

## Personal Report - Kerui Huang

During the project, 6 methods are used in total with varying purposes. These methods can be classified into two sets.

The first set takes input from real life stakeholders, general public, and members of the target audience. The methods used include:

- Survey
- Interview
- Participatory Design

The second set are non-participatory and only takes input from the IxD design group while factoring in the information gathered from the first set. The methods used include:

- Brainstorm
- Persona
- Use Case

All participatory methods will be reviewed by its concept, application, outcome, findings and field for improvement. Non-participatory methods will be disregarded for this report due to limited length.

### **Survey**

A survey is understood to be a set of questions given to a group of people, including users or stakeholders in the general public (or within a selected sample group). The data showcases the general opinions or experiences of the respondents, which can lead the design to be more beneficial for more users.

The main advantage of surveys is the potential for a large sampling size. Relative to other methods, surveys are often easy to access and to disseminate. In this context, a survey on the topic of unattended homes is advantageous as it displays the general needs and concerns relevant to the project topic, which should be considered during the design process. Hence, this method was included in the project.

The survey was conducted online using Google Forms to ensure easy access for respondents and to make use of Google's helpful data presentation. 12 questions with responses including multi-choice, checkboxes, linear scale and short answer were chosen by Chamathna, Yuta, Rachelle and I. The Google Forms is created and made

accessible via a link, which was sent to members of the general public. The resulting data can be viewed by all group members and is documented in the report.

Currently on the 1st of September, as this report is being edited, the Form has received 42 responses within 7 days. The survey has delivered a number of helpful statistics relating to the living situation, main concerns, current procedures, needs, travelling habits of respondents. Specific data will not be presented on this report, and will be only presented on the group report. Generally, it's preferred that the survey would have more respondents, as it reduces bias and shows variety.

Despite having relatively few responses, the useful insights I obtained are:

- The majority of respondents travel more than once a year, with the main destination being overseas. The duration of the travel is mostly a number of weeks to over a month. While away, the uninhabited home is vulnerable to dangers. This displays the need for a security system that can be accessed overseas, and should be able to protect the home for more than a month.
- The most popular strategy for protecting the vacant home is found to be "locking all doors and windows", while the second most popular step is to "ask neighbours and friends to keep a lookout". This highlights a lack of threat awareness, as more steps should be done to ensure the home is secure. locking doors and asking friends alone are not perfect solutions to threats of a break-in or burglary.
- The majority of respondents own a pet or plants which require human maintenance. However, such maintenance can be replaced using machines with built in schedules or routines.

To increase the number of respondents, this survey could have been posted on more public forums. While I've posted the form in public channels, most respondents were friends or family who were sent the link directly.

## **Interview**

An Interview is understood to be a meeting between a questioner and a respondent, where the respondent is provided with questions to be answered in a conversational manner. This method of data collection typically help interviewers gain perspective regarding an issue, and can be carried out in person or remotely. The information gathered reflects the opinions or experiences of the interviewee specifically, which allows an in-depth approach of understanding the users.

The main advantage of an interview is the ability to gather detailed information. The interviewee is able to (and encouraged to) express and elaborate on their points of views personally without being restricted to set choices. In this project, interviews on the topic of travelling and unattended homes can provide the team with intricate information and a variety of contexts, which should be considered in the design process. Hence, this method was included in the project.

The interviews were conducted separately. A total of 3 Interviews were coordinated by me remotely. The Interview subjects were deliberately chosen to be people with backgrounds overseas, namely Chinese, Pākehā, and Ukrainian, in order to gain insight about their travelling habits and their strategies for home security. A set of questions were chosen by Chamathna, Yuta, Rachelle and I prior to the interviews, and were presented to interviewees. Extra questions specific to the respondents' situations were also included by me and act as prompts for additional responses. The interviews were recorded through a voice recorder and revised afterwards. Responses of my interviews were summarised and documented by me.

A total of 9 interviews were conducted for this study. 4 were conducted by Rachelle, 2 by Yuma and 3 by me. The interviews has helped us gather useful insight relating to the travelling habits, major concerns, strategies for home protection, expectations and needs of interviewees. Specific responses will not be presented on this report, and will be only presented on the group report.

A notable personal summary of information (from all interviews) is as follows:

- A majority of the respondents travel at least once a year during semester breaks with the main destination being countries overseas. This gives information on the periods of times the homes are typically vulnerable.
- the main concerns for most interviewees upon leaving home is home security and the wellbeing of their pets. This confirms our original belief and a demand for an accessible smart home security App.
- The main strategies to home protections were found to be notifying trusted friends or family, and having them check the house periodically. Many respondents own security cameras capable of showing live footage. Few interviewees own alarm systems, while some were "old units" that hasn't been tested for several years. This highlights a demand for systems that alerts local police if a break-in occurrence is observed. At this moment, most homes are still somewhat defenceless against burglary.
- While the respondents were away, most expect their homes to be well maintained and kept clean or in the same condition as they left the home.

In person interviews could have been more engaging than remote interviews and non-verbal communication could have been observed. Generally, in person interviews are also beneficial for rapport-building, which leads to more trust and honesty from the respondents.

## **Participatory Design**

Participatory Design is understood to be a collaborative approach to design which involves stakeholders and especially potential users in the design process. This can be carried out by having end-users provide design feedback during ideation sessions or at their own pace. The suggestions gathered from users displays their expectations and demands for a product (or in this case, an App).

The main advantage of participatory design is that, optimal designs that satisfy user needs are produced by letting the users make suggestions and certain decisions. In this project, users who regularly leave their homes vacant are given the opportunity to voice their design ideas. This is crucial in a design process to ensure user contentment. Hence, this method was included in this project.

The participatory design was conducted remotely as a second segment after the interview process. The same respondents as the interviews were featured in this method. A set of questions were chosen by Chamathna, Yuta, Rachelle and I prior to this segment, and were used to prompt the respondents. The set of questions seek the users' desired features, design and specific preferences in a smart home security App. Contact information were provided to respondents after the questioning process for any additional response or feedback. The responses recorded were then documented in the report.

Identical to the interview method, a total of 9 participatory design sessions were carried out for this study. 4 by Rachelle, 2 by Yuta and 3 by me. This participatory design process shed light on insightful ideas regarding possible features, visual designs and preferences for certain features. Actual responses will not be quoted and will only be presented in the group report.

The suggestions and ideas personally gathered are summarised as follows:

### Suggested Features:

- App is connected to motion sensors, video doorbells and cameras, which start recording when detected motion. Live footage is also accessible via the App. The footage is stored on cloud storage.
  - Be able to detect faces of familiar faces such as family members.
  - Uses AI to detect human movement or activity
  - Has a way to notify local police
- App is connected to the heating/cooling system of the house, to make the room temperature comfortable after the owners arrive back home.
- App is connected to lights of the home, allows long range control.
- App has 2 types of alerts, one depicts emergency while the other is used for ordinary notifications.
- App allows one to share data with trusted contacts such as family and friends.
- The system should have the option of both professional and personal installation.
- Adjustable and compatible with scheduling Apps such as Apple calendar

### App appearance

- customisable dashboard
- Minimalistic with many icons
- simple and foolproof, understandable by non-tech savvy people
- follows Nielsen's ten usability heuristic
- Able to give devices custom names

This method could have been better carried out in person, as it allows for a more personalised environment, in which the users could have less restraint expressing their ideas. By having the users meet the design team personally, it could allow them to have a more open mindset as a part of the design team.

## Contributions

Section	Contributors
Abstract	Chamathna
Introduction	Kerui
Background work	Kerui
Methods	Discussion of methods - Rachelle  Brainstorm for the actual report - Kerui  Survey questions - Yuta, Rachelle, Kerui & Chamathna  Interview questions - Yuta, Rachelle, Kerui  Conducting interviews - Yuta, Rachelle, Kerui
Results	Survey results - Donata  Interview results - Donata  Personas - Rachelle  Use cases - Yuta  System requirements - Chamathna & Donata (supplied ideas for this section)
Discussion	Discussion - Donata
Other	Formatting & Editing - Donata, Kerui, Rachelle, Yuta & Chamathna