Chapter 5

Redesign

From the previous chapter, we have gained insights into usability issues of WeChat for Chinese elders as our experts and users indicated and discovered using allocated personas and HCI evaluation methods, including think-aloud, cognitive walkthrough and questionnaire. With questions discovered, we would like to validate and improve the design of WeChat using both theoretical methods such as heuristic evaluation and redesign some of the interfaces.

For most of the redesign work, we will illustrate using linguistic descriptions, accompanied with graphical illustration using professional design platform Figma.

I find this hard to follow.

5.1 Improve WeChat Interface

Drawing on insights from the previous chapter, we were able to identify design flaws in WeChat when conducting user studies with elders. We recommend human-centered approaches and better designs to improve those issues. By doing so, we can make WeChat more user-friendly for all age groups, as Schmutz et al. (2016) pointed out that high adherence to the Web accessibility standards and doing user studies with impaired participants may, in contrast to some concerns in the literature and among practitioners, benefit people without impairments. Indeed that elders might be categorized as disabled in some aspects because they are not able to participate in physical activities to the same extent as younger people and also in some aspects because they are not able to remember things as well as younger people. Therefore Schmutz's conclusion applies to our project as well: design improvement for a specific group of people could improve user experience for all.

Although I will offer results and suggestions based on such observations, notice WeChat is still intended for the general public and served many with satisfactory usability given its good Net Promoter Score.

We compiled key findings from human-computer interaction techniques like think aloud, cognitive walkthrough, heuristic evaluation, and questionnaire study using data from prior user studies. I will provide design suggestions for WeChat that focus on voice and video calls, location sharing, and text messages in the sections that follow.

5.1.1 On Voice and Video Call

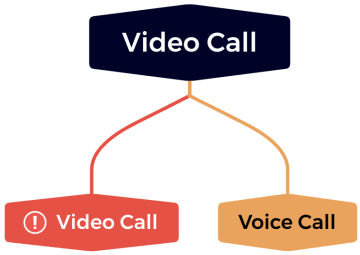


Figure 5.1. The Hierarchical Architecture of "Video Call" in WeChat

In this section, I will introduce recommendations for WeChat on how to improve video and voice call functionality.

The logic of "Voice Call" procedure is incomprehensible

As discovered in the cognitive walkthrough studies in Chapter 4, WeChat users have to click "Video Call" first in the toolbar and then proceed to "Voice Call" within the "Video Call". This makes things particularly confusing as Task A-01 requires our user to use "Voice Call" to contact other users, and participants, especially first-time WeChat elderly users, cannot find "Voice Call" directly when they are searching for it all across the toolbar page. We take the view that "Voice Call" should not be part of "Video Call" and should be independent. Therefore we put up two recommendations for WeChat on improving comprehensibility of wordings:

1. "Video Call" and "Voice Call" should be under "Call" instead;

2. "Voice Call" could be independently put alongside "Video Call".

To illustrate this design idea, refer to Figure 5.2 for graphical explanation.

I recommend you add labels to this so you can refer to them in the text and it's easy for a reader to find the part of the image that you are referring to.

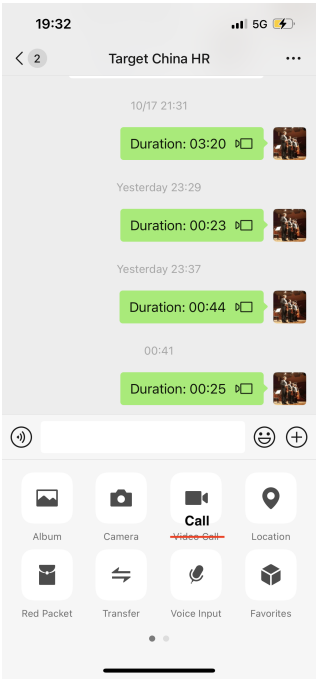


Figure 5.2. Potential Improvement of "Video Call" Function in WeChat

The size of "Minimize Window" icon is imperceptible

According to the results of Task A-04, we found that all elderly participants have difficulty completing this user task. P2 said that although she is an expert in video calls as she contacts her family member every night before going to bed, she still did not notice that there is a small icon on the top left corner; not to say our persona, Ailing, is almost in her 90s, which might have more difficulty completing this user task.

To improve WeChat usability, WeChat could consider enlarging the size of the "Minimize Window" icon and making it more perceptible by changing its colour according to the video call background colour. For instance, when the user is calling in an open environment with a blue sky, the "Minimize Window" icon should be adjusted to a colour with high contrast against the background colour, such as red colour.

I think you would do well to add labels to all the images. The small red square is pretty subtle. If a reader misses it has to spend time looking for it, that is not good

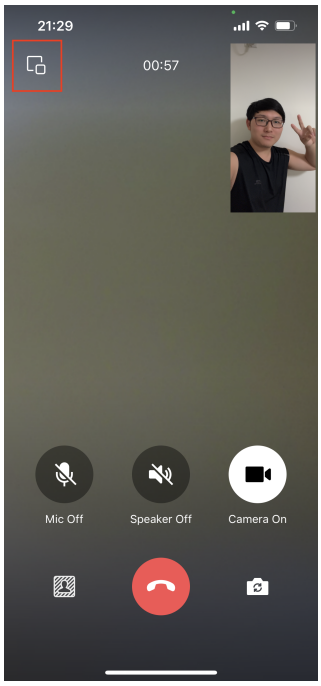


Figure 5.3. "Minimize Window" Icon Needs to be Larger

"Switch Camera" icon's location should be consistent throughout

Although Task A-03 had been completed relatively well by participants, heuristic evaluation still points to the violation of the design heuristics of "consistency" in Switch Camera's location.

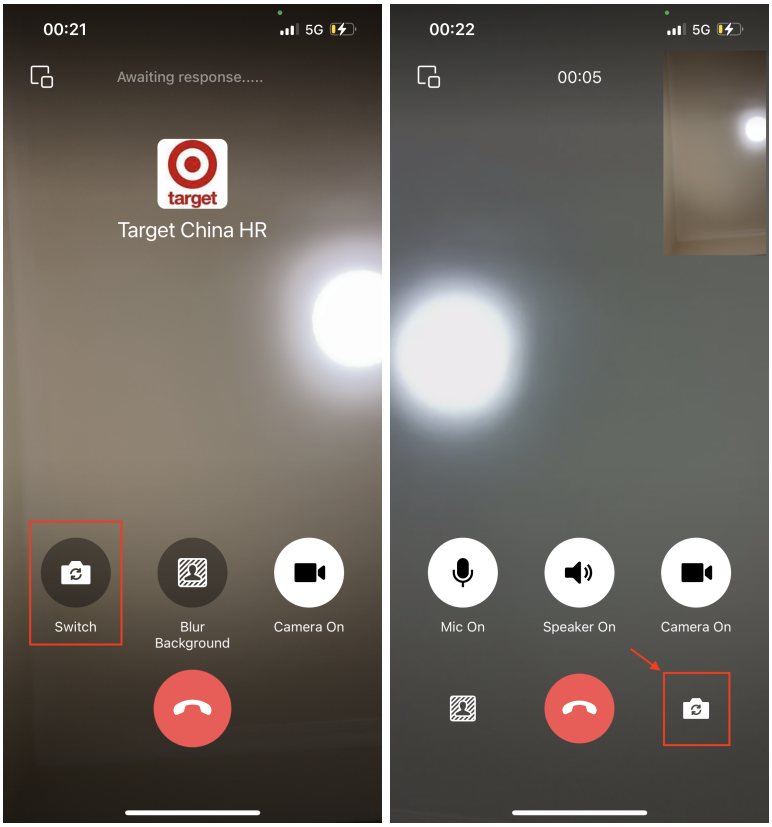
Before the video call is connected, "Switch Camera" is on bottom-left side of the screen. However, once the video call is connected, "Switch Camera" moved to bottom-right side of the screen. This violated Nielsen's ""

5.1.2 On Location Sharing

Location sharing is one of the least used functionalities among all keep-in-touch methods and ranked lowest for usability in the questionnaire.

In order to address this issue with location sharing, WeChat could cancel the static location sharing function from the toolbar and keep real-time sharing as most elders use this function only to find the location of their family member; or mostly it's elder's family member who uses this function constantly to locate their grandparents.

Of course, this is tracking my location of phone – this may be the same as the location of the person – but it also may not be.



(a) Before connection (b) After connection

Figure 5.4. Inconsistent Location of "Switch Camera" During Video Call

Another possible way to resolve this problem is to allow family members to inspect the location of each other automatically. Elders with cognitive declines might be significantly benefited as they might get lost when they are walking around and unexpectedly entered a new route. Counterarguments consider such actions as "spying", but elders could engage in such functions since they could see their children's location at any time. In fact, commercial application Zenly already has such functionalities as illustrated in Chapter 2: Zenly users could be aware of their close friends' and family members' current location at any time, with gamification elements of design built within this idea.

5.1.3 On Text Message

Among all issues surrounding text messages, keyboards and recalling messages are among the most perplexing text message-related concerns.

"Long press" is not a standard operation for elders

In Task B-06, participants faced challenges when they are asked to recall messages that they do not want to send. To do so, participants have to long press the message that they want to retreat and select "Recall Message" from there. However, elders might not know that they could conduct this operation to a text message as an object.

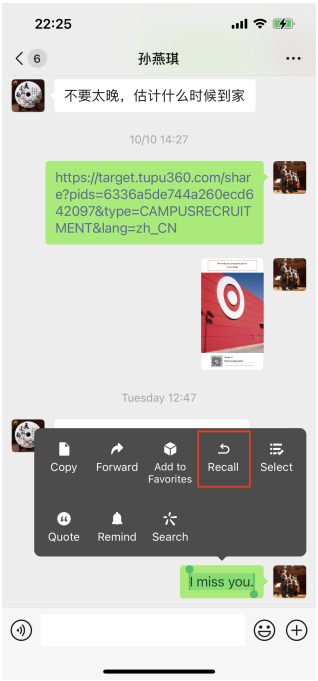


Figure 5.5. "Recall Message" is Not Explicit due to Long Press

To solve this issue, WeChat could add "recall" icon in the front of each message they sent in the elderly version of WeChat so that elders might know that they could recall such messages and can be easily done with a simple click without long pressing.

Invoking keyboard should be explicit

The same reasoning is true for keyboards. In order to activate the keyboard on WeChat, seniors must click the blank space. WeChat might include a "keyboard" icon next to the "+" toolbar symbol. Elders could readily access the keyboard with only one click in a language they could understand.

5.2 Novel Usability Heuristics for Elders?

Recall that we have reviewed many heuristics raised by many different academics, including the classic Nielsen's 10 heuristic (Nielsen and Molich, 1990) and Al-Razgan's specific touch-based mobile heuristics for elders (Al-Razgan et al., 2014). Was novel heuristics raised by Al-Razgan useful and could they add more value to the original Nielsen's heuristics?

I will lay out the theoretical reasoning in this section and argue that we might not need extra heuristics to discover the same design issues of a product, no matter if it is touch-based or hosted on a traditional PC.

Nielsen's heuristics is enough

Comparing? Or perhaps analysing and comparing?

By observing the Neilsen's heuristics and Al-Razgan's heuristics, we could find that Al-Razgan's heuristics are all align and included in Neilsen's heuristics via logical inductions. For instance, Al-Razgan's "Easy recognition and accessibility" corresponds with "Recognition rather than recall"; "Use conventional interaction items" align with Nielsen's "Match between system and the real world".

Notice in Al-Razgan's 13 heuristics, only 4 items mentioned "elders" specifically, which is "Use the elderly language and culture; minimize technical terms", "Provide preferable gesture for elderly", "Provide elderly with information on launcher/elderly status", and "Elderly control and freedom".

Without proof, we could easily understand that "Elderly control and freedom" is similar to Nielsen's "User control and freedom", with only the subject changed; "Provide elderly with information on launcher/elderly status" can be concluded in "Visibility of system status"; "Provide preferable gesture for elderly" is more simply "Flexibility and efficiency of use". The last piece, which is "Use the elderly language and culture; minimize technical terms" seemed to jumped outside of Nielsen's classic heuristics, however it could be divided into elements for "Minimalist design" and "User control and freedom", since aligning with elder's languages is part of user freedom, as people are more familiar with the environment they grew up and adapted to them.

In conclusion, we see no urgency to expand the classical heuristics as the original heuristics could discover as many problems as novel but longer versions. We need more simple but effective

design guides for programmers if they are in charge of the development of software or application for elder population. I will raise the essential guide for future gerontechnology designs in the following section.

Essential guide for future gerontechnology designs

To sum up the essence and highlights of design heuristics specially for elderly people, the author came up with a simple but innovative set of guides according to the human-computer interaction and gerontology studies.

- Big font size;
- Deep colour sharpness;
- Minimal functionality.

Notice that "minimal functionality" means that all unnecessary functionalities should be eliminated but keeping essential tools within the application at the same time is vital. Application designers and product managers should constantly review the usability of their products and only eliminate less-used functions to simplify and minimize the functionalities of their services.

WeChat has been taking care of the first two heuristics in its "Care Mode". However, to drastically improve usability for elderly people, WeChat should not only enlarge font size and deepen colour sharpness only; it needs to eliminate all unnecessary functionalities and correct all wordings that might cause elders' misconceptions.