Nick Forleo

3.1 What are some different user classes for the smart home system described in Appendix A?

A different user class for the smart home system described in Appendix A could be hackers. Potential bad actors may try to use the smart system to gain access to data or the house itself. This class would use the system in a completely different manner from its intended use. Another possible different user class could be information gathers. This may include law enforcement if they are trying to review any security features or logs in the event something has happened. It may also include IT support who are trying to gather information in the event of a system or feature failure.

3.2 What are some difficulties that may be encountered in attempting to elicit requirements without face-to-face interaction?

One difficulty that may be encountered during requirements elicitation that does not have face-to-face interaction is the lack of collective creative thought. For example, a successful brainstorming session would include being able to write all ideas down where they are visible for all attendees to see. While this can be achieved to some degree with virtual meeting software like Teams or Zoom, being able to read body language is a big part in communicating ideas or feelings about ideas. The customer may not verbally say that they don’t like a specific feature, but you might be able to infer that from their body language. It definitely cannot be done over a phone call. Another difficulty would include the inability to perform ethnographic observation. This technique requires observation of the customer. You wouldn’t be able to visually see how different user classes interact with the system or why something that you think is a feature may not be working as intended.

3.3 Does the Heisenberg uncertainty principle apply to techniques other than ethnographic observation? What are some of the ways to alleviate the Heisenberg uncertainty principle?

The Heisenberg uncertainty principle can definitely be applied to other techniques. Let’s use interviewing as an example, especially - but not limited to - structured interviews. When sitting down and having a formal interview with the customer, the customer may feel pressured to give inaccurate answers in an effort to make themselves look better. It may even be a subconscious response. Another technique would be group work. The different stakeholders may try to stand out or impress each other when they are all in a room. You could potentially get different responses depending on who is in the room or even who is asking the question.

One method to remove as much of the Heisenberg principle as possible is to combine different methods. If we use the group work example from above, we can use the group work technique followed by individual interviews. This will give the stakeholders the opportunity to discuss what was already said and give their honest thoughts. Another method could be to make your customers or stakeholders comfortable around you. The more time you spend with them, the more they will be comfortable with your presence. As time goes by, they will begin to be more honest and speak more freely, thus giving you more accurate information.

3.4 During ethnographic observation, what is the purpose of recording the time and day of the observation made?

Recording the time and day of the observation will help fine-tune the requirements to improve the quality of the system for the customer. Let’s use the smart home system as an example. One of the users may typically wear their glasses during the day, but not at night after getting into bed. This means that the font size can be smaller during the day and larger at night. The font size can automatically change, thereby reducing the amount of times a user would have to reach for their glasses. This is one action that can be done to meet the requirement of automation and removing human interaction. The timing of when to change the font could be determined through ethnographic observation and recording the time and day when the user typically gets into bed.

3.5 Should requirements account for future scalability and enhancements?

I believe that this question is highly system dependent. Generally, I would say the answer should be yes. It may not be necessary to account for future scalability or enhancements if it is an expensive, physical system. It may be easier, or cheaper, to design the system with an expected end of life and then remove and rebuild to improve it at a specified later date. On the other hand, most digital systems should have requirements with future growth in mind. It is generally good practice to design abstract software that doesn’t have hard coded specifics. This helps make future feature implementation easier and cheaper, since you don’t need to spend as much time during integration.

3.6 Which subset of the techniques described in this chapter would be appropriate for a setting where the customers are geographically distributed?

Some good techniques for geographically distributed customers include, but not limited to: crowdsourcing, goal-based approaches, interviews, and questionnaires/surveys. Crowdsourcing would be good for this because it doesn’t necessarily require any back and forth discussion. Also, social media makes crowdsourcing very easy. Goal-based approaches would be appropriate because the requirements are derived from the mission statement, not necessarily from a creative environment such as brainstorming where being in the same room would be beneficial. Now that virtual meeting software has been commonplace, interviews also don’t need to be done in person, thus making for a good technique to use. Having the questions prepared can make virtual interviews quite effective. Finally, questionnaires and surveys are also a good method to use because it doesn’t rely on discussions. The prepared questions can be sent out to users for them to fill out on their own time. It doesn’t require any face-to-face to get the necessary data.

3.7 Investigate the concept of “active listening.” How would this technique assist in requirements elicitation?

Active listening is a good skill to utilize in requirements elicitation because it means that you (the requirements engineer) are internalizing the conversation as well as building a stronger relationship with the customer. When you empathize with the conversation, you are paying attention to body language, tone, and other speech patterns. This may give you better clues as to what the customer means or wants when their words may not convey the message perfectly. In turn, you may be able to provide the customer with the words that they are looking for to describe their requirement. Practicing this skill will make the customer feel listened to and more comfortable when speaking to you. They may be more willing to reach out and have deeper discussions about their needs rather than just agreeing with or even dismissing your ideas or suggestions. All of this will help to write more accurate requirements.