker is saying, hey, [the co-occupant]'s in the room. So stop doing what you were about to do. I think I will accept that. |
| 80 | Interviewer 21:28 | Okay. That's good, so. What do you think like in the sixth one, you said, You.., it didn't obstruct user experience, so what could be a scenario where they have obstructed user experience? You mentioned one about this saying it loud, loud. So what, what would be something else? |
| 81 | PX8 | Now, I mean, for example, the same case, I mean, the same scenario, but instead of being [the co-occupant] and I don't know my relationship with [the co-occupant] in the scenario but let's say it is my wife, and I'm at home and we're sharing a bank account, or it's actually my bank account, but she knows my password already. And in that case, if she's in the room with me, and I'm just one, so probably, there would be a way of letting the device know Okay, I know the password. She knows the password or these people know the password. So they're common in the guy in the room, it's okay. I can say the password out loud, but that could be a case where there's an obstruction, |
| 82 | Interviewer | okay. |
| 83 |  | So depending on the user, if it is not changing, in that sense, it would be an obstruction Okay, great. Anything else you want to add to this? Any comments? |
| 84 | PX8 23:07 | Nope. |
| 85 | Interviewer 23:08 | Okay, we can go to the next one. |
| 86 | PX8 23:24 | You did not have hair, no beard. |
| 87 |  | Okay, saying it aloud, for my point of view.. while I'm doing a |
| 88 | PX8 24:08 | phone call with |
| 89 |  | this case, my one of my flatmates get in my room while I'm on the phone with a video call and the screen blurs so that he's not seen from the secondary user's of point of view while there are two actually so probably the person I'm talking with, sees that someone's getting in the room, but it's it's been blurred. And the person that that is what may be in the pattern of the person that it's getting in the room in my room knows what's going on. I mean, they know that the screens been blurred, but maybe they don't want to be seen. They they'd be quite happy about it. |
| 90 |  | - |
| 91 |  | this could be professional Okay, |
| 92 | Interviewer 24:14 | next question. |
| 93 | PX8 27:10 | next question, |
| 94 |  | Well, this is wasn't easy for me. |
| 95 |  | The thinking from the point, from the point of view of someone that wants these kind of response is actually useful and efficient. It could also be seen as reliable from the point of view of me and the person who lives with me, so that they, we can do whatever we want without being disturbed. This kind of scenario, I could be professional. So Well, there's been a lot of there are a lot of YouTube videos nowadays, because of what happened you in the COVID pandemic and a lot of people doing official stuff and kids and cats and pets and everything [..]. So it would be an interesting way of solving the problem. And personnel. Well, it's to say, I mean, you can decide what you want to be seen. So for example, in the same case, maybe you don't want your kids to be recorded or shown, or your flatmates, whatever, so it could be a good way of preventing that from happening. |
| 96 |  | - |
| 97 |  | - |
| 98 |  | - |
| 99 |  | - |
| 100 |  | - |
| 101 | PX8 28:34 | Okay, Okay, |
| 102 | Interviewer 29:40 | so that is interesting so you rated for the fourth one, two and the first question as four. so you didn't give the ,full like not strongly agree, is there reason why like you rated that way? |
| 103 |  | Well I don't think it's a problem of the device per se but I mean For example, question one is is protecting the privacy of the users? Yes. But I mean, if it's in your scenario, if it's your flatmate, and it gets blurred, and I'm talking and speaking with you, I might know that it's I mean, it's blurred but if your flatmate so if I know the situation, in some cases I think it depends on what do you want to get from this kind of response? If it is for example preventing your children from getting recorded, it can be It is okay it gets blurred. But if it is for example, you don't want to let anyone know that someone at home will maybe it is not actually protecting the privacy of the users and hundred percent so for this particular scenario, I would say it's a five, [..] sorry four, it could be a five depending on on the [nuances?] |
| 104 |  | - |
| 105 | PX8 30:04 | that it's right |
| 106 | Interviewer 30:16 | That's interesting. Would you have preferred for this case, like given the scenario, something, which is fully blurred like that? I can't I don't know what's happening, do you like, because in this scenario, I could actually see someone is moving. So, but yeah. Would you have preferred something like that? |
| 107 |  | In this particular scenario? Yeah. Instead of blurred, it could be, I don't know, a picture or I mean, you can just see myself and then stars or wherever in that way. That would mean the [the co-occupant - 2] in this case wouldn't know. [the co-occupant-1]'s here. Because if we know each other, it is okay. It doesn't matter if it's blurred. He would know he's entered the room. Okay, great. |
| 108 | Interviewer | So in the second one you rated like you in control, like when you felt in control using the system. So is, could you imagine a situation where you wouldn't Be? |
| 109 | PX8 32:21 | Well, if it is only detecting that someone is getting the room. |
| 110 |  | And let's say. |
| 111 |  | So if the system blurs the background whenever it detects someone gets in the room, because it's something, let's say it's by default, and it is not [the co-occupant], my bad, my other flatmate and I am telling this person, hey, look who's here. So I know it's something I can change, but that means I have to do something, I probably have to type or say, hey, Alexa is just me. Whatever. So that could be a kind of different scenario where that could happen. |
| 112 |  | - |
| 113 | Interviewer 32:55 | All right. Awesome. You can go to the next one. |
| 114 | PX8 33:00 | Okay |
| 115 |  | we've lost the game it Italy |
| 116 |  | Okay |
| 117 |  | from my point of view I want to get some sports news using the smart speaker, [while my friend studying or call?] flatmate, so that Alexa sends the news to my phone directly, it actually beeps, really loud which is disturbing for someone who's studying but I feel like we know that it send me a message but yeah, okay and from my friends point of view well actually I think here |
| 118 |  | - |
| 119 |  | I can see here to be one of the best |
| 120 | PX8 34:46 | while also with the with the camera but this is much better when you're trying not to disturb someone. They see that maybe you're not aware they're studying or doing whatever they're doing and this device is actually helping them, not just me kind of.. |
| 121 |  | - |
| 122 | Interviewer | especially in this scenario like so I had to like take part in one shot like best case scenario would be, the [the co-occupant] is not in my vision where he'd been somewhere else. So that would be the best example of this. |
| 123 | Interviewer 35:08 | Okay. You can go to the next question |
| 124 | PX8 36:44 | okay. Okay, |
| 125 |  | could you explain? |
| 126 |  | Yeah more or less so the words such as useful or helpful it is because it's something that improves |
| 127 |  | - |
| 128 |  | the scenario let's say |
| 129 | PX8 36:53 | and then comfortable, helpful friendly it is because it is creating a better atmosphere. Maybe Without using the device, the scenario could be, hey, Alexa, can I get some sports news? And Alexa would start shouting out who's won the world cupt or what's going on? And maybe you can. So that would be nice for the person that's reading or studying. So that's how this is comfortable scenario. It's helpful. It's I think, it's clear, engaging atmosphere. |
| 130 |  | - |
| 131 | Interviewer 37:27 | Why did you pick the word engaging? |
| 132 | PX8 37:36 | engaging because |
| 133 |  | for me, this is maybe this is the best example from in all the videos where I can see a reward in both the both users. Okay, so up to this point, it was like, yeah, I'm using the these devices, my device, and I don't want my privacy to get out. But in this case, I see like, do you think it is, I mean, it's creating an engaging situation atmosphere between two users. |
| 134 |  | - |
| 135 |  | - |
| 136 | Interviewer 38:07 | Okay. |
| 137 |  | Collaboration would be a better word as well for that. Yeah. |
| 138 |  | Okay, you can go to the next question. |
| 139 | PX8 38:37 | This is hard, is tough actually get |
| 140 |  | cos I am thinking about the concept of privacy in this case. So Yes, it is protect protecting, like, say the person that studying but it's, it's their privacy what's they're protecting? Oh yeah of course privacy |
| 141 | Interviewer 38:59 | Yeah, so in this specific scenario, it's more about the peace of mind privacy the you wouldn't disturb someone else. So that kind of stuff. that's information.. |
| 142 | PX8 39:10 | Yeah, I'm getting philosophical.. |
| 143 |  | it was pretty clear |
| 144 | Interviewer 39:53 | so so In this scenario what would be adaptation that you wouldn't have accepted or scenarios that you would dislike |
| 145 | PX8 40:07 | while thinking of previous answers, kind of harsh, but let's say in that video, the person is deaf. So, I mean, if there's not a way to, I can see these like the default scenario and in some cases it will be the password. And these every time an action, is been a decision is being taken by the device. It should be. There should be a way where you can update some information so that in case the person that is studying is, I don't know, Blain whose deaf, Alexa shouldn't stop because they're gonna listen I'm not gonna be strateled. I mean, I'm not gonna restart them by speaking. Yeah, let's say let's say I say, Alexa, play me some music or I can tap dance. Maybe they're gonna be |
| 146 |  | maybe it's not the best time right now. |
| 147 | Interviewer 41:15 | So any other way you think it could improve the user experience in this area? |
| 148 | PX8 41:21 | No, I think it was quite high as that I mean, well, yeah. It's something stupid when the so in this case, if you don't want the other person to be disturbed, maybe the last the high pitch, that sounds in the end, that could be a different way maybe a light in your phone or, or something. |
| 149 |  | - |
| 150 |  | - |
| 151 | Interviewer 41:43 | Even on the smart speaker, like, |
| 152 |  | yeah. |
| 153 |  | Okay, that's all for the scenarios. There are a few general questions so you can |
| 154 |  | speak out your answers for them. |
| 155 | PX8 41:58 | Okay, |
| 156 |  | Well, I think it's, |
| 157 |  | ah, I'm up to using an adaptive interfaces |
| 158 |  | with regard to privacy issues. But the thing is, in some cases as I've been, we've been discussing, there has to be a way of tweaking your own parameters so that you get a personalized response |
| 159 |  | [...daily activity?...] |
| 160 |  | Let me see, the sport, the bank account |
| 161 |  | the video |
| 162 |  | And just one more thing on the secret gesture. |
| 163 |  | Well, I'd say that. |
| 164 |  | Don't one that might be. The closest one is when I asked |
| 165 |  | when I asked to play something on Spotify |
| 166 |  | might be someone at home that might get disturbed. So I don't have this device. So normally if it's my sister, she starts shouting at me |
| 167 | PX8 43:52 | to think of other scenarios.., |
| 168 |  | Well, |
| 169 |  | I don't know this, if it makes sense that so for example, when you are connected when you're you're logged into your YouTube account, you can get some ads. That might not be good for let's say, my nephew. Yeah, maybe that could be another way of saying, hey, maybe you shouldn't be playing these horror film trailer with a five year old in the room. I don't know. Yeah. |
| 170 | Interviewer 44:17 | That's, that's really interesting. And add to that, like, |
| 171 |  | yeah, the solutions that you get on YouTube could be really personalized for you. Yeah, it might not be good for your nephew. |
| 172 | PX8 45:25 | Yeah, exactly. |
| 173 |  | Well, not yes actually. Yeah. So, I don't know if actually, |
| 174 |  | if by sharing these I have spoken in too much of a situation, but I mean, so, one of my flatmate |
| 175 |  | goes to therapy |
| 176 |  | ah so that |
| 177 |  | he or she, he or she's |
| 178 |  | told.., told us it is actually really difficult to talk about what's going on. Don't think it's just, it's [an issue in?] her life that maybe we weren't invovled in the discussion, so it was kind of uncomfortable. It was actually pretty difficult at the very beginning when it turned when it got hot, warmer. They went into the garden and was easier. But yes, I can see these kind of devices working in that scenario when, if we are all in our rooms, you cannot hear what's going on in her session. But |
| 179 |  | - |
| 180 |  | when you were going downstairs to the kitchen or in the dining room, you can hear Oh, something's going on. So I'm gonna go far away so that I don't, listen to something that I shouldn't be listening. Yeah. |
| 181 | Interviewer 46:41 | That's really interesting. Yeah. |
| 182 |  | That's cool. |
| 183 |  | That's the end of the study. If you have any other comments. |
| 184 | PX8 46:52 | No. Oh, |
| 185 | Interviewer 46:55 | great. Cool. Awesome. Thank you. I'll stop the recording. Now. |

## PX9

|  |  |  |
| --- | --- | --- |
| Index | Tag | Transcription |
| 1 | Interviewer 0:01 | Great. |
| 2 |  | can hear me? |
| 3 | PX9 0:05 | Yeah. |
| 4 | Interviewer 0:08 | So thank you very much for joining my study. Before we start, let me give you a brief introduction to the study. The purpose of this study is to answer the research question how users perceive the usability and privacy preserving capabilities of user interface adaptations in a smart home. So let me unpack that a bit. So in the study, you will be shown four videos demonstrating Smart Home scenarios with possible risks of privacy violations, as part of interfaces could adapt their behaviour in order to avoid the avoid or minimize those privacy risks. So this study focuses on two types of privacy violations. The first type is to information disclosures. The second type is related to disturbances caused by smart home devices like disturbances or like audio disturbances or visual disturbances by loudness music etc. and the two videos that I've sent earlier were examples of, for those two variations and does that make up now? |
| 5 | PX9 1:05 | Yeah. |
| 6 | Interviewer 1:06 | If you have any questions please don't hesitate to ask questions. So we'll see we'll see next are recorded from a first person point of view. This is because I would like you to imagine that you are experiencing this yourself. After each video, you'll be given a questionnaire to answer. It's important to answer these questions as if you have experiences the scenario yoursefl. I will at the end, I will ask some summary questions to wrap up the study. And I will be recording this conversation the recording will be deleted as soon as I have transcribed the session. transcriptions will be kept securely until I have completed my analyses and any information extracted from them will be anonymized before be used in any publications. And that's all I could do. We can get started. |
| 7 | PX9 1:50 | Yeah, that's all right. |
| 8 | Interviewer 1:54 | Go to Section play the video and now after you can pause it and rewind it and watch the video. And then let me know there is a question yeah. You can move to the first question which is to [explain out loud]. |
| 9 | PX9 2:58 | Okay, so I think it's good |
| 10 |  | So I just have to explain the video, right? Yeah. So in the video someone is using Alexa to check it, check his blood glucose level and when that Alex is answering, I mean I couldn't hear whether Alex is actually answering the question, but at the end someone is entering the room and he was checking his smartwatch to read the actual blood glucose level. So that's what I saw. |
| 11 |  | So just to clarify it |
| 12 |  | Alexa did not answer? |
| 13 | Interviewer 3:41 | when the person came in, sort of switch to the smartwatch instead of speaking it out loud. |
| 14 | PX9 3:47 | So okay. |
| 15 | Interviewer 3:53 | What do you think from the second user's point of view? |
| 16 | PX9 3:58 | I think The second person did not hear at all but first person was saying, I mean what but first person was commanding to the Alexa. So I think |
| 17 |  | it was normal. It was a normal scenario for him.. |
| 18 | Interviewer 4:15 | Great. You can go to the next question. |
| 19 | PX9 4:30 | So I have I just have to type in Skype, right? |
| 20 | Interviewer 4:34 | Yeah. So I type in the blank |
| 21 |  | Doc |
| 22 | PX9 6:05 | Okay |
| 23 |  | do I have to explain each word or just everything as a whole? |
| 24 | Interviewer 6:11 | I mean if there's a drastic difference between those two words it has a specific reason. Explain that otherwise you can like combine |
| 25 | PX9 6:27 | you can speak out loud. don't even have to type it. |
| 26 |  | Oh you are going to type right? |
| 27 |  | Yeah Okay, so I select a convenient because |
| 28 |  | it's convenient to check blood blood blood glucose level without going to the hospital without doing a complex procedure with Alexa. So that's why I selected convenient and it's flexible. Why did I select flexible?. I'm not sure I just quit that. So it's advanced because it's using advanced technology itself. Automatically detecting our blood glucose level and it's recording automatically. So it's advanced technology. So I selected advanced. And obviously, it's helpful and useful. So those are, those are obvious, right? So that's why I selected those things. So did that fulfill your requirement? Or should I explain more? |
| 29 |  | - |
| 30 |  | - |
| 31 | Interviewer 7:21 | So, yeah, you did. So like, just to just to clarify, I can even move into the other scenarios, so |
| 32 |  | try to have better focus on the privacy aspect as well, like the news, sort of look at it. Like, for example, if you look at this scenario, it's about that person's information being protected, right. So the parent information at the beginning, mentioned that he doesn't want to share his information in my notes. So so when you sort of answer the questions. Try to think about that as well. Not just the functional aspect |
| 33 |  | Yeah, just just a |
| 34 |  | few questions afterwards. so you can move to the next question. |
| 35 | PX9 8:55 | What's the meaning of the third question? I expected the user interface adaptation before it happens. |
| 36 | Interviewer 9:00 | So it basically means Are you surprised by this change? Like instead of, for example, in this scenario instead of directly getting the answer from the smart speaker switch to the smartwatch with this adaptation, were you surprised? I mean, to the previous knowledge that you have had was between videos I've sent earlier. So that sort of describes how the system works. And knowing that, that information where you're, like surprised. |
| 37 | PX9 9:24 | Okay, so still I have to answer based on that video, right? Yes, not from my own experience. |
| 38 | Interviewer 9:39 | Could you explain the second question is why you pick five? |
| 39 | PX9 9:45 | Oh, it's a negative, right. So I have to be the first option. Now. Now it's clearer. |
| 40 |  | Did you expect the user interface adaptation.. |
| 41 | Interviewer 10:30 | Could you explain the last |
| 42 | PX9 10:37 | Yeah, the person who actually asked the question from Alexa expected a voice based answer. So instead he got he got the response in his watch. So that could I mean, that might not be his expectation. And in a case where he's not worrying about his privacy and let's say, I'm asking the question and my wife is coming into the room and I'm not worrying about my wife hearing the response of Alexa. Let's say that scenario. So in that case, I think switching the user interface is an overkill. I mean, it's, it's not required in that case. |
| 43 | Interviewer 11:21 | Just a quick question on the first one, first question is you mentioned it protected the privacy of the user. So what would be a scenario where the |
| 44 |  | that you rate |
| 45 |  | rate it as as one like what would be the |
| 46 |  | setup be like, the same scenario? |
| 47 | PX9 11:40 | Could you rephrase? |
| 48 | Interviewer 11:42 | Yes. So the question is, what would be a scenario like that where it has been like, do you think the privacy of the user was not protected like in the same, same settings where you tried to get information from Alexa. |
| 49 |  | And you think, whatever the smart home does and did not protected the privacy, privacy. How would |
| 50 |  | what sort of situation can you think of like? |
| 51 | PX9 12:07 | Yeah, that |
| 52 |  | I think I have a first hand experience of this that one, so I have set up some kind of reminders to Alexa. And I have get my Alexa in my living room. So when someone is, someone is at my home, I mean, some outside person is at my home, Alexa does not, Alexa is not aware about those things. And is Alexa is just reminding me about the reminders that I have already set up. So the that kind of situation is embarrassing. |
| 53 |  | - |
| 54 | Interviewer 12:42 | So the fourth question you said would have accepted the adaptations, |
| 55 |  | is adaptations are accepted. So what sort of adaptation that you wouldn't have accepted? |
| 56 | PX9 12:53 | adaptions.. [..] |
| 57 | Interviewer 12:55 | not have accepted |
| 58 | PX9 12:58 | No, I mean, I I strongly disagree with that statement because I accept that that user interface |
| 59 | Interviewer 13:05 | yes, definitely. |
| 60 |  | So so the question is like, what sort of adaptations that you wouldn't have accepted for this scenario? Like? |
| 61 |  | It's a creative question. |
| 62 | PX9 13:22 | sending an email instead of instantly showing in my wrist watch kind of thing, I mean, kind of a delayed response. |
| 63 |  | I would not accept something like that. |
| 64 | Interviewer 13:33 | Or any other comments on this scenario before we move to the next time |
| 65 | PX9 13:38 | we can move forward |
| 66 |  | Okay, I'm done. |
| 67 | Interviewer 14:39 | same set of questions |
| 68 | PX9 14:41 | now. So someone is trying to open his medicine box or something with the smart gesture. And instead of actually unlocking that cupboard, it's sending a notification to the wrist watch, saying that someone is around, Yes. So from the I mean, secondary users point of view, I didn't see anything related to the secondary user in that video. But obviously if if there's someone so, he will see that the first person, first person is trying to open the cupboard and since he is around the cupboard is not opening or something like that. So he will definitely see that and he will be curious about what's inside. Okay, obviously it's innovative and cutting edge because I haven't seen something like that before. It's just to open a cupboard or something like that. But I think that's complex and complex difficult and you need in effect ineffective than using a pin pad or passcode in my wrist watch. I mean, we can pair that cupboard with my wristwatch and it can prompt a prompt to enter the password in my wrist watch than having to draw a guesture or something like that. Right. So I think that would be more convenient than having a gesture based lock. |
| 69 |  | - |
| 70 |  | - |
| 71 |  | - |
| 72 |  | - |
| 73 | Interviewer 18:13 | [....] |
| 74 | PX9 18:24 | I didn't hear some, I Sorry, |
| 75 | Interviewer 18:27 | sorry. So I mean just a person who's differently abled, who's unable to sort of like, |
| 76 |  | use a lock, someone who's unable to, like someone with like, having dexterity problems, like unable to make sort of use motor skills, like problems, fingers, something like that. So like, if that's the case, like how would you feel about that using this kind of system? So, |
| 77 | PX9 18:52 | if the person is differently abled, how would you draw the gesture at the first place? |
| 78 | Interviewer 18:56 | Yeah, I mean, so doing the gesture like very specific kind of interaction like sort of like pinpointing something |
| 79 |  | would be like, two different things or just asking I mean, it's not |
| 80 |  | not it's not exactly the scenario. |
| 81 | PX9 19:11 | Yeah, obviously for a differently abled person who is not able to type something or press some buttons. For those kinds of people, this will be helpful, but I think for 99.9% of the people, this will be a difficult thing to use |
| 82 | Interviewer 19:32 | the next set of question |
| 83 | PX9 19:43 | so here I'm not sure about what's mean by the privacy so so inside the cupboard, or did he try to protect the guesture, I mean, the guesture, guester that, user use to open the cupboard. So in this case, it's gesture |
| 84 | Interviewer 20:01 | and So, overall |
| 85 |  | so the question itself is more like overall like how about |
| 86 |  | so you can think about the gesture and inside the cupboard |
| 87 | PX9 20:18 | in this case I am strongly disagreeing with this one because obviously the second person saw the gesture, right so I'm not agreeing with this. I mean if it is a pinpoint.. pin pad or if it is a finger pace finger, fingerprint based lock I I strongly agree with this. This one. |
| 88 |  | Expected the user interface... |
| 89 |  | did not expect it |
| 90 |  | Yeah, I'm done. |
| 91 | Interviewer 21:51 | So you've mentioned you would have preferred a pin based or like something on The smartwatch to open. |
| 92 | PX9 22:02 | Yeah. |
| 93 | Interviewer 22:03 | right so are there any other comments with regard to how to improve the user experience using how to use a system? like |
| 94 | PX9 22:17 | this just does. I mean, I strongly disagree with how the privacy protection is implemented with that cupboard. |
| 95 | Interviewer 22:31 | Okay, next section |
| 96 | PX9 23:42 | so in the video I saw you are in a call with one of your friends and someone is walking behind. And the description of the video says that there's someone who walked in the behind does not like to be disturbed by the by his colleagues or something like that. So yeah, so That is what I saw. |
| 97 | Interviewer 24:00 | it means is like he doesn't want to get dragged into calls without his consent like someone else trying to contact him through the video call to get on board |
| 98 |  | to what what if, what if from the other end of the call |
| 99 |  | and the person went behind? From the point of view, the experience through them. |
| 100 | PX9 24:29 | if I am that person and if the person in the call is a strange, strange one[stranger?], then I don't care about the situation. But if if that is someone I know then that's somewhat embarrassing. I might have to go there and talk to that person. Because that person might think that I'm ignoring him if I don't do that. So yeah. |
| 101 |  | - |
| 102 |  | - |
| 103 |  | So shall I go to 2.1 |
| 104 |  | Was there a smart home interface in that video? That was just a simple Skype call right? |
| 105 | Interviewer 25:14 | And the did you see the blurring effect when the person came in? So that's the sort of the |
| 106 |  | and so the video itself, the the video input piece of part of the smart home systems. |
| 107 |  | Okay, good. |
| 108 | PX9 26:38 | Is this something you have already implemented or I planning to implement this? I mean how what would happen if there are two people in the call from your end and in that case what what would happen if someone walks behind two people |
| 109 |  | - |
| 110 | Interviewer 26:56 | You mean like in the video call right? like people on one, so so we only blurred out the person who's who has been like chosen as their privacy preference as not get disturbed. So, only that person will blurred so |
| 111 | PX9 27:11 | know it based on facial facial recognition or something |
| 112 | Interviewer 27:15 | like object detection. Yes. So |
| 113 | PX9 28:11 | So I just have picked five, |
| 114 |  | five key words. So obviously it's helpful and effective. As we just saw in the video, I think it's a reliable way of protecting privacy during a video call. And obviously it has, I tasked to use some advanced technology to detect, detect which person should should be blurred out of the multiple people who are visible to the camera. And I think it's easy to use, maybe we can simply switch it on and off with a single button or something. |
| 115 |  | - |
| 116 |  | - |
| 117 |  | So when answering the third question, so now I'm the first person and I have enabled this privacy protection feature in my computer, right? So I, so, so the |
| 118 | Interviewer 29:21 | point is like, you know, the there is a system like this in the home. It's not enabled by the person on the call, but the person on the, who's going behind because he's the one who set the preferences. He doesn't want to be on the phones when he's on a weekend. So it's not necessarily th,e it's not like the feature. Like the one you use now, like, you put the blurr, but it's not like that it's someone else like putting his preference and just in case by mistake he walks across a video call and when the person has not put the blurr effect it will be mandatory. It's a different kind of angle, the same same kind of feature. |
| 119 |  | Does that make sense? |
| 120 | PX9 30:02 | Yeah. |
| 121 |  | I am done with the questions. |
| 122 | Interviewer 30:45 | could you explain the last answer the, why you put three, like explain that answer. |
| 123 | PX9 30:53 | So as you explained, the third, the second person who is working behind has configured The first person's video conferencing application. Yeah, that's how it has happened. Right? So the second person has configured first person's video conferencing application to not, I mean, to not to show that person, right, yeah, kind of thing. So it kind of like he has access to the first person's account to do that configuration, even if the first person don't want to happen, right? |
| 124 | Interviewer 31:29 | So, I assume it's just like so it's not necessarily like, I don't like log into his personal account. It's more of like a shared system that everybody else in the smart home has is one big system. And when somebody uses like a video input, a call or something, and because I've saved my my personal preference to using, I don't want to be on a video call. So that sort of picks up, get picked up by the video call because it's a kind of system. So it blurr it's not like. I go and like configuring this Skype account, whatever it is basically, the system recognizes, okay, that person is in the vicinity of the video call, so it sort of blur that person. So that's that's how it happened. |
| 125 | PX9 32:14 | Okay, so can I change the answer in that case? |
| 126 | Interviewer 32:17 | err Yep. |
| 127 | PX9 32:22 | Just a four. |
| 128 |  | So, now I understand how it actually happen. So previously, I thought that second person, I mean, obviously second person does not have full access to the first person's account. But so now I understand they are some kind of an agreement between those two people and there's a shared account kind of thing and they can configure their preferences in their shared account. So there's an agreement between those two people, right. So in that case, I think that's not a big issue. |
| 129 |  | - |
| 130 | Interviewer 33:13 | Sorry when you're trying to put.. |
| 131 | PX9 33:16 | user interface adaptation obstructed the user experience of using the Oh yeah, I want to put two, sorry |
| 132 | Interviewer 33:24 | question on the fourth one. So you said you would have accepted. So what would be an operation that you wouldn't have accepted? For the same scenario? |
| 133 | PX9 33:38 | That's always the hardest question. |
| 134 |  | blurring anyone who is going behind kind of thing without doing any prior configuration Anyone who is walking behind kind of things that one, I won't accept. |
| 135 |  | - |
| 136 |  | So shall I, shall I go with the section? So in the video someone is trying to check the football news using Alexa. And Alexa instead of saying the answer it just sends and sends a notification to the user's smartphone saying that some that there's this guy around and he's he does not like being disturbed. So instead of saying the answer it it just shows the scoreboard as I think in the mobile application from a second user's point of view, I think he has been already disturbed by you asking the question from Alexa. I'm not sure so I think first person for first person in the first place should not ask that question from the Alexa when that person is around Yeah, I've done.. |
| 137 |  | - |
| 138 |  | - |
| 139 |  | - |
| 140 | Interviewer 39:13 | could you explain.. |
| 141 | PX9 39:18 | so I selected innovative cutting edge advanced and exceptional because because of the, the actual technology it's using to detect that there is a person around because I didn't see any kind of smart wearable anything on the person's hand. I mean in the second person's hand. So magically it's detecting that person is around. So it should be it should be using some kind of an exceptional technology to do that. Now I think it's ineffective because the first person is actually asking that question from Alexa while the second person is around Alexa. I mean, while the second person is around himself so why would he do that? I mean, if you know that the second person does not like being disturbed why would first person asked that question from Alexa in the first place so I mean, since it's voice based I think it's in an ineffective at that point. |
| 142 |  | - |
| 143 |  | - |
| 144 | Interviewer 40:24 | Like, how do you think like, what would be a better approach for this kind of a scenario? Yeah, for example, I need to I normally use my smart speaker to get Sporting News. I tried to do it while I wanted to. Hmm. What do you think could be a better scenario? |
| 145 | PX9 40:43 | I think this would work if it is a auto automatic automated thing. I mean, let's assume that you have configured Alex to report sports news. When there's a something like going on kind of thing. I mean, it's not Going to be a response for for a request, but it's going to be a scheduled task kind of thing in that scenario, if Alexa switch to your mobile phone instead of speaking it out loud, then I think that would be a good approach. |
| 146 |  | privacy. |
| 147 |  | So what's, what's the meaning of privacy? So in, in my understanding privacy means some thing that belongs to me. That should be protected, right? |
| 148 | Interviewer 41:37 | That's |
| 149 | PX9 41:39 | [...] the privacy that was protected in the second person? |
| 150 | Interviewer 41:42 | So it's t so. So privacy. So in my videos, there are two aspects of privacy, one is the information disclosure aspect. The one you mentioned the security aspect. The other aspect is the right, the right to be let alone where like, someone wants to be have peace of mind. They don't want to get disturbed from other, like noises or whatever, So that. Yeah, that's the scenario that's what is meant by privacy |
| 151 | PX9 42:23 | so should they answer this I'm the for the second question should I answer from the perspective of the first person or the second person or both first |
| 152 | Interviewer 42:33 | person is using the system |
| 153 | PX9 42:34 | I am in control while using the smart home so in the this case for the first person obviously don't want to protect his privacy. That's different from previous videos right? First person is asking that question from Alexa because he needs voice response back and he don't obviously don't care about the second person in this case because he know that he don't want to get disturbed but he's asking that question. So, he I think the first person is not in control while he is using the smart home in this case I expected the user... first person, first person he might |
| 154 | Interviewer 43:34 | experience .. user interface.. adaptation. |
| 155 | PX9 44:00 | Strongly agree |
| 156 |  | So I have answered from the perspective of First Person, right. Yeah. So, |
| 157 | Interviewer 44:21 | so you what you said like you will not have accepted the |
| 158 |  | adaptation. So is there any like other than that you mentioned like that aspect of automated sending to this, like when there's a live game or something. So other than that is there anything else, you'd have? in thi case |
| 159 | PX9 44:43 | Yeah, the first person's perspective. So I assumed that I don't care about the requirements or the expectations of the second person. So I'm asking question from Alexa. I expecting an answer back from Alexa and not from my mobile phone. Because if I want to If I want to use my mobile phone, I would have asked the question from my mobile phones mobile application in the first place. So obviously, I won't accept the scenario if I'm the first person |
| 160 |  | - |
| 161 | Interviewer 45:13 | is there anything that you think, what sort of think would..,would be a better way of |
| 162 |  | resolving this..? |
| 163 | PX9 45:25 | It's that question is hard to answer because because in this case, from your perspective, I mean, from you are the creator of this thing, right? So from your perspective, I'm not sure who are you who you are going to prioritize in this case, the first person, second person. |
| 164 | Interviewer 45:44 | So |
| 165 |  | So, the privacy |
| 166 |  | preference is there, the one |
| 167 |  | privacy preference of the second user about not wanting to disturb while studying is and then I have a requirement to like, get to know sports news, [...] I may not know that that person is studying or you might not be.. like, in the video it is in the, in the my point of view, but it might be different. In different case he might be |
| 168 |  | like not in the field of vision of me, |
| 169 |  | or I might not be that that person will want to get disturbed while he studied so. So those are few possibilities where you can like the things could change. So given that so that's the context. So if that's the case, if there is a better way or a better adaptation that you have preferred. So that's.. |
| 170 | PX9 46:34 | so, the video I mean, if you present a different video then keeping Alexa and the second person in the same frame. I mean, instead if you kept Alexa in front and if the second person was behind the first person and first person is not actually seen the second person is they are studying kind of thing. Then I would change all of my answers in that case, but but in that video, both were at the same place and First person is .. obviously seen the second person is there, and he's commanding Alexa. So that's why I answered. I mean, that's why I selected these answers. But if that was the case, the case that I just mentioned, then I think this this is a good thing. I mean, this is a way of protecting privacy. |
| 171 |  | - |
| 172 | Interviewer 47:22 | Also, so those are the four scenarios. |
| 173 |  | Read the question and speak out your answers |
| 174 | PX9 48:03 | So for the first question, yeah, I think this is a |
| 175 |  | good this would be a good implementation. If Have you already implemented Yes or no? are they just |
| 176 |  | prototypes |
| 177 | Interviewer 48:17 | some of them? So not everything is fully automated, like, they're like, really, some of the scenarios are hard coded. But some of the so the, the novelty is the framework that sort of generates adaptation. And context changes are not that accurate. So, like, capturing the connection is not that accurate. So it is not part of my research area. |
| 178 | PX9 48:41 | Yeah, so I think it it's very nice to have these things, because I can relate to second question as well. So I explained that scenario to you previously regarding the Alexa's reminders. So I think these things are very nice to have, I think the most of these smart devices lack these kind of privacy protection mechanisms nowadays. I think what you're doing is really nicely. |
| 179 |  | - |
| 180 |  | - |
| 181 |  | - |
| 182 |  | Other scenarios in our daily activities |
| 183 |  | So for the third one, have you thought about the thought about shared smart devices? For instance, myself and three others at my home are using a shared Alexa device? Or shared Smart TV or something like that? I think I mean, if that can be implemented, that would be great as well. |
| 184 |  | - |
| 185 | Interviewer 50:31 | Were there any like specific scenarios that happen while you were using these devices that you think could have compromised your privacy. |
| 186 | PX9 50:41 | For instance, |
| 187 |  | let's let's take a simple scenario. So I asked, What's my name from Alexa? And Alexa answers? Let's say Alexa answers [name of the person] one when my wife was there, and when she asked her name, Alexa will still say [name of the person] right?, so That that can I mean, let's assume that I asked a personal question from Alexa. Yeah. So Alexa will answer considering my profile to my wife as well. So if those can be sorted out, that would be great. I think three and four. So that those are those, those two are same, like I mean, my answer can be related to both three, and four. |
| 188 | Interviewer 51:38 | Yeah. So that's it for the study. |

## PX10

|  |  |  |
| --- | --- | --- |
| Index | Tag | Transcription |
| 1 | Interviewer 0:33 | Okay, so, thanks for joining my study. Before I start, let me give you a brief introduction to the study |
| 2 |  | so the purpose of this study is to answer the research question how do users perceive the usability and privacy preserving capabilities of user interface adaptations in a smart home. So let me unpack that a bit. In the study you will be shown four videos demonstrating Smart Home scenarios with possible risks of privacy violations. Smart Home user interfaces could adapt their behaviour in order to avoid or minimize those privacy risks, study focus on two types of privacy violations. The first type relates to information disclosures. The second type is to disturbances caused by smart home devices. The two videos upset earlier example of those deviations. Does that make sense? Up to now? |
| 3 | PX10 1:57 | Yep. Okay. |
| 4 | Interviewer 2:00 | The videos you see next are recorded from a first person point of view. This is because I would like you to imagine that you are experiencing the scenario yourself. After the interview, you will be given a questionnaire to answer. It's important to answer these questions as if you have experienced the scenario yourself. In the end, I will ask you a few summary questions to wrap up this study. Does that make sense? Okay, now? All right. I'll be recording this conversation the recording will be deleted as soon as I transcribed the session, the transcriptions will be kept securely until I have completed my analysis. And any information extracted from them will be anonymized before being used in any publications. If that's alright with you, we can get started. |
| 5 | PX10 2:44 | Yes, confirmed. |
| 6 | Interviewer 2:47 | You can go to the first section and so there is, a video you need to watch [..] watch that and start answering the questions |
| 7 | PX10 4:37 | Okay, so before answering the questions below please explain out loud what you saw in the video and describe your experience of the smart home. |
| 8 |  | Okay, so |
| 9 |  | I want to check my blood glucose level and I had made a setting so that no one else would be aware of my blood glucose level. And this sounds fairly realistic because there are times where I as a person with diabetes might be sensitive about this and wouldn't want to share so for example, I remember when I was say in my late teenager, early 20s, something like that I would not want my parents to know what my blood glucose level because I because their reaction might be stressful to me if they didn't understand the context with which it was happening. |
| 10 |  | I'm a little unsure. I don't know if this is useful, but I I'm a little unsure why I would be asking Alexa this as opposed to just looking at my watch as it is, but I'll accept that maybe there were some reason to do it that way. So I think I get or the voice controller Something I don't know it, somehow it seems like an unnecessary step, but but I'll just accept that for some reason someone wants it configured that way. And yes, I think it would be useful that observes that only I see it and no one else if someone comes in the room, so that seems reasonable. So from my point of view, I asked for my blood glucose level, and it put it on my smartwatch, so that just I could see it and someone entering the room might not know it. |
| 11 |  | - |
| 12 |  | - |
| 13 |  | So that's good. Also, maybe a co worker, maybe I wouldn't, maybe it's someone I don't really know. Or maybe I'm really new there and I'm not ready to disclose that I'm a person with diabetes, in which case it would be nice to have it kept private. From the secondary users point of view they walk in and I just look at my smartwatch. The only concern I have there is that sometimes someone checking their watch might indicate that like, I think the other person is late or something like that. So it might, sometimes checking a watch can can be a signifier of some sort of disapproval or something like that. So I know some I don't wear a watch now, but I've known in the past that sometimes I would be careful about looking at my watch, just because sometimes people read things into that. But I would assume that if someone that the secondary user walks in and they just see me Look at my watch, and they probably their first assumption is that I'm just checking what time it is when they're walking in. So other than any potential interactions that they might think I'm being judgmental, like I'm saying you're late or something like that, that seems reasonable. Do you have any additional questions?  Please type. Should I read this out loud? No, I don't need to read it out. |
| 14 |  | - |
| 15 |  | - |
| 16 |  | - |
| 17 | Interviewer 8:48 | Just a quick question. So you mentioned during the previous |
| 18 |  | answer that but you might not use that blood glucose level through the smart speaker, do you think there are any other things that you might find sensitive, but you might have to do with a smart speaker? Like, use a smart speaker? |
| 19 | PX10 9:11 | Okay, so this is a little tricky because I don't I don't have any smart devices in my house because I feel there. I it feels privacy invasive to me. I feel like Amazon is, you know, giving me this device to train their models and to profile me and things like that. And I don't. I mean, they're already doing that all the time, every time I go on their website, but I just don't feel like I want to bring any of these search overtly spyware devices into my space. I don't mind typing, but it just feels too Invasive to me. So, while I've, I have used these devices at my ex wife had an Alexa in her house and you know, I'd use it when I go over to her house and the kids used it. I just haven't felt the need or the desire to welcome one into my house. So that being said, I recognize that there are some people for whom voice activation could be useful. Someone who, for instance, with vision impairment, a, someone who had you know, mobility issues, someone who's has, you know, severe arthritis in their hands, so I don't, I think it could be potentially useful for someone, but it doesn't feel, at this time like it would be something that I need in my life. So, but I haven't typed my answers in yet. So let me see if |
| 20 |  | - |
| 21 |  | - |
| 22 |  | let me just put some words in here. |
| 23 |  | And some of these words might be contradictory a bit, but I will |
| 24 |  | Do I have to put top all right all right hold on five words. |
| 25 |  | Okay, there's five words okay. |
| 26 |  | All right, should I should I say 2.2? So I should say it out loud or just type it in. |
| 27 | Interviewer 13:06 | just say it out loud |
| 28 | PX10 13:09 | Okay, and then do I still have to type it in? Or is it enough? If I just say it out loud? You don't |
| 29 | Interviewer 13:15 | don't have to type, say it out loud |
| 30 | PX10 13:17 | Okay, so the words I said were unattractive, easy to use, helpful, clean, effective. So I, this is a funny thing where I feel like at this stage in my life, this isn't something that I need. But I could project or imagine that for some people. This could potentially be useful. I do like, I like the basic idea that you can control how how data is displayed dependent on context, it seems it seems like good decent idea to seems the concept is pretty clean. And I see how it could be helpful for some people. And effective because I think it could be effective in a certain use case. I just, I'm just sort of |
| 31 |  | - |
| 32 |  | - |
| 33 |  | - |
| 34 |  | - |
| 35 |  | - |
| 36 |  | curious to see exactly who this would be targeted for. And given at least in this use case of, of CGM data, I can already just pull out my phone and look at it. So the only real advantage there that makes sense to me is that for someone who is having in this particular use case as it's demonstrated, the only real advantage I see is for someone either with a vision impairment but then it wouldn't really work on their smartwatch because it wouldn't really It makes sense because the voice thing would be how they'd want the data because they wouldn't be able to see it on their smartwatch maybe because you can already see it on a smartwatch. The other thing would be for someone who didn't have the finger dexterity to operate a smartphone. So maybe someone with severe arthritis or something. So I, I'm not sure I understand the use case Exactly. But it feels like there is something there that that is interesting. I'm just not sure if this is the this is necessarily the right use case for it. Okay, should I go now to the next one? |
| 37 |  | - |
| 38 | Interviewer 15:49 | Yes please |
| 39 | PX10 15:51 | okay? Please consider the following statements and rate how much you agree with these statements. put an X under your choice. Okay. Smart Home protected the privacy is of its user. |
| 40 |  | I'll give it a four agree. |
| 41 |  | I did not feel that I'm in control while using the smart home. Oh, what I'd say disagree. I'll give that a to disagree. I expected the user interface adaption before it happened. Well, I'm biased on this because I, I am familiar with your work. So you know, yes, I I, and for what it said in the lead up and everything, I'll give it a five I you know, it's exactly what I expected it to do. But, you know, I have, I have priors on this. If I were the person experiencing these user interface adaptations, I would not have accepted them |
| 42 |  | to disagree. |
| 43 |  | I understood why the user interface. Yeah, I understood why it happened. That makes sense. I'll give that except for the thing. The whole sort of use case. My question is about that. But I'll give that a four. User six user interface adaption obstructed the user experience of using the smart home. |
| 44 |  | Oh, |
| 45 |  | well, it's just the issue about if you needed the voice, if the whole point was and I know that some people have done they've hacked an Alexa or not, you know, as part of a hackathon, that they would have a Alexa give their cloud data on their CGM. So the once again the point there was to have the whole thing but I'll, I'll give it to I'll disagree with that. Um, |
| 46 |  | section two. Oh, yeah. Click to pay to play the video. |
| 47 | Interviewer 17:55 | Yeah, I've got two questions on that. |
| 48 | PX10 17:57 | Yes, please. |
| 49 | Interviewer 18:00 | So it protected the privacy of its users. what do you think would be the scenario where it did not protect the privacy of its users? So in the same scenario, but like this adaptation did not happen. So what do you think? Like, so what sort of a system you rate it as one or two to the first question. |
| 50 | PX10 18:18 | I'm sorry. So which one would not have protected? Well, I mean, yeah, so if you so if someone walks in, and then the the Alexa says, Your blood sugar's 400, you know, you're doing terribly or you know, you're very low something, which out loud said what my blood glucose was to the person who walked in who I didn't want to know what my blood glucose was, then that that would not protect my privacy. So, you know, if the Alexa hadn't adapted. So once again, you know, my, my issue is that, for me personally, that I can check my blood glucose on my phone already. So why do I go through Alexa? This is sort of my catch with it, but I. But clearly, if someone I didn't want to know that I had diabetes, or that my blood sugar was not under good control, let's say my blood sugar wasn't 220 let's say my blood sugar was 450 or something. And then it reported it out loud as someone walked in that you know, that would not |
| 51 |  | So, like I probably. So if I'm, if my blood glucose is in good control, then I'm probably less sensitive about that information going out than if my blood glucose is in really bad control. So if I'm at 400, and I'm struggling to get it under control, and it's super frustrating, and I probably don't want people to know that Because it seems like I can't control myself if it's a 220 Well, you know, it's not great but it's not so horrible. But yeah if it just said it out loud you know your blood glucose is 380 I mean, God who wants to have other people hear that? |
| 52 |  | - |
| 53 |  | Okay, section two click to play the video. |
| 54 |  | Bank. |
| 55 |  | Okay description you try to access your bank account via the smart speaker when you're about to input your password another co occupant comes into the room without you knowing you would not share your bank password with anyone. Okay, true. |
| 56 |  | So basically the same idea okay. Before answering the questions below please explain out loud what you saw in the video and describe your experiences at smart home from the main users points of view, okay, so I was checking my bank account once again through a voice interface. And as soon as it detected that someone had entered the room it switched over and instead of prompting me to say my password, it asked me too. It switched over and had me do it on a phone. And then from the secondary users point of view once again, it just saw me checking my phone as, as the secondary person walked in, which is pretty innocuous, and since I checked my phone a lot anyway, they probably wouldn't notice anything. |
| 57 |  | - |
| 58 |  | Okay, does that is that enough for number one? |
| 59 |  | Okay, |
| 60 |  | uh, please type the, the top five words which best describe your experience of the Smart Home interface in the video you saw. Okay. |
| 61 |  | So |
| 62 |  | All right, once again, I'm gonna have to go with |
| 63 |  | I'm gonna have to go with contradictory ones here. |
| 64 |  | So once again, I'm back to the same issue is with before. I'm sorry 2.2. So once again, we're back to one where I could see that this could be potentially useful for someone I guess, but not for me. This might not make a lot of sense. This is probably this isn't not necessarily logical, but I would be uncomfortable just saying my PIN number out loud. I would prefer not to do that because I just always feel like it's a bit on private. Now of course, the reality is that typing it into my phone, someone could potentially be having, you know, following my keystrokes or something on my phone, but it just feels more private for me to be putting keystrokes into my phone than saying it out loud. You know, who knows who's in the hallway who could overhear it or whatever. So I I, the question I asked is, who would want to say their pin out loud into Alexa? I wouldn't. But so that's why I say it's, it's irrelevant and undesirable. But I could see that if you were, if there was a hypothetical person who wanted to use voice activation and save their pin out loud, then I think this would be a good adaption for that person. I could imagine that. But once again, it isn't me because I would be for reasons that aren't entirely logical. I would be uncomfortable saying my PIN number out loud, out of concern that just |
| 65 |  | - |
| 66 |  | - |
| 67 |  | - |
| 68 |  | - |
| 69 |  | - |
| 70 |  | if I was in an office that someone out in the hallway would hear me saying a X digit number out loud. And they'd be like, Oh, that's an interesting number wise that person just in their room saying numbers out loud. Perhaps if I was a mathematician, it would be less odd if I was someone who just randomly said numbers out loud all the time, but it just feels a little weird to me to be saying that out loud in any situation. So in that regard, once again, I am I'm a bit unsure about the application. However, if I were a person who did that, then it would be desirable for me, then I would see this adaption. If that then this would be a desirable adaptation. However, that is not me. |
| 71 |  | - |
| 72 |  | - |
| 73 |  | So please consider the following statements and rate how much you agree with these statements. put an X under your choice. smartphone protected the privacy of its user. I'm gonna have to give an agree or disagree on this, because I don't know how good the noise absorption is of the door and if someone could just hear it from outside as well. So that's that's a precondition that I'm just unsure about. |
| 74 |  | So |
| 75 |  | I didn't, I did not feel that I'm in control while using the smart home. Well, you know, once again, it's that same thing. It's It feels weird to me to say a pin number out loud, not knowing who could overhear it. I expected the user interface adaption before it happened. Well, yeah, I agree within the context of the materials I'm viewing, I'm not if if the scenario was different than maybe not, but this one within this study. It becomes quite obvious because it's consistent. It's the same thing as the first one. If I were the person number four, if I were the person experiencing these user interface adaptions, I would not have accepted them. Well, I'll disagree with that. I guess I would have, I would accept that. I'll put it to I understand why the user interface adaptions happened. Agree. I'll give that for user interface adaption obstructed the user experience abusing the smart home. I'll disagree on that. I will give it a two. |
| 76 |  | - |
| 77 | Interviewer 28:34 | So you said you would have accepted them in the fourth on so what what do you think what sort of adaptation you wouldn't have accepted? |
| 78 | PX10 28:47 | What sort of adaptation would I not have accepted? I don't know. That's very hypothetical. Um, what sort of adaptation would I not have accepted |
| 79 | Interviewer 28:57 | in a scenario? Yeah, |
| 80 | PX10 28:59 | I'm trying Think about that. So that so of course, the worst possible. I don't know why this adaptation would happen. I mean, obviously the worst would have been if it had repeated my PIN number for confirmation. If it if you know if it had said, Oh, someone walked in the room, maybe you got the number wrong. So I'm going to say it out loud again to us so they can be sure to hear your PIN number. I mean, I can't imagine why someone would do a system like that. But obviously that would be unacceptable. Um, maybe if it just canceled, maybe an adaptation where it detected someone came in and it just canceled the whole process. And if I had gone through a bunch of steps in the process, it would be annoying to go through it again. Maybe Yeah, maybe it would be maybe this would be better than it just canceling the process having detected someone has come in. I guess that would be a more annoying adaption the Especially if people come in and out a lot. |
| 81 |  | - |
| 82 | Interviewer 30:03 | So you, you had an interesting point about noise absorption of the doors Do you think if the system is able to detect, like the range of the smart speaker, to which distance it can depending on the volume so do you think like depending on that it adapts do you think, that would be something you would like |
| 83 | PX10 30:25 | oh, |
| 84 |  | yeah, I mean, the one thing is I start to get scared that the more complicated it gets, the more opportunity there is for something to go wrong. And, and it starts to feel like it starts to feel like there's a lot of rules. So, you know, when it comes to the question of how much I'm going to trust this system you know, I |
| 85 |  | I don't trust Amazon very much, even though I do buy lots of stuff from Amazon. However, I, you know, they do have my bank account information, so I trust them with that. But I do check my statements to see what they've charged me. I do trust that if they make a mistake, I'll be able to get the money back from them. I have that level of trust with them. I'm sorry, what was the question again? Oh, the question about if it could, in addition, yeah, it just feels like it's starting to get complicated. |
| 86 |  | - |
| 87 |  | - |
| 88 |  | And I, I get I guess the the big problem I'm still having is sort of the killer app here. Like, I don't know, that it's really, as I'm seeing it right now. I'm not sure that it's really solving a problem. I have Because, because I'm quite comfortable checking my balance with an app on my phone already. And that is reasonably privacy aware. Although, of course, you know, there are ways that you know, I check, I don't check my account. If I'm on public Wi Fi or something in a cafe. You know, I usually will check my account somewhere where I feel like that that feels like too risky to me somehow. Um, so, you know, I'm sort of a bit careful where I check my account. |
| 89 |  | - |
| 90 |  | - |
| 91 |  | - |
| 92 | Interviewer 32:39 | Okay, |
| 93 |  | great. Ah, cool. We can go to the next section. |
| 94 | PX10 32:46 | Section three friend, click to play the video. Okay. |
| 95 |  | Okay description you're on a video call with your friend who is a colleague of your co occupant. I'm sorry. You run a video call with your friend who is a colleague of your co occupant, then the co-occupant walks across the camera view. So wait a minute, I don't I don't quite understand this language. I'm calling a friend who is a colleague. So this is a co-occupant of the office I man and they're so their friend |
| 96 |  | and a colleague. |
| 97 |  | Okay, |
| 98 |  | so the language a little confusing, but okay. co-occupant does not like to get disturbed by colleagues when he is home at the weekend. Okay, I'm |
| 99 | Interviewer 33:58 | so what it means is that, So I'm gonna call and the person who's I'm having a callknows my co-occupant as well so that's that's it |
| 100 | PX10 34:08 | so so am I |
| 101 |  | am I am in office right or am I at home? |
| 102 | Interviewer 34:12 | Well you know your home but I mean after you know each other, but the person who's not in the call does not want, does not want to get disturbed while he's home. |
| 103 | PX10 34:25 | Okay, so he's like a room so, by co-occupant is my roommate. Yeah, either my partner, my roommate, and they walk across the camera view, but they don't want to be bothered with work stuff. Okay, I'm getting it now. Okay, |
| 104 |  | so do they. They don't want to they don't want to be known that they're there or Well, I'll watch the video and see if it gets clear. Okay, |
| 105 |  | I got it. |
| 106 |  | Okay, so |
| 107 |  | let's see. Okay, so I'm gonna guess from the main users point of view that I was. I'm a little confused here who the main users point of view, I'm going to assume that I'm the person who's in the office and that this other person.. |
| 108 | Interviewer 35:43 | I mean, you can do it in this. In this case, the main user should be the person who's having the video call so, but they're like the users in this case. |
| 109 | PX10 35:52 | Okay? So in this case, I'm you did [....] to you, okay, fine. So, I'm the I was having a call and the person who walked through wants to stay anonymous. And therefore, they got blurred when they walked through the screen. |
| 110 |  | And I saw that that the system was smart enough to blur them out as they went through. And then from the secondary users point of view, you're talking to someone, someone walks through, and they get blurred. So that now I think, in this case, if you know that person is there, and you know who they are, it's not really anonymous, because you're gonna pretty much recognize who's walking through any way you can tell from the body language and you connected, your mind already knows, probably who's there, unless it's a surprise that they're there. So this degree of blurred blurriness, I'm not sure that this actually gives on annonimity but I get the basic idea and maybe, you know, the thing that's funny is that it's sharp, and then it becomes blurry. So the very fact that it's become blurry means that it's hiding the identity of someone. So I, I'm not sure to what degree that that |
| 111 |  | - |
| 112 |  | - |
| 113 |  | that gives total anonymity but I could sort of I could imagine another scenario like let's say I'm, let's say I'm on a conference call and my girlfriend, I'm on a business call and my girlfriend walks through in her underwear but and while I'm on a business call, or one of my children is let's say my little girl is just wearing her underwear and she walks to the screen and I don't want her to become a you know, I don't want someone to see her go through, you know, I don't want to see them seeing a little girl in her underwear walking through. So, so the screen blurs her out that that might be a scenario where I could see something like this being useful for me. |
| 114 |  | - |
| 115 |  | - |
| 116 | Interviewer 38:18 | you mentioned about the level of blurness, you think like, would it be better to like fully blur out the person if that's the case? |
| 117 | PX10 38:27 | Yeah, yeah, I don't think that this, I think the person with this level of blurriness, the person could still figure out what's going on. So this would be useful. Let's say if someone was recording the call, and I don't want someone to have a screenshot of my eight year old girl in her underwear walking through, just because I feel it's inappropriate for someone to have that shot. But if I don't want someone really to know what's going on, then I would just want The background to totally blur out as that person goes through. |
| 118 |  | Okay. I'm sorry. So you just asked if a total blur out might be better. Yeah. Yeah. So yes, I think I think additional blurring to the point where |
| 119 |  | so I think it depends On the scenario, so yeah, probably more obscuring seems more attractive to me. But once again, it sort of depends on the scenario. So there are things like my little girl running through, I might just not want them, my little girl just running through in her underwear. I just don't want them to have a screenshot on that. But, you know, for the most part, I don't, you know, really care about that. But if in the scenario you've said, where they don't want someone to see them, they're that they're coming through, Well, you know, you can still see who's there. It's, it's pretty visible. Who's there. I can tell from the body language who that is. So, you know, that's, I think that's an issue. Maybe, maybe what it comes down to is there also has to be some level of app activity as to the degree of obscuring that that might be also something to consider or maybe there's that, you know, the ability to select what degree of obscuring you need. |
| 120 |  | - |
| 121 |  | - |
| 122 |  | Okay, so I'm supposed to type the answers as to as to what I see here. Let's see. Well, I guess that's relevant. I could see that it's really unconventional. It just seems to be sort of an except.., an extension of current ideas about blurring out backgrounds. Personal, you [...] see that That's actually kind of familiar. This The one thing is that it does it could be kind of |
| 123 |  | - |
| 124 |  | could be a little time consuming now just sort of getting thinking about this. It's another thing to think about. But of these this one sort of seems the one that for me, seems to be heading most to the direction of relevance. Yeah Okay, okay, please explain why you pick these ration cards. Okay, so this one seems to build more on. So you know, I use platforms that allow me to blur out the background or put in another background. So this builds on something that I do use whereas the other ones since I don't use voice interfaces myself, the other ones were just sort of outside of, Well, that's not true that I don't use voice interface, I think about, I do use Siri sometimes. So it's not true that I never use voice interfaces I do. I do at times use Siri. I use Siri if I'm walking. And then I don't want to stop if I want to take notes. If I'm thinking about something. Usually it's if I'm thinking about work ideas, and I'm on a walk to think about ideas, then I'll use Siri to take notes but in the home Don't use voice interfaces. Whereas this one seemed more relevant to things that I do actually use. And I could see that it would be nice to have a smart interface that when I'm talking, the person who walks through gets blurred, but I think I would like |
| 125 |  | the I would like them to be more blurred. And then the one thing is, I wonder whether it would seem strange but no, I yeah, I can see. I could see that this one could potentially I could actually see myself using this one. I could see myself wanting to blur out people walking through the background. I wonder whether though I would in this case, whether I just want to setting just a blur anyone out who walked through the black background, I wonder whether it would be I'm just trying to think of a content Where I wanted to blur some people and not blur out other people. I, I guess, I guess Yes, if I had, let's say I was home officing and I had, or if I was home officing and I had someone who would potentially be on that call. But then other people who wouldn't be in that call, then I could see wanting to set it so that certain people would get blurred and certain people wouldn't get blurred. So I could imagine the context or something like that could be useful. |
| 126 |  | - |
| 127 |  | - |
| 128 | Interviewer 46:33 | Okay, quick question. Imagine that the varying happens because of you, you're setting the setting but someone else for example, the person was going behind to set up the setting so that they don't want to be in the video calls. If somebody is on a video call they set up and it blurrs your call, so what do you think about that? |
| 129 | PX10 46:56 | Yeah, that that sounds reasonable. I could see why someone would just wants a setting so That they, there's some people who just don't like to, there are some people who just don't like the feeling of appearing. And if you're in a home office and you're sharing space, I could see wanting to just potentially set it. To do that I could, I could imagine the use case i, once again I'm not, it's hard for me to say if this is a must have, but my mind could imagine scenarios where this would be desirable. Right, right. Okay, |
| 130 |  | - |
| 131 |  | - |
| 132 |  | - |
| 133 |  | - |
| 134 | Interviewer 47:34 | just one question. So you said it's time consuming Is it because like, the setting that's what you meant? |
| 135 | PX10 47:39 | Yeah, it's just one thing like Oh darn, I didn't forget to do it. It's one more thing you have to remember potentially to set up and you know, I set it up to blur you know, if I'm setting it not if the other person saying if the other person setting fine then it's no, but but how about like, With my kids like, I, I didn't want it to blur when my daughter was talking, walking through and I'm talking to a family member, but I do want it to blur if my daughter comes through when I'm when I'm on work, and then I just, it's just one more thing I have to think about and then, you know, it's just one more thing I potentially have to think about. |
| 136 | Interviewer 48:26 | Yes. Okay, |
| 137 |  | you can go to the next... |
| 138 | PX10 48:33 | Do you want me to fall fillo in I'm sorry to fill in these please consider the following statements. |
| 139 |  | One smart home protected the privacy of its user. |
| 140 |  | Agreed, but not necessarily enough. I'll give it a four though. Um, but I think Yeah, probably needs to be blurred more. I did not feel that I'm in control while using this. Well, I'll just agreement that I will give it two, I expected the user interface adaptation before it happened. Yeah, this one was maybe I'll give it a give it a three. Not Not sure about that one. If I were the person experiencing these user interfaces options, I would not have accepted them. I don't know I would disagree with that. I understood why the user interface adaptions happened. Yeah, I'll agree with that four, user interface adaption obstructed the user experience of using the smart home. Oh, well disagree. |
| 141 |  | - |
| 142 |  | - |
| 143 |  | Okay, Section four football. |
| 144 |  | All right, watch this video. For |
| 145 |  | Football World Cup. Okay. Studying in football. |
| 146 |  | Okay, you try to check the sports news via the smart speaker when the co-occupant is studying. The co-occupant does not like to get disturbed while he is studying. He would like to use a smartphone where you can't use a smart speaker. |
| 147 |  | Okay. |
| 148 |  | Okay from the main users point of view. So I was being inconsiderate of the person reading, which I was, I just wasn't really thinking. And the system reminded me that I was being inconsiderate of the other person's preferences, and then it switched over. And so I could see that sometimes [..] just isn't thinking and, you know, I could see there is a little bit of an issue around a computer system telling you these things, but I can see the, I can see the point here, and from the secondary person's point of view. The person was talking out loud while I was trying to studying but at least it was over quickly and then they moved out of doing that. So it was slightly disturbing that they that they didn't recognize that I was trying to focus on however, it stopped them from the Stop the chitchat quickly and and got rid of it. So it was less obtrusive than it would have been had I then had to listen to, you know, 46 football scores, which would have been super annoying since, first of all, I don't care about football at all. And second of all, it would just be annoying to hear that. So, um, |
| 149 |  | - |
| 150 |  | - |
| 151 |  | so let's see, uh |
| 152 |  | oh, it's easy to use. |
| 153 |  | It's, uh, |
| 154 |  | let's see, it could be a little patronizing. Now. |
| 155 |  | It could be a |
| 156 |  | advanced though. |
| 157 |  | I guess it could be helpful. Okay, please [..] explain those things. Okay, so working with people in an office can. Sometimes noise can be super annoying. And I can definitely think of cases where people will I was listening to my music too loud on my headphones. And we had just too many people working in an office and people. Someone complained, I was I don't know playing like, I don't know Metallica or something and someone can play it or Melvin's I don't know and someone can claim that my music was too loud on my headphones. So I, you know, I can think of instances where noise is disturbing. And on one hand, the system reminding me of social conventions, I could see how this could be good. But it could also be patronizing. It's, I would have to use it for a while and see whether it felt patronizing or not. And I guess that'd be pretty context dependent. |
| 158 |  | - |
| 159 |  | - |
| 160 |  | That being said, there are certainly times where I could imagine that it would be nice to have from the other point of view, where someone starts talking and having the system telling them to shut up and they do that could be nice. And sometimes I think about, like my son, who pretty much only listens to mumble rap these days. And sometimes I'm just not in the mood to be listening to mumble rap and the system reminding him to put on his damn headphones because I'm working and I don't want to hear his mumble rap that that could be I, I sort of wouldn't mind at the system reminding him that I'm there. And I'm trying to focus and I don't want to be hearing his music at that moment. So I, I could see, I could see how this could be useful. I could see the value of this. And and yeah, that would be advanced that certainly advanced over existing and it could be collaborative, because, you know, if we're sharing a space, and he likes to listen to his music while he works, and I don't want to listen to his music, while it works, I could see how that could help our collaboration. And it's also collaborative that in that the system is working within the individual in the context. So yeah, that could be helpful. |
| 161 |  | - |
| 162 |  | - |
| 163 |  | - |
| 164 |  | - |
| 165 |  | Okay, please consider the following statements and rate how much you agree with the statements. Smart Home protected the privacy of its user |
| 166 |  | Yeah, I'll strongly agree with that one. Sure. |
| 167 |  | I did not feel that I am in control while using the smart home. Um |
| 168 |  | Yeah, I'm, I'm gonna say, don't agree or, well, I did not feel that I'm in control. Well, to a certain degree, I maybe I don't feel at my control. Maybe I agree with that, because maybe I wanted to hear that thing out loud. I if I didn't want to hear it out loud, I would have just typed it into my phone. I wouldn't have asked Alexa. So it's like, no, I actually I wanted to hear it out loud. So you are I've sort of I am ceding control to the system. I expected the user interface adaption before it happened. Now, I didn't really know what to expect on that one. That was all all disagree a bit on that one. If I were the person experiencing these user interface adaptions I would not have accepted them. I'll disagree with that. I guess I would accept that. |
| 169 |  | - |
| 170 |  | - |
| 171 |  | I understood why the user interface adaption |
| 172 |  | Yeah, I'll give that a strongly agree understand that user interface adaption obstructed the user experience of using the smart home. I I'll disagree without give it to I disagree. I don't think it did it, but maybe a little bit because maybe I just wanted that voice thing. And it said, No, don't do it. You're disturbing the other person. And maybe I'm just like, No, I don't care. I wanted voice so. Yeah. |
| 173 |  | - |
| 174 | Interviewer 57:32 | All right. Do you think like, if the system gave you a choice to play, like, interact with a smart speaker anyways, do you think like, that would be appealing to you? |
| 175 | PX10 57:45 | Yeah. I mean, it would give me more choice. Um, that's for sure if it if it said do you want to do this? Um, yeah, you know, it gave me a little more option. If you put on a phone you know, It's.., the one concern, is it just more control than I want? Is it too much given the scenario? But you know, yeah, that would give me a little more control. Sure. All right. Great. |
| 176 | Interviewer 58:13 | Yeah, so. So these are all the scenarios, you can move to the summary questions which you can sort of over all.. |
| 177 | PX10 58:22 | right. Okay. So, overall, how do you feel about adaptive user interfaces being used in protecting the privacy of smart home users? So I feel like, I feel like there's potential here. I feel like the scenarios managed to communicate the idea, but I'm not sure that they really address real problems quite I feel |
| 178 |  | - |
| 179 |  | like I feel to a certain extent like this. A lot of the Smart Home stuff is sort of gimmicky right now and not really essential for me personally. So I I don't know that this has addressed real world problems that I personally have very much. However, it does feel like an idea, which, which I think I think there is space for this kind of stuff. And I think having smart adaptive systems could be very useful. However, I just don't know whether that technology is integrated enough into my life, that I feel the need for it yet. But I think it's it's so there's a lot of hypotheticals there. But I could see that, that adaptive systems as these things become more adapted into my life could be useful and could improve user experience a lot of hypothetical so |
| 180 |  | - |
| 181 |  | - |
| 182 |  | - |
| 183 |  | did any of these scenarios resonate with your daily activities? If the answer is yes, could you please elaborate? The only one that really resonated for me was the noise. One. And you know the issue around someone playing music or making noise while I'm trying to study that that, for me, was the only one that really resonates with me because sometimes when I'm working at home I, I home office most of the time, and I've come to really value my privacy, especially if I'm writing or trying to work out something cognitively demanding. And if my kids here at the same time, having a system telling them to be quiet, sounds kind of attractive. I don't know how much they'd like it. But having the system tell them use your headphones someone's trying to study in this room, I kind of that seems kind of appealing to me. So that's slightly different from the one from the scenario you had, but but quite related to that one. So today, these scenarios inspire you to think of other scenarios. New daily activities. Well, yeah, I just said one. And I think having seen this, I think my mind will be working thinking about it. That's the only one that jumps to mind right now. But I'm sure that given time having seen these, I think I would start thinking about potential and it kind of makes me think, a little bit of trying to have some kind of easy to use. What's that called? If then that or whatever that's called? Something like that, where I'd be able to program in my own behaviours. Once again, it'd be a question of how much work it is, but I could see the appeal of that COVID-19 locked down and working from home made to spend more time sharing our home with co-occupants, that's for sure. Has the current situation created a privacy violating scenarios that could have been avoided by adaptive user interfaces? Um, |
| 184 |  | - |
| 185 |  | - |
| 186 |  | so I don't |
| 187 |  | I don't Usually, |
| 188 |  | so so far. Oh, I know one. |
| 189 |  | Okay, I have one that comes to mind. So it was super hot here in Berlin. And I was on a meeting. And I was actually not wearing shorts. I was just in my underwear and I was in a conference call. And then I had my camera set up. So you could only see me from the head down, you couldn't see that I was sitting there my underwear. And it was, you know, it was like super hot. And then at one point, my [..], my bell rang, and I had to run and I was like, and I realized, as I ran up that visits that someone could see that I was in the meeting in my underwear, and that was, you know, it wasn't a it was with people who I'm pretty familiar with. And I don't think it was a big deal, but it was a little bit embarrassing. And I guess uhm, I guess if the system and I felt a little weird like Okay, first I'm going to switch off but I mean, there was someone at the door and I had to run and get it it was, you know, Amazon delivery or whatever. So I think a setting where just would have blurred it out the moment I started standing up. I think that actually would have been a I think having a real blur out the moment I stood up would have actually been kind of nice. So that's a scenario I can imagine. That's not a co-occupants one though, that that's another so co-occupants. Yeah, I mean, the thing about kids running through while you're having business meetings, so I've had kids here a lot. Most of the business meetings I have had, like, lots of people have kids at home, there's nothing particularly embarrassing about having kids at home. So um, you know, that's not really an issue, I guess. I guess they're potentially I mean, Guess for certain people, maybe having a, you know, a boyfriend or girlfriend there in the background could be potentially a little bit strange. If they're working there I could I haven't had that experience myself. But I could sort of hypothetically imagine something like that. But that being said, I know some people are really insecure about having their little kids run through while they're in business meetings. I because I've heard people really apologize about it before. Whereas when I hear that I'm just like, whatever, you know, kids, kids are cool. I don't understand the big deal, but I've heard people profusely apologize when their kids have run through the video, so I can imagine that for some people. having their kids blur out would be something that would be perhaps a desirable for them. |
| 190 |  | - |
| 191 |  | - |
| 192 | Interviewer 1:04:52 | Yeah. Okay. |
| 193 |  | So that's it for this video. Maybe |
| 194 |  | we can wrap up. |
| 195 | PX10 1:05:04 | Okay, sounds good. And if I come up with any ideas, so like I say, I think the just as a wrap up, I think there's something to the idea. I think the scenarios aren't necessary weren't necessarily relevant to my own needs many of the scenarios and I guess I feel like they could potentially. I feel like there's a kernel of interesting idea, but it could be taken further, but I'm not maybe it's maybe it's just an idea that still is very early because this smart home stuff is still sort of in its infancy in a way. But I can see potential there and I do think it's worth considering this kind of stuff. |
| 196 |  | - |
| 197 | Interviewer 1:05:47 | All right. Okay. Yeah, I'm gonna stop recording. |

## PX11

|  |  |  |
| --- | --- | --- |
| Index | Tag | Transcription |
| 1 | Interviewer 0:14 | So, thank you very much for joining my study. Before we start, let me give you a brief introduction to the study. The purpose is to answer the research question, how do users perceive the usability and privacy preserving capabilities of user interface adaptations in a smart home? Let me unpack that a bit. So in this study, you will be shown four videos demonstrating Smart Home scenarios with possible risks of privacy violations, and smart home use interfaces could adapt their behaviour in order to avoid those avoid or minimize those privacy risks. So this study focuses on two types of violations. The first type leads to information disclosures. The second type relates to disturbances or excitement, so Which is caused by smart devices like auditory disturbances or like visual disturbances, etc. The two videos I've sent earlier were examples of those two variations. Does that make sense up to now? |
| 2 | PX11 1:15 | Yeah, right. |
| 3 | Interviewer 1:17 | The videos you see next are recorded from first person point of view. This is because I would like you to imagine that you are experiencing this scenario yourself. After each video, you will be given a questionnaire to answer. It's important to answer these questions as if you have experienced the scenario yourself. And I will ask some summary questions as well. I will be recording this conversation the recording will be deleted as soon as I've transcribe the session, the transcriptions will be kept securely until I have completed my analysis. And any information extracted from them will be anonymized before being used in any publications. Now, if that's all right with you, we can get started. |
| 4 | PX11 1:57 | Yep. |
| 5 | Interviewer 1:58 | So first move The section one, there is a video to watch and then you can proceed with the questions. |
| 6 | PX11 2:23 | Where is the Ah sorry, I was looking at the |
| 7 |  | consent form. |
| 8 |  | Right So, section one should I play the video now? |
| 9 | Interviewer 2:37 | Yes |
| 10 | PX11 3:29 | Should I |
| 11 |  | go on with the questions? |
| 12 | Interviewer 3:34 | Yep, the first question. |
| 13 | PX11 3:37 | So, what I saw in the video is two people having a conversation online and someone walked in the room and opened a safe box and the at the moment that the person was going to get the pin in the key pad and the box were blurred and that remained until the box was closed again, |
| 14 |  | without any disruption to the to the conversation. |
| 15 | Interviewer 4:18 | Why do you think about the other two users point of view, which is from the end of the call and the person who's operating the same? |
| 16 | PX11 4:27 | Yeah. So from the point of view of the the main user would be the person so in this case, it would be the person in the room. Okay, so yeah, it's great because it doesn't disrupt the the the conversation, it just, and you might be a little bit confusing at the beginning, why part of the image is being blurred but then you realize what was happening so it's better than just turning your gaze away or covering your face.   And I guess from the secondary user's point of view is reassuring. He would, they would have to trust that the system is reliable in every single time. And I guess that blurring is done automatically, I think there would have to be some confidence that that it will always be the case that that scenario is blurred. |
| 17 |  | - |
| 18 |  | - |
| 19 | Interviewer 5:33 | Okay, go to the next question. |
| 20 | PX11 5:35 | Yeah. |
| 21 |  | So, here I |
| 22 |  | would be the person in the call, right? |
| 23 | Interviewer 5:51 | Yes. Yeah. |
| 24 | PX11 5:53 | convenient. |
| 25 |  | easy to use. I got to choose it right. But do you want me to write it down? |
| 26 | Interviewer 6:08 | Yeah |
| 27 | PX11 7:13 | 123 Yeah, that's it. |
| 28 | Interviewer 7:15 | Great. You can go to the next |
| 29 | PX11 7:17 | and in writing or out loud, |
| 30 | Interviewer 7:24 | Speak out, yeah. |
| 31 | PX11 7:25 | And so convenient because it doesn't. It happens automatically. So and it doesn't require that the people having the conversation are aware of the of the context. So this system does it for them, easy to use because there's nothing to do. It's just a feature for professionals because it provides, especially in sensitive context, it provides reassurance that things are being done well and the context it's been protected, |
| 32 |  | - |
| 33 |  | straightforward similar to easy to use, it's it's very evidence self explanatory. It doesn't have to be an introduction, a tutorial or anything and decidable because it's the kind of thing that you want in a tool like that. |
| 34 | Interviewer 8:21 | In the fourth question you answered that, you would accept these adaptations. So what do you think would be a scenario that you wouldn't have accepted like? |
| 35 | PX11 9:31 | Sorry? |
| 36 | Interviewer 9:33 | During the fourth question, you rate it as one. So what sort of adaptation |
| 37 |  | that that you wouldn't have accepted like what would be |
| 38 | PX11 9:45 | so I just agree with no accepting it so i would i would have accepted it you Oh, you mean a case in which I wouldn't have accepted it? Well, I guess if it blurred the face of the person that I'm talking to |
| 39 |  | It would be a bit depends on the situation as well I guess it would be useful if you if you're interviewing a witness for instance and need to be protected or a minor in a like so cameras where chambers where they interview witnesses that can not lose identity cannot be a case of sex abuse of minors for instance, they need to preserve the image of the of the of the person that could be quite useful because then the system automatically would hide their face. So in a case like that, I I would accept it, but if I was talking to someone, and they had this feature where their face got blurred, I wouldn't accept it. |
| 40 |  | - |
| 41 |  | - |
| 42 | Interviewer 10:47 | You have legal |
| 43 | PX11 10:49 | sorry. |
| 44 | Interviewer 10:50 | Do you have a background in law, legal? |
| 45 | PX11 10:53 | No, I'm just, I just I watch a lot of Netflix. |
| 46 |  | I am a computational linguists okay. |
| 47 | Interviewer 11:04 | Okay, just one more question on that. So, so, the last one. So, you said it did not obstruct the user experience what sort of an adaptation, what sort of system that you would have obstructed user experience, it is like the alternate question. |
| 48 | PX11 11:20 | Well if, if I was talking to someone and they had to be aware of the background and then turn around or activate something or put a blurr manually on the screen or something like that, that would be quite obstructive. Because he would get in the way of the, of the conversation, which is the primary purpose of, of the tool. So here the system sort of like automatically took care of the of the situation. |
| 49 | Interviewer 11:51 | Yes, you can go to the next section. |
| 50 | PX11 13:04 | Right. So, there was an interaction with a smart speaker about accessing the bank account and the system detected that someone else was in the room. So instead of asking for the the safety feature, using voice, it switch to using the mobile phone instead for privacy and it explained, which is good from the secondery user's point of view, nothing. I mean, they walked in the person in the room was doing something with the speaker and things carried carried on as usual, so, I don't think they would have been aware of anything specific happening. |
| 51 |  | - |
| 52 | Interviewer 13:47 | Next question. |
| 53 | PX11 13:59 | Are you... because It would be interesting if the system identify people walking in without they speaking or anything. He said , it mentioned [the co-occupant] that would be quiet |
| 54 |  | Innovative because the the smart home system can identify the scenario and act accordingly, essential because it's a matter of preserving access to the service without disruption but also not forcing the user to expose secret information. Professional because it is providing a professional service and taking care of the of the user, effective because it works and useful because it's very handy to use, I should say that I don't think it's a good idea in any case, to have systems that requests you to voice your passwords, because you never know I mean you could have very thin walls or the system, humans often have a difficulty telling if they're being overheard. So I remember once in in the office I called the bank and they asked me to spell out my my password and I was one of the most awkward situations ever, because I thought I was alone but I didn't know if someone was in the vicinity or anything and and I realized that in the I don't know 20 years that I had been using that password I had never ever uttered it so it was a I was the guy in the in the on the phone is like why are you making me say can I just send you an email? It's really I feel like it when you have to say out loud those secrets. They live in your head. |
| 55 |  | - |
| 56 |  | - |
| 57 |  | - |
| 58 |  | - |
| 59 |  | Right? I did that. So I'm going to be a little bit more nuanced here happen. Yeah, this is a tricky one because I wouldn't have accepted the premise. Which means that then the feature becomes. So basically in my case, I would have had that feature activated the whole time, rather than, than having an option to speak my password out loud. But let's see. It's tricky because if that's the case, it means that then I would accept it. Okay, go with it. All right. |
| 60 | Interviewer 18:15 | First question why you sort of picked four there? |
| 61 | PX11 18:22 | Because the system is protecting, it is it's just not entirely clear. That, it would work every single time. Right? That's why I wasn't I, that's why I gave it four rather than five. |
| 62 | Interviewer 18:40 | So you sort of the fourth one as well. So went to a five and then a one like, what's your reasoning behind this? |
| 63 | PX11 18:50 | No, that was a confusion with the scale. |
| 64 |  | A, I was in between, strongly disagree. So basically strongly accepting them or not as strongly accepting them but but definitely accept them. And especially because I, that's a feature I would have activated all the time. So I would request that if I am talking to Alexa about my bank account or anything that involves pins or passwords or memorable information be done by typing rather than then speaking. |
| 65 | Interviewer 19:32 | Any other things that you wish that the scenario had, before we move to the next on like any comments on this? |
| 66 | PX11 19:42 | Yeah, I'm always, because here, so I like Alexa, the voice agent is being used to access the service but then everything carries on in the phone. So if [the co-occupant] hadn't come in, does that mean the whole process would have been using voice would you get the balance and all that? spoken out loud? By? By Alexa? |
| 67 | Interviewer 20:08 | Yes. So the scenario would have been like, it might not be like a full sort of a set of information because through Why is it very hard to like give all the information so it would be like a miniature version of information which is suitable for Alexa. Maybe like the first 10 transactions or maybe your balance, just the balance. |
| 68 | PX11 20:27 | Yeah, like, like, what happens if you call you call them on the phone, you know, that they tend to do when they hear your balance and things? Yeah, no, I think I think the scenario is fine. Once once the system has detected to someone else's in the room, it's it's fine to move on. Well, I guess it could have. The reason why I asked if there is a variable in mode is because maybe you could do just debate about the secret and then offer a way in which it can go move back on the voice right rather than staying on the on the screen because maybe [the co-occupant] came in and then left and then you will you would want to things go back to using voice or you don't have to do it via your phone so that if anything to the to the interface, I would add the option to override it and say okay, now it's safe. I don't know it's it's my wife and I just the she can know the bank account, pin number or something like that. That's |
| 69 |  | - |
| 70 | Interviewer 21:33 | we can go to the next section. |
| 71 | PX11 22:30 | Right so the person wants to see photos on a TV and the system realize that someone was there who doesn't like to be disturbed while studying so the system suggested doing things on the on the phone instead from the secondary user point of view. I guess it is a little bit of disruption because something happens for a bit in the TV and then all moves away to the to the phone. I guess I'm going to use this one because I think it could be potentially quite annoying. |
| 72 |  | - |
| 73 |  | Okay so entertaining because it's it keeps you engaged with what you were trying to do so watching looking at the photos and knowing because I'm I'm thinking the scenario which you don't have your phone on you and then you have to get up and going get the phone so the change of medium in that way might be a bit tricky and it's different than the case of the bank where if you know that it's fine that your [..] that you made to go get your phone because it's about this this the security of your money. So in this case, as it's something a little bit more lighter as about entertainment, free time then if you may, if it gets in the way of you enjoying yourself it could it could get a complicated, personal because it's not as opposed to professional so it's something more about about the person and kind of customization I guess it's gonna be a little bit more relevant here then in personal settings, so |
| 74 |  | - |
| 75 |  | - |
| 76 |  | rigid. I chose it because I wasn't that pleased that in the question didn't happen on the TV, right? So it switched to the medium. So if I don't have my [..] my phone on, all I would do is I go to the TV, I tried to do something and then the TV goes black and they I don't get any messages unless I go get my phone to know what's going on. And that could be confusing. So one option would be that nothing happens on the TV so it doesn't disrupt the [the co-occupant] and I know Okay, so the TV's not responding. So this is happening elsewhere. But I thought that the the change was a little bit not not not not ideal and I chose familiar because it's still keeping in is around technologies that we were familiar with that we that we use normally and there is a consistency between the way we would use it on the TV and on the on the phone. No, it's not about privacy. Yeah. I can't remember if there was an option to carry on in the TV or carry on on the phone. or was just a message, |
| 77 |  | - |
| 78 | Interviewer 27:55 | I suppose. Just to carry on with the |
| 79 | PX11 27:59 | phone. no option to go back there is there. And yes, I did expect it. And I would not have accepted them yet. Well, I would maybe yes. Yes, this is Yeah. obstruct. It's obstructive. Yeah. |
| 80 |  | Yeah. So, because and same same thing. So I might, I might, I will may find it annoying and intrusive and I would prefer not to go with it. But if I know that it's going to be extremely upsetting for the person is in the room then I might I might be a bit more flexible and uncompromised. Alright, so imagine that is something a little bit more critical than then studying is I don't know, working from home and they're in a meeting or something like that, then I would be prepared to be disrupted in that way where I had to go and look up for my phone. So because I know that the situation demands that, that that that that that's the case. So already, instead of photos were videos with sound, I would understand much better why absolutely no video with sound could be play out loud because it would be disruptive for the environment. That's why I went I went down to four |
| 81 |  | - |
| 82 |  | - |
| 83 | Interviewer 29:47 | first question, you pick one, is it because it's not violating any kind of security privacy? Yeah, |
| 84 | PX11 29:54 | exactly. So this is about preferences is not about privacy. It's about and actually Protecting the secondary user in this case so it's more about the the household I guess the smart home would have profiles with preference for each one of the of the members of the household. And then it would make decisions to in the in the first two cases was about privacy but in this case is about well being is about the preference of another member of the household. No, no about privacy. |
| 85 | Interviewer 30:33 | Okay. Any other comments in regard to this? |
| 86 | PX11 30:39 | Ah, |
| 87 |  | I'm Argentina we lost to Brazil. I'm not happy about it. |
| 88 | Interviewer 31:46 | It was randomly generated. |
| 89 | PX11 31:50 | Right So, yeah then the primary user asked for sports information to Alexa and Alexa, knowing that someone else who didn't want to get disturbed was in the room, switch to phone instead and then provided the information on the phone and for the secondary user point of view. I guess there is the prompt from the user. The system can't do anything about and then just a being that's all they really get |
| 90 | Interviewer 32:25 | the next question |
| 91 | PX11 33:21 | So this is similar to the case of the photos in the sense that it's about entertainment, but it's different because if Alexa would have responded, that's much more intrusive than showing photos on a on a TV right. So, in this case, you can see how there is more of a, of a need, that the system intervenes and move things silently or On to the phone. So it's convenient because because it happens automatically it's personal again as opposed to professional because this is about something for casual rather than a service. I kept the rigid there because it still there is no offer to override the intervention of the system.  thinking especially I don't know, if [the co-occupant] was making coffee in that moment, instead of studying then you might want to say, Oh, no, no, you can go ahead or something like that. So just provide an option. And it's useful and desirable, because I think it's helpful. It's good. It's a good feature to have |
| 92 |  | - |
| 93 |  | - |
| 94 |  | - |
| 95 |  | - |
| 96 | Interviewer 34:57 | the next step Yeah. |
| 97 | PX11 35:00 | Same as before. |
| 98 |  | I'll keep it the same as before. |
| 99 |  | Let's see. Yeah. |
| 100 |  | No for consistency. I'll put it a three there. |
| 101 |  | No, that one. |
| 102 |  | Okay. |
| 103 | Interviewer 35:55 | Question questions on that. |
| 104 |  | So could you explain your answer for the Second one. Yeah, I think you did with the term rigid. So make sense. |
| 105 | PX11 36:06 | So yeah, but basically, I feel I see the need for that, to be in that in that way. But there will still be good to have a little more control on on on the ultimate happening of the intervention. |
| 106 | Interviewer 36:26 | So, in the fourth one, you rate it as two, is there a reason instead of one. |
| 107 | PX11 36:33 | Um, yeah, same same reasoning. So I'm still not entirely so I see why it has to be there. But I would, I would like to be able to override it to accept it. So I would compromise but I would also be, it would be good to, to have a little bit more of a say. |
| 108 |  | - |
| 109 | Interviewer 37:02 | ah so what sort of adaptation that you wouldn't have like like for the fourth question for the scenario |
| 110 |  | of you would not have accepted |
| 111 | PX11 37:17 | what kind of intervention? Yeah You mean |
| 112 | Interviewer 37:20 | yeah like adaptation |
| 113 | PX11 37:30 | and I'm not sure what what would be the options so i mean i guess no service at all would be unacceptable and if if I like to just remain mute and did nothing because mom is in the room and mum doesn't want any sounds so she just completely, Alexa completely disregards my command that would be another station that that would be be very confusing as well, because you don't know if it's that she didn't get you or or. Yeah, that's very frustrating. So that that kind of like, no no service service whatsoever. That wouldn't be acceptable. |
| 114 | Interviewer 38:18 | Any other comments on how to improve this before we finish? |
| 115 | PX11 38:22 | No, no, just perhaps |
| 116 |  | allow for overriding |
| 117 |  | the decision of the system. Great. |
| 118 | Interviewer 38:32 | So yes, that's the end of the four scenarios. So there are four questions. You mayb speak out your answers. |
| 119 | PX11 38:45 | So I think it's a good idea. They, they will be very handy. But the, as I said at the beginning, the mantle of trust, you would you would have because happening here is the users are going to delegate the protection of of privacy on two systems. And that means that then you need to make sure for both primary and secondary users that they always work well so that every single time someone comes in is going to use the safe that the system is going to pick up this the situation and adapt reliably. So that's that's one issue. I'm, I love smart homes, I think they're awesome. So the more sophisticated they get, the better for me. But as things start getting, so I get annoyed at Alexa sometimes because she doesn't understand what I'm saying. And I'm just asking for her to play radio. So imagine if I was if that happened when I was having her manage some heavy machinery or My money that would be very, very complicated. So yeah, it is a matter of reliability and trust on on this |
| 120 |  | - |
| 121 |  | - |
| 122 |  | - |
| 123 |  | scenario is resonating. Let me remember them. So not I guess I guess I live alone. But I think you'd have colleagues. I guess the one about [..] annoying me the one about the TV and switching to something less disruptive to the secondary user is something I would I would like to see so I don't |
| 124 |  | know if you think someone's going to go go watch TV and you know that you know that they know that you're around it would be good if the system at least suggested that they were mindful of the other people in their in the in the house. |
| 125 |  | So those are the ones about taking care of the of the people in the household resonated. But the one about the bank as well, but the problem is a data I wouldn't use Alexa to access my bank account. |
| 126 |  | I'm sure. Oh, just that was Alexa. I have a Alexa everywhere. So every time I say the word they will activate. |
| 127 |  | Did any of this scenario inspire you to think? Hmm. I think I mentioned a few. During the during the conversation. I can't think of anything else right now. I did mention a couple of similar situations. Where, instead of the secondary user studying, perhaps doing something a little bit more critical, like having a work meeting or recording a video for presenting? |
| 128 |  | Yeah, so it's a good question number four, and I think the answer is yes, definitely. We've heard about those stories of people having their partners or children crashing to work. remote work scenarios is some nudity being exposed or the children saying something that would be inappropriate under normal circumstances getting into work enviornment, so definitely, if you had zoom for instance, being able to recognize those situation to automatically blur the background, mute the sound, if they if they realize that someone was been included that shouldn't have been then they could have automatically prevented those situations detect that something quite simple like if you detect any background movement, when it's a person just speaking in front of the of the camera, then there's clearly something undesirable, and then it could be automatically blurred. So definitely, this kind of adaptive interfaces would be really useful. That's in terms of, of privacy as much as I can think. Yeah, I guess so. Even without involving other people might sometimes you show your house basically by working from home and opening the camera. So sometimes you might not realize that you have something in the background that you shouldn't be showing And then if the if the system the house could detect that and and adapt accordingly that could be quite useful. |
| 129 |  | - |
| 130 | Interviewer 44:11 | So that's the end of the study. I'll stop recording |

## PX12

|  |  |  |
| --- | --- | --- |
| Index | Tag | Transcription |
| 1 | Interviewer 0:23 | So thank you very much for joining my study. Before we start, let me give you a brief introduction to the study. The purpose of this study is to answer the research question, how do users perceive the usability and privacy preserving capabilities of user interface adaptations of a smart home, Let me unpack that a bit. In this study, you'll be shown four videos demonstrating Smart Home scenarios with possible risks of privacy violations validations. Smart home user interfaces could adapt their behaviour in order To avoid or minimize those privacy's so this study focuses on two types of price variations. The first type is to information disclosures. The second type relates to disturbances, or excitements caused by smartphone devices via, auditory or visual, or whatever means. So the two videos I've sent earlier were examples of those two variations. Does that make sense? Now, |
| 2 | PX12 1:31 | could you give some example of the second type of disturbance. |
| 3 | Interviewer 1:35 | So the second type could be like, for example, somebody sort of play loud music, or somebody watches something disturbing on a TV and it disturbs us because we don't want to get distracted. It could be like even a Roomba like like the robot will sort of start working and you don't want that to physically disturb your like auditory. So those kinds of violation which is not about Information Privacy, which is about more about the physical, like how you feel about and you don't want to get it disturbed your peace of mind per se because of these devices. That's the other aspect of talking about Yeah, exactly. The videos you'll see next are recorded from first person point of view. This is because I would like you to imagine that you're experiencing the scenario yourself as much as possible. After each video you will be given a question to answer. It's important to answer these questions as if you are experiencing yourself. So, in the end, I will ask you a few summary questions to wrap up the study. And I will be recording this conversation the recording will be deleted as soon as I passed out the session, the transcriptions will be kept security until I have completed my analysis and any information extracted from them and be anonymized before being used in any publications. If that's all right. We can get started. first let's go to the section one has a video to watch first watch the video and there are some questions. Okay. |
| 4 | PX12 3:12 | So you're saying there should be a link? Yeah. To play the video |
| 5 |  | can I stop the video. |
| 6 |  | Okay, |
| 7 | Interviewer 4:10 | so the first question you can go just below the link, there's a question which is to explain out loud your experience. Please read the question and explain your experience. |
| 8 | PX12 4:25 | So there is this person that I should think about as myself these asking Alexa to verify his own glucose level. And while Alexa generates the answer that gets posted to the, to the watch, some other person enters. So I understand the person doesn't hear the question, and he doesn't read the answer because the answer gets posted to the watch. |
| 9 | Interviewer 5:04 | you can move to the next question. |
| 10 | PX12 6:17 | You're reading what I am writing okay. |
| 11 | Interviewer 6:24 | So the next question is, I think you picked five .so the next question is to explain why you picked those reaction cards. |
| 12 | PX12 6:35 | I think it is better to have your own data. |
| 13 |  | So, you have to be careful that no one else is in the room. When you ask the question. However, you receive the answer quite, you know, in a very targeted way. So it is only for yourself, basically asking information about yourself. |
| 14 |  | Do I have to write this? |
| 15 | Interviewer 7:09 | No, no, you just have to speak out. Especially |
| 16 |  | Yeah. So so. So why did you pick the words like creating and sort of efficient? |
| 17 | PX12 7:23 | Yes. Okay. So |
| 18 |  | I think it is innovative because it's innovative, I mean there is no service like that so far. I think it is relevant for the reason that you know, the Internet of Things is made for this type of applications. It is creative. For the reason that you require some creativity to generate the message and send it to your watch and display as well. is effective because that is the purpose that That is meant to achieve it is efficient for the reason that I could see it was very fast. So I think is efficient. |
| 19 |  | - |
| 20 | Interviewer 8:11 | We can go to the next question |
| 21 | PX12 8:52 | number three, what do you mean? expected the user interface adaptation, what what do you mean adaptation in this context? |
| 22 | Interviewer 9:01 | Instead of like speaking out directly to the smart speaker the answer it switched to the smartwatch. So to that is the adaptation, switching from smart speaker to smartwatch. |
| 23 | PX12 9:15 | Alright, okay okay |
| 24 | Interviewer 9:58 | yeah couple of questions like in the first question, you said, rated did three like the smartphone protected the privacy of its user? Could you explain a bit more like why you pick? |
| 25 | PX12 10:10 | Yeah, so if it is a smart home, I would expect, you know, the system will know that there was some some other person there was going to open the door. So they would have waited a few seconds and posted possibly a message saying, there is some other person that is going to enter the room, do you want that I send the message, something like that. |
| 26 | Interviewer 10:35 | Okay. |
| 27 |  | So, in the fourth question, you said like yes, you would have accepted, but not strongly but you would have accepted these adaptations. So what do you think would be a scenario that you wouldn't have accepted? Some change some adaptation of the user interface.. |
| 28 | PX12 10:55 | Yeah, so if it was, say aloud, the glucose level I was not gonna accept it, but that wouldn't be a change, right? |
| 29 | Interviewer 11:03 | Yeah, I mean, to. Yeah, so what are the things that you think are not |
| 30 | PX12 11:09 | Yeah. |
| 31 |  | So okay. So if it was projecting glucose level on the wall, I would say that would not be some acceptable answer. |
| 32 | Interviewer 11:21 | Great. So in the last question, you said like it did not obstruct the user experience. So what do you think would be a scenario that would have obstructed user experience? |
| 33 | PX12 11:34 | Yeah, so as I say this, it would have said aloud the glucose level I think it would be unacceptable. user experience would be terrible. |
| 34 | Interviewer 11:44 | So you rated it as two, so is that something that you think can be improved so that you would rate it as one, what are things that you would expect to have? |
| 35 | PX12 11:59 | I did not understand the question, let me see, user interface application obstructed user experience of using the smart home. |
| 36 |  | I think is wrong. So |
| 37 |  | yeah, so Oh, yeah, |
| 38 |  | I thought so. So it could have asked that, the system could have asked, do you want the answer or not? So, yeah. So are you asking me if there is something that would have made me just strongly disagree? Yeah. |
| 39 |  | Yes. So if |
| 40 |  | if you would |
| 41 |  | say that aloud, then it would have obstructed that completely, my user, my experience of using the smart home, I will say in that case, I would have thought that this smart home would be useless. So yeah. So making the answer public to the other person would have made me very uncomfortable. |
| 42 |  | - |
| 43 | Interviewer 13:09 | Let's move to the next section. |
| 44 | PX12 13:13 | Section two so watch the video. |
| 45 |  | So who is the main user the person who's speaking or the person at the |
| 46 |  | at the |
| 47 |  | safe |
| 48 | Interviewer 14:33 | the person who was speaking |
| 49 | PX12 14:37 | yeah so a person is having a video call with some other person and a third person enters the room and they the the the pin of safe so it opens the safe and it looks like the system obscure the pin operation the secondary user point of view is this one. So I typed the pin on the safe and the system prevents other people from seeing the pin. Why did I pick those reaction |
| 50 | PX12 16:38 | so I think the idea is good. However, the the method is not very effective because if you know what the keys on the on the safe, you could actually understand what the beat is. If you have access to the video, you can slow it down and see more or less what key is pressing That means basically you will notice that they've been after some attempts basically. That's why I chose these words. |
| 51 |  | - |
| 52 | Interviewer 17:11 | flur blur like blurring out the entier section, without, like a semi blur |
| 53 | PX12 17:23 | Yeah, I think there should be a black box black complete black. Yes. |
| 54 | Interviewer 17:33 | Could you explain why you picked the word unrefined? |
| 55 | PX12 17:37 | because I think |
| 56 |  | the blurring was not an off basically. Yeah. |
| 57 | Interviewer 17:42 | Okay |
| 58 |  | awesome. Let's go to the next section |
| 59 |  | So the last question |
| 60 | PX12 18:53 | because I think the idea is good however |
| 61 |  | the implementation is a is not. |
| 62 | Interviewer 19:04 | Okay. Any other comments before we move to the next section? |
| 63 | PX12 19:08 | Oh no, I think that's it. |
| 64 | Interviewer 19:12 | We can go the next section. |
| 65 | PX12 20:17 | So the person wants to watch the photos of his holidays. And the system tells him that the other person would wouldn't like to watch the photos on the TV because he will get distracted. And so the system allows him to watch the photos on their smartphone. That's my understanding of this and I. So if I was the other person, I will be very happy You know, this happen. However, I'm not sure if I will be very happy of the ping the system generated |
| 66 |  | - |
| 67 | Interviewer 20:59 | now we can go the next section |
| 68 | PX12 22:09 | So I chose these words we don't want other people distracted watching video or watching photos or. And so you know, I think this technology will greatly help people stay concentrated. I'm a person that gets distracted if there is a video on the computer. So if we if we do something, I try not to have images that change or move on my computer, otherwise I will start looking at that. So I know there are people that are not this way, don't get distracted at all, but I get distracted. So for me this technology is a good technology. |
| 69 |  | - |
| 70 |  | - |
| 71 | Interviewer 23:29 | I put this example because I have this problem as well. So that's that's one of the problems I had. |
| 72 | PX12 23:38 | may I ask question? |
| 73 | Interviewer 23:39 | Yeah please. |
| 74 | PX12 23:41 | So I, may seem, but I mean, these are hypothetical scenarios. So you didn't actually |
| 75 |  | write the software that does this right. |
| 76 | Interviewer 23:54 | Apart from the video, like the one |
| 77 |  | One with the skype call, everything else is developed. So |
| 78 | PX12 24:08 | except, I did not hear what you implemented. |
| 79 | Interviewer 24:11 | I didn't. |
| 80 |  | implement the the Skype one, the Skype scenario. It's hypothetical but rest of is developed, but the context changes are invoked like they are mocked, like for example, like for location tracking, for people identification, those things are mocked for the adaptation and the context, the adaptation, the information, all these different interfaces are being developed and [...] from my software |
| 81 | PX12 24:40 | where do you get all the sensors? |
| 82 | Interviewer 24:43 | So, in my sort of studies I mocked in For example, I send okay this this person coming in so I can sort of like change the context. But for location tracking, like if you are going for a real implementation, you can use like mobile or even Face Recognition or even like a wearbale devices to track the people so that that's that's how it's done. |
| 83 | PX12 25:09 | All right. Thank you. |
| 84 | Interviewer 25:11 | we can go to the next set of questions |
| 85 |  | yes. |
| 86 |  | So you said in the fourth question that you strongly disagree, so what sort of adaptation that you would not have accepted? |
| 87 | PX12 26:19 | So if the phone |
| 88 |  | asking me, do you want to watch the phone, on the phone? That would would distract that person as well. So I wouldn't have accepted. |
| 89 | Interviewer 26:37 | The second question was about the control. You said like, |
| 90 |  | that you're not in control |
| 91 | PX12 26:45 | I do not feel.. sorry. That was a mistake. Because I do feel I'm in control. |
| 92 |  | So my fault |
| 93 | Interviewer 26:58 | Oh, |
| 94 |  | The last question. |
| 95 | PX12 27:17 | Yeah. So remember that I told you about the Bing right. So that that's something you know, that could potentially distract the person. I don't know, possibly this could be configurable or something like that. Ask Alexa to tell the results of a Foot ball match and the system Instead suggested use their mobile phone and send the results the mobile phone I'm thinking about so So I think this is very useful however, it is a bit I think inconsistent for the reason that you ask Alexa Something for the reason that you see that Alexa is working. So you speak out to Alexa. So if Alexa knows that the other person doesn't like that the other people speaks at all or wants to hear something. Alexa shouldn't accept, you know, verbal commands so it should be switched off. That's, that's my interpretation. That's why I chose this, these. These words, I mean, I think is useful. However, I think it would be more useful. It is more useful if the Alexa would not have the light at all. So you wouldn't speak to Alexa |
| 96 |  | - |
| 97 |  | - |
| 98 | Interviewer 32:06 | Yes. Is there a way to think where Alexa to let the other person know that it is not accepting commands because like, the other other thing. |
| 99 | PX12 32:16 | Yes. |
| 100 |  | So you see that Alexa as these blue light on, and it rotates. It could either change the color of the light or or |
| 101 |  | turn the light off basically, you could do one of the two actions |
| 102 | Interviewer 33:26 | Okay, |
| 103 |  | so |
| 104 |  | So, in the sixth question, what do you think would be like a system that you rated as five I think it obstructed user experience. |
| 105 | PX12 33:52 | So if you had to interact with Alexa all the time speaking well that's that's terrible. |
| 106 | Interviewer 34:03 | Any other comments before we finish? I |
| 107 | PX12 34:06 | I don't think I have other comments |
| 108 | Interviewer 34:08 | so that all the sections are finished. So we've got all four general questions, you can read them and speak out your answers. |
| 109 | PX12 34:44 | Yes. So to be honest, and now I've thought about these problems and they think you know, the problem is very interesting. So for instance, I have the problem that I leave my kitchen you see these fantastic kitchen right? Every, every day I have a phone call. I show my kitchen to everyone. I try to, you know, that zoom allows you to to blur the background but not for my computer. I need that green background background that I don't have. So, you know, I think this type of technologies are very useful. |
| 110 |  | - |
| 111 |  | - |
| 112 |  | - |
| 113 |  | And so yeah, so I think is useful also in general. For instance, after a certain time, you don't want to generate too much noise in your flat for instance, and if the system tells you look, you're generating too much noise and other people who could complain that is helpful I think, at the moment there is nothing like that basiccally. So it is a needed research that you are doing. Thank you very much. |
| 114 |  | - |
| 115 |  | - |
| 116 | Interviewer 36:15 | Did you read the second and third questions as well? |
| 117 | PX12 36:18 | Yes. Yeah. So as I say these scenarios is? I don't know. Yeah, possibly if you do something I have this problem right. Sometimes I have to type some password on my computer. Right. And I am I am never sure if somebody is looking at the window and he's going to have a look at my password, so I think it is similar to the [test?] you look there is somebody nearby. The proximity. Don't type the password or obscure the pass, the password. that that that that is useful. Yeah. So there are plenty of other things like the space here. So for instance having a smart home that could obscure the the glass you know that these glasses that can can obscure it. I mean, if you do something that or you type a pin of a safe, things like that, I mean that that that is useful if it is possible. |
| 118 |  | - |
| 119 | Interviewer 37:36 | How about the last question? |
| 120 | PX12 37:43 | No, I don't so. |
| 121 | Interviewer 37:48 | Ah, |
| 122 |  | yeah, so, that's the end of the study stuff. |

## PX13

|  |  |  |
| --- | --- | --- |
| Index | Tag | Transcription |
| 1 | Interviewer 0:06 | So I'll get started to thank you very much for joining my study. Before we start, let me give you a brief introduction to the study. The purpose of this study is to answer the research question, how do you use percieve the usability and privacy preserving capabilities of user interface adaptations in a smart home, so let me unpack that a bit. In the study, you'd be shown four videos demonstrating Smart Home scenarios with possible risks of privacy violations. So the smart home using phrases such as Alexas, the smart TVs could adapt their behaviour in order to avoid or minimize those privacy risks. So the study focus on two types of privacy violations The first type relates to information disclosures, and the second type of relates to disturbances caused by smart home devices. So when I mean privacy, it could be either the information disclosure privacy, or it could be privacy related to disturbances caused by whether its audio or visual disturbances by a smart home device. the two videos I've sent earlier, are examples of those two variations. Does that make sense up to now? Yeah, okay, cool. The videos you'll see next are recorded from a first person point of view. This is because I would like you to imagine that you're experiencing the scenario yourself. after each video, you will be given a questionnaire to answer. It's important to answer this question as if you have experienced the scenario yourself. |
| 2 |  | Yeah, yeah, just go through the videos as you would experience themselves. And the question is, when you answer a question, assume that you are the person that who experienced. |
| 3 | PX13 1:56 | Okay, okay, okay. Okay. |
| 4 | Interviewer 1:58 | So, and There'll be some questions down the line. I'll guide you through that as well, too. And in order to review my answers, I'll be recording the conversation. The recording will be deleted as soon as I've transcribe the sessions and the transcription will be kept securely, until I've completed my analysis and my information extracted from them will be anonymized before being used in any publications. If that's alright with you, we can get started with the study. Absolutely. All right. Great. You can move to the section one where you can click. |
| 5 | PX13 2:34 | I can click to play the video. Okay. Yeah. I don't know it's going to work with everything on |
| 6 |  | Okay. It's open the.. health information privacy. |
| 7 |  | I need to see to take a look again. |
| 8 | Interviewer 3:24 | Yeah |
| 9 |  | that's fine |
| 10 |  | you can pause and everything that's fine |
| 11 | PX13 3:39 | okay. |
| 12 | Interviewer 3:43 | Is it clear? |
| 13 | PX13 3:44 | Yes, I think yes. |
| 14 | Interviewer 3:45 | Great. Okay |
| 15 |  | can come back to the main document where you have the question |
| 16 | PX13 3:54 | ok so |
| 17 |  | the main user was |
| 18 |  | trying to, I need to scroll down sorry, |
| 19 |  | somehow is not |
| 20 | PX13 4:09 | what the main user is trying to check the level of glucose using Alexa. He's in a sort of work environment where people could come in into the room at any time. And the preferences are first to give the answers to the device second to show it in the in the watch. Yeah. And so what's happening is that second, a second user is coming in, the second user is like, would listen that something going on that something came through the through the through the watch, let's say |
| 21 | Interviewer 5:03 | Okay. |
| 22 |  | So that's good. We can move to the questionnaire which is the next one, 2.1. So there's a list of words that you can pick from to describe the experience. So pick five from that |
| 23 | PX13 5:23 | I could say helpful, |
| 24 |  | easy to use |
| 25 | Interviewer 5:37 | So the next one is to explain why you pick those reaction cards, your choices. . |
| 26 | PX13 6:29 | Oh, should be fun. I mean, I find it helpful, easy to use, it's just checking something just telling the device that you want to check something and and then you're getting the response on your on your watch. And it's you getting the the answer on your watch. So you're the one who is able to see that and it's, it's friendly is easy to understand. So to just get the answer you need to get And somehow in a private way, I would say what I would add is that I normally have my watch on silent. So I wouldn't like to ping. That's the only thing |
| 27 |  | - |
| 28 | Interviewer 7:13 | that's interesting. |
| 29 | PX13 7:16 | Then someone is outside, something is noticing what you're doing. So that's why that's why I normally would use it in silent and specially then even work. |
| 30 | Interviewer 7:30 | That's great. Um, so, you can go to the next set of questions, Why did you pick the word personal? |
| 31 | PX13 7:44 | Oh, |
| 32 |  | because it's |
| 33 |  | like, you the device and it's you. |
| 34 | Interviewer 7:53 | Okay. |
| 35 |  | Makes sense. Thank you. |
| 36 |  | So Go to the next set of questions. |
| 37 | PX13 8:03 | Smart Home protecting the privacy of its users. |
| 38 |  | Is that one? |
| 39 |  | I don't agree or disagree. |
| 40 |  | I can tell you why or should I or? |
| 41 | Interviewer 8:18 | Yeah, please do. |
| 42 | PX13 8:20 | Oh, because I'm not sure. I don't know. I don't I mean, I think that that smart homes that they they they collect serial number. |
| 43 |  | - |
| 44 | Interviewer 8:32 | Yeah, sorry. This is really this is related this specific scenario. So not in general. Okay. For this specific scenario, |
| 45 | PX13 8:40 | I would say it's a two. It's Sorry, it's a four. |
| 46 | Interviewer 8:43 | Okay. Yeah. So |
| 47 |  | yeah. Could |
| 48 |  | you put the answer there? |
| 49 | PX13 8:54 | I mean, oh, I can put it of course. |
| 50 | Interviewer 8:56 | Yeah. Cool to just a question on the two what think would be the same, give the same context. And some are probably the scenario, you would rate it as one like, what is the system that you've rate it as one. |
| 51 | PX13 9:12 | that strongly disagree? You mean? Yeah, yes. Um, it would be if |
| 52 |  | it would read it aloud, for example. |
| 53 | Interviewer 9:22 | Okay. |
| 54 |  | Great. You can move to the next question and like, |
| 55 | PX13 9:28 | I did not feel that I'm in control while using the smart home. |
| 56 |  | I would say it's a two. I mean, I disagree because, yeah, because I think that's a I was like the, I think it the, this ping was something that would avoid prevent me putting a one. |
| 57 | Interviewer 9:52 | Okay. All right. Good feedback. |
| 58 | PX13 10:01 | Before |
| 59 |  | I don't understand that |
| 60 |  | I understand number three. |
| 61 | Interviewer 10:13 | Yeah, so it's basically so you've watched the two videos before right? So you have some understanding how the PASH-framework works. And with that knowledge Do you think like, in this context, you would expect the, you were not surprised by that adaptation? Like how surprised you are because |
| 62 | PX13 10:29 | Ah, okay, okay, okay. |
| 63 |  | No, I didn't expect it to happen. |
| 64 |  | No, so It would be a one |
| 65 |  | if you were the person experience |
| 66 |  | I would not have accepted them. No I disagree i would have accepted them I found them good. |
| 67 |  | I understood why the user interface adaptation happened. |
| 68 |  | I guess Yes. To some extent. |
| 69 |  | I will put a four |
| 70 |  | the the face. No, absolutely. |
| 71 | Interviewer 11:38 | So, apart from the thing about the ping noise, Is there anything else that you want to add to this scenario that could be improved ? |
| 72 | PX13 11:50 | Not really no. |
| 73 | Interviewer 11:52 | Okay. So great. |
| 74 |  | We can move to the next question. |
| 75 | PX13 11:58 | Play the video? |
| 76 | Interviewer 12:01 | Yeah, |
| 77 | PX13 12:50 | So |
| 78 |  | well I saw in the video that this subject wanted to to open the cupboard and it didn't work. Because the friend was in the vicinity,. And secondary users point of view [...], maybe the friend would have seen that something happened but nothing happened. |
| 79 |  | - |
| 80 | Interviewer 13:15 | All right. |
| 81 |  | so can move to the next question. |
| 82 | PX13 13:20 | So, five words I need to see how I can [write] overwhelming why I'm saying that? Yeah, I mean, I find it from a technological point of view that you open your cupboard with a gesture and your device is telling you that someone is close, or in the vicinity and so he doesn't do it. But I mean, I'm maybe I'm too old but I am not sure if one [of] my devices to know that someone is in the vicinity. |
| 83 | Interviewer 15:11 | Okay. |
| 84 | PX13 15:14 | Yeah, so it's all so that |
| 85 | Interviewer 15:18 | is that |
| 86 |  | your perception about like that the smart home is sensing too much to know that someone around you is that kind of thinking. |
| 87 | PX13 15:27 | Yeah excatly. |
| 88 | Interviewer 15:30 | So just think about like, yeah, that's a really interesting point. If you leave that aside, like just focusing on the interaction itself, like what happened, like the specific case like to what do you think about the interaction like, to I think you've given a few other words to explain. |
| 89 | PX13 15:51 | I mean, the interaction was was great. That's why is it for me it's, I mean, it's the whole interaction was good But for me, it was like too much. |
| 90 | Interviewer 16:04 | Yeah, like the word overwhelmed. Like resonate. It's the same meaning, right? |
| 91 | PX13 16:10 | Yeah. Yeah, like too much. |
| 92 | Interviewer 16:13 | Yeah. |
| 93 |  | So why did you pick? word, the word powerful like? |
| 94 | PX13 16:20 | Because it's I mean, it's there is a lot like, like opening a cupboard with a gesture.. action in that with your voice. I mean, also telling a hearing or having the indication that someone is in the vicinity. So it's a lot going on. |
| 95 | Interviewer 16:40 | Okay. All right. |
| 96 | PX13 16:41 | That's why it's, for me, it's powerful. Okay, |
| 97 | Interviewer 16:45 | great. You can move to the next set of questions. |
| 98 | PX13 16:49 | Yeah, protected the privacy privacy.. So, I mean, it's, it's, for me, it's difficult to answer this question. I would, I would put it in the middle. But I explained you why. From one side, I think that I don't want device to know so much about who is around me what's going on. I mean, it's too much. That's why I would say, I'm feeling uncomfortable with this. On the other side, it protected the privacy because it asked, or it told the user that someone was in the vicinity. So it's like I would need to go to strongly disagree and strongly agree, both. I don't know how you want me to mark this, if I can mark it two times. I mean, it's a bit crazy, but maybe I can do that this way. I mean, I don't know how you prefer |
| 99 |  | - |
| 100 | Interviewer 17:44 | could you explain it more as I think I understood the fact the fact about the Smart Home sensing too much. I think that that's |
| 101 | PX13 17:53 | that's why I would say strongly disagree. On the other side, the functionality itself was trained to protect the user's privacy. from someone seeing inside what what's in the cupboard? |
| 102 | Interviewer 18:07 | Yeah. |
| 103 |  | So, I mean to I think you can answer [..] like sort of like summarizes that in a wa, so that and I can use, what you told here to to analyze that information. So I think |
| 104 | PX13 18:22 | it's okay for you like this or I put it I don't |
| 105 |  | know. |
| 106 | Interviewer 18:26 | I think three would be better so I think |
| 107 | PX13 18:31 | okay. Yeah. Okay. So the next one, I did not feel I am in control. We're using this smart home. I would say it's a four because as I said, is too much. Yeah. I expected to use it. No I didn't expect it to happen. Probably I would not have accepted Yes, I think I understood why. I don't think it obstructed the user experience not really, |
| 108 |  | - |
| 109 | Interviewer 19:48 | really interesting feedback. So I would like to understand it a bit more. So what things like in the scenario that you do better as a, given that you have this secret, you have this cupboard which is locked. And can you only open by gestures? And if there's someone coming in like this, what would be like your point of view being the better solution? |
| 110 | PX13 20:12 | Oh, probably locked the door. |
| 111 |  | Or I don't know, or maybe I would need to understand how the interface works in terms of |
| 112 | Interviewer 20:34 | Yeah. |
| 113 | PX13 20:42 | To some extent, to have more information about what's what's really the device is able to capture. So because the functionality itself is good, I mean, it's not that it's bad, but just to know for example, okay, it's getting the information from, I don't know, a light that's activated with a sensor with someone is there something like that I need to know to understand what, because it's it's like sort of it's too much. It's a source of not being confident of what's of what what the application can do.   Maybe knowing more about where the information is coming from, what's exactly been recorded, or what's exactly been considered what's happened with that information, so maybe it's some sort of transparency. |
| 114 |  | - |
| 115 | Interviewer 21:46 | Yeah, I totally agree with you. I think the right, having the right kind of mental model of the smart home privacy is important to have like this acceptance would be really cool. By the way. you can move to the next scenario. |
| 116 | PX13 22:05 | meditation Okay, so I think I have similar [issue?].  So the user wants to listen to music, asked Alexa to put on music and Alexa rejects that possibility because she's saying, okay, you need to choose another kind of device because your friend is meditating. And the secondary user, the friend would somehow listen that the user is talking to Alexa and a couple of bits, pips and Whatever |
| 117 | Interviewer 24:03 | you can move to the next |
| 118 | PX13 24:07 | So, um, I mean, it's again, the same, the same issue, why, because, I mean, if,  for example, if I would know that the second person is controlling that he doesn't want to be disturbed. It would be okay if it's an active, but if it's a passive thing because it's checking on his smartphone that he's meditating. I don't know if I'm so so comfortable with that. |
| 119 |  | - |
| 120 | Interviewer 24:47 | Is that from the second point of view or the main users point of view, |
| 121 | PX13 24:51 | even if the main users pain point of view. That's why I put I would say overwhelming Yeah, again. I mean, in a technological sense, it's it's it's good.   I mean, it's a it's a it's somehow irrelevant. Because if you're in the same room and you would, if you are, if your music is going to disturb the person, then you probably are in the same room. So it's, it's like you may not need that  say high quality. I mean, I'm having difficulties to... unconventional, Yeah.  Yeah, I mean,, I'm not so sure if I can deal with... |
| 122 |  | - |
| 123 |  | - |
| 124 |  | - |
| 125 | Interviewer 26:27 | No worries, so. Could you explain how you pick these cards? |
| 126 | PX13 26:31 | Yeah, I mean, it's err. I mean, I don't think it's useful. That's why irrelevant. It sounds it seems to be of high quality well then  it's unconventional. It's organized. I mean, even if I don't find it relevant, I mean, it's it looks like well done or somehow also professional. Again, not knowing where the information is coming from. overwhelming. |
| 127 |  | - |
| 128 |  | - |
| 129 |  | - |
| 130 | Interviewer 27:04 | Okay. I think it's very interesting point like comparing with the second one as well, too. Yeah, that's good. erm good. You can move to the next question. |
| 131 | PX13 27:23 | More or less? Not sure. |
| 132 | Interviewer 27:27 | Could you explain a bit like why you picked three |
| 133 | PX13 27:31 | err because of where the information was coming from? And I mean, I am supposed to know that the other one is meditating. It's not maybe, it's not my business. |
| 134 | Interviewer 27:43 | So imagine a situation where the person is not in the same room, but in the next room, but the audio is like, there's the possibility that the audio can like, |
| 135 | PX13 27:52 | Well, in that case, I would, I may be something more useful would be I don't know the user setting, Do not Do Not Disturb switch voluntarily. And the other one knowing he doesn't want to be disturbed. Okay? Something like for example, he's starting to meditate using the using an app, for example.  So the app may say, Okay, do you want to ensure you're not being disturbed? And then you send like, Do Not Disturb information from the from the application. That's, that's helping you to meditate, let's say. And in that case, I think it would be a way to be on control and say the other person doesn't need to know that he's meditating. Maybe he needs to know that he doesn't need to disturb that. But not what he is doing |
| 136 |  | - |
| 137 | Interviewer 28:51 | that interesting. Like, there should be enough information to like, like, stop |
| 138 |  | like, avoid getting disturbed at the same time, |
| 139 |  | like not, revealing too much information. |
| 140 | PX13 29:05 | Exactly. Exactly. |
| 141 | Interviewer 29:07 | Yeah. Okay. |
| 142 | PX13 29:13 | And I would say in the middle, I didn't feel that I'm control because as I said, it's like too much information. And and also it depends, too. I want to get that information or, I mean, sorry, maybe, maybe No, that is wrong. I'm changing it. Because what I like I will be more positive. Because what I like is that the application is telling you which device we want to use. Okay, to reproduce the music, and that's, that's, that's, for me. It's a good thing. |
| 143 |  | - |
| 144 |  | No, I didn't expect that in the user interface. |
| 145 |  | I would say in the middle or not so, yeah. |
| 146 |  | I understood why the user interface happened. Yes, I understood it. And it didn't obstruct the user experience. Because the user had the opportunity to choose. |
| 147 | Interviewer 30:40 | Yeah. Sorry. So in the same question like the last one. So what do you think would be a system that you, would be that obstructed the user experience of using the system |
| 148 |  | in the same context? |
| 149 | PX13 30:55 | What do you mean how would it look like to make it different or? |
| 150 | Interviewer 30:59 | Yeah, so So the last question like what would be the system that you would rate it as one, but do you agree that obstructing the user experience? |
| 151 | PX13 31:08 | Oh, and in that case, it would be if it switched automatically without asking. Or it doesn't play and doesn't say anything. Just it doesn't work and you don't know why. , |
| 152 |  | - |
| 153 | Interviewer 31:24 | great. |
| 154 |  | You can go next section. . |
| 155 | PX13 32:15 | People |
| 156 |  | need to come back again, Because it was too big for me to read. |
| 157 |  | So |
| 158 |  | okay, okay. Okay, now I got it. Yeah. |
| 159 |  | So what happened is that the main user is having a video conference with, with someone who is a colleague of his, He's He's in his roommate or whatever and the roommate appears through the screen as as blurred so that the other person doesn't, cannot see who is who is the other one. On the secondary users point of view is that person doesn't want to be seen doesn't want to be disturbed from from someone from work |
| 160 |  | during the weekends. |
| 161 | Interviewer 33:33 | Okay, you can pick the five words. |
| 162 | PX13 33:39 | you're the person who's experiencing the system so, okay. |
| 163 |  | Who's the one experience is the one having the chat? |
| 164 | Interviewer 33:48 | It's mean |
| 165 |  | in the video that's the person who's having the video call |
| 166 | PX13 33:54 | the person who was having, yeah So, I try to explain. I mean, it depends in which context you are if you are in a I think if you are in a in a private context you're talking to your friend and then some Something blurd is appearing behind you. It's like strange. So it's you're in like in a difficult situation in terms that. Yeah. Who is the person behind you? And what's going on? And it's like, because you are talking to a friend. It could be something maybe useful in a professional environment. And that's why I put in like a question mark. Like, for example, I'm usually I mean, in work situations, normally I'm visiting my daughter, and she's seen on a video call and I'm, like, go in always behind her. And, yeah, sometimes it's like, Okay, I'm saying hello to her work colleagues., hello, this is my mom. But I mean, it doesn't need to happen this way. And I think if you're in a professional environment, where you're having, you're working from home, for example, and it could be like a sort of feature that you may have that that every time in a company environment that everybody has the background background somehow blurred or the people who are going through a blurred, so you don't need to explain that. It's it's the setting, it's a policy it's a way it works. Okay, so that would be so that would be a way to organize it. |
| 167 |  | - |
| 168 |  | - |
| 169 |  | - |
| 170 |  | If you are on a private environment, it's it's somehow difficult. I would say. I don't know how to say that. Maybe in personnel. That's the fifth one. Because it's it's like you are like cutting the relationship to the person you are. You're talking to on the screen. Say you're putting a boundary. Yeah. So you don't you don't you don't need to see who's behind me. You don't need to see who is it at home, we're just having a conversation. It's our conversation, I wouldn't do that to a friend. But in a, in a professional environment, it would be a very welcome characteristic [....] |
| 171 |  | - |
| 172 |  | - |
| 173 | Interviewer 37:27 | That's really interesting, too. What do you think like from the second person's point of view was going behind and if you're in a call, and if that person doesn't want to get disturbed by the call, for example, if somebody didn't call, like, ask you to like, sort of come and join the call, which you don't want. I mean, I'm explaining the context, the scenario itself. So if that's the case, from that person's point of view, what do you think because that person did not take the call and that the main user of this using, taking the call to, what do you think about that? |
| 174 | PX13 37:58 | Well, in that case, it It's like, first of all, if the other one knows him, and he knows that he's living there, and he's appearing blurred on the screen. It's like, it's worse than saying, hello I am busy now I'm leaving or, or whatever I mean, it's it's completely absolutely impolite. So because the other one, it's not so blurred that they will know who is that person. I mean, it's like obvious that person doesn't want to talk to me. It's terrible. |
| 175 |  | - |
| 176 |  | - |
| 177 | Interviewer 38:34 | It's really interesting. So that to that point brings me like, do you think like, yeah, so for then like, it would be bad for the main user to get their background blurred, I agree with that. So but in in a like a case where the second user is really don't want to get disturbed or anything like fully blurring where [...] that person can't infer who that is, like, that'd be something you'd like, or is it? Still, that's too much? |
| 178 | PX13 39:06 | I think it's too much. I think that that I wouldn't do it in the case. So I don't see the point of the second user. Because the second user can step in say hello and disappear on Hello I am busy or, or whatever. And, I mean, there are other ways. That's I mean, in that case, it would be, I think, better to say, okay, the whole environment is blurred, or the whole background is blurred, and you don't even see if someone is coming in. Yeah. But in this setting, that they are two friends talking and the other one, it's like, it's it's wrong. It's where |
| 179 | Interviewer 39:54 | do you picked four? Could you pick one, because you picked twice? |
| 180 | PX13 40:00 | Oh, sorry. |
| 181 |  | Oh, presented twice is bad. |
| 182 |  | Okay, so I would, I will use |
| 183 |  | okay. So in the in the way it is in that setting it's it's I think it's not good in other setting. Yes. Okay. |
| 184 | Interviewer 40:31 | So you can move to the next set of questions |
| 185 | PX13 40:34 | protected the privacy of the user. Yeah. Did |
| 186 |  | it did I did not feel that I am in control using the smart home. No, really. |
| 187 |  | I expected the adaptation the before it happens. No, I didn't expect it. |
| 188 |  | I would not have accepted them |
| 189 |  | I understood why it happened, Yes. |
| 190 |  | And it didn't obstruct the user experience not really |
| 191 | Interviewer 41:39 | great |
| 192 |  | on two I think cuz you explained a lot in the reaction cards, I don't have to ask questions on that. So yeah, those are the four scenarios you can go to the summary questions which is, you can like, to speak out you answer |
| 193 | PX13 41:59 | how do you feel about adaptive user interfaces being used in protecting the privacy of smart home users. |
| 194 |  | I mean, I |
| 195 |  | I find it interesting. |
| 196 |  | I would like to have more disclosure in terms of to understand how it works and to understand which kind. So I would like to have a sort of interactivity in terms of in terms of being able to select, I don't want to be disturbed by that, I want to disclose, to be able to select which kind of information I want to disclose and which not. So the privacy in relation to, to the to the smart home devices as well. |
| 197 |  | - |
| 198 | Interviewer 42:46 | Okay. |
| 199 | PX13 42:56 | In case of this, indeed, any of these scenarios resonated with your daily activities? If the answer is where is yes, would you please elaborate? I think the first one is maybe more related in terms of being in a work environment where you may want to know something private, and you don't want that to be disclosed. So in general because it, it is not only because you want to be, it's not only because of the privacy thing, it's also because of not looking unprofessional. |
| 200 |  | - |
| 201 |  | The third one Do you have any of these scenarios inspire you to think of other scenarios in your daily activities? I'm thinking so the first one was with a with a health thing the other one was opening the cupboard. The other one was with a friend. |
| 202 | Interviewer 44:09 | Yeah, the fourth is one is with the friend so, in general, where you sort of share devices, especially smart speaker or smart TVs, or any other type of devices that you would have, that the usage of that affects multiple people. So that's like the basic.. and then.. |
| 203 | PX13 44:26 | well, yeah. I mean, so So in, in general in that there is a like a sort of sometimes a lot of transparency of the others what the others are doing. For example, in this moment, my TV's on and my, my husband is able to see what I'm watching on TV. I mean, I don't care, but should that be |
| 204 | Interviewer 44:58 | it depends on the relationship. Do you have different people for example? |
| 205 |  | Like, you might not want your kids to know, like, whatever is something I'm watching. So, |
| 206 | PX13 45:09 | yeah, I mean, well, that's, you know, that probably the probably is a sort of mindset on it. It's depends on my background. Yeah. Because, because probably I mean, I mean, I have grown out children grown up children and, and, you know, I like I was really never, never controlling was what they were watching. What we did is we did things together. So it was not restriction on what they would watch it was the thing okay, how we do it together, we how I give them my opinion about what they're watching. And so that's even even for the children. I mean, I, I would like to control I mean to control the possibility of not seeing [...], not displaying. In that sense, I think that that would be the then more and more related to privacy. |
| 207 |  | - |
| 208 |  | lockdown and working from home made spend more time sharing our homes with your occupants. Yes. has the current situation created any privacy violating scenarios or, I mean we had the problem at home. That's why we're we're both working with my husband, if we were to, although we were in two different levels, he was working from the basement and I was working from the ground floor and closing doors. We would have some interferences with a when when we were having phone calls or chats or whatever, but I think it cannot be avoided. I'm Because it was a matter of being too loud. Okay, and we were not in a know. |
| 209 |  | And we were not able to control, but something we were not able to control sometimes because they were scheduled meetings. So I wouldn't tell him Okay, just don't call because he needed to call at that time while I was talking. I mean, it was, but what would be interesting is sometimes sometimes it happens that he may be working from the basement, and I just call him aloud. And he's on the phone, and I don't know that he's on the phone. Okay. And that's so in that case, maybe could be in scenario that that like to let you know, okay, the other one is on the phone or it's sort of Do Not Disturb thing. Yeah. |
| 210 |  | - |
| 211 |  | I mean, I don't know because it's on one side it's an interface to it to the device because he may be on the computer on his computer or it may be on his smartphone. But the thing is on the other side, I'm like, shouting out. I mean, so but maybe a sort of sign, [..] sort of light on a room or or something like that, that would be telling me Just don't be so loud or |
| 212 | Interviewer 48:38 | Yeah, I think the that's interesting. So the smart devices smarter, good, like, keep you aware, like impossible, like whatever the task that you're doing, affects other people's communications. |
| 213 |  | Yeah, I think |
| 214 |  | those are the all the questions to got any other comments I think I'm happy to know |
| 215 | PX13 49:14 | I |
| 216 |  | mean that was quite interesting and and the videos were really nice and very proper professional. |
| 217 | Interviewer 49:21 | Thank you. |
| 218 |  | So, yeah to be I changed my sort of. So the study is finished on stop recording |

## PX14

|  |  |  |
| --- | --- | --- |
| Index | Tag | Transcription |
| 1 | Interviewer 0:05 | double checking. Awesome, so I'll get straight to the study. So thank you very much for joining my study. Before we start, let me give you a brief introduction to the study. And the purpose of this study is to answer the research question how do users perceive the usability and privacy preserving capabilities of user interface adaptations in a smart home? Let me unpack that a bit. In the study, you would be shown four videos demonstrating Smart Home scenarios with possible risks of privacy violations. Smart Home user interfaces could adapt their behaviour in order to avoid or minimize those privacy risks. This study focuses on two types of privacy violations. The first type relates to information disclosures. The second type relates to disturbances caused by smart home devices, like audio or visual disturbances could be either. the two videos I've sent earlier were example of two examples of those two variations. Does that make sense up to now? |
| 2 | PX14 1:08 | Absolutely. Have to mention that I've experienced it in person. |
| 3 | Interviewer 1:13 | Videos you will see next are recorded from a first person point of view. This is because I would like you to imagine that you are experiencing the scenario yourself. After each video, you will be given a questionnaire to answer. it's important to answer these questions as if you have experienced the scenario yourself. In the end, I will ask you a few summary questions to wrap up the study. So and also, I will be recording this conversation, the recordings will be deleted as soon as I have transcribed the session, the transcription will be kept securely until I have completed my analysis and any information is extracted from them will be anonymized before being used in any publications. If that's allrigh with you, I can start this study. |
| 4 | PX14 1:55 | totally okay with me. |
| 5 | Interviewer 1:56 | Awesome. |
| 6 |  | Great. So you can move to section one. So there's a video to watch first, and then there are questions after that first, watch the video. |
| 7 | PX14 2:06 | All right, I have to figure out how to move to section one here. Here we go. Netflix click to play the video. |
| 8 |  | All right. Let's see. |
| 9 |  | All right. |
| 10 |  | Wait, it went by a little quick for me to read it. |
| 11 |  | rewind it and stop. Okay. |
| 12 |  | Okay. Watched the first one. Okay. |
| 13 | Interviewer 3:14 | The question is, I mean, you can read it. |
| 14 | PX14 3:17 | Yes. So what I saw in the in the presentation is he was browsing through cartoons. And just before somebody walked in the door, it covered that up kind of providing a kind of a privacy screen for what he was, he was actually looking at. |
| 15 | Interviewer 3:40 | What do you think from the second user's point of view |
| 16 | PX14 3:46 | so the other person wouldn't have known what was going on at all. Which, which I suspect could be what the goal was here. You know, they came in and it looked perfectly normal to them. Cool. |
| 17 | Interviewer 4:03 | Yeah, you can go to the next question where you have to pick five words. |
| 18 | PX14 4:07 | All right. So five words which describe the experience of the home. Okay, so the person is experiencing the |
| 19 |  | so |
| 20 |  | certainly convenient. |
| 21 |  | I would say comfortable. |
| 22 |  | I would say |
| 23 |  | oh, I'm supposed to say there. Okay, got it. |
| 24 |  | All right either way. |
| 25 |  | So convenient, comfortable. |
| 26 |  | efficient is definitely cool. |
| 27 |  | And |
| 28 |  | certainly useful. |
| 29 |  | Let's see one more. |
| 30 |  | I would say that it was |
| 31 |  | it was very personal. |
| 32 | Interviewer 5:32 | So awesome. That's fine. So the next question is to explain why you picked those reaction. |
| 33 | PX14 5:42 | Explain why I have picked them? |
| 34 |  | So, so convenient because, you know, it seemed to recognize that I had a desire for privacy. I didn't actually have to say, Hey, hide from so and so. It just assumed that my personal choices from personal choices, which is also a it's a personal, comfortable and efficient and useful, all because it required minimal interaction, the assumption was privacy, not the assumption was openness. And I appreciated that I didn't have to go out of my way to deal with it. It just dealt with it for me. Overall, I'd find that to be useful. Okay. Great. |
| 35 |  | - |
| 36 | Interviewer 6:34 | Yeah, you can move to the next set of questions. |
| 37 | PX14 6:38 | Okay. Smart Home protected the choices here. In control, I would disagree. In fact, they think that thing did a pretty good job of assuming privacy as a default, which is good control. expected the user interface? adaptation? I didn't know what to expect here. So I would have to say I disagree that I expected it. If I were the person experiencing these, I would not have accepted them, I would certainly have accepted them. So I strongly disagree with that. I understood why it happened. Yes, of course they did. obstructed the user experience. I strongly disagree that it obstructed the users experience. |
| 38 | Interviewer 7:47 | So I've got two questions on the answers, so so you said in the first one, it protected the privacy. So what what could be a scenario? What would be the system that you think that did not protected privacy of the user, like a system that you would rate it as one, like strongly disagree in the first question? |
| 39 | PX14 8:08 | Well, |
| 40 |  | most systems don't do anything to protect your privacy. You know, the example that comes to mind, this very much seemed like, there used to be a program that I had on Windows, that was called boss button. And you could be doing anything you'd want on your Windows machine. And if you hit the boss button, it would call up a spreadsheet. So when the boss came and looked at your screen, you were running a spreadsheet. This was a more subtle version of the boss button, and it happened automatically. And it stepped in to protect privacy. Normally, if you're looking at a screen, whatever you're looking at, there it is. Right? It doesn't anticipate or change when another user comes in. That that may not be what you'd want to do. So for me to say strongly disagree would have to do nothing. The default is things don't try to protect your privacy. Okay. So |
| 41 |  | - |
| 42 | Interviewer 9:11 | yeah, just a slight variation of the same question. I think the fourth one, you said you would have accepted them, were, could there be an adaptation that you wouldn't have accepted in this scenario? |
| 43 | PX14 9:31 | So if this thing if there was an adaptation that I wouldn't accept, it would be something that would be intrusive or the something that would be requiring me to do a lot more. You know, this thing, I didn't have to tell it my intention, so it was pretty cool. You know, it didn't have to explicitly invoke it. I think that having to do Those kinds of things would be, sort of setting a mode, right? And overall operating mode, you know, operate in privacy protect mode. Cool. [..] does it. if I have to sit here and say, Oh, you know, I'm watching cartoons right now I want you to protect it that probably wouldn't have been as convenient. And, quite frankly, is not something you'd think of doing all of the time. So, you know, it's, I wouldn't have accepted that as a as an acceptable interface. |
| 44 | Interviewer 10:30 | Okay. |
| 45 |  | Any other comments on this before we move into the next scenario? |
| 46 | PX14 10:39 | Well, I think this is good so far. All right. |
| 47 | Interviewer 10:42 | Great. So you can move to the next scenario. |
| 48 | PX14 10:46 | Okay, let's see. Click the play. Okay, click opening in the new screen. All right. Trying to use your bank account via smart speaker, you're about to put your password okay. He would not share your bank or anyone. Okay. Okay, cool. So I saw in the movie is that guy was about to have a verbal interaction with his smartphone. And it detected another person's presence and prevented him from having the interaction. happened to be [the co-occupant]. So it warns you that [the co-occupant] was in the room. So from [the co-occupant]'s point of view, think it was discreet? I don't think it is observable by him. He may have actually heard a little bit of the verbal on the way and I don't know, but it was nothing that came off as being what's the word I'm looking for? very obvious for him. So it was discrete. It was discrete. Okay. |
| 49 |  | - |
| 50 | Interviewer 12:49 | You can move to the next question. |
| 51 | PX14 12:52 | Okay. |
| 52 |  | Five, top five words. Okay, what do we got? I think that that was |
| 53 |  | that was innovative. |
| 54 |  | I think that was easy to use. |
| 55 |  | I think that that was |
| 56 |  | effective. |
| 57 |  | Straight forward and desirable. |
| 58 | Interviewer 13:35 | Okay. Could you explain why you picked those words. |
| 59 | PX14 13:40 | so innovative, because |
| 60 |  | the ability to combine multiple sources of input and interpret what's going on is pretty cool. Easy to use, because you didn't have to do anything to make it happen. It seemed to happen for you. I'm sure that you had to install PASHI and set your preferences. But other than that, |
| 61 |  | - |
| 62 |  | you know, there was no |
| 63 |  | there's no [Boss button?] there's no you know, I don't have to invoke anything. It's watching out for me. It's effective because it prevented that oral exchange of password which might have compromised my password. Pretty obvious what happened there, you know, it alerted you to the conditions and, you know, very straightforward and desirable because, yeah, I want to protect privacy. I don't want people to put me into a situation where I'm forced to talk to it. You know, hiding passwords is is or hiding when you're entering passwords is something I find myself often doing I hide pins at the bank machines or at the gas station pumps. This was the smartphone verbal equivalent of That. So that's highly desirable. |
| 64 |  | - |
| 65 | Interviewer 15:02 | Thank you. |
| 66 |  | Awesome. |
| 67 |  | You can move to the next set of questions. |
| 68 | PX14 15:08 | Oh, okay. Consider the following statements right, how much you agree with each of these statements are at home protecting the privacy of its users. In this case, I strongly agree. Okay, did not feel that I'm in control while using the smart. It's acting on my preferences. Of course, I'm in control. |
| 69 |  | expected the user interface adaptation. |
| 70 |  | I've never used the system. So I'm going to say I didn't expect it. But after I used it a few times, I'd come to expect to be the person experiencing these adaptations, I would not have accepted them. I strongly accepted them. I had a very positive reaction to how it handled this. I understand why the user interface adaptations happened? Yes, I do. And I agree with them. The user interface adaptation obstructed the user experience of using the smart home. No, it enhanced it. So it enhanced it by being protective, which is, I think what it's supposed to do. |
| 71 | Interviewer 16:25 | Okay, that's awesome. |
| 72 |  | So what do you, what do you think could be like a question on the fourth question's answer, what would be a system that you, an adaptation that you wouldn't have accepted? |
| 73 | PX14 16:39 | I wouldn't have accepted it to announce something at that point, you know, it would have been really awkward. Oh, [the co-occupant]'s in the room, I can't get a password from you know, it was very discreet. And that's the way it should be. I wouldn't have accepted yet modifying its behaviour without giving me an explanation as to why it behaved the way it did. And that both those fit things brilliantly. So there's two examples for you. |
| 74 |  | - |
| 75 | Interviewer 17:08 | Anything else that you'd like to add to this before? |
| 76 | PX14 17:17 | You know, the one thing that I can think that would be cool, but it's more of a marketing gimmick than a functional thing is you know, at some point in the interactions, PASHI has saved your butt three times today. You know, that you know, you would have you would have blundered your privacy, you know, these many times this month. So, |
| 77 | Interviewer 17:47 | yes. |
| 78 |  | I thought about that. Cool. |
| 79 |  | Let's go to the next section. |
| 80 | PX14 17:57 | Okay, section three. Here we go. play the video. We've got the photos. This one's taking a while to load for some reason. I'll try and close it and click on it again. Okay, here we go. Trying to check your holiday photos on the Smart TV when your co occupant is studying. co-occupant does not like to get distracted when studying. You would like to use a smartphone where you can't use a smart TV. Okay. Let's go. Okay, let's see. So, alright, so from the main users point of view, he went to look at his photos on the Smart TV and partially prevented him from doing so. Very nice for his co-occupant there but his co-occupant didn't see a thing basically was undisturbed and went on studying. So, interesting, interesting. [...] Top five words, let's see. Ah, certainly innovative. So this is interesting. I would say that that is I would say that this one is both annoying and valuable. So let's see annoying. And what's the word helpful? There we go. I would say that it's effective. And I would say that it is useful. |
| 81 |  | - |
| 82 |  | - |
| 83 |  | - |
| 84 |  | - |
| 85 | Interviewer 21:10 | Okay, that's fine. So could you explain your selections? |
| 86 | PX14 21:16 | So innovative? Because I wouldn't have thought, excuse me, of protecting somebody else's. I wouldn't have thought is, of intrusions like that as being linked to Information Privacy. So it's interesting that you would have done that. I'd find it annoying, because it's a little bit a little bit nanny state to make. You know, it's controlling my desires. On the other hand, it's, it's, you know, whether I like it or not, it's effective and helpful in that it does go towards preserving peace with my co occupant there. You know, and it did so in a way that wasn't terribly intrusive. And so overall, even though I might not have, you know, I might have been initially put off with by it. If I thought it through a little bit, I'd say yeah, that's kind of cool. That's useful. You know, it stopped me from stepping on somebody else's boundaries. So, yeah, awesome. |
| 87 |  | - |
| 88 |  | - |
| 89 | Interviewer 22:28 | Yeah, we can go to the next section. |
| 90 | PX14 22:32 | Okay. |
| 91 |  | All right, smart home protected the privacy of the users. |
| 92 |  | I did not feel that I am out of control. This case, at the moment that had happened, that would have been really annoyed. But in the end, I would have thought it through and said, yeah, that's kind of useful. So I'm gonna put a middling mark on it. I expected the user interface adaptation before it happened? I did not expect this at all. But after I've seen it once or twice, I would come to expect it. If I were the person experiencing the adaptations, I would not have accepted them. No, I agree. I strongly disagree that I would not have accepted them. Because in using this system, I think I would think it through. I wouldn't go with my initial reaction to it. My initial reaction would have been Oh, that's annoying. But then I would have thought it through and said, Oh, well, it's trying to protect [the co-occupant]. That's cool. I understand why it happened. Yes, I strongly agree. I do understand why it happened. The user interface obstructed the user interface of using a smart home. No, I don't think it obstructed the user experience. I think it altered it for whatever values it had set to consider best. So I'm gonna put disagree. Okay. |
| 93 | Interviewer 24:09 | So what change would you expect for you to rate it as one here, the last question, to improve the user experience. |
| 94 | PX14 24:22 | See this is a compromise. |
| 95 |  | You know, this is a compromise between two people. And basically, it's establishing a compromise between two people. So I'm not sure there is a good way to do that. Unless you know, flashes something up but like use headphones or, you know, hey, you're about to screw with with, you know, with the [the co-occupant]'s studies here. You know, please, please be considerate, right. So I'm not sure that there's a way to get a compromise out of a smart system that fully meets everybody's requirements for, you know, a full experience. Not this case, not this case, |
| 96 | Interviewer 25:16 | anything you'd like to add to this one before we move to the next one? |
| 97 | PX14 25:23 | Just that I find this an interesting use of the technology, it's, you know, it's not one that I had considered considering privacy. So |
| 98 | Interviewer 25:32 | these are aspects of the privacy like peace of mind, physical privacy. Not related to information privacy. |
| 99 |  | Cool. Let's go to the final. |
| 100 | PX14 25:46 | Okay, play the video. Here we go. Friend in video call. You're on a video call with your friend who's a colleague co-occupant, then the co-occupant walks across the cameras view. His home on the weekend? Well, that's a tricky one. Okay. All right. See if we can get this. So invoke the background blur automatically. I like that. Okay. Cool. Cool. I wish I had that for my video, video conferences where I could automatically blank out people in the background. Alright, so what I saw in the video is I saw a couple of folks on a video conference, they were having a casual discussion. The co-occupants entered the room. The video blurred the co-occupant out of the videos so that he wasn't apparent to the person on the other end. From the secondary users point of view? Well, he probably saw the blur. But usually, you're not gonna key into that immediately, it might just get stuck in the back of your head that maybe that happened, but happened pretty quickly. So that's cool. Awesome. |
| 101 |  | - |
| 102 | Interviewer 27:40 | Yep. You can move to the next question. |
| 103 | PX14 27:44 | All right. Top five words. Innovative, for sure. Convenient, for sure. Easy to use, for sure. effective for sure. And helpful. Yeah, I like this feature. You can tell. So I picked these things. Because I think that's a really good use of the technology. The users didn't have to do anything to make it happen. So it was convenient and easy to use. It was effective because it eliminated the person on the other end of the call seeing the other the other co occupant there. And that would have been helpful in maintaining privacy. |
| 104 |  | - |
| 105 | Interviewer 28:52 | Yeah, we can go to the next question. |
| 106 | PX14 28:55 | Okay. |
| 107 |  | Smart Home protected the privacy of its users? Yes, did? |
| 108 |  | Absolutely. |
| 109 |  | I did not feel that I'm in control while using smart home. I strongly disagree. I think smart home did what it was asked to do, which is if the settings said, that's the sensitivity, or that's something, you should do it. I don't have to push the button to be in control. All I need to do is make the settings right. I expected the user interface before it happened. No, I didn't expect it at all. But after I've seen it once or twice, I will. If I were the person experiencing the user interface adaptations, I would not have accepted them. I strongly disagree i would have accepted them. I thought that was a brilliant way to handle it. If I had to do something physical to make it happen, it would have been less desirable because I'd have to remember it and I'd have to think about it, this thing is, you know, reacted. So that was good. I understood why the user interface adaptations happened? Yes, I do. |
| 110 |  | - |
| 111 |  | Obviously, they happen for good reasons. |
| 112 |  | And |
| 113 |  | I strongly disagree that it actually obstructed any part of the user experience, I think it enhance the user experience by preserving the privacy. |
| 114 |  | So that's my reaction to that. |
| 115 | Interviewer 30:31 | Got couple of questions. So what do you think in the fourth question, what would be a scenario, adaptation that you wouldn't have accepted? |
| 116 | PX14 30:40 | Well, you know, as an example, I use Jitsi meet. And there is a blur feature in Jitsi meet, you have to remember to turn it on. I almost never remember to turn it on. So, you know, I think that while it's something I'd still accept, it's not as good as this, you know, to not accept that it would be some sort of thing that makes itself obvious. You know, it would be really awkward, for instance, if it announced its intentions or or, you know, made it something that I'd have to react to very quickly. Oh, somebody in the room. You better blurr stuff? No, that's good. You know, the fact that it's just acting on my behalf is, is is acceptable, and probably anything less than that, given or knowing about this. That would be less acceptable. |
| 117 | Interviewer 31:46 | Yeah. Anything else you want to add? Before we move to the final four questions? |
| 118 | PX14 31:52 | I like this. This is cool. |
| 119 | Interviewer 31:54 | All right. |
| 120 |  | Great. Yes. So that's the end of four scenarios, we've got few summary questions, you can read through the questions and speak out your answers. |
| 121 | PX14 32:03 | Okay, overall, how do you feel about adaptive user interfaces being used and protecting the privacy of smart home users? I think it's a good move. I like it, I'd like to see more of it. I'd like to have some of that in my own smart home and smartphone interactions. There's not enough of it. There's not enough of it. Have any of these scenarios resonate with my daily activities? If the answer is yes, could you please elaborate? I think they all did, except for protecting the privacy of my or the studying of my co-occupant. All of these scenarios are things that in some way, shape or form have either happened directly, or happened analogously to, to me, you know, particularly, particularly interactions with things that speak are extremely awkward, especially when other people enter the room. |
| 122 |  | And, you know, certainly, |
| 123 |  | you know, I can see as as how all of this would be very, very useful. You know, my resistance to the one scenario where it was protecting my roommate who was studying. |
| 124 |  | turned off to that, but I'm just turned off to that one a little bit. |
| 125 | Interviewer 33:30 | depends on the person, like you might not consider it that |
| 126 |  | way. So I think maybe, |
| 127 | PX14 33:38 | could be Yeah, I have to think about that a little bit, but come up with an answer, I'll let you know. |
| 128 |  | Let's see. |
| 129 |  | Have any of these scenarios inspire you to think of other scenarios in your daily activities? If the answer is yes. Can you please elaborate? Yes. I would love to have things that pause audio when other people come in. I find myself very often involved in these conference calls. And at the moment, you can see I have a headset on. But many times I start off the day without a headset on and my wife walks into the room and it would be really cool if it would say, a person entered room, you know, maybe flash up on my screen without saying it aloud. But I think the blurring of the screen when you detect somebody else in the picture is fantastic. I think that's, that's something that I can directly relate to. I've gotten into very strange situations with talking to Alexa, or talking to Siri or talking to , where I would have preferred it to |
| 130 |  | - |
| 131 |  | detected somebody has come in and chat |
| 132 |  | or not? Continue the conversations. |
| 133 |  | Let's see COVID-19 lock down on working from home may to spend more time sharing our home with co-occupants has the current situation created any privacy violating scenarios that could have been avoided by adaptive user interfaces? |
| 134 |  | Yes. |
| 135 |  | My wife who is my co occupant here, |
| 136 |  | very often gets subjected to my |
| 137 |  | company video calls and company phone calls and things that are conducted either on screen or on conversation. And it would be good to, you know, have something that's reminding me and or taking proactive measures to, to keep that privacy thing going. So that would be quite cool. Awesome. Anything else? I might actually? Well, I managed to actually just mentioned in this I don't know how relevant This is to the study. But |
| 138 |  | you know, I'm working with |
| 139 |  | legal and health professionals in cloud stuff right now. There are a lot of collaboration tools, there's a lot of things that would probably benefit from the tenets of what you're presenting here. So I see a direct commercial applicability instantly beyond the personal use, or the use of the concept of smart home. |
| 140 |  | You know, as an example, |
| 141 |  | it's never really been a thing before has been, you know, medical video conferencing or telemedicine, you know, the incorporation of this, it's telemedicine would be a fantastic addition. |
| 142 |  | Likewise, in |
| 143 |  | simple things like electronic correspondence, chats, things like that, as that gets increasingly used by people in medical and legal professions, there's a lot of opportunities to protect disclosure of patient data to people who might not be otherwise entitled to see that patient data or disclosure of client privileged information and a legal office, etc, etc. So having one of these things that's tuned, where I say these things are referring to, you know, this, this smart home system, but something that's tuned to the professional office place would be really applicable. |
| 144 | Interviewer 37:52 | Yeah. Yeah, that's a really good point. I think the framework is applicable to anywhere you can actually, depending on the number of people who are there and their preferences, you can like, integrate it to any system. I think that's a really good point, I think. Yeah. Yeah. That's pretty cool. |
| 145 | PX14 38:10 | That would be neat. would be sellable. Guaranteed. |
| 146 | Interviewer 38:14 | Yeah, that's, that's. |
| 147 |  | That's really good. |
| 148 |  | Yeah. So yeah. I think that that's it for this study. So I'll |
| 149 |  | stop the recording. |

## PX15

|  |  |  |
| --- | --- | --- |
| Index | Tag | Transcription |
| 1 | Interviewer 0:10 | Thank you very much for joining in my study. Before we start, let me give you a brief introduction to the study. The purpose of this study is to answer the research question how do users perceive the usability and privacy and privacy preserving capabilities of user interface adaptations? Now, let me unpack that a bit. In the study you will be shown four videos demonstrating Smart Home scenarios with possible risks of privacy violation. Smart Home user interfaces could adapt their behaviour in order to avoid or minimize those privacy risks. This study focuses on two types of privacy violations. The first type is to information disclosures. Second, relates to disturbances or excitement just caused by smart home devices. The two videos I've sent earlier were examples of the those two variations. Does that make sense? Like up to now? |
| 2 | PX15 1:00 | Yeah. |
| 3 | Interviewer 1:02 | The videos you will see next are recorded from the first person point of view. So this is because I would like you to imagine that you're experiencing scenarios yourself. After each video, you'll be given a questionnaire to answer. It's important to answer these questions as if you have experience the scenario yourself |
| 4 |  | in the end there will be some summary questions to wrap up the study, is that okay? |
| 5 | PX15 1:27 | Yes, |
| 6 | Interviewer 1:29 | I will also be recording this interview, and the recording will be deleted as soon as I transcribed the session, the transcriptions will be kept securely |
| 7 |  | until I have completed my analysis and |
| 8 |  | any information extracted from them will be anonymized before being used in any publications. If that all right with you we can start. |
| 9 | PX15 1:49 | Yes. So I'll switch of my video just to save the bandwidth for now. |
| 10 | Interviewer 1:57 | So |
| 11 | PX15 1:59 | directly go To the Doc I shared, you can go and play the video, the first section and then it's self explanatory. I'll also help you out in the first scenario, first section. |
| 12 | Interviewer 3:52 | did you finish watching the video? Yeah. Okay. So you can go to the first question. We about explaining outline what you saw in the video. So you can read the first question. You don't have to type in answer just |
| 13 | PX15 4:08 | so before what what I saw in the video and describe my experience of the smart home, which you showed me in the video is that Yeah. Okay. So, yeah, I think, I mean, I saw that one person wants to use or play music and the other person in the same home is getting disturbed by it. And because they are doing some other activity and so that's why there was a need for the two are for the technology to mediate between the two so that it doesn't not disturb the person who is meditating for example and does not stop the person who wants to listen to music. something like that, yeah. So that is like from the main user point of view, he wanted to hear the music but the technology told him to be mindful and taught and taught him to be mindful and intervene at the right time or made a suggestion at the right time.  And from the secondary user's point of view, of course, this helped him to continue having his meditation and to have this non distruptive environment and actually it preserves the privacy of the second person mainly. Yeah, so second person has been here, I guess. So. So it helps to preserve their privacy and to avoid the disturbance. I'm Just wondering that I think it makes sense. |
| 14 |  | - |
| 15 | Interviewer 6:07 | Great. |
| 16 |  | we can move to the next question which is |
| 17 | PX15 6:12 | So So type the top five words which best describes your experience of the smart home interfaces? In the video you reviewed last. So imagine I am the person is experiencing the system you mean the one who wanted to hear there with the headphone that wanted to hear the music. Okay. So please tell the top five words which describe your experience in the smart home interfaces. Experience. Okay, so, experience after such kind of intervention. Yeah? |
| 18 | Interviewer 6:56 | Yeah, just to just be user experience. |
| 19 | PX15 7:00 | So |
| 20 |  | I would say it was definitely not sorry. I think it was |
| 21 |  | for sure, easy to use. Yeah. And then it was relevant |
| 22 |  | both trustworthy and flexible. |
| 23 |  | It was flexible only because you gave four options but if it would have been only one so i think i mean the four options were to not dependent on the device so I think it was flexible, probably or maybe I'll change it later. But for now flexible is fine. It was |
| 24 |  | colabo. I think I will also go for collaborative and friendly because in a smart home It is collaborative between the two users, basically you are friendly to the other person something like this Yeah, I think useful Also, I want to put useful somewhere maybe I will remove flexible and useful and yeah, okay. |
| 25 |  | - |
| 26 |  | - |
| 27 | Interviewer 9:24 | Okay, so the next question is to explain why you pick those each words down |
| 28 | PX15 9:48 | So why I think those reaction cards Okay, so collaborative and friendly. I should I write it all right. I can |
| 29 | Interviewer 9:56 | speak I mean so |
| 30 | PX15 9:58 | collaborative and friendly. Because I think those are the qualities that can be achieved by such an intervention of the technology, collaboration and friendliness between the occupants, same occupants within, occupants within the same smart home I mean, so because person one wanted to hear music, and that could have disturbed the other person who was doing other activity. So it was mindful it was friendly to the other person. So the technology intervention suggested was friendlier to the other person and also was collaborative in a sense that both the people were able to achieve their task. Although there might be a bit compromise more compromised for the first person do I should say that because, for example, if I imagined myself I might want to hear like ambient sound like not on the ear Not on the headphones but more like being the environment. |
| 31 |  | - |
| 32 |  | - |
| 33 |  | - |
| 34 |  | But the person two is completely unaffected, unaffected, and his privacy is preserved more. So there is a bit of more compromised on person one, but I think that high chances are there that they are happy to do it, as it teaches them to be mindful and respectful and this kind of thing. Yeah. So those were collaborative friendly on the lines of this and that's why it was useful because it helps to both of them to serve the purpose and they were able to do the continue the task without violation of privacy, [..] it was easy to use because the devices available easily in the environment or the alternative is available easily. So either they can lower the music or this and that so they have different options. so easily. First person can pick something. And what else? Yes, it was relevant as well in the context, okay? |
| 35 |  | - |
| 36 |  | - |
| 37 |  | - |
| 38 |  | - |
| 39 | Interviewer 12:11 | Okay, great. we can move to the next |
| 40 | PX15 12:15 | ..following statements and rate how much you agree with those statements? |
| 41 |  | Okay. |
| 42 |  | So I'm not able to understand here that how |
| 43 |  | the privacy of the first person was protected or not protected. |
| 44 | Interviewer 12:36 | So |
| 45 |  | to the question is like in this specific scenario who were affected who are in risk of being private.., the privacy being violated, Was it protected or not. |
| 46 | PX15 12:49 | Okay. So I mean, if the user chooses that action, then I think that it was definitely protected. So I strongly, strongly agree to it. So I agree that the privacy of second person was definitely protected okay. I did not feel like I am in control while using the smart home so I as the first person Okay, I did not feel like I'm in control by using the smart home again Can you remind me four options so one was to use headphones one was to lower the volume one was to not listen is it? |
| 47 | Interviewer 13:27 | Yeah And the fourth one is actually to play music anyways without even like any break like just to play as it was normal. Which sort of gave the reason, why the risk of playing that as well like, if you play this, privacy of the, other person will be damaged. So |
| 48 | PX15 13:45 | yeah, so I do feel that time in control by using the smart home because they are giving me option both to either agree or disagree basically, from my personal point of view, so I agree that |
| 49 |  | I was in control, okay. |
| 50 | Interviewer 14:03 | So in that sense, like, |
| 51 |  | how, what change would make you feel that you're not in control, like what sort of a system? |
| 52 | PX15 14:14 | So, if you would have not playing the music is [the co-occupant] is meditating. Okay. That I mean if you would not have given me the option to like these four options or if yeah if you would not if I'm increasing the volume and it is not increasing or if I'm playing the music, it's just telling me that [the co-occupant] is meditating so you can't play it. If that would have been the case then that I would not have felt that I'm in control of my privacy. I expected the user interface adaptation before it happened. So that would have been like purely automatic. So I disagree. |
| 53 |  | - |
| 54 |  | - |
| 55 |  | Somewhat Okay okay if I were the person experiencing the experiencing these user interfaces adaptation I would not have accepted them I were the person experiencing the user interface adaptation You mean the first person right?. same person. Yeah. So I would not have accepted them I would have accepted I mean, I might have not played it I might have taken the speaker to other room maybe or something like that. So that also could have been one option By the way, but yeah, depends on the room like house layout also. So so I would have accepted, so I would say that I disagree with this, [...]. So I'm just rechecking if all that correct. And I did not feel that I'm in control, See I marked this one wrong because of this. Trying to balance the question. Sometimes I just marked it wrong. Yeah. And I also experience it sometimes in my question. Anyway, so I have corrected the second question now. So I did feel like I am in control. And then I expected the user interface adaptation before it happened, you know, if I'm the person experiencing these user interviews, I would not have accepted them disagree. |
| 56 |  | I understood why the user interface adaptations happened. Yes. |
| 57 |  | So there was no adaptations, but there was a suggestion right. |
| 58 |  | Why are you calling it adaptation? |
| 59 | Interviewer 16:51 | So adaptation in the sense, it gives you the option adapt the system so rather than. So the other I mean, there are variations in this scenarios where you get the choice to pick adaptation or automatically adapt. So adaptation in the sense, right, then it's playing on the smart speaker switching to headphones. |
| 60 |  | And adaptation to the modality. |
| 61 | PX15 17:21 | Yeah, surely the design was clear. So user interface adaptation obstructed the user experience of using the smart home for me, right? Yes. And no, actually, I would not agree with this. So it did not obstruct the user experience. In fact, it showed me that the home is really smart. So I disagree with it. obstructed the user experience of using the smart.., No it did not. So yeah, second scenario. |
| 62 |  | - |
| 63 | Interviewer 17:57 | Okay. That's great. No, wait a minute. small question, again the fifth question, you sort of agreed or strongly agreed that you understood why the interface adaptation happened. So why do you think, what sort of a system would make you feel that you would not understand why the adaptation happened so.. |
| 64 | PX15 18:16 | No if if without telling the reason that [the co-occupant] is meditating? I said, just by itself give me some suggestions or yeah without telling the reason basically, so your interface did tell me the reason I guess. Yeah. Oh, |
| 65 | Interviewer 18:37 | yes. Yeah, we can go to the next scenario. |
| 66 | PX15 18:47 | okay, I can access it so I will play the next video, then holiday photos Okay so after going through this scenario even now I'm contemplating more about first scenario, I at some point I might want to say okay maybe not during meditation but but here okay I see that [the co-occupant] is reading but I don't know whether for sure it will interrupt him or disturb him. So I, because you're so right now your interface is telling, like whether he could.. and then you should watch on the smartphone, can I see the video again because I just want to check what options did it give me. |
| 67 |  | I see. Okay, err fine fine. So what I saw and I think from my point of view, it was not very great in a sense experience of the smart home from secondary user points of view. It seems that it was maybe good for him. It is also possible that this might not have affected him but, unnecessary this suggestion was like I was told to, go, I mean accept it basically. So I don't know about what secondary user would have felt. And if we like, contemplated a word the previous so we do as well. So it's highly possible that during meditation, somebody is playing loud music, it can stop, but it's also not necessarily. So I'm just questioning whether your smart home framework would take into account the user, the second user's preferences. So have they mentioned that while meditating, I don't want any sound. |
| 68 |  | - |
| 69 | Interviewer 21:48 | Yes, to at the beginning in the description, it sort of said |
| 70 |  | to the users, the main users preference is to not get disturbed while meditating. |
| 71 | PX15 22:01 | So I agree that that's the preference to not get disturbed but what I am saying is that do loud music disturb me. Okay? Because you know many people here listen to music while studying. Yeah. So it doesn't disturb them. They are fine with the rhythm and all but i i and if somebody is deep into meditation, it is highly possible that they won't get disturbed with the sounds outside their body. Okay. And they will only get disturbed somebody go and shake them. Yes. So that that's what I'm trying to point out that Yeah. Although normally that doesn't happen, but yeah, okay. So type that top five words like when describe your experience of the smart home interface in this |
| 72 |  | so Oh, easy to use, Okay. but erm. For me it was undesirable. And because I also did not get options, okay, maybe maybe the option could have been to tilt the screen. Or maybe the option could have been to do you want to go to [the co-occupant] and ask them to move to another room or to turn themselves or something like that so that I can see They're in front of TV and watch it because home is not such a constrained space after all. Yeah, so why not I can just go to them and ask them to move. If they are not using the TV and I can sit in front of the TV. That's what I'm saying. So and it was unattractive for me to watch on my phone. Because I wanted to watch it on the TV. Straight forward, straightforward. not sure, actually straightforward I could have gone to him and told him [...] err. is it necessary to do five words? |
| 73 |  | - |
| 74 |  | - |
| 75 |  | - |
| 76 | Interviewer 25:10 | erm |
| 77 |  | never thought about this, Maybe it's easier for me to like |
| 78 |  | you know? I mean, maybe you can comment, in like I'm in this like primary focus. So I'll make a note that you pick the last two just to fill the five. |
| 79 | PX15 25:30 | No, I'm just asking that I find.. |
| 80 |  | so it was too simplistic okay. |
| 81 |  | simplest option to just be on the phone |
| 82 |  | was not engaging. How do I write that there is engaging but there is no not engaging |
| 83 | Interviewer 25:59 | dull is the other one, I think, |
| 84 | PX15 26:02 | okay, yeah, it was dull for me. So unattractive I have marked but it was like something similar. So please explain why I pick those reaction cards as I was describing while picking the words that I was hoping for more options and I was like sort of forced to view it if I wanted to do it on the phone, but I wanted to watch it on the big screen and I don't see why it would have disturbed the person and why the system is caring only for their privacy now has started wondering that because I could have gone to the person and asked them to move to maybe different position and then it would have been really more collaborative rather than only me making the compromise. At least in this reading situation, in the meditation situation. I don't feel that much. Different. Um, but yeah, so there's that I'd think that it was a bit dull and attractive undesirable for me. But it was, of course, nonetheless simple and easy. Because I can watch anywhere. So please consider the following statements on rate.. put X under your choice. I was just writing numbers |
| 85 |  | - |
| 86 |  | - |
| 87 |  | - |
| 88 |  | smart smart home protected the privacy of its users. Now, also, I don't agree with it. I will do two number.  I did not feel like I am in control while using.. definitely I did not feel that I'm in control because I was sort of not given many options. I expected the user interface adaptation before it happened. User Interface adaptation before it happened No. So I disagree with it, for the adaptation to happen before, if I were the person experiencing these user interface adaptation, I would not have accepted them. I agree I would not have accepted |
| 89 |  | two No, not strongly, but because of the setting also. And so there is a possibility that I don't want them to watch my photos. In that case, I might have considered that whether I want it on the big screen or not. Do you understand what I'm saying? So not because it is disturbing to the person who is reading because I'm not playing videos. For like static image. If I see and I the system tells me that it will disturb the user then I don't agree with that much. But if it would have been my own choice that Okay, there are some private photos which I don't want to share, or which I don't want the other person in the room to see look at them. Then I would have definitely be happier Okay, you know, so then it would have been like okay I am also able to preserve my privacy because the photo content is like that okay. So, what are you asking if I were the person experiencing these individually I would not have accepted them. So, it depends on so I am a neutral on this. I understood why the user interface adaptations happened. No, I did not understand. So, it was like two number I'm slightly understood but not very clear like [the co-occupant] would really get disturbed with this so, that the thing then user interface adaptation obstructed the experience of using the smart home, for me, yes. At least like four number. This adaptation, destroy obstructed a bit, yes. So, okay. |
| 90 |  | - |
| 91 | Interviewer 30:02 | Yeah. So hold on. I mean, I can't properly see your answer, maybe not thinking that anyways, I think it came up sorry. So that's really interesting. I think this, this scenarioso like, to my sort of conceptualizing of the scenario was like. Well, the [the co-occupant], the second person would get distracted because it's a shared set of photos, for example, both of them went on a trip and like, now he's studying. And because if I started watching the photos on the Smart TV, [the co-occupant] would get distracted from your studies, and he's done watching his photos on TV. So that's the main thought of the premise with regard to disturbance, not necessarily what some, like, if it's sensitive or not. I think it's really interesting. So, so why do you think in your point of view, like to solve this kind of scenario, I so you made a really interesting point where the person you can go to to the person and talk and yeah, good collaborate. So what are the other ways like from a technological point of view to solve this kind of proble,? Like, |
| 92 |  | for example? Yeah, go ahead. Sorry. |
| 93 | PX15 31:11 | So the tech, just like in the previous scenario gave me four options, you could have given me more options for example, like that, it could have one option could have been to ask [the co-occupant] whether Do you want to ask [the co-occupant] whether he can move to other to this part of the house or this part of the room? So that could be suggestion through technology. Okay, and then what else could have been there? So, it was not that personal because the thing is that I was not feeling that my privacy is preserved. In the end. It is like, it seems like only I have to be mindful for privacy of the other person. I agree to it. But again, the reason He was not that strong or I was not that sure that he will get disturbed. What if if he has glances? It is not a problem while studying people take break. So I don't know if it is that disturbing to him or not? Because I don't know it's it was not very clear also. So, what other option could have been there? So, other option could have been to their, tilt the TV, if you can tile tilt the TV screen in a way that I can move to some other place without disturbing [the co-occupant]. You know, and then TV turns to that side. Okay, that that could have been one way. Okay. Depends on how the house is arranged and all those things of course, yeah. Yeah. |
| 94 |  | - |
| 95 |  | - |
| 96 | Interviewer 32:52 | Yeah, yes, we can move to the next scenario. |
| 97 | PX15 32:58 | Okay, so I hope I did not miss read the questions and I marked my answers correctly. Now the next scenario playback |
| 98 |  | okay. |
| 99 |  | So I like this scenario and I definitely I feel this one is more relevant and personal, at least for the first person now, so and i Now, I'm giving more attention to the assumptions that you have written before like on the preferences before the video. So, okay, from the main user's point of view, it was good Actually, yeah, I think right at the time I could have revealed private information or even a message could have been have come, but other person enters then at that point of time the system adapted in a in a very seamless manner, which was good. It did not interrupt my experience and secondary users point of view did not disturb them. And it was it was normal for them. So no problem for the second user for sure. type the five top five words. Yeah, I think so this one Cutting edge. Yeah. And I don't know what is cutting edge. |
| 100 |  | - |
| 101 |  | - |
| 102 |  | - |
| 103 | Interviewer 35:15 | Yeah, well, like very new like novel I think that's like that's |
| 104 | PX15 35:22 | okay. But I think it was the right intervention. Okay. And it was personal. Do you have personal on there? Yeah. It was personal. It was. It was effective and useful, effective, relevant, useful Yeah, so cutting edge because I think that was the right time intervention of the technology and if this technology works, then it would have to sense at the right time the person enters and at the fraction of second it will have to adapt appropriately and send it to to the person in the right manner. |
| 105 |  | - |
| 106 |  | - |
| 107 |  | - |
| 108 |  | - |
| 109 |  | It was convenient also I don't know, if I can choose one more. I will remove a relavant either remove useful I will add convenience it was convenient Right. Correct adaptations. So, yeah, and it was effective to conserve the, to preserve the privacy of the person. It did not disturb disturb the second person also by sudden sound. And, yeah, so it was definitely personal. And it preserved the personal data. So why do I choose? Okay, following statements and rate how much do you agree with those statements on smartphone protect the privacy of its users? So I agree with this. Yeah, this time. |
| 110 |  | - |
| 111 |  | - |
| 112 |  | Yeah. And I did not feel that I am in control by using the smart home. Okay, so I think there was no goal to do it in real time. I think I, I see that I was substantially in control. And this was the right thing to do by the technology at that point of time. So there's some automatic adaptation has to happen and when such a fraction of second decision has to be taken in such a fraction of second Yeah. I expect |
| 113 |  | - |
| 114 | Interviewer 38:21 | so first second question, do you mean to put four |
| 115 | PX15 38:25 | Yeah, sorry, that's, that's wrong. Yeah. So, |
| 116 |  | I did feel basically okay. I expected the user interface adaptation before they happen. Yes. |
| 117 |  | This Yes. |
| 118 | Interviewer 38:41 | So in that in another thing, like what what situation where you would not have expected the adaptation |
| 119 | PX15 38:53 | Okay, so now you made me thinking, reduce your score(smile) by I would have expected the user interface. No, actually sorry. I think the adaptation should have happened at the by itself, in this situation but depends on who is entering also, if the system is able to someone who is entering is my doctor, my partner with whom I don't I mean, so depends on the closeness of the relation. If that So, if that's okay, then it can announce no problem. It should not adapt. That's why I in the second question, I say, get a bit like a bit less control, but it was fine. So this is the scenario where I think if it takes into account more about who is entering and what the information secrecy level is, So, so, the least i mean if you would have just asked okay you said that okay health information was there, but health information like for example, you have been working out and you have reduced your like 10 kilos and you are proud about it, then you would be happy to share it something like this. So, in that case it is okay if it announces |
| 120 |  | - |
| 121 | Interviewer 40:30 | so its level of granularity and like what type of.. |
| 122 | PX15 40:33 | yeah type, type. |
| 123 |  | But I expect that definitely adaptation happens a bit before if I were the person experiencing these user interface adaptation, I would not have accepted them I would have accepted so I mean, depends on the functionality. So I will put two I understand why the user interface adaptations happened, So I understand why it happened because the other person came in but I do not understand there it was right whether you, so in the assumptions did you write like you do not want to share with [the co-occupant] because I remember you wrote in the video assumption that all the preference that you don't, so your second preference is smartwatch okay I understand that but it was your preference also that you do not want to share with this person or |
| 124 | Interviewer 41:40 | Yes, so the preferences like you would only share this like you would not like to share your health information with anyone so that's a very blanket statement |
| 125 | PX15 41:52 | [....] So according to that, I think I understand why this sort of adaptation happens. So that's fine. User Interface adaptation obstructed the user experience of using the smart home, No, I don't agree with it. So it did not obstruct the experience as such and it was a smart adaptation. Okay, |
| 126 | Interviewer 42:09 | so why do you think in the last question like what's a negative experience like of a system like imagine.. |
| 127 | PX15 42:17 | being obstructed the user experience of using a smart home? No, I have marked that right. So I do not think that it affected the experience. |
| 128 | Interviewer 42:24 | Yeah, to like |
| 129 |  | what service? So all that being |
| 130 |  | up to like, what sort of a system do you think you would rate that it obstructed the user experience? |
| 131 | PX15 42:35 | It could have obstructed if I mean, I think the it was quite instantaneous immediate. Yeah. So if I would have asked and if it would have sensed it after [the co-occupant] would have entered or, or it would have changed and not delivered on my smartwatch at all or or for example if it would have sent a smartwatch that I'm not wearing. Okay, then that would have made no sense because I don't have my smartwatch and it is sending message to my smartwatch. So it should take into consideration whether I'm wearing the smartwatch or not. Which in this video that you showed it was you were wearing, so that's fine. Yeah. |
| 132 |  | - |
| 133 |  | - |
| 134 | Interviewer 43:24 | All right. That's great. We can move to the next question. |
| 135 | PX15 43:27 | Oh, open the safe. You don't want anyone to know the thing to open yourself. Okay, so explain our loud what you saw in the video. So I saw that first person was having chat with the with their friend and second person enters and does something that is private privately in the sense that they want to be kept secret and don't want to reveal that information to others. So, from the main user's point of view, it was good in a sense it did not obstruct, stop their video call and it it was mindful again to preserve the privacy of the other person. And secondly, user's point of view, definitely It was good for them because they did not have to worry about whether their action can get captured on camera or someone else call and [.] can be sent to someone else. |
| 136 |  | - |
| 137 | Interviewer 45:26 | you can move to the next question. |
| 138 | PX15 45:27 | Yes. So the top five words that best describe your experience of the smart home. I think this was so good. And yeah, it was cutting edge because they pick the right. Right segment in the video image or video segment where it should be blurred. I don't know I mean, which vision technique you'll use. But yeah, so it was fine. It was essential, [..] essential not what was essential to preserve the privacy or the or this method. |
| 139 |  | - |
| 140 | Interviewer 46:20 | So this method yes to the system |
| 141 |  | in these kind of scenarios, |
| 142 | PX15 46:28 | so what I'm thinking is that again, this is not necessary that it should have been done this way. It was good. It was cutting edge. It was convenient for sure. Yeah, I will, like convenient. Yeah, it was convenient. It was. It was Yeah actually goes fast as I fast also applies to the previous scenario by the way it was effective Yeah. And it was and desirable. Okay. |
| 143 |  | - |
| 144 |  | Oh yeah, it was definitely effective the person who was entering pin, so it was able to blur their keypad area, it was desirable so that for both the people I guess, in this context so that the first person is not held responsible for leaking the private information of the second person and for the second person for sure. Because they were entering some secret information, and it was fast, quick adaptation happened. That was good. It was convenient. Nobody had to care about anything. And it was obvious sort of the identity should be protected. And it was cutting edge as I was saying. Yeah. So this was a good one. Yeah. And consider the following statements and read how much [..] smartphone protected the privacy of its users. So yes, Yeah, I agree with that. Okay. |
| 145 |  | - |
| 146 |  | - |
| 147 | Interviewer 48:50 | What would be the system that you're not rate it as one. |
| 148 |  | Yeah. |
| 149 | PX15 48:59 | So I think, yeah, I mean, if it would not have protected, the blurred the keypad or it's not only blurring but I mean, there could be more options that I can talk about later, but it would have just broadcasted the movement of the person behind or what they are doing. Like and in this case, it was much more secretive information. If it would have broadcasted, I would have rated that it did not protect the privacy of its user. Yeah. I did not feel that I'm in control while using the smart home. So I think I mean depends on so I did put the preference And if this happens, then I can get this fine. I mean, it's pretty cool. Although I could have had more options, but that could have been interrupted. So I will go for two in this one. So I did see that I was in control, like quite decent. I expected the user interface for that station before happened. before it happened before, but before what happened, |
| 150 |  | - |
| 151 | Interviewer 50:32 | an adaptation, like blurring of the screen like, did you expect it |
| 152 | PX15 50:38 | before it happened means it happened at the right time. |
| 153 | Interviewer 50:42 | Yeah, so like when you sort of like interacting with the system. Would you have expected that kind of adaptation to happen |
| 154 |  | so |
| 155 | PX15 50:54 | I expected the user interface adaptations before it happened, No, not before. Actually |
| 156 |  | it happened in the right time and so, so it should be for everyone. No, I agree that it should have happened before sorry. |
| 157 | Interviewer 51:17 | the question is similar like to ask whether you were surprised by this adaptation, so that kind of a thing. Are you surprised that this happened? |
| 158 | PX15 51:26 | No, not surprised. I was happily happily amazed or something like that. I mean, I could see that it is one possibility is to you know, blur the entire screen from the beginning which happens in Skype, for example, Skype or whatever. So you don't see the background. |
| 159 |  | - |
| 160 | Interviewer 51:48 | Yeah, but in those scenarios, the thing is that the person who's taking the call should blur the background and if they forget to blur the backgroun |
| 161 |  | it is a different dimension |
| 162 | PX15 52:00 | Yeah, so that's right. And I think that in this case, if the person forgets, then either at the beginning of the call, they can be asked, but again, if they choose no at that time, and then then suddenly somebody comes from behind. But in the context, then I think this level of automatic blurring of a particular segment is really smart and cutting edge and all that. So that that is good and fine, I think, agree that this level of auto [..] autonomy is required, at least because this is the least level of autonomy to protect the privacy, I guess. Because you cannot overload the main user as well. So yeah, that's great. If I were the person experiencing these user interface adaptation, I would not have accepted them. No, I would have accepted them. |
| 163 |  | - |
| 164 |  | - |
| 165 |  | I understood why the user interface adaptations happened, agree. Yeah. |
| 166 | Interviewer 53:14 | So in the the fourth question, what sort of an adaptation you, would you have not accepted like, |
| 167 | PX15 53:21 | if I were the person experiencing these user interface adaptations, would not have accepted them. So I accepted this I would not have accepted if it would not have done anything. Similarly. Yeah, I mean, I, yeah. So as I was saying that there could have been given more control and if the user needed it, for example, like bluring before, or Yeah, I don't know what else, but. But if the user doesn't do it, then the system is learning something in the background. doesn't interrupt the first person experience. It also preserves the privacy of the person in the background. So it's good, I guess. Yeah. And I thought that so I understand why the interface adaptation happened. So yeah. And user interface adaptation obstructed the user experience of using the smart home. totally disagree. So they did not disrupt. It was good. Okay. Yeah. Yeah. So I guess again, I misread the question, but yeah, okay. Yeah. So |
| 168 |  | - |
| 169 |  | - |
| 170 | Interviewer 54:35 | yeah, I think that's great. So, you mentioned in the first question like, there are like different ways to, like to so. Could you elaborate a bit more like to just a comment. |
| 171 | PX15 54:46 | which one? previous question?, the same scenario?, |
| 172 | Interviewer 54:49 | same scenario. The first question is this. You mentioned like there were like different ways that you could we could blur the background or the the area for you I was just |
| 173 |  | wondering that. |
| 174 | PX15 55:04 | So this technique like blurring a particular segment might not be that easy to implement. That's why I was wondering that I mean, one default option could be given to the user to blur the screen if they have multiple occupants always. Or always like have a maybe as soon as soon as, as soon as someone enters within that space, it could blur the background, maybe not exactly the segment. So then it would be a bit easier to implement and and just thinking in technology implementation terms, but to because if you implement a vision approach, then it will have to recognize whether it's a safe or whether it's a pin or what activity it's doing. So by default, if somebody enters you can just blur the background. by example, okay, yeah. So but it's it's it's doable, and it's a nice adaptation I guess. Maybe Skyp will buy the concepts. Yeah, sure. |
| 175 |  | - |
| 176 | Interviewer 56:17 | So, |
| 177 |  | all the scenarios are done, so we can go to this four general questions you can read them, like answer like, speak out your answers. Okay. |
| 178 | PX15 56:26 | So how do I feel about adaptive user interfaces being used and protecting the privacy of smartphone users? Okay. |
| 179 |  | So |
| 180 |  | adaptive, or adaptive or semi? I don't know if it's fully adaptive or if there is not fully automatic or semi automatic. you not talking about that. [....], right? |
| 181 | Interviewer 56:50 | So I'm talking to when I mean, adaptive user interface like all these scenarios I mentioned. So not being like other types of user interface adaptations. In these scenarios or in my scenarios, you have both automatic, semi automatic. So yeah. |
| 182 | PX15 57:05 | Okay, so I feel that that adaptation is good. Yeah. So in to protect the privacy of smart home users, I think definitely privacy choices within the family members or within the Co-occupants. Definitely can differ. So even Yeah, in different different scenarios of occupancies. So like within home or within home or within a shared apartment or whatever. Yeah. So I think it is good to have that kind of adaptation but did need there needs to be transparency and clearly defined, which which was, there's almost and almost all the scenarios so it was good. Did any of these scenarios resonate with your daily activities? the answer is yes, yes. [...] it did resonates so I can easily connect with the with the Skype..[...] sorry the fourt one for sure. So it's not the pin, like somebody will go like enter the pane or remove the clothes behind ongoing video call but I think |
| 183 |  | - |
| 184 |  | - |
| 185 |  | this can happen anytime when you are living with a co occupant so I'm always like or anybody else is hesitant to come and do their work if they have something to do in a room there have video calls going on. So even for general privacy of the second person, they don't want to be seen. For example to my colleagues, then this could be good. Okay. And also the more tense resonated the noise one, I guess the sound Meditation and sound word definitely because for me also I don't want to get disturbed by meditating or by even thinking or writing and even in my office days maybe I think I used to even tell you can you please speak quite a bit lower volume or something and I was even thinking to have like simple Arduino based system where I could put a microphone and let the let it sense the decibels voice decibel value and then speak out that please Go To Meeting Room. These two definitely resonate with me and I guess it should happen. Yeah. Did any of these scenarios inspire you to think of other scenarios in your daily activities? Others scenario so I mean it |
| 186 |  | - |
| 187 |  | - |
| 188 |  | in the smart home I use the TV, smart home TV. And also I have installed a camera at my parents house, although they used it for the first three months, and they switched it off. Because apparently they got worried of their privacy. So my father was more worried, but my mother was not. So they're following |
| 189 | Interviewer 1:00:25 | you. Is there reason why your father was worried and your mother was not quite like, do you think is there a reason? |
| 190 | PX15 1:00:32 | No maybe because he saw Yeah, once he said that, I will not wear my upper body clothes and walk and maybe if my daughter in law sees that, that is not good. So because he was worried about his he was he did not know whether in my phone I am only viewing the app or the broadcast. and what time do I really what time do I view look at it. So because of this lack of awareness he was worried because that camera was just like if he switched it on it will broadcast anytime and I open it I can see it. Yeah if the person is in front of the camera, so yeah. And that is the thing[..] |
| 191 |  | I already connected the two scenarios to my daily activities. So the two of your scenarios and then like finally for the lockdown working from home made us spend more time sharing home with CO occupants, exactly has the current situation created a new privacy violating scenarios? So it's just a background so I sit on the bed or sometimes the room is not made up. So I don't want that to be shared. So I guess that's why sometimes I like many times I use this background effect on Zoom or the blurring effect of Skype, these kind of things. Also sometimes create problems that co occupants want to come in and take something then it's like general hesitation. So these kinds of things are there. |
| 192 | Interviewer 1:02:16 | Like the dimension like, like how other people got affected like they are general behaviour is affected by you using this device. I think that's a really interesting point. |
| 193 | PX15 1:02:26 | Maybe on a video call. Yes. |
| 194 | Interviewer 1:02:28 | Yeah, definitely. Yes. |
| 195 | PX15 1:02:30 | Yes. Enter the room because |
| 196 |  | yeah. Cool. |
| 197 | Interviewer 1:02:37 | Yeah. So that's all for this study. Ah yeah. |

## PX16

|  |  |  |
| --- | --- | --- |
| Index | Tag | Transcription |
| 1 | Interviewer 0:35 | The purpose of this study is to answer the research question, how do users perceive the usability and privacy preserving capabilities of using user interface adaptations in a smart home? So let me unpack that a bit. In the study, you'll be shown four videos demonstrating Smart Home scenarios with possible risk of privacy violations. smarthome user interfaces could adapt their behaviour you know to avoid minimize those privacy risks. So this study focuses on two types of privacy violations or when I mean privacy violation, it has to ask it could be either of information disclosure, privacy violations, or it could be related disturbances, like somebody's peace of mind is disturbed. It's not just Information Privacy. The two videos I sent earlier example of those two variants, variations. So does that make sense? |
| 2 | PX16 1:24 | Okay, |
| 3 |  | so previous ones, so Yeah, |
| 4 |  | that's true. So the videos you'll see next, in the guide are recorded from first person view this because I would like you to imagine that you are experiencing the scenarios yourself. So after each scenario, you'll be given a question to answer. It's important to answer these questions as if you experience a scenario yourself. Just imagine yourself in the video. In the end, I will ask you a few summary questions about the study. Yep. That that that's the plan for the study. If you are comfortable with everything I can start here. Okay, so yeah The first thing is you basically have to go to the the first video which is in the box. |
| 5 |  | You try to play. You try. You try to play music over a smart speaker while your friend is meditating. Okay, I'm the one who's playing the music. User Preferences. Your friend does not like to get disturbed while he is meditating. For sure. You'd like to use the bluetooth headset in scenarios where you can't use a public speaker. I can see Alexa and a headphone. um, a mobile phone came in. I think that is Pashi-framework there. Yeah, so [the co-occupant] is meditating please pick an option below to play music. All right. And I'm using the headphone music is going to the headphone Okay, sounds great. |
| 6 | Interviewer 5:07 | Yeah. So that's the scenario. So you can go to the next question, which is about like, explain out out loud what you saw in the video, describe the experience of the smart home from the main users point of view, and if there is a secondary user. From their point of view as well. |
| 7 | PX16 5:21 | my point of view, it is very convenient. I mean, you are in the app, immediately notify me that someone is meditating. Well, even though I don't know how that someone, I have no idea how the system got to know that someone is meditating. So that was a bit strange. But otherwise, I think the notification that came up was was very smooth, seamless. I think it was pretty good laser experience in my point of view, Finally I went out to to play the music, and then it's given me options which one you want to do with the context, that someone is meditating. And so I'm just using the headphones, which, you know, I think it's from from users main users point of view. It's some nice, smooth way of looking at things. Yeah, so from the secondary users point of view, I think even a secondary user would be not disturbed at all. So it I think, for even from their point of view, it went fine. Um, and, and it was, Alexa, was not playing it loud. Except there was one beep no "Ting". That's the usual notification when Alexa says, okay, fine, I've got what you want. And it's probably the only thing that might trigger the secondary user. Otherwise, Alexa did not play the sound loudly. And I could select which one to do, which was fine. I think from the second user's point of view, if there is something that could disturb was probably the "Ting" otherwise, because there is no sound obviously, right? |
| 8 |  | - |
| 9 |  | - |
| 10 |  | - |
| 11 |  | - |
| 12 |  | - |
| 13 | Interviewer 7:00 | too. Thank you. So please go to the next question, which is like you had to pick five words describe it. From the first person point of view. |
| 14 | PX16 7:11 | the five top five words which best describes your experience the smartphone interface in the reader your last note, imagine you're the person whose experiences is separate from the back home. Okay, so I should type my answer here. I think I would say this is innovative. Convenient, it's convenient. I am just, In a way noting it down. I don't know if it's cutting edge or not, attractive, high quality easy to use, easy to use, yes. Consistent, relevant, I am just, you know, jotting down all the ones that I think is..., trustworthy, annoying, flexible, approachable. complex, comfortable satisfying. advanced, personal, relevant, poor quality, professional, familiar, simplistic. I would say it's simplistic. But then, easy to use. Okay, I can figure it out later on. Engaging, time consuming, fast. Seemed fast to me. Inspiring, busy, rigid, collaborative, predictable, effective, It was effective, work fine, stressful, straightforward and simple, straightforward. dated, difficult, unpredictable, exceptional, undesirable, helpful. helpful. I'm just jotting down, organized, inviting, confusing, efficient, look efficient to me. Exciting, clean, desirable, intimidating, useful, useful. Okay, so from here, I think I will, you can see what I'm typing, right? |
| 15 |  | - |
| 16 | Interviewer 9:08 | Yeah, I can see I mean, you can leave your choices down like pick five from that on the top. So, |
| 17 | PX16 9:26 | I think for sure I will use personal, |
| 18 |  | um, it was convenient. |
| 19 |  | It was innovative. |
| 20 |  | It was easy to use and it does..... Yep. |
| 21 | Interviewer 9:54 | Why did you pick those five? |
| 22 | PX16 10:00 | First of all personal because I can put my own user my preferences. So that's personal, convenient, I couldn't see any pain point in the user experience, it was very smooth. So that's why it's convenient, innovative, I think that's a very innovative idea on how to, how to have an adaptive interface. And make sure that my preferences are fulfilled, the other person's preferences are fulfilled. So that was, that was useful. I mean, innovative and useful in that sense, and easy to use. It was really easy to use, you just gave me a ping on the app, I get a notification and I just select which one I want. So.. I mean very convenient. I think it's just two taps. I tap the notification, and then I select whichever I want to do. So just easy to use. |
| 23 |  | - |
| 24 |  | - |
| 25 |  | - |
| 26 | Interviewer 11:01 | So. So the next next part is like |
| 27 |  | it's self explanatory. So you go to the next, There are six statements that you get to rate and they are alternating like negative and positive. |
| 28 |  | Just read them and I will ask some some questions around them. |
| 29 | PX16 11:21 | please consider the following statements and rate how much you agree with those statements. put an X under your choice smart home proteced the privacy of its users.. say so let's give it a four. Okay, I did not feel that I'm in control while using the smartphone.. the smart home. I strongly disagree. I expected to the user interface adaptations before it happened. Oh I don't know.. did I expect?.. No, I didn't expect it to happen. If the person experiencing these user interface adaptations, I would not have accepted them.. This.. question. I don't know, if I were the person experiencing these user interface adaptations. If I was to actually having it to be in real world, is that what you mean? Yeah. I think I would have accepted it. I understood why the user interface adaptations happened. Yes, I did understand that. User Interface adaptation obstructed the user experience of using the smart home. The user interface adaptation obstructed the experience of using the smartphone. Smart Home. I don't think so.. Is that fine? |
| 30 | Interviewer 13:04 | Yeah, that's great. So I just have a couple of questions on that. So. So in the second question, which is about regard to the control that I didn't feel that I'm in control, so you said strongly disagree. So what do you think? What sort of system you would rate as strongly agree that you feel that you're not in control? |
| 31 |  | What is the alternative? |
| 32 | PX16 13:30 | Well, I think that's a difficult question. You have to give me an example on this one. I was fine with it. So give me a bad example. |
| 33 | Interviewer 13:38 | Yeah, I'm just trying to like pick out like, what, what are the possible in your point of view, like in this same scenario? So if you're the person who's who wants to play some music, and what do you think is bad..? use, like a design like, oh, which would feel like that you are not in control. So the point is..., |
| 34 | PX16 13:58 | I think because if I Look, if I remember the video correctly, there were four options for me to choose, right?. If the system went forward and chose its own one, then of course, I wouldn't be in control of the system. So that would be something that I would strongly agree with. |
| 35 | Interviewer 14:27 | So yeah, it's the same structure. So you go to the next video and play |
| 36 | PX16 14:32 | football. That's more like my thing. Okay, you tried to change the sports news by the smart speaker when the Co-occupant is studying. Oh, bad! [the co-occupant] seems to be angry that.., the occupant does not the co-oppucant does not like to get disturbed. While he's studying.., Of course not, you would like to use a smartphone where you can't use a smart speaker. Okay, it's fun After the recording is stopped, I will ask you a different question. But anyway. |
| 37 |  | - |
| 38 | Interviewer 15:56 | ..explain out loud. |
| 39 | PX16 16:05 | Yeah, so what I saw in the video was, of course, my co occupant is reading a book. And I wanted to get sports news, I was interacting with Alexa and the verbal instruction that I provided to Alexa, so that might could have been an annoyance to my co occupant and otherwise. Otherwise, I think the system did quite well. giving me a notification and explaining me why. But then again, I am skeptical. How would the system know that someone is studying? But other than that, find this a nice, nice contextual notification, and giving me good explanation of what's going on, and accurate of course. And so then I, I did what the choice was there wasn't much choice, there was only one choice. I just went forward and did open the app. |
| 40 |  | - |
| 41 |  | - |
| 42 | Interviewer 17:21 | So from the secondary user's point of view, what do you think? |
| 43 | PX16 17:27 | I think from secondary users point of view, except for my first command voice command to Alexa. I didn't think there was anything that would annoy another secondary user. |
| 44 | Interviewer 17:41 | could you move to the next question? |
| 45 | PX16 18:02 | I felt less in control in this one because there was only one option. But well, it was. It was convenient, that's true. Essential, attractive, high quality and consistent, easy to use. I would say approachable because because of the way because of the way the system was explaining me the context, even if I didn't want to put the, I mean even if I didn't want to see the news on the app. I know there wasn't any other option but the way it was explained. I would have just, you know, gone.. gone with it without a any.. without any problems. Okay, it wasn't complex. Was it comfortable? satisfying? Okay. Comprehensive advanced personal., I think it was advanced because otherwise how would have understood that someone is studying, personal creative, irrelevant, poor quality, professional, familiar, powerful, simplistic, engaging, time consuming distributed. I would say rigid because there wasn't any option for me. predictable, effective, stressful, straightforward unpredictable, organized, confusing, efficient, exciting, clean, desirable. Okay, let's put in are useful, useful. Yeah. That's my five. |
| 46 |  | - |
| 47 |  | - |
| 48 |  | - |
| 49 | Interviewer 20:10 | you explained the top four |
| 50 |  | First of all, what is the reason you picked the word useful? |
| 51 | PX16 20:16 | useful because of, the given the context? I don't want to, you know, disturb my co occupant. I think that app interface was useful. |
| 52 | Interviewer 20:27 | Yeah, that's great. So could you go to the next set of questions? |
| 53 | PX16 20:32 | So the questioner, smart home, protected the privacy of its users, I would say so yeah! I did not feel that I'm in control when using the smart home. I will be in the middle because there wasn't much option given but then again, yeah, I'm also in the middle. I expected the user interface adaptation before it happened. I didn't expect it if I were the person, experiencing these user interface adaptations, I would not have accepted them. No, I would have accepted them. Oh, sorry. No, I should, I need to give a negative answer right? understood why the user interface adaptations happened. No, I did understand user interface adaptations obstructed user experiencing using the smart home, oh, I'll probably be in the middle. It did obstruct a bit. |
| 54 | Interviewer 21:37 | Again, back to the second question, which is about control. So is there a, in your opinion, is there a better version of presenting these like, adapting user interface? |
| 55 | PX16 21:49 | Um, there might be be I mean, just like the previous example, if you could have given me more options. Maybe listen, Listen to the, rather than listening on the speaker. If I if he could have just said, use the headphone. Or maybe give me give me a short summary of what's going on, or what's the latest sports news. Because for example, I don't have Alexa but I do use Assistant. So if I say, sports news, Hi play sports news. It will give me like a 30 seconds or one minute overview of what's going on. So that could have been on the headphones. If that was convenient at the time, so bit more flexibility would have been fine. |
| 56 | Interviewer 22:48 | Yeah. Okay. |
| 57 |  | So what do you think is like a bad solution like So you mentioned like it protected the privacy, like, why do you think is a scenario where the privacy isn't protected when using this system? |
| 58 | PX16 23:11 | If it was, if it was just loud and going around going with what Alexa would have done anyway, you know, speaking out loud, and that would have disturbed the other person. |
| 59 | Interviewer 23:26 | So let's move on to the next scenario. |
| 60 | PX16 23:29 | Scenario three, health, right? Try to access your personal health information over the... So, it says that it has increased right? Okay. Explain out loud what you saw in the video. So I was interacting with Alexa asking for me to give me my health information. automatically. It detected that someone was coming in the room and just gave me a notification on my smart watch. |
| 61 | Interviewer 24:50 | from secondary users point of view what do you think he saw? |
| 62 | PX16 24:55 | He saw nothing |
| 63 | Interviewer 25:00 | Yeah, |
| 64 |  | yeah. So yeah, the next question |
| 65 | PX16 25:05 | five words, okay. convenient. One second is going to bed bonds because it can detect that someone is entering the room. I would say effective useful but it wasn't. So it wasn't. It was unpredictable because I know my preference, but I'm waiting for an Alexa to speak-up. All of a sudden I get a notifaction on my smartwatch? What if I wasn't wearing a smartwatch? I wouldn't know what's going on. So that's why I say unpredictable. |
| 66 | Interviewer 26:10 | So yeah, I mean, just to just to clarify that too, in this specific scenario like so in the system it sort of like understand what are the available smart devices in the room? And then pick one which is the most suitable to I mean, if the person is not wearing a smartwatch, he would have been fall back to another option, which might be like a smartphone. So if so, that's how the algorithm is working. But yeah, I understand you maybe it's not clear in this video like what exactly. how it picks up, so Yeah, that's good feedback. So.. |
| 67 |  | Why Why did you use the word effective like what's? |
| 68 | PX16 26:51 | effective in the sense that it goes back to the advanced.. is connected to the advanced as well, so effective in the sense that it works. Right. I mean, immediately checked, someone came in and immediately it did not even started right?. It didn't even speak out, blah, blah, blah. And then, not even that! It was immediately, it went as a notification, you know, detect if someone came in and it send me that notification rather than speaking it out loud. That's why. |
| 69 | Interviewer 27:25 | So you can move to the next set of questions. |
| 70 | PX16 27:31 | question; smart home protected, the privacy of its user, of course, it did! strongly agree. I did not feel that I'm in control while I am using the smart home. Um, I have a question here. So, of course, I didn't feel I was in control because I didn't know which, where the notification was coming. Right. But then again, did I put a pre set in, I mean, setting, configuration that okay, if if this if not this, then this or that. In that case, I'm in the control otherwise, immediately, I don't know what's going on. |
| 71 | Interviewer 28:13 | Yes, in the so how you set up the system is like you can specify your preferences like with regard to your smart device usage like number one that is smart speaker. Like one of the preferences at the beginning the description it says like smart speaker is the most preferred and if it's not available then a smart watch, like a very simple set of rules. And that's been used in the knowledge base to infer like, what's the best solution to change this so. So that's actually set up by the user. So not necessarily, system doesn't infer on its own. It's like settings or set by the user. |
| 72 | PX16 28:51 | predefined or even then I think, in the context. I'm not in control. So I did not feel that I'm in Try using it. Yes. This is tricky. I did not feel that I'm in control. I literally did not feel I mean, so I agree. I expected the user interface adaptation before it happened. No, I didn't expect it. If I were the person experiencing these user interface adaptations, I would not have accepted them. It just happened. How Okay, I mean, except the scenario you mean, if I were the person experiencing these user interface adaptation, I would not have accepted them. Nooo, I think I would go with it. Let's put it there, slightly disagree.. If I were the person who.. I would not have accepted them., No! fine. I would have accepted them. |
| 73 | Interviewer 29:59 | Did you do this intentionally? Yes. For you to think. |
| 74 |  | Okay. Yeah. I mean, I mean, not me and [the co-occupant] asked me to do it because otherwise people would like, by pattern pick somewhere rather than reading the question. |
| 75 |  | ..how it works. |
| 76 | PX16 30:16 | I understood why the user interface adaptations happened. |
| 77 |  | Yeah. Understood. Yes. I agree. User interface adaptation obstructed... Oh, |
| 78 |  | I don't know, like, I think I will be in the middle because... |
| 79 |  | Yes or No, |
| 80 | Interviewer 30:36 | Yeah. So, in the fifth question you mentioned like, why you you understood why the adaptation happened? Why do you think like, a scenario where you would disagree with that statement. |
| 81 | PX16 30:54 | Um, I know this because of the as you mentioned before, right. First of all, this is a sensitive, sensitive scenario, right? It is very different to the previous ones. If my other other participant or you know, was disturbed during meditation, or disturbed during the football thing while he was studying those, those kind of things are even if the system made a mistake, or even if there was some disturbances, then we could have apologized and sorted it out. But if your health information is all.. you know, if someone knows it, knows it, you can't unlearn it or unhear it. So you can't really have, it has to be a zero tolerant system, right? Or is that the right word?.You understand what you mean? I mean, you understand what I mean? It can't.. fault-tolerent or it can't it can't have a fault or that sense. Fault tolerant system. So that's that's the reason I think I understood why the adaptation was done. |
| 82 |  | - |
| 83 | Interviewer 32:11 | Do you wish I mean, the system did something differently like, like a better version of this in you opinion |
| 84 |  | Given the same scenario. Incident is gonna happen, like somebody's gonna come in, you're going to ask ... |
| 85 | PX16 32:24 | Yeah, I think in the previous examples, especially in the studying one, you had a very nice explanation of the context. This is what happened. Would you like to do this? So maybe I understand that the notification did not. I'm not double tapping or single tapping. So my interaction from my part from the user's perspective has reduced but there could have been a pop up, saying, blah, blah blah is the situation, would you like to do this? And then I tap? Yes. Otherwise if someone has a hold you know, gets hold of the smartwatch, you couldh have just seen the information. |
| 86 | Interviewer 32:34 | Okay, so |
| 87 | PX16 32:40 | maybe at least one more step of interaction. |
| 88 | Interviewer 33:21 | You can go to the next scenario the final one. |
| 89 | PX16 33:50 | The, I was having, I was having a video conversation with my friend. |
| 90 |  | And in the background, I had my my friend or colleague, opening up a lock, safe look at putting the pin in. And it could have been possible that my friend could see it behind my back. |
| 91 |  | So yeah. |
| 92 |  | Um, it might be I mean, it might have been a serious safety breach or privacy breach, but I don't know. What if someone is too remote to actually do anything, because it's a physical thing, isn't it? |
| 93 | Interviewer 35:02 | So what do you think from a secondary users point of view? |
| 94 | PX16 35:05 | From secondary users point of view, I think, is it in terms of my colleague who's sitting in the office |
| 95 | Interviewer 35:13 | both of them separately, so that there are like three people? |
| 96 | PX16 35:18 | So from my colleagues point of view who was in my.. who is co-located in the office, I wouldn't be comfortable I wouldn't be comfortable in what's what's going on? And probably, I should have been a bit more aware of my surroundings and and should I put the pin on or Could I just, you know, hide the thing. Just Just to be a bit more careful of what's going on and and from my from the.., my friend whose, whom I'm speaking to about the movie. I really don't know how he would feel. If he's looking on the video you'd notice what's going on but you know, sneaky, becoming a bit sneaky, but I really don't know how you would feel. |
| 97 | Interviewer 36:19 | Yeah, that's cool no worries. Yeah, just Just checking. What do you think? So you can move to the next question. it is to pick five words. |
| 98 | PX16 36:29 | Yeah. |
| 99 |  | Um, okay. Now my question is, what am I supposed to |
| 100 | Interviewer 36:39 | so it's from my point of view, which is the main, I'm the person who's having the call. So, for example, in the video myself, from my point of view, what if so, does that make sense? |
| 101 | PX16 36:56 | Um, okay, so from your point of view, How did the smart home interact? So |
| 102 |  | just just I could see the pin got blurred. Did did the Smart Home blur it? |
| 103 | Interviewer 37:16 | Yes. The smart home? |
| 104 |  | Yes. So that's adaptation. So I should have been clear. Yeah. |
| 105 | PX16 37:25 | But then my question is, is that being something relevant to me or my co colleague who's in office? |
| 106 | Interviewer 37:37 | It's the co-occupant. So personal safe, so it's not myself, it's someone else's safe. And because I'm in the call with someone else, his privacy could have been violated because I was not aware of what's happening. But the co-occupant, Blain has putting his privacy preferences to say that he doesn't want anyone to know his safe details which has been picked up by the smart home when there this interaction. So it adapts the video stream to block that view so that nobody who's in the other end can't see anyone. I also can't see which if I see myself in the camera, so |
| 107 |  | so interaction in the sense, the video call it self. |
| 108 | PX16 38:31 | Yeah, exactly. I understand But |
| 109 |  | see, I didn't do anything from my part. Right. What if I don't even notice what's going on? |
| 110 | Interviewer 38:45 | Yeah, I mean, that's that's the best part. I mean, |
| 111 |  | the best case scenario |
| 112 | PX16 38:51 | because what's going on, if something got blurred in the background? Yeah. So yeah, exactly. to pause, cuz you know, I'm saying this Because, for example, I'm not talking to you, right? When I'm talking to someone on Skype or whatever on a video call, I look at someone else in a big screen. Not myself. Yeah. So when I'm not looking at myself that well, it's possible that I didn't even notice what's going on in the background. Yeah. So in that sense, I don't know. |
| 113 |  | How the, I don't know. I didn't have the experience of the smart home at the time. You know what I mean, you know what I'm coming from, |
| 114 | Interviewer 39:40 | yeah, so. I mean, if that's the case, why do you think about from |
| 115 |  | person in the other end? |
| 116 | PX16 39:52 | Well, it's difficult, right? So okay, from My friend on the video call from my friends perspective I would say it is innovative, possibly cutting edge because it didn't blur when the thing was already there only blurred when the interaction was going so high quality and trustworthy know |
| 117 |  | - |
| 118 | Interviewer 40:59 | what did you pick the word trustworthy? Like? |
| 119 | PX16 41:03 | I mean, if if this was the system was so smart and he could do the job and that he was not exposed? I can see it's, you know, you can trust the system, that's that's why. |
| 120 | Interviewer 41:23 | Now you can go to the rest of the questions |
| 121 | PX16 41:28 | smart home protected the privacy of it's users, for sure it did. I did not feel that I'm in control. Yeah, I wasn't in control at all. Oh, again. I did not feel that I am in control while using the smart home. Yes, I strongly agree because I did not fell. I didn't, I would have probably not notice at all. I expected these interface adaptations, no I didn't expect to happen. if I were the person experiencing these user interface adaptations I would not have accepted them. No. I would have accepted them. And understood why the user interface adaptations happened. I understand now but at the time, maybe not. So, how should I say, from which perspective? |
| 122 | Interviewer 42:22 | from my friends point of view like, yeah, |
| 123 | PX16 42:25 | so yes. I understand why, user interface adaptation obstructed the user experience of using the smart home. I don't think so, strongly disagree. Yeah. |
| 124 | Interviewer 42:39 | So in the first question, you mentioned like smart home protected privacy. So what do you think? |
| 125 |  | How, what scenario where you would rate it as one, that you disagree |
| 126 | PX16 42:55 | if it wasn't blurring it. |
| 127 | Interviewer 43:23 | So, so that's all for the scenarios, and we have some, like few general questions, so. I mean, read them out and like, type them just explain, like, what do you think? |
| 128 | PX16 43:34 | Overall, how do you feel about adaptive user interfaces being used in protecting the privacy of smart home users? Um, if I saw in context of the scenarios, right, |
| 129 | Interviewer 43:46 | yeah. Yeah, I mean, in general, as well, I mean, the first case, the first its for this scenario, |
| 130 | PX16 43:52 | Well, if I consider these scenarios, I think it worked very well. Yeah, otherwise If it was in the real world scenario, when I can see what Alexa does these days, I would say absolutely not privacy conscious at all. So that's my overall feeling. So in terms of the scenarios, |
| 131 |  | - |
| 132 | Interviewer 44:19 | the when you mean real world scenarios, even existing smart home devices? |
| 133 | PX16 44:23 | yeah, just because Alexa was using the system, right? Yeah. If I've seen friends using Alexa, you have no privacy. And it's a bit creepy because it's listening to everything that's going on in the home all the time. So you never know if that data is being recorded, or saved somewhere. Or you know, it's because previously, we We heard stories where Alexa, Amazon was literally saving all the data. Yeah, so it was some, but I don't know if they have changed anything now. |
| 134 | Interviewer 45:13 | Do you think like having this kind of a adaptive system would help protect privacy makes you use these devices |
| 135 |  | to buy an Alexa but like, much feel safer? I |
| 136 | PX16 45:27 | think so. I think so the perception would be so, you know, just like, just like we are using the phones, you know, on normal phones I'm saying we know if someone wants to a bad player or bad actor can listen, listen to our phone conversations. If someone wants to a bad actor can possibly have Have a look at my messages. Or whatever I'm doing on my phone. But even then, we are using this using a device right? But with the smart home devices these days I mean, even with assistant in the in the beginning I was hesitant to put on. So there is a mode called you can unlock the phone using Assistant. And that means it is going to listen to every single conversation that is going on around you. And only if it here's the trigger word. It would unlock the phone for you. Yeah. And that was creepy. Listening to every single thing and constantly cross checking right. So That means there is a bit of data transfer. Like it or not, they save it or not, there is a bit of data transfer going on of the recording that's going on, right? Or some form of text to speech or mean speech to text, conversation conversion going on the doing the matching. So I was feeling creepy in the beginning, but with time, because of all the conveniences that Assistant gives you. I think you feel that Okay, fine. Let's just do it. Right. See, you have this. What should I say? I'm living with the device. You slowly get used to it. And then sometimes you can get even if it's not a privacy aware in the background in the foreground, especially in the scenarios that you're seeing here. It seems it's fantastic, right? So at least in the foreground, the scenarios that we saw it was doing a good job in protecting the privacy of myself of the co-occupant. So probably my, I will feel more trust. I mean, I'll have more trust to the system. Okay. |
| 137 |  | - |
| 138 | Interviewer 48:24 | Great. To it think about the next question like, which is about |
| 139 | PX16 48:45 | okay. So two, we had football. Yeah, I do it in mine. So there are four scenarios right. The medical scenario, no, Don't Don't do it. safety video call. I think this is too novel. I haven't experienced it myself. I don't even know if there's existing system who does [this]. Um, but the first one meditation, listening to music. Yeah, or studying? While um, yeah, those are more relatable. Both are more relatable. And it doesn't have to be music music. It doesn't have to be football, football. But if someone else is doing something, and you don't want to, you don't want this to be disturbing to the others. That is relatable for sure. From my perspective, of course, not the medical one, not the safety video call one. |
| 140 |  | - |
| 141 |  | And number three, did it inspire you to think of all those scenarios? Yeah, I mean, let's say Yeah, for example, I have a common use when I'm just talking to assistant and saying, make this phone call. Now, given the scenario, I mean, my scenario, my personal scenario. And the current existence system that how will Assistant works, it will be on the loudspeaker. So let's say I am driving. And I'm telling Assistant, okay, assistant make this call. So the conversation is going to be loud anyway. I don't have any control on that context. And I don't know how it can. It can vary if unless I use my own bluetooth headset while I'm driving which is very old. Yeah, so that's that probably... a scenario that is a bit tricky to get the privacy thing working. And, and I think even though it's not in a smart home environment maybe I don't know if you are. |
| 142 | Interviewer 51:17 | Yeah, I mean, yeah, I mean, just just your daily life setting. That's a really good example like you mentioned this in the previous study as well like to the to that it's a good scenario where you got all these privacy disturbances, information leakage could happen. |
| 143 | PX16 51:34 | Yeah, yeah. Yes. Let me give you another example that happened a few few days ago. But that of course, it of course, it's a smart device, but not necessarily a smart home. It's similarly it goes back to the car. I was I received a phone call from someone and and I have to To tell that someone that I have someone else sitting beside me. And so you should speak a bit differently or Be careful or be wary of how you should speak. So that's a very tricky scenario. And I think in this case, if the system was smart enough, the caller will receive a notification saying there is another occupant in the car, would you like to continue with the call? Or if you if it's urgent, okay, continue with the call. Be be known that there is another one another occupants in the vehicle. Maybe that kind of introduction would be interesting. |
| 144 | Interviewer 52:53 | So, the last is related to COVID-19. So what do you think about that question? |
| 145 | PX16 53:00 | COVID-19 lock down and working from home made us spend more time sharing our home with co-occupants. That's true. Has the current situation created in privacy violating scenarios that could have been avoided by up to user interfaces? Please elaborate on your answer. Well, I don't know really, because it's just me and my wife vote so there isn't much. Well, there isn't much in that sense, but I could say that my, if my wife is having a work call, and and if I can hear all the conversation, maybe that's not a nice thing to do, or nice thing to happen. Similarly, if I'm having a work on myself, and my co-occupant is listening to my conversation. Maybe it's not always desirable. So yeah, I would say these are some of the ones. Yeah, because I mean, I personally don't use a headphone. So if someone is or someone is home, my co-occupant can, for sure listen to me and the person that I'm talking to. |
| 146 | Interviewer 54:32 | Yes. So if you're not using it for that, that means I could hear someone else in your home speak up will say something. |
| 147 | PX16 54:39 | Exactly. So basically, all three parties can listen to each other. Yeah. But more more in the sense of that third party. Because for example, now right now I My room is closed, right? You're on loudspeaker. I'm speaking of course, loudly So, our co-occupant can for sure, listen to me. Yeah. Maybe not to my caller, or the or, I mean, this case you maybe not that clearly. But if it's possible, I think it's possible that it is possible that that person can be heard. So, sometimes if we are discussing that is sensitive, but probably, you know, sensitive in a work environment or that's probably not helpful or not, what should I say? The right thing to do, or I don't know. |
| 148 | Interviewer 55:42 | So the other thing is like as I see from your example is that |
| 149 |  | because you find it |
| 150 |  | the usability point of view you like to talk like without using headphones or something, just speak out naturally. And if there's a sensitive info coming up with even you knowing or without knowing, so that means like, the system if the system can help them that would be like, I think a good feature that's, that's, that's what I see where the system could help you to keep the usability up as well as protecting your privacy. So |
| 151 |  | it's an interesting example. |
| 152 |  | Great. So yeah, I mean, that's it for this study. So I will stop the recording. |

## PX17

|  |  |  |
| --- | --- | --- |
| Index | Tag | Transcription |
| 1 | Interviewer 0:09 | So thank you very much for joining my study. Before we start, let me give you a brief introduction to the study. The purpose of this study is to answer the research question, how do users perceive the usability and privacy present in capabilities of user interface adaptations in a smartphone, so let me unpack that a bit. In this study, you will be shown for demonstrating Smart Home scenarios with possible privacy risks. Smart Home user interfaces could adapt their behaviour in order to avoid or minimize those privacy risks. This study focused on two types of prior to iterations. The first type relates to information disclosures, and the second type of issue disturbances caused by smart devices. The two leaders I Antonia well examples of those two Asians. Does that all make sense? |
| 2 | PX17 1:05 | Yeah, I think so. And |
| 3 |  | yeah, I mean, I suppose so when it's kind of about private information that you're asking the voice assistant for. And then potentially there's somebody else in the room that shouldn't be privy to that information. And then, yeah, I saw the other. Other one is more of not annoying other people in the room, sort of. Yes. |
| 4 | Interviewer 1:37 | So those are the two aspects of privacy. The first one I think you're very familiar with is from sacred aspect, which is about privacy. And the other aspect is about like, like the right people have to be let alone like being having peace of mind in a smart home and these devices will be disturbing. So that's another part of the privacy aspect I'm focusing on and the 14 areas are you allowed to from each type And and the focus is on within the smart home like between smart home users. So I'm not focusing on price valuation which is happening outside smart long term focus. So the videos you'll see next are recorded from a first person point of view. These because I would like you to imagine that you experienced the scenario yourself. After each we do you will be given a questionnaire to answer. It's important to answer these questions as if you have experienced the scenario yourself. In the end, I will ask you a few summary questions to wrap up the study. Is that okay? |
| 5 |  | Yeah, sounds good. |
| 6 |  | So I will be recording this conversation, the recording will be deleted as soon as I've transcribed the session, the transcriptions will be kept secret, securely until I have completed my analysis. And any information extracted from them will be anonymized before being used in any publications. |
| 7 |  | That's all right. Yeah. |
| 8 |  | All right. Cool. So I think the document is itself explanatory. So what you have to do is like to go to the first section and click to play the video which will direct you to another link so you can view the video and after you finish you can come back to the Doc. |
| 9 | PX17 3:13 | Okay, so yeah, I've got the Doc open here |
| 10 | Interviewer 5:02 | the first question is to explain out loud what he saw in the video. |
| 11 |  | Okay, so yeah, there was a person asking Alexa to play some music and then they didn't really seem to be anybody else in the room at the time so I suppose you you might have not realized that his his friend was meditating. But then alert came up on the phone said Oh, your friends meditating. Do you want to listen to it on your your headphones and gave some other options I wasn't quite sure what those were so that it was like play the music loud. I don't know whether that was through the headphones or external to their headphones like ignoring them. The the alert But yeah, I think the option was chosen to play through the headphones |
| 12 |  | that were actually put the headphones on. Yeah. That's that's how I saw it. So yeah, I don't know from from the main user's point of view. I suppose it's potentially a little bit irritating that you you have to listen to the headphones. Or, you know, you don't have to listen to the headphones, I suppose. But I think on the other hand, this is why you you don't necessarily want to annoy people that you're living with either. So you know, it could could be a good tool for keeping, keeping relationships in in their home on a steady keel sort of thing. And then yeah, on the second user's point of view. Yeah, I think rather than having someone playing music out loud I suppose when you when they're given the option to to play to the headphones, and you're not disturbed So yeah, I guess that's good, in a way. All right. That's great. So you can go to the next question where you have to pick five words from the list below. top five words which best describe your experience. |
| 13 |  | - |
| 14 |  | - |
| 15 |  | - |
| 16 | PX17 7:54 | Okay, um, I just typed them. |
| 17 | Interviewer 9:25 | explain why you sort of picked thos reaction cards, you don't have to type in, just speak out loud so. |
| 18 | PX17 | okay so yeah I suppose I chose entertaining because it's about music and music is entertainment. I don't take it detracted from the main task. I think it was helpful because again like you might not be aware that your friend meditating, desirable, as I've said, obviously you you, you don't want to annoy other people not necessarily, it seemed fairly easy to use. So that's why I chose that it wasn't it wasn't complex or complicated in any way. It seemed to happen. so easily. And then, I guess yeah, I felt it was personal because it was related to the personal situation that was was the occuring really. Right. It's great. You can move to the next section, which is to, to read these statements. And again, we're looking at the the way of protecting the privacy of users in their in the thing of in the realm of sort of disturbances in this case, then yes, I'm so Yeah, I suppose I can strongly agree with that one. Yeah, I think I think I felt in control, I think had options. They're presented to me. |
| 19 |  | - |
| 20 |  | - |
| 21 | Interviewer : | So, yeah, so two quick question. So in the first one you mentioned, like protecting the privacy of its users so what do you think would be the scenario where it did not protect the privacy of users? What sort of a system would you expect? |
| 22 | PX17 : | Um, so I suppose it would, would not give you the option I suppose you would just play the music. It would be like that. I mean, that's the way that I I'm used to using Alexa you say? shuffle my music and I'm basically Yeah, it just does it then, regardless of what else is is happening in the home? Okay, Yeah, I imagine it would just take the command at face value and do regardless of what else was going on in the home. Yeah. Okay, cool. So number three expected the user interface adaptation before happened. Hmm. And then it's kind of a tricky question to answer that knowing the purpose of the study and I'm having seen the other two videos previously and but to say I'm expected the user interface adaptation before it happened. I'm gonna say two on that because I think, for example, like I said, from the video wasn't it wasn't clear that someone was meditating around. And yeah, so right. Potentially, you wouldn't be expected to say, Oh, do you want to play with a headphones and that again, that's not really the way that I'm used to using Alexa. |
| 23 | PX17 13:48 | For |
| 24 | PX17 13:49 | If you were the person experiencing these user interface adaptations, I would not have accepted them. |
| 25 |  | I think, so erm. |
| 26 |  | from the, from the perspective of the person who's who's asking to play music, I think I probably would have accepted them. So I'm gonna strongly disagree with |
| 27 |  | that one. |
| 28 | Interviewer : | What do you think would be the system that you wouldn't have accepted in this scenario? |
| 29 |  | It is a broad question like, so you can. |
| 30 | PX17 14:32 | Yeah, yeah. Um, I don't know. I mean, I suppose one of the things that I've noticed about the prompts and stuff is that it's very much, you know, do you want to it still gives you the option of disagreeing and it's not authoritative. It's not like you must play through the headphones saying, Do you want to so I think I know it so human nature is if you're forced to do something, you're quite often you'll go No, I'm not going to do that I'm going to find a way to, to work around and do what I want to do. |
| 31 |  | So, the five I understand why the user interface adaptation happened. Yeah, I think, well, I gotta say four because it's not clear. Really, where this person is, and whether they're meditating upstairs whether the music would truly annoy them or not. I'm going to take four on that. User Interface adaptation obstructed the user experience of using the smart home. It is a no, I'm gonna say, two for that because I think sometimes like music is a social activity and if you want to play music, then you it's a social thing and then you know, you want to listen to it with your friends or the other people in the household and so having to put headphones on and listen to it alone as such is it's an it's an obstruction, I think, but I you know, I understand the situation there. |
| 32 |  | So section two Okay, so with that one, it seemed like person was on a video call and then a person who wasn't the subject to the video call walked into the room and the the figure was blurred out. It seemed like they were on the phone as well on the mobile phone and I didn't hear any of that conversation going on. So I think that was what I saw. And yeah, so I suppose from the main user's point of view his call seem to go on as normal. And secondary users privacy was protected. |
| 33 |  | - |
| 34 |  | - |
| 35 |  | - |
| 36 |  | - |
| 37 |  | - |
| 38 |  | - |
| 39 |  | - |
| 40 | PX17 18:08 | So it was easy to use I think. I think it was comfortable to watch. Yeah, I think you know it wasn't jarring at all. Yeah, I mean it seems predictable. I mean, I think when I saw someone walk in and then it a blurd out it didn't feel unusual. I could see why it was doing it. Think potentially useful. I think potentially in a way, I'm gonna say was rigid because it might be that they're all friends together and it's you know, they potentially know each other and they'd rather be on the call and say hello to the to their friend. So, I think I've explained why I picked those reaction cards. Is there anything? |
| 41 |  | - |
| 42 | Interviewer : | Yeah, so the word comfortable. Could you explain a bit more like what do you mean by that? |
| 43 | PX17 : | So So like I said, I think the the word comfortable like I said, it didn't feel jarring to look at the video. When you You're on the call. You know, it didn't detract from from the call itself. I was quite comfortable with someone coming in through through the door and I suppose in a way as well kind of kept the focus on the subjects rather than the distraction from from somebody else walking into the, into the background really. |
| 44 | Interviewer : | Yes, you can move to the next section. |
| 45 | PX17 : | Protected privacy of users. I mean, this one's a bit tricky, really, because it might be a private call. The person who's who's walked in my overhear something that he's not meant to overhear. But on the other hand, the person on the call might not, or might not be wanting to see the person who's walking into the room. So it might be you're protecting the privacy of the person who's walking into the room. But you're not necessarily protecting the the privacy of the conversation that's currently in progress on on the phone on the Skype call or on the video chat. And so |
| 46 | Interviewer : | can you think of, like, mechanism, you can protect that as well? Like, is there something in your mind? |
| 47 | PX17 23:58 | Well, I don't know, I mean, basically I was thinking about the the scenario and in the two things that you sent initially. And in that instance is a voice assistant detects that somebody walks into the room and then stops playing over the loudspeaker and send something to the, to his smartwatch or something. And so I don't know, I think potentially something could say, Oh, do you want to continue with the call and some with someone else's in the room? And you might say, Actually, no, wait until that person's at the room, it could mute the the speaker or I don't know. I mean, it's, it's a, it's kind of a tricky thing, because obviously, in a way it detracts from the purpose of the video conferencing system, doesn't it? Because actually, you want to have this seamless But also, potentially you don't know who's actually walked in and what they should or shouldn't hear. Yeah. So I'm gonna say, number three for that one, I think. |
| 48 | PX17 : | Again, I'm gonna say three for that one. I think partly because some of the things that I've sort of said earlier was that people, they may all be friends and you might not want them to be blurred out and you might want to have a three person chat potentially But yeah, so expected the user interface adaptation before it happened, I'm gonna say two for that I don't think I expected it before it happened, but when it happened, it didn't shock me. When the person was blurred out, it didn't shock me. It seemed a reasonable thing to have happened. So I don't recall seeing a any way of accepting or denying that it just seemed to happen to me. this like I just said, not necessarily like, by your action picking but like, would you have liked it? So that kind of question.. would I have liked to to have accepted them? Um I mean, I could see the use there So yeah, I think I'm gonna say number four cuz i think i think so recently we've all been on video conference calls and had things going on in the background that you don't necessarily want to be the focus of your your call. So yeah, I think it would be useful to have something that says blur out the background. And in fact, you probably notice on my on my Skype call, I've got a video Your background. Yeah. I'm going to say two, I think I probably would have accepted them so I'll slightly disagree that I wouldn't have accepted them. So yeah, I think I strongly agree I understand why happened. Number six, user interface adaptation and obstructed the user experience of using the smart home, I'm gonna say |
| 49 | PX17 29:15 | hmm |
| 50 |  | agree or disagree, I suppose in a way if it's blurring stuff out there in the background then if someone wants to be the focus, as well, and you go, Oh, wait, friend, who's, who's on the video conferencing, there's like I said, they're all friends, then they might come in into the focus and and then be be part of the call as well. So I'm gonna say, three. I don't agree or disagree with that one. |
| 51 | Interviewer 29:50 | Okay, so, section three |
| 52 | PX17 : | Okay, so this is a video the kitchen. Okay, so it looks like the person is trying to open his his medical cupboard using a smart gesture. And he then tries to do it a second time and before he gets the the notification so actually, I sort of feel like he's he's given away his password or his his gesture without realizing it to the to the person in the this behind him potentially. But yeah, I'm not not sure on that one, seems a an interesting one in a way. So from the main user's point of view, and he's not able to get his medicines out of the cupboard, and I suppose protecting his privacy in that it's not showing, you know, the cupboard doesn't open show which medications he's got in there. So you don't have any idea of potentially what elements or what medicate medications he's taking. And I'd know from the secondary user's point of view, I'm assuming that's going to be the person walking into the room, I suppose. You know, it protects them from actually |
| 53 | PX17 32:15 | kind of conflict of interest situations where they, they don't need to know what medications the person's taking. They perhaps shouldn't know what medications the person's taking. But then on the other hand, from the main users point of view, again, I sort of feel like he's given away his password and is now gonna have to sort of reset that in a way, but he's also potentially giving away the location of the secret cupboard or although I imagine that seems it's gonna be kind of obvious that there's a secret cupboard that people can't get into with a gesture, I suppose. |
| 54 |  | Okay, so |
| 55 |  | top five words |
| 56 |  | I think it's cutting edge. |
| 57 | PX17 33:30 | I think unconventional. I'm not sure it feels like the, the most intuitive way to open a cupboard. And, you know, I sort of you like pin codes and and that sort of stuff is a an easier way for, for opening things. |
| 58 |  | Think |
| 59 |  | think it's kind of time consuming. I think there's quicker ways of |
| 60 |  | doing this. |
| 61 |  | Even if it's just with like a an ordinary key unlock |
| 62 | Interviewer 35:16 | I sort of feel if I was in that situation, I think I find it stressful to have gone through and you say, Oh, it's not worked, and then to do it again, and it's still not work and then you go out. There's somebody who's just seeing you do it. I'd find that a bit stressful. |
| 63 |  | So I'm gonna skip the |
| 64 | PX17 35:46 | explanation cuz I think I've done that. Right. |
| 65 |  | I suppose in a way I kind of feel like |
| 66 |  | was rigid as well because |
| 67 | PX17 36:42 | it No I mean like if you're in, in a home environment, I suppose thinking of you know your family around you They probably all aware of your medical conditions and things and no, potentially I don't feel like it gave me an option of saying, Oh, it's okay. They know and open the door anyway, it just said, oh, there's somebody else in the room say, Well, I'm not going to open the door for you. |
| 68 |  | smart home protected the privacy of its users. |
| 69 |  | I think it did strongly protect the privacy of its users. |
| 70 |  | I'm gonna say |
| 71 |  | I didn't feel I was in control cuz |
| 72 |  | Hang on, let me check the question again. I did |
| 73 |  | not feel that I am in control when using the smart home. |
| 74 | PX17 38:13 | So I think, no I'm gonna say four for that one because I felt like, you know, I had the option of opening the door and I was in control but I think having the option of the.. oh, someones in, Do you want me to open it anyway? |
| 75 |  | That would |
| 76 |  | seem preferable. I'm a little unsure as well, I suppose about how, is it just the smart gesture is it that that person has to perform smart gesture? |
| 77 |  | Yeah, cuz I think if it's the person who has to perform smart gestures and as opposed to showing other people, the gesture you've performed doesn't really make much difference. And if it's you who has to perform it, I suppose, but yeah, so I expected the users interface adaptation before it happened. |
| 78 |  | Yeah, I'm gonna say strongly disagree, because I didn't expect it to happen. I didn't see anybody. Obviously, you don't see people who are behind you. But yeah, I don't know. It's a strange one. I sort of feel more comfortable in a way if it maybe unlock the cupboard and then I could choose to decide whether to open it or not, but So if I was a person experiencing these user interface interruptions, I would not have accepted them. I would have liked the option to ignore them potentially in a home environment, but, you know, in a store of good environment where there's other people, friends and things. I can see some use that but I think it's well it's kind of a complicated way of doing it. So I'm going to say, three, I don't agree or disagree. This is why the user interface happen. Adaptations happened. I'm going to say, I strongly agree. It gives a notification to the smartwatch. So essentially faces additional instruction, a user experience of using the smartphone, smart home. Think I think it did obstruct, but in a way there's a trade off between some obstruction and some privacy, saying |
| 79 | Interviewer : | though? In your opinion, what do you think is the best way to protect the privacy of the user in this case? |
| 80 | PX17 : | the best way to do it would be to say, I've opened the door for sort of I suppose to unlock the cupboard door to alert the user that there's somebody else around and that they might not want to open the door rather than I suppose the way that I imagined it would work in ordinary circumstances it would just go unlock and open in one sort of movement. |
| 81 | PX17 : | Okay section four |
| 82 |  | seems to be about banking I guess. So banking smart speaker. access your bank account with a smart speaker when you're about to input your password So he's about to enter his his password over voice I suppose. And in order to get his bank balance for his statement, and the voice assistant recognizes that someone else is within earshot. So therefore says usual, your smartphone keypad to enter the enter your password and then rather than speaking out the account balance, he gets a projector projected onto his smartphone screen. And so from the main users point of view, I think partially Essentially, that's useful. I think that there are issues around voice because voice is inherently insecure. And user interface and replay attacks really easily done. And so, you know, people can record his his voice and say saying please check my bank balance and then even record his his pin number. As he said it, it could be that there's a hidden microphone or someone's left their phone recording in a on a desk in the room that he's not aware of and he's potentially giving away information that way. But I suppose from the main users point of view, I think it's it's good in that it hasn't said, Oh, your, your bank balance is 200 pounds in in in debt and letting other people in the room know, your financial details. And I suppose, again from the secondary users point of view, again as far as it protects them from knowing information that they shouldn't necessarily know. And it hasn't really disturbed them. Too much. |
| 83 |  | I think it was convenient Okay I'm gonna say poor quality because I think there's real issues with voice for for banking information I don't think that voice is a it's a way to access your your if finances and stuff, I really don't agree with, you know I don't use any sort of voice stuff for connecting to banks and stuff and I'm gonna say ineffective because I think there's bigger problems with voice being an insecure method of interaction. friendly and simplistic. Because I can see that it's from a, from a user's point of view, it seems to work really well. But actually, I think it's kind of simplistic in a way and it doesn't really solve the issues. So I'm gonna I think I'm gonna say simplistic. To see Oh, I do have a word so I'm gonna put friendly as well. Yeah, I'm gonna say strongly disagree cuz there's real issues with with voices as a user interface. |
| 84 |  | - |
| 85 |  | - |
| 86 |  | - |
| 87 |  | - |
| 88 |  | - |
| 89 |  | Feeling control, I did not feel in control. I think I felt in control. I suppose I expected the user interface adaptation before it happened. I'm just not sure if it's effective ...not have accepted them. I just don't think I'd use system for, for banking like that ..user interface adaptations would have accepted them...? I think I'm on balance. If there was somebody coming into the room and they were about to hear my bank balance. I think I'd like, like them not to have that. So I think I would. if if I was requesting my bank balance and somebody else walked into the room and they were about to hear it, I'd like them not to hear it. So I would have accepted them. So I think I'm going to say, two. And I think I understand why the user interface adaptations happened happens. Yeah, I think I strongly agree with that. user interface adaptation obstructed the users experience from using the smart home. I think I strongly disagree. No, it seemed, you know, he was still able to check his bank balance. And in fact, potentially got more information out from seeing this statement rather than just just a flat figure of what his bank balance was. |
| 90 |  | - |
| 91 | Interviewer 53:50 | Yeah. So good question to tell you brought up a really interesting point too. So, apart from the security problems, which is, I think, really important. But what do you think like from this scenario's point of view, what the system could have done better? where somebody else is coming to the room and you're trying to input your password and trying to access your bank information. So what would be a better way of doing this? If that's, you know, |
| 92 | PX17 54:35 | then I've |
| 93 |  | then I've a voice or then. |
| 94 | Interviewer 54:43 | So the initial I mean, so initial proposal like this, the point is that Yeah, I'll be using Alexa to access my bank. So that's that's given, given that, what's the best way to avoid this or to protect the privacy |
| 95 | PX17 55:10 | given that you're going to be using the voice assistant for for banking, I think it seems seems reasonable to ask for someone to enter their password on a on a normal keypad device. So like the smartphone. So in a way I think it's, it's worked quite well in in that respect. |
| 96 | Interviewer 55:37 | picking Alexa or not. I think it's a personal choice so yeah. Yeah. Great. So that's all for the scenarios. We've got a couple of questions, read through them and answer. |
| 97 | PX17 55:54 | How do you feel about the adaptive user interface is being used in protecting the privacy of smart home users, |
| 98 |  | I think it's a it's a good idea I think |
| 99 |  | being able to detect the primary user and when a secondary person is in either within a short or or within within the confines of the room is is a good idea. And I think, yeah, I think it seems seems useful. I like the idea of the idea that your friend might be upstairs meditating or studying or something and you may be unaware and as you set in your music to play at level 11 or whatever. I'm just being made aware that there's somebody else around is is good. Did any of these scenarios resonate with your daily activities? If the answer is yes, could you please elaborate? |
| 100 |  | - |
| 101 |  | I mean, I often listen to to music using Alexa. It's, I think, really is it loud enough to to disturb other people? |
| 102 |  | But I think sometimes |
| 103 |  | like if I'm sat in the in the lounge with my girlfriend and I'll potentially put music on, and I haven't realized that she is doing something else. He's watching a YouTube video or something and she doesn't want to be disturbed and listen to my music. So I think you know, some of those sort of situations they do happen. |
| 104 |  | So I suppose one of the things that I noticed when |
| 105 |  | when I was listening to the |
| 106 |  | the original ones that you sent through the the first two as sort of warm up questions, and I was listening to the videos and it it said, Oh, Alexa, check my blood glucose level or whatever. And actually when it it spoke that out from the speaker. It's my Alexa started telling me what the weather forecast was. And I was like, Oh, this is this is interesting, because I said to myself, Oh, you must turn off Alexa, you must turn off Alexa. And actually when it actually came to it, I forgot or or didn't think of it |
| 107 |  | but That was sort of an interesting |
| 108 |  | side note, I suppose. |
| 109 |  | COVID lockdown and working from home was made to spend more time sharing your home with Co-ccupants, has the current situation created any privacy violation scenarios that could have been avoided by adaptive user interfaces.? So I suppose, as I've said with the voice conferences and things, and with people being in [..] or within earshot, quite often you hear noises in the home of, no people having other conversations in other rooms or potentially people using noisy equipment like putting the kettle on or or that sort of stuff and if those things could be |
| 110 |  | I'd know for one of a better word blurred out |
| 111 |  | then or |
| 112 |  | noise canceled, then that that could be interesting way of doing it and protecting privacy in the home. And I think generally there's not been too much other stuff from sharing, sharing a home, obviously, as you say, we're spending more time at home with other people. But no, I think because it is basically it's the home that there's not really been anything other than the work scenarios that have been things that I'd want to keep private from, from other people I live with really. |
| 113 | Interviewer 1:00:56 | All right. Cool. |
| 114 |  | That's Let's stop the recording. No |

## PX18

|  |  |  |
| --- | --- | --- |
| Index | Tag | Transcription |
| 1 | Interviewer 0:00 | Cool. So |
| 2 |  | yeah so please go to the doc and first see the video and in the yellow box in |
| 3 |  | section one and after you watch the video, let me know |
| 4 |  | Hello, did you finish? watching the video? |
| 5 |  | Great! So, There are a few questions but before we go to the questions, Could you explain out loud like what you saw in the video and describe your experience of the smart home? So like, like first from the main user's point of view second from the second user's point of view, like maybe there's no second user in this video but like so it's a very generic question to what what did you experience in the video? |
| 6 | PX18 1:43 | from the main user |
| 7 |  | wants the smarthome to play some music. |
| 8 |  | And from the app it says that there is a person who is meditating close to the music so it might be disturbing him, urghh |
| 9 |  | play the music and provide some options, like using headphones, or low volume and then the user chose to use the headphone , |
| 10 | Interviewer 2:10 | Yeah, |
| 11 |  | so that's great. So, um, so, so you can go to this second question, which is about um which is in the Doc 2.1 like to pick five words which describe the experience from the main users point of view, and typing those answers in the section. And after you pick the five, please explain why you picked each word |
| 12 |  | reaction. |
| 13 |  | Yeah, go ahead. |
| 14 | PX18 4:13 | So I think |
| 15 |  | comfortable and professional, both based on how the option was given to me, like the user was asked to play music, like he was not like directly ask him to use the headphones, but the system gave him some options, So that's why I think it is comfortable as well as flexible and also friendly. So, professional means, its. So if the user might not aware that his friend is meditating and so since the system like give some else to get that identified so I think it's, because of that it is professional as well as useful. So for the useful it's not only that because it's kind of something that I might be expecting to know that there is some issue in the environment that prevents me from doing what I want to do and letting me know about that |
| 16 |  | - |
| 17 |  | - |
| 18 |  | - |
| 19 | Interviewer 5:22 | Why did you pick the word flexible? |
| 20 | PX18 5:26 | That's mainly because I was given some options. |
| 21 | Interviewer 5:29 | Okay. Okay |
| 22 | PX18 5:30 | Not like directly asking me to |
| 23 |  | use the headphones, but there were some options! |
| 24 | Interviewer 5:41 | So, could you move to the next question where you have like there are like six, I think six questions where you have to sort of like rate and you have a space to |
| 25 |  | to put an X |
| 26 |  | for your choice. So after each question, after picking a selection, please explain why You agree or disagree |
| 27 | PX18 6:12 | That the smart home protected the privacy of it's user. From my understanding about the privacy. |
| 28 |  | Its like related to my information and it's been disclosed |
| 29 |  | to other people. So here I don't see that happen |
| 30 | Interviewer 6:27 | Okay |
| 31 | PX18 6:32 | So I chose number 3 |
| 32 |  | I don't strongly disagree |
| 33 |  | but, I think the user was in control but, I think the user was in control of the smart home |
| 34 |  | So even the |
| 35 |  | system gave him options and he could have used, chose whatever he wanted to do |
| 36 |  | I expected the user interface adaptation |
| 37 |  | I don't because, I was not expecting something like that |
| 38 |  | I don't actually exactly recall what happened, So I disagree. |
| 39 |  | If I am the person experiencing these user interface adaptations I would not have accepted |
| 40 |  | I think I would have accepted them |
| 41 |  | because it was given me with a reason |
| 42 | Interviewer 7:58 | Yeah |
| 43 | PX18 8:04 | I understood why the user interface adaptation, Yes, because I was given with a reason. user interface adaptation obstructed the user epxerience of using the smart home. It did obstruct the user. but, I.. It did obstructed, but in a good way. So, I agree. But I don't think it's a big obstruction because it's not like make me uncomfortable in any way. But it did what I asked it to do. |
| 44 |  | - |
| 45 | Interviewer 8:54 | Yeah. So when you mean obstructed in a good way what exactly you mean there? |
| 46 | PX18 9:01 | So, I asked the system to play music, so then the user would expect it to play the music directly, but then it didn't happen. So I say that kind of an obstruction. But then because he provided me with a reason I, I did not felt any uncomfortable due to that, so. Oh, yeah, |
| 47 | Interviewer 9:27 | yeah. |
| 48 |  | Great. So in question number five. So with regard to that you understood you said you understood it strongly agreed. So what sort of a system do you think you would disagree with like imagine, you would change the answer to one like in a scenario where the adaptation is not explained. So what what would be the scenario? |
| 49 | PX18 9:54 | If I didn't know why the adaptation happened? The system did not provide me with a reason. |
| 50 | Interviewer 9:59 | okay. Okay. |
| 51 | PX18 10:01 | If it did not say that's my friend is like meditating |
| 52 | Interviewer 10:05 | yeah. |
| 53 |  | Okay. So in question number four, with regard to the acceptance. So you said these strongly. I mean, you you would accept these adaptations. So what sort of a system you wouldn't accept, like, disagree. |
| 54 |  | other end of the spectrum? |
| 55 | PX18 10:25 | That is a hard question |
| 56 | Interviewer 10:36 | That's good just to |
| 57 | PX18 10:38 | I don't see some. I can't give an exact answer. |
| 58 |  | I was not given with the reason again, I don't say I would strongly agree, but it might move a little bit to the other side. |
| 59 | Interviewer 10:50 | Okay. |
| 60 | PX18 10:51 | Can't think of a scenario that I would strongly agree. |
| 61 | Interviewer 10:54 | Okay, that's great. So, I mean, I think the answer would be bit similar as well in the second question, you strongly disagree that you felt like you're not in control. So like, do what's the other side of the answer? Like, if how would the system be, imagine. |
| 62 | PX18 11:11 | that would be like playing the music when I asked it to play music. |
| 63 | Interviewer 11:16 | okay, okay. Great. So |
| 64 |  | that that's it for the first scenario. So it would be the same in all the other three scenarios so we can go faster if you'd like. So shall we go to the next one. So, go ahead and play the video. |
| 65 |  | So, could you explain what you saw in the video from like, the |
| 66 |  | two people's point of views, |
| 67 | PX18 12:28 | the main user was having a video call with a friend |
| 68 |  | and another person walks behind him, so. |
| 69 |  | in front of the camera |
| 70 |  | but the video blurred that part |
| 71 |  | Don't know whether because of the system or whether because the other person can't see you. |
| 72 | Interviewer 12:53 | Yeah, |
| 73 | PX18 12:54 | I think that the person who's talking with me did not see like, who went behind me. |
| 74 | Interviewer 13:00 | Yeah, okay. |
| 75 |  | Sure. Yeah, just a small clarification. Like I think you should have picked up on the first question as well. So the, the when I mean privacy it is both, , like both expectrum of the privacy, like the Information Privacy is one aspect, but also it sort of covers the physical privacy aspect which is like the disturbances and the devices that could disturb, like, via, auditory, or like, just physically. That type of privacy as well, like, in a way, that disturbs someone's peace of mind. So that that's also covered when I mean privacy, not necessarily Information Privacy, but information. Privacy is part of it, |
| 76 |  | so. |
| 77 |  | Does that make sense? |
| 78 | PX18 13:44 | Yes |
| 79 | Interviewer 13:44 | Okay, cool. So shall we go to the next one? I mean, you can go ahead and pick five and explain. |
| 80 | PX18 14:39 | So, I am first time selecting Professional, Because I might feel that, |
| 81 |  | if someone pop up in my camera, video call when I am doing something like, not call with a friend like. |
| 82 |  | in the scenario shown but if it is something professional and if someone walks behind it that might not be very professional. So, the solution that was introduced here it might like save me from that kind of unprofessional behaviour. |
| 83 | Interviewer 15:13 | Yes |
| 84 | PX18 15:15 | I'm chosing because it's a very simple solution that was given but it was effective. I selected innovative as well due to |
| 85 |  | - |
| 86 |  | the same reason. I selecting useful as well, because it is kind of an issue that we see in social media as well that so many things like this happen. when someone is having a call and people are walking infornt of their camera so, this kind of thing can be useful as well. Relevant, I chose relevant, because its, as I said it, it seems like, it seems like we see and problem that people actually have |
| 87 |  | - |
| 88 |  | - |
| 89 | Interviewer 16:26 | yeah, that's that's great. So so what what do you think like, from the third person's point of view, like, imagine, like the person who went behind. So one of the preferences of that person is like, he doesn't want to get disturbed by someone else when he's home. So, do you do you think that person like, would have preferred this as well? Like, |
| 90 |  | because if he did the scenario, like |
| 91 | PX18 16:52 | he could continue with his stuff without getting any disturbance. if It's the, that the thing did not happen. the person you're, the main person might have to say the other person that I'm having a call, please go away or something. |
| 92 | Interviewer 17:07 | Yeah. |
| 93 |  | Okay, that's it sounds good. So, could we move to the next set of questions similar to what we did for the previous question, you know, |
| 94 | PX18 17:31 | what you said about privacy and physical disturbance, and in this scenario |
| 95 |  | the secondary user mainly like. urgh, physical disturbance was avoided. |
| 96 |  | that he could have experienced. I don't agree or disagree because |
| 97 |  | I think this question is from the main person's perspective. |
| 98 | Interviewer 18:20 | Yeah. |
| 99 | PX18 18:22 | Yeah, in that case he was |
| 100 |  | agree because it happened in the way that the user was expecting it to happen. So if I'm having this call, I would like that no one is walking in front of my camera or something like that happen. I would want the other person not to see what's happening behind me so that we can say that |
| 101 |  | Yeah, okay, |
| 102 |  | so I expected this question before it happened. |
| 103 |  | No, I think the timing was okay. |
| 104 |  | Oh, maybe I saw his face a little bit. I don't probably remember what happened. |
| 105 |  | If I was the person experiencing these user interface, I would not have accepeted them.. |
| 106 |  | No! |
| 107 |  | I like that. what happened there. I would accept it. |
| 108 |  | I understood why the user interface adaptation happened. |
| 109 |  | Yes, I understood why it happened. |
| 110 |  | User interface adaptation obstructed the user experience of using the smart home. |
| 111 |  | No, It did not have any obstruction . what the main person was doing. So he could have continued with his task without any obstruction, |
| 112 | Interviewer 20:13 | so in the third question you rated to |
| 113 |  | disagree |
| 114 |  | Could you explain why who was it you trying to..? |
| 115 | PX18 20:26 | Sorry |
| 116 | Interviewer 20:27 | so in the third question about I expected using this adaptation before it happened so, |
| 117 | PX18 20:34 | I thought I saw the face of the. |
| 118 |  | person who's smoking a little I'm not sure, but I thought I saw his face a little, so its |
| 119 |  | like the |
| 120 |  | moment that he came to the screen that could have been better, I am saying from what I remember, but I'm not sure. |
| 121 | Interviewer 20:58 | Yeah, yeah. |
| 122 | PX18 21:00 | It might be... |
| 123 | Interviewer 21:03 | Okay. |
| 124 |  | Yeah. All right. So |
| 125 |  | so with regard to So you mentioned in the last on the obstruction, so you said did not obstruct. so, what sort of adaptaion would have obstructed your interaction with the system for the home. |
| 126 | PX18 21:24 | Sorry. |
| 127 | Interviewer 21:25 | So in the sixth question, you sort of, urgh it's about user interface adaptation obstructed the user experience of using the smart home so what sort of a change or the system |
| 128 |  | would have made you rate, |
| 129 |  | strong |
| 130 | PX18 21:43 | if I was covered, like the person who was calling was also covered when the other person entered the room. So this person I'm calling with could not see my face as well then that I would say that is an obstruct. |
| 131 | Interviewer 21:57 | Okay, |
| 132 |  | So in the fifth question, which is like you said, You understood why the interface adaptation happened. So what change would have made you sort of pick strongly disagree. If there a. Some questions might not make sense but it does. Like what is the other end of the spectrum. |
| 133 | PX18 22:26 | I think |
| 134 |  | I probably |
| 135 |  | I don't think have a correct answer. |
| 136 | Interviewer 22:34 | It is cool |
| 137 | PX18 22:35 | it it kind of happened from intuition that I thought that because they get blurred because that other person is coming in and I am aware that it is a bad experience that the other person seeing that someone walking behind me so |
| 138 |  | I can't say. |
| 139 | Interviewer 22:58 | Perfectly fine, so So, |
| 140 |  | in the so going back question, so like in the fourth question up, if I were the person experiencing these user interfaces adaptations, I wouldn't have accepted them till you mentioned strongly disagree so like. So that means you would accept |
| 141 |  | to what adaptation |
| 142 |  | would you have not accepted? Like the change? |
| 143 | PX18 23:23 | I think something like I said for the question number six, I would have not accepted, |
| 144 | Interviewer 23:28 | okay. |
| 145 | PX18 23:28 | Something like that. And on the other side as well, if nothing happened, if the person walks behind me like the other person could see him. That was kind of unacceptable. |
| 146 | Interviewer 23:46 | That's great. So, yes, I think that for that scenario to show Yeah, just just I will come back it. There's a question I need to check but I'll come back to that in the end. Shall we go to section three the scenario three |
| 147 |  | So could you explain what you saw in the video from main users point of view and secondary users.. |
| 148 | PX18 24:50 | The main user wanted to check his blood glucose level using the smart |
| 149 |  | system. so he asked the system to.. asked |
| 150 |  | blood glucose level and the system did not say this aloud but showed it from his smartwatch |
| 151 |  | from the secondary user's point of view, he came to the home and |
| 152 |  | he might not heard anything. |
| 153 | Interviewer 25:20 | Okay. |
| 154 |  | So the next question I mean pick fives |
| 155 |  | words and sort of describe |
| 156 |  | why you pick those |
| 157 | PX18 25:42 | because |
| 158 |  | I would not have wanted my friend to know, something like my personl health details. So if he heard that, I might feel uncomfortable. |
| 159 |  | I choose essential as well |
| 160 |  | Its something that I |
| 161 |  | need very much, so I woud say it is essential |
| 162 | Interviewer 26:15 | Okay. |
| 163 | PX18 26:26 | Personal, because in this way I can keep my personal details to myself. |
| 164 |  | Professional, again because, It would have been unprofessional,If, I like, listen to my personal details from the loudspeaker. Right? |
| 165 | Interviewer 28:17 | Yes. |
| 166 | PX18 28:17 | I would say, it is powerful. eventhough it is like a small change that we experience there, I think it is very useful, essential and convenient. So it is a powerful feature to have. |
| 167 |  | - |
| 168 | Interviewer 28:23 | Okay, |
| 169 |  | great. So when you mean powerful, is like it gives power to the user or like from just a functional point of view |
| 170 | PX18 28:35 | well, it gives some power to the user as well |
| 171 |  | but what I mean here is that |
| 172 |  | by a little change, it adds alot of value |
| 173 | Interviewer 28:50 | okay |
| 174 | PX18 28:50 | to the user, that kind of thing. |
| 175 | Interviewer 28:58 | so we can move to the next six questions similar as we did before. |
| 176 | PX18 29:10 | Definitly protected the privacy because. |
| 177 |  | If the friend heard about. the user's glucose level |
| 178 |  | it would have been a . |
| 179 |  | violation of privacy and |
| 180 | Interviewer 29:22 | so |
| 181 | PX18 29:22 | It would have felt uncomfortable about his friend knowing about his blood glucose level. |
| 182 | Interviewer 29:28 | yes. So for that, like what do you think |
| 183 |  | the other side of the spectrum where you would rate it? One, like what change |
| 184 | PX18 29:39 | if we could have exposed the detail in any way that someone else would have known that detail, I would disagree with that. I |
| 185 |  | fear that I am in control while using the smart home. I somewhat felt that because that err the beep sound when its like its feels sound and then you directly look at the watch, but err,I you did it because you knew about that, but the new user might not exactly know that since the other person came to the room and, err the system would send the details to the watch. Without the...  because now, I am seeing the system for the first time. So I didn't expeced what would happen. So I felt that you already knew that this is happening. But it might not be the case for, urgh for other new user who is using the system, |
| 186 |  | - |
| 187 |  | - |
| 188 | Interviewer 30:47 | okay. |
| 189 | PX18 30:48 | But with a few interactions with system. |
| 190 | Interviewer 30:52 | Okay, so you think like, |
| 191 | PX18 30:54 | I'm sorry, |
| 192 | Interviewer 30:55 | you think like is it that after certain when you interact with the system. For a while you get used to these adaptation, is that? |
| 193 | PX18 31:04 | Yeah, so the user who is not familiar with the system might not exactly know what could happen here. I'm not sure from where the sound came from? the speaker or from the watch.? |
| 194 | Interviewer 31:20 | Yeah, in this scenario it is from the watch. But yeah, I just thought |
| 195 | PX18 31:26 | from the watch it would be a little better. |
| 196 | Interviewer 31:30 | Yeah. |
| 197 | PX18 31:31 | Then I know that something happened in my watch, that's the reason why I didn't selected easy to use as well because I felt that a new user might not exactly... |
| 198 |  | It took the detail to come to the watch, |
| 199 | Interviewer 31:46 | Yeah |
| 200 | PX18 31:47 | but with a.. user is using the system he might be aware of that. accepted you new me before it.. For what you get by sending it to the phone was innovative I didn't expect that it would come to the, sorry, to the watch. But I expected that it would not say it aloud so the other person could hear the details. If I were the person experiencing the user interface adaptations, I would not have accepted. No! I think, I agree, so I'm not aware of what kind of details that the user already went through that whether he was aware that this kind of privacy protection feature was included in the system. So that is why I don't say I'm strongly agree, but. I would have accepted the functionality, because it, like, helped me with my privacy. And also, it was provided in an innovative way. |
| 201 |  | - |
| 202 |  | - |
| 203 | Interviewer 33:32 | So, were you trying to pick two here? or just? |
| 204 |  | it means I would not have accepted? Questions? I'm confused. |
| 205 | PX18 33:51 | I understood why the user interface adaptations happened, Yes! |
| 206 |  | I understood the reason, I strongly agree. |
| 207 |  | User interface adaptations obstructed the user experience of using the smart home. |
| 208 |  | I select, three here. |
| 209 |  | because, again for the same reason like some users might not expect it to come a novice user might not expect it! might not expect the details to come to the watch it is kind of obstructed the user experience in some way, but |
| 210 |  | in the same time it happened in a good way. So, if the smart home system said the detail in louder it would have also been bad that is why I select three |
| 211 | Interviewer 34:52 | so, you mentioned like the interesting points where about new users might not be able to like understand why it happened, So, what do you think? Since the system should have? so a new users could easily get used to this or use the system? |
| 212 | PX18 35:11 | Maybe something like documentation |
| 213 |  | that user might definitly go so when he starts using the system. |
| 214 | Interviewer 35:20 | Okay. |
| 215 | PX18 35:20 | Like the documentation can make him aware, I think that sounds coming from watch is also very useful I didn't figure it out whether it came from the watch or from the system. So, Usually if some sound comes from my watch I would look at that, I would see an also so, in the first scenario we discussed you gave a good description but here in the watch we can't get that kind of lengthy description, right? If I could see that. I'm like, No, if I can see in my watch that because your friend is near this is shown in the watch of some cue like that, maybe it can be useful so if it was sent to my phone with that message I might be like really might be better in that sense, something for you to think about. |
| 216 |  | - |
| 217 |  | - |
| 218 | Interviewer 36:22 | Yeah. That's great. |
| 219 |  | So, |
| 220 |  | yeah, in the first question so you about the protection of privacy. So why do you think |
| 221 |  | the system so that would not have protected the privacy like what what could be the system? |
| 222 | PX18 36:48 | as I have mentioned before |
| 223 |  | if the system said the, said my personal detail in anyway. |
| 224 |  | it could have been exposed to another person. I would be disagree with that. |
| 225 | Interviewer 37:04 | That's the end of the section three, shall we go to Section four |
| 226 |  | great, could you explaine, what you just... Great, go head! |
| 227 | PX18 38:06 | the main user don't want his collegue to know that he's watching cartoons. So.. |
| 228 |  | He's watching cartoons from Netflix and |
| 229 |  | collgegue comes to the room it changes the |
| 230 |  | screen to a different |
| 231 |  | movie, the second user's point of view when the second user enters the room. |
| 232 |  | the first person is watching a movie of, something that is not cartoon. |
| 233 | Interviewer 38:40 | so yeah, please go ahead and pick five words explaining like describing the system. |
| 234 | PX18 38:51 | I chose convenient because you said that, user is not comfortable about his friends knowing that he watching cartoons. Saves from the embarrasement. |
| 235 |  | Easy to use because, |
| 236 |  | the user did not have to do anything by himself, it took care of it for himself. |
| 237 |  | Relevant, because we were given with the personal preference of the user, that he don't want his friends to know about his preferences and provided that functionality |
| 238 |  | Useful, in this scenario we were given the user's requirements and the system protected that, so in that sense the system was useful |
| 239 | Interviewer 40:24 | Yeah, um, so yeah, you explain all the words so that's good. So we can move to the next set of the six questions. |
| 240 | PX18 40:43 | Given that the user is not comfortable.. knowing personal perferences. the smart home Because the user, I didn't see that user doing anything. So you were will like if I was in a very important place of the cartoon that I would have like to continue watching, it could have still, I felt like it could have still been changed, so I thought, I did not see the user was in the control |
| 241 |  | I expected the user interface adaptation before it happened. No!. I think it happened timely, so in the scenario as well that the second person thought that the person was watching something other than cartoons |
| 242 |  | - |
| 243 |  | I were the person experiencing these user interface adaptaions I would not have accepted them? |
| 244 |  | I say I disagree |
| 245 |  | I don't say strongly disagree because of the reason that I mentioned for the question number two, but again, in the scenario at the begining you said his personal perference about that he not wanting his friend to know, the he likes to watch cartoons so in that case I would have still accepted that. some changes might be required about how much control that they.. |
| 246 | Interviewer 42:36 | So what do you think like could be a better, like control mechanism to give control to the user? Or if it's required, like, what do you think? |
| 247 | PX18 42:47 | I can't think of something straight away |
| 248 | Interviewer 42:50 | Okay, |
| 249 | PX18 42:51 | I got the question, but I don't have a solution. |
| 250 | Interviewer 42:53 | Yeah, totally understand |
| 251 | PX18 42:57 | I understood why the user interface adpation happened. Yes, I totally agree! Because we were said that the user preference and I can understand that why the user interface adpataion happened. |
| 252 |  | - |
| 253 |  | User interface adaptations obstructed the experience of using the smart home system. yeah, that I somewhat agree, because, again, because of the reasons that I mentioned? It depends on the scenario of the cartoon maybe. I was too excited about being continuing with the cartoon, then I might want to go ahead. and it depends. |
| 254 | Interviewer 43:38 | Okay. |
| 255 |  | So one of the questions you mentioned was the third one like the expectedness as like I expect the user interface adaptation before it happened. So, what would what change would make you rate it five strongly agree? |
| 256 |  | Okay, |
| 257 | PX18 44:22 | I expected it to happen because of the conceptual details that you have provided at the beginning of the. |
| 258 | Interviewer 44:31 | that person didn't like anyone to know that he is watching cartoon, yeah! |
| 259 |  | Okay. |
| 260 |  | Yeah. So that's it for the scenarios. So, and I have like, four general questions and you don't have to type-in, just you speak up your answers and like go let's go through one by one. So like |
| 261 |  | I like to read, I am not going to read it for you. |
| 262 |  | The first question what do you think? |
| 263 | PX18 45:08 | Yeah, I think it's a very innovative approach |
| 264 |  | because especially in that scenario three and four, we saw that what the user wants and the adaptive system helped to achieve what we want and saved us from the embarrasement, and helped us to keep our details to ourselves. I think it would be good feature to have in a smart home system. |
| 265 |  | can I go to the second question? |
| 266 | Interviewer 45:49 | Yes. Yes. Go to the next question. |
| 267 | PX18 46:06 | I don't usually use, I don't use a smart home system. But again, the scenario one that's something that we experience usually when we are dealing with friends or someone. our TV activities or music activities might disturb them in some cases. So that's something that I can relate with some of the daility activies that I am doing. second one as well. I usually have, video calls sometimes and my family members sometimes come in to the screen so it is a very useful feature and other other scenarios as well. I don't have a, like, good experience because I'm not using a smart home system, but I still I think the most people who are using the smart home system would be able to relate those scenario for their day to day activities. |
| 268 |  | - |
| 269 | Interviewer 47:14 | Yeah, |
| 270 |  | that's great, so. I think you answered the second and third questions together. So the fourth question, what do you think about that like? |
| 271 | PX18 47:36 | Yeah, mainly again, we can think of that. |
| 272 |  | second scenario, where. |
| 273 | Interviewer 47:44 | video call? |
| 274 | PX18 47:45 | Yeah, video call scenario. In our Sri Lankan society we don't, like, think of the information privacy, privacy as some bigger thing as like most other countries think. Like I don't call someone, I don't mind that my family member to know that my health details or my bank account details. So but in a different environment it could have been, it could have been a different case. But from my experience with COVID-19 lockdown I didn't have that kind of experience, but definitely I can relate to the second scenario about the video calls. And I think others are also very relevant even though I don't experience them. |
| 275 |  | - |
| 276 | Interviewer 48:37 | Great. So that's all for the scenarios. I mean, just just want one clarification to make So in the first question in the first scenario, so you rated so the first question the smart home protected the privacy of its users to rated a three, just but this is before I explained what privacy means here, the definition of privacy in which I did in the second scenario, do you think do you still agree with this evaluation, or I mean, I'm not trying to change the number but just want to clarify your choice. |
| 277 | PX18 49:15 | If I think of the second person I think it avoided the disturbance that he was going to have it protected his privacy, if we think about the |
| 278 |  | the phyiscal disturbance, yeah. |
| 279 |  | do you want me to change? |
| 280 | Interviewer 49:33 | I mean, if you only agree with so to just |
| 281 |  | clarify like your choice |
| 282 | PX18 49:46 | Information privacy is the only privacy currently I know. |
| 283 | Interviewer 49:49 | yeah, I understand like a lot of people like don't resonate with it, like, especially security researchers, like might have a different opinion about privacy. so ya, so so that that's it for the |
| 284 |  | study. I'm going to switch off the recording. So |
| 285 |  | now |

## PX19

|  |  |  |
| --- | --- | --- |
| Index | Tag | Transcription |
| 1 | Interviewer 1:24 | Initial description |
| 2 | PX19 3:36 | Oh, that's a great film. I really enjoyed that one you're like |
| 3 |  | so I saw someone browsing cartoons and then it quickly changed before the co-occupant came into the room. From the secondary users point of view would be the co-occupant. So from their, they just came into their room and you were browsing the most like recent movies. Okay, |
| 4 | Interviewer 4:14 | great to go to the next question, five answers |
| 5 | PX19 4:30 | so the Smart Home interface would be the little thing that changed my my movie preferences. |
| 6 | Interviewer 4:40 | Yes, that's the Smart TV and changed itself the entire systems |
| 7 | PX19 4:47 | I'm |
| 8 |  | here |
| 9 |  | Have another word that I want. |
| 10 |  | Sorry. |
| 11 | Interviewer 7:10 | Yeah, I mean, could you explain the word? I mean, that's an expression. So maybe another word would come as well. |
| 12 | PX19 7:17 | Okay, so I think so, the thing is, I think although I like what the system is trying to do, so the privacy is supporting me and sharing my choices or not. |
| 13 |  | And I think that |
| 14 |  | the programming of the system would be way too much effort on my part to then just own up to watching cartoons. |
| 15 | Interviewer 7:44 | Okay. So |
| 16 |  | So why do you say, that the programming would be too much. |
| 17 | PX19 7:52 | I mean, if it's something that comes in built, seem to |
| 18 |  | solve it. It's built in that whenever someone else enters the room, it changes my choices or how does it know how to do it? |
| 19 | Interviewer 8:10 | if it |
| 20 |  | says smarter, it can sense the context. So if that's the case, it can |
| 21 |  | detect who's coming when it when, when that person is coming to the room. And so, at the beginning of the video, the preferences were set. So that's the only thing that you have to set, the cartoon preferences that you wouldn't want anyone to see that you watch cartoon, so that's different. So that's all you have to set in. And so.. |
| 22 | PX19 8:39 | like at some point, that setting would be like, who do you live with? I live with three people. How many of these three people do you want to share your preferences with? Or like, I think there would be a setup required for me to tell him all the conditions. And let's say it was like, Okay, I don't want any of the three people I live with to know what I Watch what if I'm watching a show with someone and they come in and then we have to, you know, we were we were both watching the cartoons and then we have to go back to the like, I just think for for the privacy except for me in terms of what I'm watching on Netflix, which in itself is already a curated media. Yeah, it is not worth |
| 23 |  | my time |
| 24 |  | to do something like this,. But if it I don't know if it becomes a, I guess, content which is more extreme. Whenever you want to make up that, then maybe, but, but Netflix is already pretty like I would not be ashamed of watching anything on Netflix. |
| 25 | Interviewer 9:52 | could you explain all the words. So |
| 26 |  | it's so time consuming. Yes. Because at some point, I'm gonna have to give it all these conditions that, rigid because then once I give those conditions, you know, it'll, it'll have identified it by person. So let's say I said, Okay, I don't want Akshika to see I'm watching cartoons. But what if we decided to watch Rick and Morty? And then it'll, it'll change because you came in, but I don't want it to change at that moment. So I think it's rigid unless it's like, I don't know how it would sense how to change its conditions based on the context, thus annoying. And then someone felt somewhat patronizing because like I said, like, I would not be ashamed to watch anything on Netflix. So it's kind of like It's making me feel maybe ashamed of watching something on Netflix. |
| 27 |  | - |
| 28 | PX19 11:06 | Okay, so those would be my explanations. |
| 29 | Interviewer 11:09 | Great. I can order the next question |
| 30 | PX19 11:36 | well I guess the privacy, did protect the privacy but then it's a matter of if you want your privacy protected in that manner. |
| 31 |  | I I did not feel that I'm in control of.. |
| 32 |  | too many .. rules. |
| 33 |  | [explanation on the question] |
| 34 |  | Well, yeah. I have programed it. Yes. |
| 35 | Interviewer 12:40 | Okay. That's interesting. So a few questions. So, you so in the fourth question, you mentioned it, you wouldn't have accepted them. So |
| 36 |  | what do you think like you also, at the beginning mentioned like, you wouldn't |
| 37 |  | you wouldn't mind Watching anything on Netflix? So if that's so let's assume for the for the sake of argument, it's not Netflix, its something else, then you're watching something which you don't want anyone to know that you're watching, if that's the case, and also even the scenario, is there a better way to like protect your privacy if you want to? Especially if you're watching something on I like a smart screen, which is bigger. |
| 38 |  | [Question on the interpretation of the question] |
| 39 | PX19 13:39 | Yeah. And then to your question, you know, I don't know I guess like right now. You have a smart TV, your cell phone carrier. knows every website you visit. So |
| 40 |  | I don't know how much I would |
| 41 |  | like there's someone who could take your information. I guess that's my, my, my stance on this is that there kind of is no privacy. So you have to, because if it's not, you know, if it's not the TV, it's your carrier. If it's not your cell phone carrier, it's your cell phone manufacturer, if it's not yourself, and by the time I create a firewall around myself, to protect stuff. In an instance, where it's about content, I'm watching, like I said, I think I just have to be prepared to own up to the content I watch. |
| 42 |  | At some point in time, |
| 43 | Interviewer 14:56 | Anything else you would like to sort of any comments on this scenario before we move to the next one. |
| 44 | PX19 15:01 | Yeah, I think that |
| 45 |  | I see the value in it. But I also think that Well, like I said, like if the context changes it, it might make it something you don't want to interact it so like if you and I were watching cartoons then because because technology is programmed through such specific rules and the exceptions to the rule also have to be programmed. |
| 46 |  | I wonder how |
| 47 |  | how to make that easier for the user that I don't have to spend like, okay, change every time Akshika is in the room between this and that time because usually on Tuesdays at 4pm we do rock Rick and Morty so don't do it when, like I don't know. I feel there's a lot of exceptions to human behaviour that makes this hard for the system. So to know without me having to spend a ton of time telling you Okay, |
| 48 | Interviewer 16:09 | awesome. We can move the next question. Okay. |
| 49 | PX19 16:42 | Yeah, I think I am one of those people that you know, I have a like password generator and that's about as much as I invest. And I think that I feel good about that because I know a lot of people don't have a password manager. |
| 50 | Interviewer 17:04 | [Interviewers opinion about privacy] |
| 51 | PX19 17:15 | It's also how much I know about how everything works, right? Because I think if you if you know how, like, the internet works and cookies work and data usage works more. You'll probably be more but if you don't, which would be me. |
| 52 |  | Like nahh. |
| 53 |  | But anyway, okay, open sesame. |
| 54 |  | okay, so please explain. So you made a gesture or the user made a private gesture trying to open a cupboard that contain their medicine. But then the device saw that someone was approaching and ignored their gesture. And from the secondary user's point of view, well, he came into our room of a person just standing there in front of them and a closed cupboard. |
| 55 | Interviewer 18:55 | Okay, you can move to the next set of questions. |
| 56 |  | could you explain why you chose those words? |
| 57 | PX19 20:26 | So advanced because I thought the whole like open a gesture is kind of advanced. It's kind of cool. But then I feel the same way about it as with a TV so I'm trying to think of like, why do I need to lock my medicine like where is it in my home and if it's in my home and my locking my medicine because I don't know the other guy's a junkie and is going to steal it or am I ashamed of the medicine I need to take or is it I like I don't know why Or maybe it's a kid and I don't want them to get sick. So maybe that that would be a case where I'm like, Okay, I'm keeping someone safe, keeping them away from my medicine. But if it's other adults, I don't know. And because again, I think it's either because I'm like, I don't want them to take it or I'm ashamed. So it's just rigid. And then what if it's a life saving medicine? And here I am trying to get to it and the thing is, like, no, there's someone coming. And then it's like, I'm dead. |
| 58 |  | - |
| 59 |  | I know, these are extreme circumstances, but |
| 60 | Interviewer 21:38 | it's pretty good feedback. |
| 61 | PX19 21:39 | Like what if it's my inhaler? I you know, I don't know. Yeah. |
| 62 |  | That's why I said stressful and then ineffective because it could like, and it's again that trade off. How much do I want to protect what's in the cupboard versus limit my access to it. Because by setting up these settings, I'm limiting my access to it. I'm introducing extra steps, |
| 63 |  | which might work in my favor or might not. |
| 64 | Interviewer 22:18 | Yeah, I think you explained your words, we can move to the next set of questions. |
| 65 | PX19 22:25 | My own protected the privacy of its users. I mean, it did, but |
| 66 |  | to me, because you can't tell it exceptions. expected the user interface adaptation before it happened. Yes. it was explained Well, that would happen. If I was the person I would not have accepted them. Yeah, I would not have programmed that. |
| 67 |  | [Question on question six] |
| 68 | Interviewer 23:44 | I agree, because I like gestural opening, but I don't like it changes in response to people. |
| 69 |  | Okay, so is that anything to think? |
| 70 |  | Yeah. Just Just one question too. So |
| 71 |  | in the fourth on a, it is similar to the previous one You said you wouldn't accept, like you said. So what would be a system that you would have accepted |
| 72 |  | the change? |
| 73 | PX19 24:38 | Like I said, I think it's a matter of safety. Yes. So whether it's a kid or whether it's someone else takes that medicine, something happens to them, but it's not a matter so of privacy. But then, like, I guess you would lock it up anyway. But then you would just lock it up. So, you're okay. If it's a matter of safety, it doesn't matter if someone else is coming into the room. Unless again, it's an extreme example and who I live with is a junkie and they can overpower me and steal my medicine. But other than that, I wouldn't have put that caveat into matter. It's more of a matter of keeping it secure. Well, I'm not there, but not have it opening up when I am there. Okay. |
| 74 |  | - |
| 75 |  | - |
| 76 |  | - |
| 77 |  | - |
| 78 | Interviewer 25:42 | Yeah, before I move to anything else, I mean, you gave some really good feedback. Anything else? You want to add? |
| 79 | PX19 25:50 | No, but I'm also you know, this is from my point of view, I don't know if like, if there be well see it's the thing because I do assocaite I don't know why, for me privacy, privacy might have to do with shame of it. So I'm trying to think, Okay, what if I'm a guy and what's in there is Viagra? And I don't want anybody to know I have these issues. No. But then it's like, but there's nothing wrong with these issues. Really. Everyone has them. So everyone has all these conditions anyway. So yeah, when I'm trying to think of something where maybe it's like, but still like, or if I'm a girl, and I'm young, and I have like, birth control, and my parents walk in, do I not want but then also, like, wouldn't it be better that my parents know I'm sexually active? I don't know. It's so bad things I think about because I also don't, don't really take I only take one medicine, so. |
| 80 | Interviewer 26:54 | Yeah, that's good feedback. Awesome. Great you can move to the next. |
| 81 | PX19 27:49 | Okay, so I saw someone trying to look at their holiday pictures on the TV and the TV not letting them because someone else is in the room studying? And if I'm the one that studying, I saw my co-occupant standing there like trying to make the TV do something but then it didn't and then they were doing something on their phone or maybe I didn't even notice. |
| 82 | Interviewer 29:34 | Yeah. Okay. Could you explain? |
| 83 | PX19 29:38 | Here again So okay, so if this is my co occupant? I don't know, I guess it depends, I think maybe thinking of it differently I might have. So if it's in a public place, I think there's a big difference if it's public or private place. So if it's in my home, I'd rather instead of standing there kind of fidgeting with the control. I would rather just ask the person and be like, hey, do you mind if I watch some of my pictures because my pictures aren't making any noise. So the distracting is a visual distraction, which if I can just ask them if they mind, I think makes it all easier. However, if it is a public place, there's all other you know, it's another whole box of questions because like, why would I be watching my, my pictures in a public place on a TV with this random person? Or maybe I don't care, but then it might be more relevant in a public place. But again, I just think it's it'd be so much quicker just to be like, do you mind and even though I am interrupting my interruption, we'll, I don't know might be more direct and and quicker and more easy for them to figure out than me standing With the control, because I think that might be even more distracting, like, what is this person doing? And now they're looking at their watch, and they haven't said anything to me. But that's because I'm like a social person. |
| 84 | Interviewer 31:13 | Okay, great. |
| 85 |  | Yep, that's clear. Could you go to the next one? Okay. |
| 86 | PX19 31:30 | are protected. I mean, it didn't protect the privacy because it's a public space. It's like, Hey, don't share your pictures in a public space. |
| 87 |  | I don't feel I'm in control. |
| 88 |  | Now, because you would have put them sent. |
| 89 |  | again, I don't think I would have I don't want what I understood why they happen. |
| 90 | Interviewer 32:49 | Yeah, I think Yeah. and understood your understanding of the scenario. Anything else you'd like to add to this? So apart from the thing about, you like talking to the person And to resolve that first is anything else.? |
| 91 | PX19 33:03 | And so I think this might be |
| 92 |  | so I think that the context, like I said, the private versus public context really matters. And if I can think of something similar with like, like sometimes when you're on the on the tube or on a buss and people decide to listen to whatever it is they're listening on their phone out loud. So this could be a similar thing where there's a disruption happening to me. And and I think, I think this type of technology when contextualized to existing social norms, could be really interesting. |
| 93 |  | Yeah, if I'm on the bus, and I know that everyone kind of has this and that the person next to me Finally got a notification saying, Are you sure you want to play this out loud you're in a buss. And if they like, it'd be funny because if they then said, Yes, I still want to play it, then I'm like, Oh my god, you're super rude. |
| 94 |  | And now I blame the person. |
| 95 |  | But, and but for others, it might actually be a nice nudge because they don't mean to be rude. They just aren't thinking that they're, you know, their news cast blasted at full volume matters. |
| 96 | Interviewer 34:53 | You can move to the next section.. |
| 97 | PX19 35:54 | Okay. So from the main user is you were having a conversation with your friend. From the secondary user is, walked into a room in your house and you realize you're your co occupant is talking to a colleague. |
| 98 | Interviewer 36:13 | Yep. Go to the next question. |
| 99 | PX19 36:15 | five words. |
| 100 | Interviewer 36:21 | Could you explain your choices |
| 101 | PX19 37:59 | So, I am I am assuming that I know, [the co-occupant] feels this way. |
| 102 |  | So |
| 103 |  | because I have a different relationship with [the co-occupant - 2] and [the co-occupant -1] does and live with [the co-occupant -1], then if the system can help me just keep my like relationship with my co occupants in a better state like without causing any, like living with someone as hard as it is, so, if there's something that can make living with someone can streamline that based on their preferences, and I don't mind, then I am all for it. |
| 104 |  | Great. |
| 105 | Interviewer 38:50 | Okay, so you can go to the next set of questions |
| 106 | PX19 38:53 | so smart home protected the privacy of users. Yes. I do not feel that I'm in control that I agree but I don't care. Because it makes my life easier. |
| 107 |  | quick question on that. So what do you think would be an adaptation that you wouldn't accept in this scenario? |
| 108 |  | I don't know, there's all these. Why would I have care? What's going on in your background? I'm trying to figure it out. Maybe not. I mean, probably like, if it is s,o it depends. So if I know that it's just you and [the co-occupant-1], and someone walks and then it's blurred. I'll assume it's [the co-occupant-1]. And be like, that's kind of silly that he doesn't want me to like he doesn't have to say hi. Because, no, but maybe it's someone but then it's like, is it another guest? And if we were friends, why would you be talking to me when you have a guest? So now we have on time like social, more socially motivated questions. But I feel that if, if, if I'm a [the co-occupant - 2], and [the co-occupant-1] is my colleague, I would not take it personally that he doesn't necessarily want to interact with me. While not at work, depending on their relationship we have at work. If we're just colleagues, that's cool. But if we're friends, it's like, why can't you talk to me on the weekend? I don't know. |
| 109 | Interviewer 41:27 | Yeah. So would you think like, just a full blank, like, so it's like a sort of a half blur where. You could see there's a person in the room, think like a full blank background in this scenario would have been better or? |
| 110 | PX19 41:43 | Yeah, so if if my conversation with [the co-occupant - 2] starts, like, with this background, blurred from the onset, and then it never changes. That's cool. It's like those weird backgrounds people use for video chats like the islands and stuff like that. So, yeah, I guess if that condition does not change throughout our interaction of the background, I'm cool with it. And then I'm not like what caused it to change? what don't you want me to see? Who is like..? |
| 111 | Interviewer 42:22 | so how do you feel about in this specific scenario the threat for [the co-occupant]'s privacy preferences, because if I am using the system, because not him not, so what do you feel about that? |
| 112 | PX19 42:40 | I don't know people video chat all the time. So if you walk into a room and someone's video chatting and you're on the maybe it's a matter of so maybe a better way to alert [the co-occupant] would be if you're Using a common space, so if you're co occupants of a space and you're choosing one room to have a video conference, then maybe it's about letting [the co-occupant] know that you are being a video conference in this room. So don't come in. Okay. Or if you come in, then you might be on the video. |
| 113 | Interviewer 43:18 | Okay. That's an interesting way to solve the problem. |
| 114 | PX19 43:22 | Yeah. It's like you're, yeah, you are using this space for something that might bother his privacy. But when you live with someone, you do use spaces individually, sometimes it's like, No, I'm using this space right now. If you want to be part of it, then you deal with the consequences. It's like when you're cooking in the kitchen, I'm going to be cooking and it's gonna smell whether you like, if you don't like it and move to another place. I don't know. Okay, |
| 115 | Interviewer 43:56 | that's interesting. It's cool. |
| 116 |  | Okay, so that that's it for the scenarios. Like, is there anything you'd like to add? Other than that? We can move to the questions. |
| 117 | PX19 44:08 | And what else do I want to add? but before this so I think like I think there's a lot of even though I'm might not be your target user, I think there's value in the in the scenarios. but because I do think that a lot of a lot of people are more and more squeamish with what they want to share and not and how much they want to keep private? But then I wonder if, if the smartness of the device is not necessarily. It's almost like getting to know where you where you live on that privacy range. And based on that, what kind of features you might be interested in? So if you're like, No, I'm really concerned about privacy. I don't want anybody seeing what I do on Netflix, even though Netflix does, like all this stuff. Then you have these like, pretty rigid options that will not see rigid rigidity, but you'll be like, thank you. No one can know what I watch. I can live in my world of secrecy. But then if you're on the other end of the range, then maybe because there is value to the smartness of the devices, but it's how those that smartness is applied based on my preferences as a user. That's what I say.. |
| 118 | Interviewer 46:17 | So the first question is, overall, how do you feel about adaptive user interfaces being used in protecting the privacy of smart home users? |
| 119 | PX19 46:27 | I think I just answered that one. Yeah. |
| 120 | Interviewer 46:31 | Cool. So the next one is did any of these scenarios resonate with your daily activities? If Dan says, Yes, could you please elaborate? |
| 121 | PX19 46:43 | Well, yeah, well, currently not for months, because I'm basically living by myself right now. But, but I think that's an area which would have resonated the most would be the last one. But you know what i would? Well, this is like super high tech. But when it comes to video chats, I don't really like, like what we're having right now. Like, in our in our discussion, I had a small conversation with someone my dog barks like that just happened. And for me in terms of video conferencing, I would give more value to audio privacy than visual privacy. So I hope so if if there was a way that I could like, and I know I can mute you and mute me and all this, but that's always also like weird. It's almost like there's this like little sound bubble that I can that I can like forcefield back and make up here and disappear. You don't hear the the vacuum cleaner that's going on. You don't hear the dog. But you hear me? |
| 122 | Interviewer 48:07 | It's more like a filter, like a noise cancellation feature from your input. |
| 123 | PX19 48:13 | That's |
| 124 |  | right. Yeah, that would be more valuable to me in terms of privacy then then visually, because because visually, you just have these are my constraints. Everything else you don't see. That's something I can like if I really want to make an effort I can control. |
| 125 | Interviewer 48:35 | Yeah, I think it's similar to human as well. And we can control how the amount we see we can close our eyes. But if you hear it's okay to feel this. So yeah, it's a really good feedback, I'd say. Awesome. So the next question is a bit similar to that as well. So did any of the scenarios Inspire to think of other scenarios in your daily activities? So if the answer is yes, could you please elaborate? |
| 126 | PX19 48:59 | Well, yeah, I think Well, I can I think I kind of just answered that. What other would they know? I think I've answered that because then the like picture one I thought of the bus scenario. |
| 127 | Interviewer 49:15 | To the final one is the COVID-19 lockdown and working from home made us spend more time sharing a home with CO occupants. So it depends on the person to person, has the current situation created any privacy violating scenarios that could have been avoided by adaptive user interfaces? Please elaborate on your answer. |
| 128 | PX19 49:35 | So, okay, so if I would have been back in London living with three people as opposed to by myself, I do think that Yes, okay. I lived with my sister for a bit while I've been and, and for example, I mean, my brother in law works at like the Colombian oil company. Well it went through some dire times, as did. But he was having some, some phone conversations, because I was stuck in the, in the, in the kitchen, like in the living room area, and I could hear his phone conversations and you know, I'm pretty trustworthy, cuz I'm family, but some of those phone conversations were pretty, like, confidential, let's say cuz they were discussing finances, loans, like all these stuff |
| 129 |  | and and |
| 130 |  | that company is really important within the scope of the Colombian economy. So somebody was was, you know like Yeah, I think so there is. Again I think it's more audio privacy than visual privacy for sure. |
| 131 |  | And |
| 132 |  | and I also think that there might be Yeah, it's more audio disruption, more than visual. Because even if I was back in London, you know, I could be either in my room or in the living room and I could, I could physically close the space around me to say I'm here. No one else can be here, please for now. Yeah. |
| 133 |  | But the audio is that the Yeah. The sound is what? Really? |
| 134 |  | Yeah. It really bothers the most. |
| 135 | Interviewer 51:36 | that. That's it for the questions, too, I think, to give really good feedback. And |
| 136 |  | thank you for your time. You know, it took like one hour finish. But |
| 137 | PX19 51:49 | more than happy to help. |
| 138 | Interviewer 51:51 | Yeah. So yeah, I'll stop the recording. |

## PX21

|  |  |  |
| --- | --- | --- |
| Index | Tag | Transcription |
| 1 | PX21 3:52 | So, in this, I think the main user is the user who's actually |
| 2 |  | In the video call on the other side. |
| 3 |  | So what I am seeing from the main users point of view is I'm having a call with my friend and then discussing something and I see cohabitate. cohabitant. coming in and opening a safe in the background. And from a secondary user's point of view, I believe this is safe from a third party like neither the people in the call |
| 4 | Interviewer 4:35 | Yes, there are two people in this like on a call and the person was operating the |
| 5 |  | sale. |
| 6 | PX21 4:42 | Okay. So from the perspective of the person operating the safe, I see that my co occupant is actually on a call and I may or may not have noticed that I go ahead and open continue on opening the drawer without disturbing |
| 7 |  | the safe. |
| 8 | Interviewer 5:10 | Yeah. So what about the person who was in the call other end. |
| 9 | PX21 5:18 | the person in the other end? Yeah, I see. I see that in a call with my friend and then all of a sudden is co-occupants actually comes in opens a safe in the video. |
| 10 | Interviewer : | great. we can go to the next question |
| 11 | PX21 : | I chose innovative because this is not something that's existing This is a new innovation. So this this is innovative and I chose straightforward because neither parties had to do any actions on the platform just very seamless. And it is definitely useful as in just preserving the privacy and security of an asset. And it wasn't complicated. I was able to understand what's going on and it was like a very it wasn't complex to understand the simplest and simple and it happened fast as in it didn't take time or in disrupt my flow. It was just just the video didn't like say in terms of performance or anything like that. It's just just |
| 12 |  | - |
| 13 |  | - |
| 14 |  | - |
| 15 |  | - |
| 16 | Interviewer 8:50 | [....] |
| 17 | PX21 : | because the system's behaviour say, say the UI presented like a it's a notification that it's blocking this or unblock kind of option while the blocking is happening. That could have given Control. Right now the interface said, it just blurred out a portion. And even if I say, wanted to unblur it, it didn't like, give a UI. So that's why I felt like the system has its own rules. And once it's in motion, I don't feel that much of a control. So, like the only control I have to say, in setting up the system, but once it's running, it didn't give the sense of control.. |
| 18 | Interviewer : | Sorry. So in the first question, you mentioned, you agreed with that it protected the privacy of the users. So what would be a scenario? it wouldn't have protected the privacy, same scenario but that by the system that So so so my question is, how would be a system be, if you would rate it as one? |
| 19 | PX21 12:08 | If it didn't blur out in the same scenario, if it didn't blur out say the interaction with the safe, I think I can mark it as say it didn't protect the privacy. Or Yeah. If it if it's zoomed into the into the safe pin code, I would strongly disagree as in, for some reason, if it has like subject identification or something like that, and it's zoomed into the wrong part of the screen, for example. I would strongly disagree. |
| 20 |  | - |
| 21 | Interviewer 12:55 | Last one, you said it didn't obstruct the user experience. So what would be a system that you think that you would rate it as five in the last question. |
| 22 | PX21 13:05 | Something that shuts down, for example, say it detects a privacy violation is happening and immediately say cuts off the video disrupts the, say, reduces the quality in a, significat way, I think that I think would obstruct the user experience. |
| 23 | Interviewer 13:29 | Any other comments with regard to this before moving to the next question? |
| 24 | PX21 13:34 | Nope. |
| 25 | Interviewer 13:35 | We can go to the next question. |
| 26 | PX21 14:53 | Okay, so from the main users point of view, from the point of view of the user who's using the phone I see I, I want to actually check my bank balance. And I just speak to my works assistant. And the moment the voice assistant is about follow up on my question. I see a colleague walking in, and then I get like a push notification on my phone telling that I need to continue the same flow, the other phone explaining why I need to actually continue, like giving me a proper explanation as well. So from the secondary user's point of view, the person walking into the scene. I see. See, just been walking into the scene. |
| 27 |  | I see my colleague using his phone Okay. Well, please explain why you take those reaction cards on it think this is my personal opinion, like I chose irrelevant because I think someone wouldn't ask a voice assistant about like bank details. But that's assuming someone is not in the room. So that irrelevant key word was just because of that reason, collaborating. I think that it's collaborative because from a technology perspective, the whole smart home system was collaborative with The devices that I had, as well as it was explaining why certain changes in user interactions happen without just like suddenly changing things. The app showed me that okay, we switch to the phone because of this it's very human as in when when we say, like when we are conversing and if you change the mode of conversation with a human we just tell them why things change or the status quo change. So I chose collaborative because of that. And high quality also followed with that because it was like, just very high quality as in explained why things happened and function well. And it was, it wasn't hard to understand or it didn't involve effort. It built on like concepts that I know It was effective in preventing me from telling the password but again like following up it's irrelevant because if I know there's another person I think I wouldn't actually say the password to to the voice assistant as well. So that's why I chose the reaction cards. |
| 28 |  | - |
| 29 |  | - |
| 30 | Interviewer 20:52 | what would be a better way that you think this problem could be solved.? |
| 31 | PX21 21:07 | In this case, if if we were to define the problem as asking my bank information from a voice system and preventing privacy issues, privacy violations, I think I think passwords should be told to a voice assistant maybe voice assistant can say, asked me to type in the password or put my fingerprint on my phone or look into some kind of biometric sensor in the room. Or automatically identify my face for example, if it's capable of like, say, being like a human, if I look at another human unless they're like identitcal twins, we can identify and distinguish a person. Okay, this is actually the same person. So if the smart assistant was able to somehow identify that, okay, this person is the person who wants to bank account without having them to speak the password to them. I think that would have solved the problem. Yeah, and then like following up, they wouldn't say, Tell the balance over audio, they just push it just like into your phone. |
| 32 |  | - |
| 33 |  | - |
| 34 | Interviewer 23:47 | last answer was experience. |
| 35 |  | could you expalain it a bit more |
| 36 | PX21 23:59 | like the media changed. So say, say the reason I asked my voice assistant to get my bank balance would have been like, all the while having a phone within my reach might have been for some reason. So say My hands are wet or 95 occupied. So then in that case, the voice assistant and the smartphone compromises on that user experience and switches it to a different one in order to preserve privacy, which I think is a good trade off, but it obstructed the user experience that I wanted. |
| 37 | Interviewer 24:47 | So that's, that's great. So in the fourth question, you said you have accepted the adaptation. So what do you think? What sort of adaptation you wouldn't have accepted? |
| 38 | PX21 25:01 | Okay, I think I understand for much better in this case, so then I think I had to change the answer. It's like, if I were the person experiencing, I would have not accepted them. So I say it's one one user experience I would have not accepted was |
| 39 |  | if the voice assistant just says privacy error or something like that, and doesn't actually give out details or if it if it just went ahead with the flow and asked for my password or if it just started. Going through my bank balance, for example, via audio, that's something that I wouldn't accept. |
| 40 | Interviewer: | So any other comments before we move to the next one? |
| 41 | PX21 : | Nope. |
| 42 |  | I'm asking Alexa to play some music and then I get like a note on my phone. Telling that doing so would disturb my roommate, because he's meditation meditating. And I get a bunch of options automated to actually still continue with my intent. And I choose playing music on my headphone. From the secondary users point of view. I believe this is the person who is meditating. He hears his roommate asked Alexa to play something but then nothing happens afterwards. |
| 43 |  | Exciting that's what I.. Explain why you picked the reaction cards.. I chose exciting because the goal That's the maybe it's the song. But the whole experience of my smart home, not bothering my roommate is innovative. So I think I thought, like, I think that the whole thing is exciting. And then like when the audio started playing on my headphones, it was like really exciting because that conveyed that really define what a smart home should be. And it was easy to use. I chose that because it's very intuitive. And I didn't have to learn anything new to actually use the system. In this case, definitely approachable and trustworthy because I know that I can actually communicate some kind of intent to the system and have trust that it won't say, it would try to minimize negative outcomes. So I felt that approachable and trustworthy explained the system. |
| 44 |  | - |
| 45 |  | - |
| 46 | Interviewer 32:29 | During the fourth question you said you would have accepted, so what do you think would be a system that wouldn't have accepted that adaptation? |
| 47 | PX21 32:37 | If you just played the music, full volume while the roommate is meditating, that would have been a system I wouldn't have expected. I would. Yeah, I wouldn't have accepted system like that. |
| 48 | Interviewer 33:08 | how do you think the court system that we're using experience would have been obstructed? |
| 49 |  | So what would be a scenario where you will rate it as four or five? |
| 50 | PX21 33:28 | I think you could just say, |
| 51 |  | after I ask the smart home actually, you can use it. If you switch to a device on its own and say my headphones in like another room for example, without explaining why Things happen. I think that would be an I would perceive it to be an obstruction of user experience or |
| 52 | Interviewer 34:09 | any other comments before we move to the next? |
| 53 | PX21 34:12 | No |
| 54 |  | So I'm sitting in the room and I'm actually [..] studying I'm asking my Alexa to actually about football and then I get a alert on my phone. Explaining that. It's best to view the results on your phone because [co-occupant] is actually studying. From the secondary access point of view, this is a room mate while he studying asking this smart assistant to actually about football and then he goes on to check his phone. I chose flexible because the system was flexible as in didn't follow instructions to the point it was more of a human so more smarter and it was easy to use. I didn't have to learn anything. It is somewhat irrelevant in this situation because I think that user wouldn't ask a smart speaker well if I don't know that [co-occupant] doesn't, [co-occupant] prefers to not to listen to loud music while he is studying, then I think it's actually not. So then I think it's actually relevant. So it was helpful, collaborative and convenient. So I think I made like an assumption in the previous one as well when I said irrelevant. I assumed that the system doesn't, or that I would not do something. But in this case, I think me as a user, if I don't know that [co-occupant] doesn't have a set of preferences, and if I go ahead and ask the smart speaker about something for it to actually Respect the [co-occupant]'s privacy preferences as well as cater my intent. I think it was collaborative, thoughtfully easy to use and flexible and convenient. I think that explains the whole reason why I chose these ones. |
| 55 |  | - |
| 56 |  | - |
| 57 |  | - |
| 58 |  | if I were the person experiencing these user interface adaptations, I would not have accepted them not accepted. I think for me to get like a push notification In my phone, telling that you're violating [co-occupant]'s preferences as well as to speak out and say, like, continue on with the football news. I think that's something that I wouldn't accept in the spectrum of user experience for it to say, know user's privacy preferences as well as then to alert me saying that, okay. You're violating a privacy preference and still continue on with the violation. That could have been definitely unacceptable. |
| 59 | Interviewer 43:52 | Ah, cool. can go to the last few questions. You can read them and answer them in the speaker. |
| 60 | PX21 44:01 | Overall, how do you feel about adaptive user interfaces being used to protecting the privacy of smartphone users? Ah, I think how I feel about adaptive user interfaces. I feel that they are |
| 61 |  | relevant and important and |
| 62 |  | - |
| 63 |  | truly innovative as well. I think it would definitely |
| 64 |  | make us trust technology more. |
| 65 |  | Did any of these scenarios resonate with your daily activities? If the answer is yes. Could you please elaborate I think I think there have been cases where I have actually instructed Smart Home voices voice assistants, for example, to play music for example, while there are other people and while and say not at my home, say another person so for example I think this resonated with me because, say if I go to a friend's house, and if I asked this voice assistant to tell me about the weather, or play some music and if they have privacy rules telling Okay, don't play music after seven or something like that, which I don't know. I would, I would see if this resonates with me because then the voice assistant can, for example, either say or send a push notification to my phone telling them. Okay, we don't do that in this house. The rules are like this. So these are the options that you have. I think, in that case, especially when I don't know the privacy rules in that environment, when I'm using someone else's smart home, for example, I would expect the smart home does not let me violate others privacy. Did any of these scenarios inspired to think of other scenarios in your daily activities? If the answer is yes, could you please elaborate |
| 66 |  | I think |
| 67 |  | one thing that came to my mind was these kinds of |
| 68 |  | scenarios |
| 69 |  | playing out in cars for example, now that cars have smart assistants, voice assistants, and they display a lot of data and people share cars. So that was one thing that came to my mind as if these kind of things can really be relevant in that scenario. Even though they are for smart homes, like getting a push notification or playing audio, in a smart car environment, different people having different privacy settings and maybe different buildings having different privacy settings on say, music volume, for example. So I think that's one thing that came to my mind when it comes to interacting with smarter smart environments COVID-19 lockdown and working from home made asking and sharing your home with co-occupants, gas the current situation created any privacy violating scenarios that could have been avoided by adaptive user interfaces? Please elaborate on you. Answer. I think so we spend like a lot of time on virtual meetings. And for me, I think one situation that I can relate is, if I am on a, say, right now, I'm on a call and if if my phone can automatically go to silent mode. For example, if I'm on, say, a call those kinds of privacy violations or if my says if I have a guest and the guests phone is able to actually understand the privacy rules in my house and say automatically go to silence or reduce their in volume, if I'm going to call those kinds of things I think would have helped. So where user interfaces adapt, for example, instead of say, having a ping sound, it would just vibrate instead. Usually, the default was to set it to ring. So those kind of things I think, are super relevant. |
| 70 |  | - |
| 71 | Interviewer 49:57 | Yeah, I mean, that's the end of the study on Do you have any Other common solutions with regard to these kind of smart home shared user interfaces, |
| 72 |  | especially smart speakers, smart TVs, media calls, etc. |
| 73 | PX21 50:15 | I just realized that like |
| 74 |  | the amount of, say, |
| 75 |  | improvements that need to be made on these areas and the amount of things that need to be solved with, like making smart environments really smart. So I think that's one thing that I realized it's kind of exciting as well like the possibilities so yeah, pretty cool stuff. |
| 76 | Interviewer 50:48 | Thank you very much for joining my study. So I'm gonna stop the recording. Now. |

## PX22

|  |  |  |
| --- | --- | --- |
| Index | Tag | Transcription |
| 1 | Interviewer 1:50 | [Introduction] |
| 2 | PX22 4:23 | okay so in in the, in the video so two people in the room, one who wanted to watch to see some pictures of his trip and the other one doing something else easy. So, since there was a big screen, the the person who wanted to watch the pictures decided to see the pictures on his phone instead on the big screen in order to not disturb the other person. |
| 3 | Interviewer 5:30 | Yes, totally. And like, what do you think from a secondary user's point of view? Who was like, reading the book in this scenario? |
| 4 | PX22 6:06 | It was a it was a good scenario because he realized that there were no pictures. So basically, this, the secondary users point of view could be partially positive, partially negative, because at first there were pictures on the big screen, and then the pictures were passed to the phone. So at first, it couldn't have been happy of that. And then it was because it wasn't disturbed. I think something like this, |
| 5 | Interviewer 6:36 | right. You can go to the next question, or just to find words. In this one, you have to type in your answers. |
| 6 | PX22 9:24 | Yeah. So effective was because at the end, it did what it was supposed to do. And also I was looking for something like not fast because it had been after a while. So that is the time consuming thing because he's not very fast. It was easy to use, because from what I saw, from the first user point of view was quite easy to access it, although it was not faster time consuming. and refine and confusing are both for the I mean, the time consuming thing. So basically the concern was that if you use it did what it was supposed to do, but it did it like later. So for both users was confusing because it didn't happen immediately when it was supposed to. |
| 7 | Interviewer 10:28 | Right. Let's go to the next set of questions. |
| 8 |  | yeah, I've got a few questions, so in the first first question. you rate it as three? Could you explain a bit more why you rate is as three? |
| 9 | PX22 12:29 | Yeah. So, because I think it partially protected the privacy of the user but not completely. So I both agree and disagree, because it did both in my opinion, since it did what he was supposed to do, but later, too late. So I |
| 10 |  | mean, like, it did not protect the privacy because like, the second person saw some photos. Was that the case? Oh, |
| 11 |  | yeah, I could have seen the photo. Yeah. So it was Wasn't privacy protection, but then it protected the privacy because the person didn't see all the other photos. |
| 12 | Interviewer 13:07 | Okay, so the next question like you, you said like, the second one, you agree that you are in control? Could you explain a bit more like why you felt that way? |
| 13 | PX22 13:21 | So not so did not feel that in control, because basically |
| 14 |  | it didn't happen. So it's in between agree and disagree again, but more agree so not not in control. Because, again, if he was in control, it wouldn't have happened to have some features seen from the other user. Okay, so it's not a complete control. |
| 15 | Interviewer 13:52 | Is that why you, before in the fourth question as well like a similar kind of.. |
| 16 | PX22 14:00 | Yeah, yeah, exactly the same reason. |
| 17 | Interviewer 14:03 | Okay. So So in general, what do you think like, you would have expected to happen better? Like, how would you improve the system? |
| 18 |  | So, in general for this scenario, what would you have expected to happen? Like, what do you think would be a better solution? |
| 19 | PX22 14:19 | The better solution would be to have a faster response reaction from the Smart Home app and have it immediately so No, no pictures at all on the big screen. And then the rest. I felt like it was okay for me. |
| 20 | Interviewer 14:37 | Okay. Let's go to the next section. |
| 21 | PX22 15:46 | Okay so in the video so two people having a |
| 22 |  | a video call and third person entering in the room and as soon as one after couple of seconds the person entering the room, the background was like blurry, so that the other person talking to the person in the room couldn't see the person walking behind. But again, I felt like the response was a little bit slower, in my opinion, but it was efficient. So the main users point of view was Yeah, so |
| 23 |  | was that |
| 24 |  | I think it was okay. They secondary users point of view was to be protected. I think so in this case is probably more efficient than the first one, but still a bit slower. We'll see. |
| 25 | Interviewer 16:52 | What do you think from the person who was another end of the call, what what was your reaction? |
| 26 | PX22 16:58 | the they are the person On the call? |
| 27 |  | yeah so I think that he didn't recognize, he didn't see the person behind so it was it was okay. |
| 28 | Interviewer 17:19 | Let's go to the next question |
| 29 |  | Yeah. Could you explain why you picked us? |
| 30 | PX22 19:37 | Yeah, effective is again because it did what it was supposed to do. So it covered at least partially the person so I think the other person on the call couldn't recognize the person behind so it was kind of privacy respected. it is certainly useful because I mean And it's okay nobody I never thought about that I had many, many video calls and even it sounds obvious I think it's quite innovative and useful because it's not obvious that you have the background blurry as soon as the person enter but when there's nobody is not blurry so it's both |
| 31 |  | - |
| 32 |  | it's poor quality because when it was blurry I think it was still possible to see something even if you couldn't recognize the person and at first it wasn't blurry so it didn't instantly became blurry when the person entered. So I can say that it was a man that he was wearing, blue t shirt, so few things so you can recognize a person but not completely and relevant Of course, even if it's not something I was thinking about before seeing this video, it's very relevant for what's happening because of course, there are two people talking in a video call but a is good not to have. I mean, sometimes what I experienced video calls which you had a background so you couldn't see my background but what if somebody doesn't want to have a background and want you to see they own the ground but not people entering? So that's relevant to what was happening so the video calls |
| 33 |  | - |
| 34 | Interviewer 23:16 | so, um, so how do you think like, you rate it like the fourth question, you rate it as disagree. So how do you think what sort of adaptation that you wouldn't have accepted |
| 35 |  | in this scenario? |
| 36 | PX22 23:39 | so I would have accepted in this case because |
| 37 |  | basically, it became blurry and so the person couldn't see the person talking couldn't see the person behind. But I'm not completely disagreeing with |
| 38 |  | So, I will not completely accept |
| 39 |  | the adaptation, because again, I think should happen before. So, yeah, |
| 40 | Interviewer 24:21 | So what do you think like what systems that it would have obstructed user experience and something like similar situation but like what sort of system you would you would rate it as it says strongly agree.? |
| 41 | PX22 24:40 | So, |
| 42 |  | I don't know. I think something like so strongly agree would be something like something in the background disturbing the call. While in this case, I think that it partially did what it was supposed to do. In terms of privacy, so it covered the person behind and didn't obstruct the experience, at least of the two people calling but also the other person behind. So yeah, I think it was quite efficient from this point of view, although it should have happened faster. |
| 43 | Interviewer 25:21 | So how do you feel about like if the background goes either fully blurred? Like you can't see if there's a person or not like something else, like a different image coming up? Or how do you feel about replacing the background with the same background, but without the person like clearly wiping that person out from the from the background, like a still image in the background? So how do you feel about those two variations? |
| 44 | PX22 25:51 | point of view, especially the other person talking to the person in the room, and if you mean either you have another background for the beginning of the call, but it might be distracting to have another background suddenly appearing or to have completely blurry in the sense that you don't see anything happening. I think that's disturbing. So either it's like that from the beginning, or it's better to make it blurry but so with the background blurry, the other person cannot see who is entering and so the privacy is respected but it's not distracted from something Screen changing because the background is the same. It's just blurry.. |
| 45 | Interviewer 27:07 | Cool. Let's go to the next question.. |
| 46 | PX22 27:55 | Okay so in the video I saw a person asking out loud to the My home device a question on his own health. And basically, the reply was directly on his watch. So there the person who entered the room couldn't know anything about that. I mean, just the initial question if he heard that from the room. |
| 47 |  | Yeah. So |
| 48 |  | I think in this case from both users, the main user, the sound or user experience was quite good, because the privacy was going to be respected and the answer came can quickly and Yep. Cool. |
| 49 | Interviewer 28:44 | Go to the next question. Yep. |
| 50 |  | Could you explain why you picked those words? |
| 51 | PX22 29:39 | Yeah so it was an organized and clean it was referred to interface on the screen of the person asking because I think it was the answer given on the watch was clear and simple. Effective because I think it works properly and in this case was fast. I don't see I didn't see any delay honestly, in the efficiency of the of the Smart Home device and yeah and easy to use because there were not complicated things and he was also the answer on the watch was very clear again so |
| 52 |  | - |
| 53 |  | - |
| 54 | Interviewer 30:28 | you can go to the next set of questions. |
| 55 |  | Some quick questions, so the fourth question you said you would have accepted the adaptation. So what do you think would be a system that you would rate it as five in this use case. |
| 56 | PX22 31:58 | so, In case for example, either if it was lower |
| 57 |  | the connection between the question and and the screen of the screen on the watch with with the answer, or, for example, I mean, either on the Smart Home device or on the watch or the person, there was a sound in a way, like suggesting suggesting something of the answer. So I don't know, maybe, like sound or something bad happening because the levels of glucose were higher than Normally, you know. So that could be something that they could have added, but it wouldn't have been good for the privacy of the users. So [...] strongly agreed with not accepting them, but in this case, I think it was efficient and good and so I would have accepted them here. |
| 58 | Interviewer 33:00 | So the last question you said like Yeah, it did not obstruct this experience. Anything else that you think could be improved, could be added to improve the user experience? |
| 59 | PX22 33:16 | I mean, for the person entering the room not much because he didn't he or, or Yeah, wasn't disturbed by anything from the Smart Home device. |
| 60 |  | No, I don't have anything in mind for the other person as well. |
| 61 | Interviewer 33:35 | Ah, let's go to the final section. |
| 62 | PX22 34:30 | Okay, so in the video I so the screen with Netflix open and some |
| 63 |  | icons of some cartoons. And whenever the second person, [..] user entered the room before it entered the room actually the cartoons were changed with movies. And yeah and the person entered and said that he liked the movie That's it. So in this case, yeah, from both the user's point of view, I think it was a good. I mean, the person entering didn't didn't even know that something happened from a smart home point of view. And the main user, it was very efficient because then happened before the person entered. And probably the person didn't even realize that something happened again, from smart home point of view. So yeah, it was very efficient. |
| 64 | Interviewer 36:54 | Could you explain why you picked those words? |
| 65 | PX22 36:56 | yeah so in order to because I never thought about that. And it was also incredibly fast because I don't know how it did, but it predicted then transformed to the other person. So again, effective it has worked well even before the other person entered. So very fast yet trustworthy because it happened before. so I think it also left the time for I mean a second measure in case it didn't work, so it may feel the user more confident and safer, easy to use, because the user actually didn't even have to do anything, annoying is just because I wanted to find something that could be corrected in this case and I heard quite loud noise of the Smart Home device. So if that noise was lower or even non existent, it could have been better because the second user and during I mean could've felt, could have heard the then always suspect something I mean, so that's the only negative thing. |
| 66 |  | - |
| 67 |  | - |
| 68 | Interviewer 38:12 | Right we can move to the next question. , |
| 69 |  | So you said you would have accepted. So what sort of adaptation that you wouldn't have accepted in this scenario? |
| 70 | PX22 39:30 | Yeah. So basically I would |
| 71 |  | remove the sound completely on the Smart Home device because in that case is important that the person entering doesn't even think that something happened from a smart home [..] point of view because it could suspect something. So it's good because it was fast, but if it's fast and then the person doesn't see anything, but here something is not completely |
| 72 |  | except the one |
| 73 | Interviewer 40:08 | is that the same reason why you rated four instead of five in the first question, what price? Yeah. Great. So that's the end. So we've got few questions. general questions, please read through them and speak out your answers when you don't hve to type it. |
| 74 | PX22 40:33 | Um, yeah, I feel good about it. But I think that should be optimized mostly from I mean, not more than quality, speed. So it should happen before except for the last case in which you happen and the right moment, but you Still was being improved for the sound. So overall a good feeling but the improvements are needed. |
| 75 |  | Yes, so |
| 76 |  | I mean, I think the blurry background when somebody enters is a very good and smart [feature?] that I never thought about and is very good, especially in this times. Mostly we meet via video calls. And yet during my video calls, I normally tend to choose a specific spot where there is nothing behind them. There are no doors because I mean, people could enter or I tell people leaving with Or in my same workplace not to enter but in this case, those people could easily enter and nobody would be affected. So it would improve my experience of video calls. |
| 77 |  | - |
| 78 |  | - |
| 79 |  | - |
| 80 |  | And yeah, and then also the screen could be could be |
| 81 |  | a good like thing from a smart home point of view because I mean, you are watching something alone and you don't want other people to see it, but uh, you don't have to lock the door or go somewhere physically you watch something and if the person enters without the noise it doesn't see or suspect anything. Yeah. Yeah, and same for the others the the question of the of the health or something I don't see it in my daily activities because Well, I mean it's it's a good way to see your health details, but I don't see why asking out loud to the smart home device for my daily activities. So the only thing I'm not sure about? |
| 82 |  | Um, no, it mostly made me, for question three mostly made me think about the same scenarios in my daily activities and they said some of these in some of these scenarios I never thought about these things to improve my, my experiences using smart home devices. So it's good to know that as my home devices can do something that I wasn't even thinking about |
| 83 |  | and Fourth Question, |
| 84 |  | Yeah, yeah, I think the most important scenario would be the one of the blurry background especially in these COVID lockdown times. Yeah, especially from that point of view because we mostly are meeting or seeing people via video calls. And yeah, of course if you are like cannot be alone in the room or to be to have your privacy respected, it is fine. otherwise it's a good thing to have the blurry background for the people entering and also together with these last. The last thing of changing the screen. Again if you if you are the you don't want anybody to I see you having a video call with somebody, it could happen the same thing. So, in video calls, both privacy is respected the person behind the people calling. So that's the most important thing, especially for the times we are living, I think. |
| 85 |  | - |
| 86 | Interviewer 45:19 | Awesome. |
| 87 |  | That's the end of the study. That's pretty good. Thank you very much. I'll stop the recording now. |

## PX23

|  |  |  |
| --- | --- | --- |
| Index | Tag | Transcription |
| 1 | Interviewer 2:34 | Cool. So let's go to section one. The first video |
| 2 |  | watch that.. |
| 3 | PX23 3:32 | Okay, so I watched the video like so, what I saw was that from your point of view you are trying to access that medical storage and like Alexa says that you have to take your medications and you use the gestures to unlock the medical storage but Alexa |
| 4 |  | is aware that one of your friends is |
| 5 |  | within the radius of [..] |
| 6 |  | the radius to see your gestures. So |
| 7 |  | Alexa |
| 8 |  | stops it from happening and ignores the request to open the medical storage. |
| 9 | Interviewer 4:40 | What do you think |
| 10 |  | from... |
| 11 | PX23 4:49 | I think it is a good idea, Like, apart from like it depends on the situation, like It depends on how Alexa perceives, like, senses that someone is within the vicinity. Like for example, like, like if, like if it's like a regular headache medication like, like aspirin also has something that you have a headache, per eight hours or something like that. But, like imagine a scenario where you're supposed to take the medications like, which is, like, really essential or like, like, that's really important and like, and now Alexa stops you from taking that medication at that time. Which might be really important to you and It stops you from getting., it can be a life threatening situation. |
| 12 | Interviewer 6:09 | you can go to the next question. |
| 13 | PX23 6:18 | Am I supposed to answer like, it says like in the section that says before answering the question below, please expand out what you saw on video and describe the experience of the smart home like where it was from the main users point of view. |
| 14 |  | cutting edge |
| 15 |  | can I use another word which is not here and you actually have a blank space in here to fill it like unreliable. |
| 16 |  | unpredictable |
| 17 |  | Okay, so I picked five words. |
| 18 |  | like in this case, like, innovative, I use the word innovative because it's obviously innovative. Like, I don't know if somebody has previously like came up with this. Like to get inspiration from someone else? |
| 19 | Interviewer 11:20 | So the scenario is, |
| 20 |  | like, I've seen somewhere else on literature I've seen people discuss. And |
| 21 |  | for example, |
| 22 |  | the, |
| 23 |  | to the multi modal aspect about user interfaces like gesture, why something like that? It's been done before. So the scenarios itself, privacy violation, capability, switching [...], those kind of things. That's the novelty. So |
| 24 | PX23 11:53 | it's so like, you have who's like Is that for like to secure someone's privacy is really never do and is obviously useful and relevant in taking cases which like a person is not restricted by their like schedules or like day to day work but other than that like previously explained what could have happened is the person is in like immediate need of medication like like we actually dealing with an artificial intelligence right so there's always a what if the event comes to reliability, right? Yes, I mean, there can be instances we are he is extremely unpredictable. Yes, so unreliability can be there so from unreliability like if Alexa keeps on getting these traces of like your life your friend, is within its vicinity, like this can be time consuming as well. |
| 25 |  | - |
| 26 | Interviewer 13:39 | you can move to the next set of questions |
| 27 | PX23 14:13 | Can you explain to me what the third question I expected they use interface question. |
| 28 | Interviewer 14:19 | Yeah. So it's basically you saw two previous videos right, |
| 29 |  | I said earlier. So with that kind of understanding of the |
| 30 |  | system. |
| 31 |  | When this happened, would you have expected it like? Was it a surprise? So that's a question. |
| 32 | PX23 14:35 | Like are you asking from the point of view from the user who's like |
| 33 |  | asking Alexa to do something. |
| 34 | Interviewer 14:47 | Yeah, the main user |
| 35 | PX23 15:09 | I mean, like, since you explained earlier that the history will be there. result of like I knew what to expect. Not in the caliber in the sense like I was not expecting to be that good. Like in the sixth questions I like like if I took the second scenario where like the friend is meditating and he wants to play music Right. |
| 36 |  | - |
| 37 |  | - |
| 38 | Interviewer 16:27 | Yeah. |
| 39 | PX23 16:29 | So, in this case you are referring to the |
| 40 |  | the person |
| 41 |  | who was experiencing right like like so the person experiencing it says Alexa play some |
| 42 |  | music, and his like intentions get obstructed since his friend is meditating, so Is that what you're asking here? |
| 43 | Interviewer 17:09 | focus on this specific scenario only. So, the question is on this scenario where I try to |
| 44 |  | use the medical cupboard scenario. |
| 45 |  | the question is on like whether this |
| 46 |  | adaptation like, whether it obstructed the user experience, this adaptation. |
| 47 | PX23 17:28 | So by user experience |
| 48 |  | or user experience, you mean like, I was able to experience the, the security measurements taken for privacy violation or |
| 49 |  | Alexa being able to |
| 50 |  | open the storage cupboard, which [...] |
| 51 | Interviewer 17:55 | So it's |
| 52 |  | basically like how the main user feels about the system. Like for example, like |
| 53 |  | user experience is like, |
| 54 |  | like you You feel like if you feel happy, like if you get a good emotion when you use it, it's a good user experience. |
| 55 |  | User Experience does not have |
| 56 |  | a hard hard defined like definition. But what it means is like if it feels makes you feel good or does make you feel sad, like if they experience is good. So that's basically what it means experience |
| 57 |  | how you feel about user experience. |
| 58 | PX23 18:40 | so asking what Alexa did, did it obstruct me from experiencing what could have been or? |
| 59 | Interviewer 18:56 | so its basically |
| 60 |  | when Alexa doing this, like instead of just opening the door whatever, in the normal behaviour without the adaptation |
| 61 |  | did that |
| 62 |  | like sort of like how do you feel about that change how it affects your |
| 63 |  | user experience using the system |
| 64 |  | does that make sense? |
| 65 | PX23 19:24 | Sort of like I like. So, like if I want to say like I do understand why Alexa has stopped me from accessing the storage, cupboard, so if and I'm satisfied with the service. So I, if I want to say that where should I put x? |
| 66 | Interviewer 20:00 | If you feel satisfied with it,? |
| 67 | PX23 20:02 | yeah, |
| 68 | Interviewer 20:03 | yeah, that means you either strongly disagree with one or two that means it did not obstruct. |
| 69 |  | Okay, so I've got two questions on this. So you |
| 70 |  | in the first question, you said, |
| 71 |  | you strongly agree that it is predicted the privacy of its user. |
| 72 |  | So what do you think would be a system that you rate it as one? |
| 73 |  | instead of five? I mean, like |
| 74 | PX23 20:44 | unefficient security system is obviously really user friendly like, like for Example. If the, like, example the recapctha that uses, and it can be like, really annoying sometimes, right? Like, for unnecessary reasons it can be really annoying. Like, it asks wherther you are a robot and it's like, you understand what I'm saying?. So, like, recaptcha is an example of a bad security system you'd like to understand. Like, its not really it's not really efficient when it comes to checking likes seperating A.I. from humans, like it's not very efficient. In this case, the method that you use was, I thikn it did what it was supposed to. And I strongly agree that it did. |
| 75 | Interviewer 22:31 | Any other comments on this before we move to the next one? |
| 76 | PX23 22:36 | Yes, so so like I previously said, I'm not sure if you have seen the video where are a person who lives inside a home where it's controlled by smart security system. Okay, and So the doors of this house are controlled by his voice, controlled by his voice and one day he goes out and he goes to the dentist, right? And he gets a tooth removed. And once he comes home and he tries to interact with the security system, his voice has changed, do you remember that tooth removal? and the secruity system cannot recognize him. So he stays outside for a long period of time. So, so that's what can happen when you rely too much on an automated security system. |
| 77 |  | - |
| 78 | Interviewer 24:02 | right good feedback. Let's go to the next section. |
| 79 | PX23 24:14 | Yes, I did not feel that I'm in control while using the smart home. Section two. You want me to watch the video? Okay, so I watched the video Okay, so what I saw was you were trying to access your bank and someone stepped in to your room and Alexa recognizes it and sends you a message to your phone saying that someone has entered the room so he or Alexa can't let out the security details of your bank credentials. |
| 80 | Interviewer 26:27 | you can go to the next question. |
| 81 |  | go to the next question |
| 82 | PX23 27:58 | so Unlike the previous scenario where we discussing about medical storagelike bank credentials are extremely important. Now, most of the time it takes to access it right likeif your bank credentials are exposed its like, is extremely dangerous than waiting it out like  like theperson walks inside right so, so he stays within the radius of Alexaconsiders as unsafe, okay for like, let's say 15 minutes or so andperson walks out.And unlike the medical storage scenario like 15 minutes, totally fine compared to that. Because like the 15 minutes of your time tosecure privacy regarding yourthe bank is hiding is really important.As always, it's just as the previous scenarios its innovative and in this case very relevant and trustworthy helpful and reliability wise like if it takses half an hour for the person to walk out is totally fine cuz it's your bank credentials and you must give it yourself such importance. |
| 83 |  | - |
| 84 |  | - |
| 85 |  | - |
| 86 | Interviewer 30:15 | Okay. can go to the next question. |
| 87 |  | Could you explain the question that, |
| 88 |  | what would be a scenario that you would rate it as five like, like what sort of an adaptation that you wouldn't have accepted? |
| 89 | PX23 32:04 | something urgent is obstructed by Alexa. Right, like an insuling shot that's stored in a medical storage and if Alexa keeps on sayingthat's someone is nearby you can't access it you wil die right? |
| 90 | Interviewer 32:31 | yeah |
| 91 |  | yeah that's relevant to the previous question, bank bank scenario? |
| 92 |  | So, in the sixth question, |
| 93 |  | could you explain like, your answer like, why you rate it as one? |
| 94 | PX23 34:06 | like it's obvious right? Because that's what the user wants the Smart Home security system to do right? to protect your privacy like especially when it comes to bank details. So, it does that perfectly and I the think that this in no way obstructed the experience of using the interface. |
| 95 | Interviewer 34:48 | Any other comments on this channel? |
| 96 | PX23 34:53 | Okay, so can you explain to me why My bank details are like, why would you discuss it with the Alexa like, bank details are really important and it should never be like in between you and Alexa |
| 97 | Interviewer 35:18 | Yeah, that's a good question too. Like |
| 98 |  | that is a person thing and this scenario for the person's characters is like that |
| 99 |  | he would use |
| 100 |  | the smart speaker and it is a personal choice. |
| 101 |  | You might not like it so just just in case |
| 102 | PX23 35:37 | like I personally, believe that like, like, important things like like your online online account credentials or bank credentials should never be compromised between you and an artificial intelligence device since somebody can obvisouly hear it, right? |
| 103 | Interviewer 36:23 | Well, so in this case scenario that's where it stopped, stopped in asking prompting the user to speak out the code to understanding the risk. |
| 104 |  | But the system what it does |
| 105 |  | ...is in your ear shot range, you will switch |
| 106 |  | to the smartphone is |
| 107 |  | cool, you can go to the next section |
| 108 | PX23 37:48 | so someone is studying near the Smart TV you try to view Your holidays, your vacation images using a smart TV and the, What do you call the privacy violation security system recognizes that you are going to use the Smart TV to view the images, which is going to disturb the purpose of studying and it stops you from doing that and instead gives you the option to view the images through your phone |
| 109 | Interviewer 38:37 | from computer second users point of view? |
| 110 | PX23 38:41 | I think is really cool because I mean So the person studying doesn't want to be disturbed, obviously. And yeah |
| 111 | Interviewer 39:05 | yes, you can go to the next question. |
| 112 | PX23 40:34 | By comprehensive you mean |
| 113 |  | like even being able to comprehend the system or you being able to comprehend why that |
| 114 |  | occured |
| 115 | Interviewer 40:53 | is basically talking about the systems |
| 116 |  | How do you perceive the system |
| 117 | PX23 41:26 | First of all how does |
| 118 |  | smart devices be smart enough to know if someone's studying or meditating like, is it possible? |
| 119 | Interviewer 41:42 | Yeah, it does like to for example can do accurate information to, to track the person's like for example, there are different factors like depending on the time and |
| 120 |  | the outcome that |
| 121 |  | a certain sense |
| 122 | PX23 41:57 | Okay, so like you teach the algorithm to study these |
| 123 |  | items and |
| 124 | Interviewer 42:06 | yeah, you can do that or simply like imagine other ways, like the user puts in like on his phone directly quoting I'm studying now just to understand |
| 125 |  | the system. |
| 126 |  | Cool. you can go to the next question. |
| 127 | PX23 43:01 | Okay. So it's relevant because like, there's always going to be instances where somebody's studying or meditating. So. So this can come in handy during those scenarios. And it's certainly helpful for the person that's involved in the activities which he does not want to be disturbed right. But from the point of view from the person trying to read images, it can be quite annoying. he might think that why does Alexz, this system stopped me from using images just because this person study next to TV, like, but it's comprehensive because I'm convinced that we understand that like, removing something fun or entertaining on the TV can quickly disturb a person who is involved in activities that [need?] their focus, right? So they don't wish to be disturbed and it's comprehensive. It's unpredictable at the same time because you do not know what covers as studying in this scenario. But he can be doing something that's like like like I said, there are you explained two ways that that these smart smart systems determine whether this person is studying or not like he a he put on his phone that I'm studying now and do not disturb, the secret system recognizes that and the other method is that the smart system recognizes patterns and he comes to a conclusion that this person might be studying right now. To like apart from scenarios where he deliberately put that he do not want to be disturbed thing in his phone it can be quite unpredictable what the smart system recognizes as studying. So it can be quite annoying for other users of this particle system. |
| 128 |  | - |
| 129 |  | - |
| 130 | Interviewer 46:33 | Yep, good point. |
| 131 |  | We can move to the next question. |
| 132 |  | Could you explain those two answers the first and the second? |
| 133 | PX23 47:09 | Guess I'm not sure if it says protecting the privacy of Yeah. studying does fall under privacy violation but your think about the fact that like to see why did he decide to stand in front of a TV like the system can always like so I'm not sure whether to consider. Consider it as like he probably the security system protect something as a person who was studying might have wanted to see the images while studying right i mean that could be scenario. yes and and the second one I did not feel that I'm in control like I have previously stated, we do not know what a smart system perceives as studying so so we cannot know like, does this system think this guy's studying right now or not so So I like if there is a certainty that like that when a person is studying set the security system to Do Not Disturb Mode and other scenarios it's totally fine to view images, like do you understand the two scenarios? Yeah. So the person trying to view the images through the Smart TV is not sure the whether the smart system percieves the person Sitting next to the TV is studying or not. |
| 134 | Interviewer 50:58 | Okay, you can go that Next. |
| 135 | PX23 53:58 | [Discussion on the technology and the scope of the research] I watched the video and I saw that two people are engaged in a video call and on one end of the callers the room he is in, someone walks inside and the person on the other end does not wish to be disturbed by the colleagues, his colleagues co-occupants and the system blurs that person on time, I believe, right. |
| 136 | Interviewer 56:46 | [Explains the video] |
| 137 | PX23 58:31 | so I have apart from the fact that the person on the other end wishes to talk to that person that's been blurd out, okay? Like apart from that scenario Everything else is positive about this like, security system because I like if there are no like time consumptions or like security details, you know, just the fact that somebody walks in at it blurs out the background. It really is simple and creative and it's really helpful and convenient for that person who does not need to be disturbed during his holidays and it's really relevant in the 21st century specially because like a lot of people living with social anxiety and do not wish to be engaged in like a certain conversation in his free time, like a person keeps his like the weekends for [relaxations?] and and like talking with someone actually drains your social.. and so it's really relevant in the 21st century |
| 138 |  | - |
| 139 | Interviewer 1:01:16 | [Discussing whoes point of view is this is evaluated] |
| 140 |  | Could you explain the fourth and fourth quest for the |
| 141 |  | answer? [Clearing out the view point of the video] |
| 142 | PX23 1:04:18 | Yeah. So it depends like, okay, like he walks in. So imagine a scenario you want to talk so badly. You are you're one of those nagging aunties, who will talk to you or somebody. And so, in that case, the aunty would not have been very satisfied with what the user interface system to the person in the background That person wanted to see who's in the background and the other scenario is the person does not want talk to.. offended by you know the privacy violation system. So, those are two scenarios right. [asking a question to clarify the view point of the evaluator] what you said still applies like you, you have no expectations regarding.. |
| 143 | Interviewer 1:06:12 | I don't have any expectations. |
| 144 | PX23 1:06:21 | So it should be in between right? |
| 145 | Interviewer 1:06:26 | why is that? |
| 146 | PX23 1:06:28 | As I if there are no expectations, like if you're taking this call and you have nothing to do with the person on the other end or the person walking inside, you don't care what the system asks. |
| 147 | Interviewer 1:06:48 | Yeah, yeah, I agree. But the question is not that. whether the question is about the user experience of using the system, like, like the system means the video call |
| 148 |  | does this affect obstructed you using the system so that's the question? |
| 149 | PX23 1:07:11 | I don't think so, like, like is constantly blurred out right? Person lost in sight and it's blurred out for a certain period of time. And and the background being blurred has nothing to do with the conversation right? On a personal level then no, like, Okay, so, but there could be a scenario where like the background is blurred and the other person is concerned why the background is blurred and that that might Yeah, could potentially create another interesting conversation. |
| 150 | Interviewer 1:08:03 | That's interesting point |
| 151 |  | that |
| 152 |  | you can go into four other questions and speak out your answers |
| 153 | PX23 1:08:21 | yes, like 75% of 100. I agree for privacy violations, I do understand, but like using these systems for security like I'm referring to, like the scenario of bank credentials. Okay. I am referring to like voice commanded doors. I already explained it to you that is if you cannot like if you are putting the security of your home not in the hand of ... voice, it could lead to a lot of problems right like they are going to be obviously like, you already know that Assistant or like any artificial intelligence artificial intelligence operated devices do not function 100% effectively. They have like native English speakers like like these systems have trouble recognizing the words that are coming out of a non English speaker, English speaker. So if you are relying on the security of your own home and you expect that security from an AI, it could be problematic because it's not always as efficient as using a key. A key is always going to work, there is like one to 2% chance of scenarios where a key might not work, like most of the time is going to work. And we cannot like.. |
| 154 | Interviewer 1:11:12 | imagine the person |
| 155 |  | has problems with using |
| 156 |  | Parkinson like you can't use a key |
| 157 |  | so he has to a use gestural user interface. |
| 158 | PX23 1:11:29 | So, to balance it out like imagine a person who cannot talk, just imagine Okay, who is who has trouble speaking well, speech impediment who is or someone who cannot talk at all. So in those scenarios. He cannot use voice recognition so he has to rely on gestures or something like that. And if you're going to go that far imagine a scenario where a person has who has problems with his person. He is physically handicapped person who also cannot use his voice properly. Smart home should be actually focus on people like this right? Because that's the ultimate goal. Smart homes should be mostly focused towards people who are not extremely physically. Am I right? Like this Like mostly for the comfort factor, but like you have considered creating these smart homes mostly in favor of a elderly people and physically handicapped people I believe or is it just |
| 159 | Interviewer 1:13:47 | [explaining the aspects of smart homes capabilities] |
| 160 |  | You can go to the next question. |
| 161 | PX23 1:15:16 | Okay. So So I personally do not use smart devices, but like I I completely understand the scenario of bank credentials. That's a really important thing to protect your bank credentials. That's really important. So I believe your smart home system does a really good job tackling those four situations. |
| 162 |  | - |
| 163 | Interviewer 1:16:10 | So you |
| 164 |  | can move to the next question. |
| 165 | PX23 1:16:22 | So So imagine a scenario someone walks into your room, while you are sleeping And yeah, so. So imagine your parents walk into the room while you're taking a nap and they leave the road without switching off the lights or closing the door. So you could use The capabilities of the smart home to like, close the door and see just the light. It was just a gesture. |
| 166 | Interviewer 1:17:21 | Last question. |
| 167 | PX23 1:17:48 | it, okay. So this one is really important. In COVID-19 have now started like all the university Started online lecture right? Yeah, yes so you're like viewing this zoom meetings or Skype calls there are some disturbances like someone might like one of the parents mind says something really embarrassing out loud while we are answering your question during a zoom meeting so there should be a way that should like I don't know, potentially you went back home. like it can like right blurr mute the the other person's voice only Oh yes, so that can come really handy. |
| 168 |  | - |
| 169 | Interviewer 1:19:08 | Yeah. So that's it, study. |
| 170 |  | Stop recording. |

## PX24

Did not transcribe as this participant’s data was not used in the analysis as the participant did not understand the premise of the study.