

Ohana

Chiao-Wen “Arwin” Wang  
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## I. Introduction

Ohana is an iPad interface solution that empowers and connects older adults to their loved ones to help them maintain their quality of life. It focuses on convenience and simplicity by gathering various interactions into one simple design that makes it easier for them to interact with the interface. Current technology offers many convenient services that make our lives easier, allowing us to connect with friends and family through apps such as Facebook, Uber, and Grubhub. However, these technologies are often only accessible to the tech-savvy younger generations who grew up with them. Although such services could mean more independence for the elderly, they do not know how to access these applications that young people take for granted. Ohana aims to solve this problem by consolidating this communicative technology in one place, enabling the elderly to more easily reconnect with their friends and family.



Ohana means family in Hawaiian and refers to the belief that “family means nobody gets left behind.” This sentiment strongly resonates with me, as my inspiration for this app is my grandparents. My grandparents were always there for me when I was young, but when I left Taiwan, it became more difficult for us to communicate and maintain our relationship. As my grandparents age, they feel increasingly restricted and fearful of their limitations due to their poor health and not wanting to be a burden on their loved ones. My grandparents are not the only ones feeling this way. Most elderly adults prefer to remain independent and maintain their quality of life. Research shows that 28% of elderly in the U.S. live by themselves while 43% of them report feeling lonely on a regular basis<sup>1</sup>. Our seniors do not simply experience physical inconvenience but also a lack of psychological stimulus which is heavily affected by their relationships with others, their sense of independence and purpose.

<sup>1</sup> Smith, Aaron. “Older Adults and Technology Use.” Pew Research Center: Internet, Science & Tech. April 03, 2014. Accessed April 21, 2017. <http://www.pewinternet.org/2014/04/03/older-adults-and-technology-use/>.

The following are questions driving my research:

How do we help maintain the quality of life and relationships for our older adults?; What are the essential or priorities of our older adults?; How do we introduce older adults to our new technologies without compromising or changing the younger generation's way of interacting with this technology?; To what extent can we continue to be innovative without excluding the older generations?; How can we bridge the conversational gap between older adults and younger generations?; Do younger generations want to have conversations with their elders, and if so why and what do they want to talk about?

## II. Contextual Background

Currently, we have a myriad of options for digital communication including call, text, email, and Facebook messenger, to name a few. We have even developed several styles and preferences for different types of communication tools; however, our grandparents are still using their landline phones which are only capable of calling and leaving voicemail. Thus, they are often uninformed and left out of conversations. Smartphones and iPads are allowing people to not only communicate vocally but also visually through the use of emoticons, photos and videos instantly, so connecting with people is becoming more engaging and flexible. Many families have already bought iPads for their older loved ones because of its larger screen and lower learning curve<sup>2</sup>. The iPad has similar functionality to a smartphone but interaction with these gadgets is unfamiliar to our older generations so many iPads given to them remain **unused**<sup>3</sup>. Most of our technology now is not accessible to older adults because the people who are creating these tools are making them for themselves, with a futuristic mindset. “It seems a big reason is that not all computer users are created equal, a fact that computer designers and software engineers have not always seemed to recognize. As we age, changes in perception and motor control may make it harder to see a computer screen, type on a keyboard or use a mouse, Charness says. And then there's the added time it takes to learn a complicated new routine — spreadsheet software, for example.”<sup>4</sup>

We have fancy ways of interacting with our gadgets now such as swiping, double tapping, and zooming

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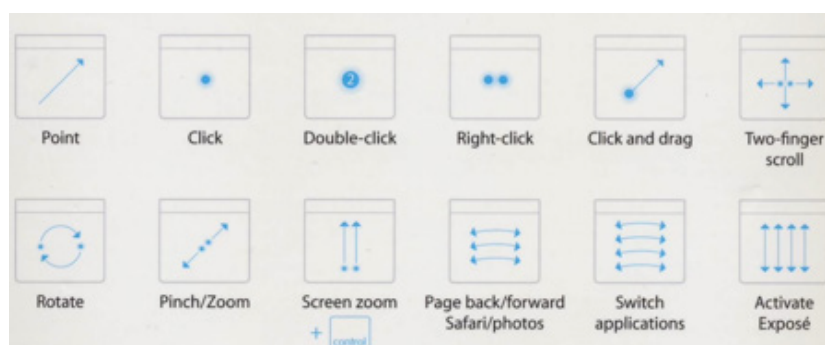
2 Buchanan, Gizmodo.com Matt. “How Steve Jobs Made the iPad Succeed When All Other Tablets Failed.” Wired. November 02, 2013. Accessed April 21, 2017. <https://www.wired.com/2013/11/one-ipad-to-rule-them-all-all-those-who-dream-big-are-not-lost/>.

3 Wang, Chiao-Wen. Connecting Generations. <https://docs.google.com/a/umich.edu/forms/d/e/1FAIpQLS-dTvaJJQbF3Us6SekIOWXnfYGGJvs4qTIIQGtuoWMrFwjbtJJQ/viewform>. October 25, 2016.

4 Haederle, Michael. “Technology Fear Stops Older Adults From Logging On Computer - AARP Bulletin.” AARP. August 29, 2011. Accessed April 21, 2017. <http://www.aarp.org/technology/innovations/info-08-2011/elderly-fear-of-technology.html>.

while older adults are familiar with physical buttons and knobs. People have been trying to help older adults to assimilate in this new technologically-driven era. For instance, the Taiwanese government started this service which allows older adults to call in for any questions regarding the use of technology. We help them to get used to our way of life but it is difficult because of their general unfamiliarity with new technologies and their physical limitations; thus, begging the question, why do we not design for them in the first place?

“Young people seek new skills ‘because they might become relevant later,’ Carstensen says, “Whereas when people age and time horizons shrink, they are more interested in what seems to matter now. So they focus more on emotional goals and being with the people that matter most in life”<sup>5</sup>



To learn more about how to design an interface that is accessible to older adults, I read “Don’t Make Me Think” by Steve Krug which introduced me to the mindset of a usability expert. Most importantly, he revealed that “Designers love subtle cues, because subtlety is one of the traits of sophisticated design. But Web users are generally in such a hurry that they routinely miss subtle cues.”<sup>6</sup> I learned that, for the sake of usability and accessibility, to let go of my stylistic preferences because ultimately the target user that I am designing for is not myself, but older adults, who are not as keen on subtlety. Another message that I follow religiously when designing is to “keep it simple, so you will keep doing it,”<sup>7</sup> which pinpoints the problem of our current apps that require complicated gestures that take time to learn and use correctly. Complicated interactions are discouraging to older adults because they are already trying new technology and if the whole interaction is challenging and difficult, they are more likely to get frustrated and give up.

Even though I am not taking my personal taste into account in designing this app, it does not mean that Ohana cannot be beautifully designed and fashionable for older adult to use. Through my study abroad

5 Haederle, Michael. “Technology Fear Stops Older Adults From Logging On Computer - AARP Bulletin.” AARP. August 29, 2011. Accessed April 21, 2017. <http://www.aarp.org/technology/innovations/info-08-2011/elderly-fear-of-technology.html>.

6 Krug, Steve. Don’t Make Me Think. 3rd ed. U.S.: New Rider, 2000.

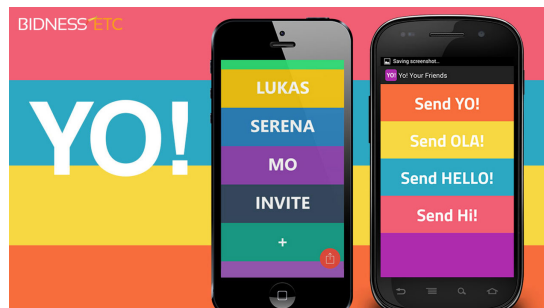
7 Krug, Steve. Don’t Make Me Think. 3rd ed. U.S.: New Rider, 2000.

experience in Scandinavia, I came to understand how beauty can be expressed through its functionality. One of my favorite Danish furniture designers, Hans J. Wegner, reflected this concept perfectly in his joinery work. His chairs are not ornate, but the joinery's structural support that keeps the chair together became its embellishment. These simple details offer surprises to the user while allowing the chair to gracefully become a part of one's life.



From this experience, I want to make Ohana emulate Wegner's chair design in the sense that is simple but graceful and allows older adults to be able to do what they want confidently and comfortably.

Yo is an app that was developed out of people's laziness and unwillingness to type out text messages, even just to say hello. It simplifies these interactions; in just one tap, it notifies the person that someone is thinking of them and if interested, they can contact back with a simple tap. It may seem ridiculous, but it tackles an important aspect of communication for older adults, especially those with tremors, who have trouble reaching out through instant messages. With Yo, you can contact your friends or family with just one tap. This allows older adults to take the initiative to reach out with less pressure and without immediately demanding a phone call with friends and family.<sup>8</sup> This insight into Yo's capabilities inspired me to introduce a variety of preset messages to let their friends and family know that they want to get in contact.



<sup>8</sup> "It's that simple." Yo. Accessed April 21, 2017. <https://www.justyo.co/>.

“My hypothesis would be if you develop new technologies that are going to give older adults an opportunity to experience meaningful rewards, they would be all over it and learn it very well, said Carstensen.”<sup>9</sup> There are many products on the market today aspiring to be the best communication tool and some of them are attempting to tackle problems that different demographics, such as kids and older adults, are facing. Before I created Ohana, I analyzed each one of these products to determine their competitive value to Ohana and how I can make Ohana even more desirable. The following is the summary of my Competitive Analysis:

Product	Pros	Cons	Cost
<b>WhatsApp</b>  It's an app that aims to eliminates the texting bill	<ul style="list-style-type: none"> <li>- Family group chat</li> <li>- Cross platform support</li> <li>- iCloud backup option</li> <li>- Secure</li> </ul>	<ul style="list-style-type: none"> <li>- Navigation is complicated</li> <li>- Small interaction area, text, and images</li> <li>- No video chat</li> <li>- Text centered, which is difficult for older adults to type on small keyboard</li> </ul>	Free
<b>Grandpad</b>  It is a touchpad specifically for the older adults	<ul style="list-style-type: none"> <li>- Big buttons and fonts</li> <li>- 4G connectivity</li> <li>- Wireless charging stand</li> <li>- Tablet is insured</li> <li>- Harvest Facebook and Instagram videos and photos then load them into the tablet</li> </ul>	<ul style="list-style-type: none"> <li>- Invest in a tablet that won't work for other things</li> <li>- The cost per month is very high</li> <li>- The design is not elegant</li> </ul>	\$60
<b>ily</b>  Smart home phone	<ul style="list-style-type: none"> <li>- No need to sign up for social network to share photo</li> <li>- Receive text messages</li> </ul>	<ul style="list-style-type: none"> <li>- Other devices need ily app to connect with the ily home phone</li> </ul>	\$159
<b>Eldy</b>  It is a software that transform the desktop's UI into six main buttons	<ul style="list-style-type: none"> <li>- Can use already have laptop or computer (email, internet, chat, video call, documents, pictures, skype...</li> </ul>	<ul style="list-style-type: none"> <li>- Poorly designed UI</li> <li>- It is only solving the surface problem of making buttons bigger and remove excess information</li> </ul>	Free

### III. Methodology

In order to create a solution that will satisfy the needs of my grandparents' generation with a technology unfamiliar to them, listening is essential because they have completely different backgrounds and experiences from my own. Thus, throughout the process, I conducted qualitative research and worked closely with my target users who are not just the older adults but also their caretakers and loved ones. This research entailed more than

<sup>9</sup> Haederle, Michael. “Technology Fear Stops Older Adults From Logging On Computer”

ten interviews, fifteen usability testing sessions and surveys to both the younger and older generations. Since it is a product that is meant to be on the market, the prototypes needed to be constantly tested and redesigned so the process is repetitive and iterative. It is just like what Krug said “If you want a great site, you’ve got to test. After you’ve worked on a site for even a few weeks, you can’t see it freshly anymore. You know too much. The only way to find out if it really works is to test it.”<sup>10</sup>

### *Prototype 1 at MHacks to test out the market needs and feasibility*

This project was inspired by my own personal struggle to keep in contact with my grandparents and maintain a close relationship but I wasn’t sure if it is a common challenge for other families. Thus, I designed and built a working prototype of the app in MHacks<sup>11</sup> with three other friends studying computer science and neuroscience. This first prototype was based on our own understandings of what our grandparents need when they live independently so we included communication, food ordering, car calling, cleaning service, and emergency. We presented at the MHacks expo and received confirmation from judges and the audience that it is a product worth pursuing and solves a niche problem to an under-served, often neglected demographic. The results were encouraging, but I realized that the judges and audience members were not our target users, so we could not assume that our assumptions were completely valid.

### *Interviews and Usability testing*

At first, I did not know where to find older adults to interview and conduct usability tests with so I went to a coffee shop on Main Street to ask people who might look like our target demographics; however, I did not realize how sensitive this topic is. I realized once I started explaining the app, “Hello, we are designing an app for the elderly to help them stay independent and connected to their loved ones,” we are in effect telling people that we think they are old and need this product. One man who I approached (probably around 65 years old) politely pivoted the conversation to be more about his mother who had just passed away. From this experience, we decided to reach out to nursing homes where older adults may be more receptive to these conversations. These are some people that I worked with in Atria Senior Living and Turner Senior Resource Center:

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10 Krug, Steve. Don’t Make Me Think. 3rd ed. U.S.: New Rider, 2000.

11 MHacks is a weekend long tech competition where students make their ideas into reality with their team.



Participant	Demographic
Carol	Around 80s Poor eyesight and uses computer for emails only Her daughters visit her every week and update her on everyone's life in the family
Larry	Around 80s Hard of hearing Not much patient Does not like new technology
Dolores	Around 80s Short-term memory loss
Margery	Around 80s Arthritis in hand
Katie	35 years old Caretaker and Director of the nursing home
Pats	74 years old Front Desk helper
Randy	65 years old Volunteer for activities and has hand tremor

From these initial interviews and usability testing, the results indicated that the proposed app is solving a valid problem with suitable technology and on-track design intentions. Another key finding was that communication is the most interesting module for older adults. Thus, I focused the project scope on communication first because both the older adults and the family members agreed that communication is a key family value, yet also one of the biggest issues.

To prevent more uncomfortable conversations that are age sensitive, I produced a standard script that is carefully worded and planned. It has every task direction written down so that every participant gets the same information which helps limit any unpredictable factors. I drafted a form of consent for my participants to make sure that they fully understand what the usability testing entails, they are free to withdraw from the testing any time, and I have the right to record them interacting with the app and use the data that they provide. After these items were drafted, I consulted with my professor from the university's Science of Information department, Lija Hogan. Her feedback was:

1. When conducting a Usability Testing, don't start with specific tasks. Start with more open-ended tasks such as, "If you really miss your daughter, Sarah, what would you do?" This allows me to see their thought process and understand which service they are most comfortable with and why.
2. Conduct interviews and Usability testing with the caretakers to understand the relationship dynamic between the older adult and their caretakers.
3. Think about edge cases. When there are multiple notifications, how would I design it?
4. Every new version should have different participants in order to avoid any bias.



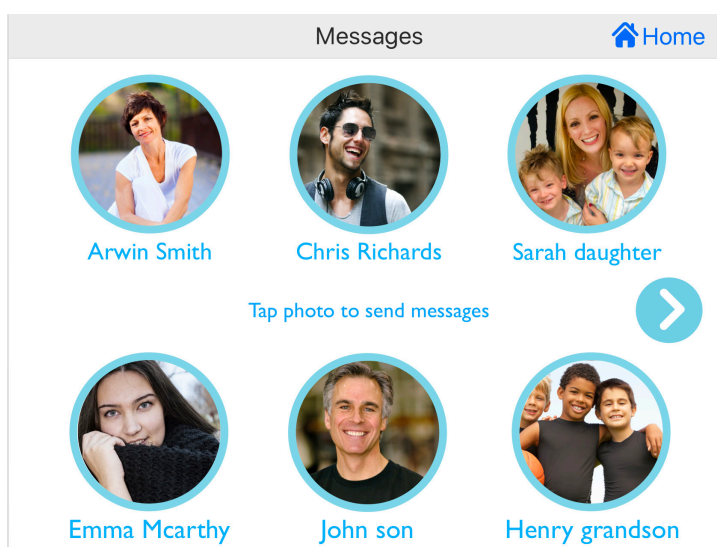


### *Key Findings in Usability Testing*

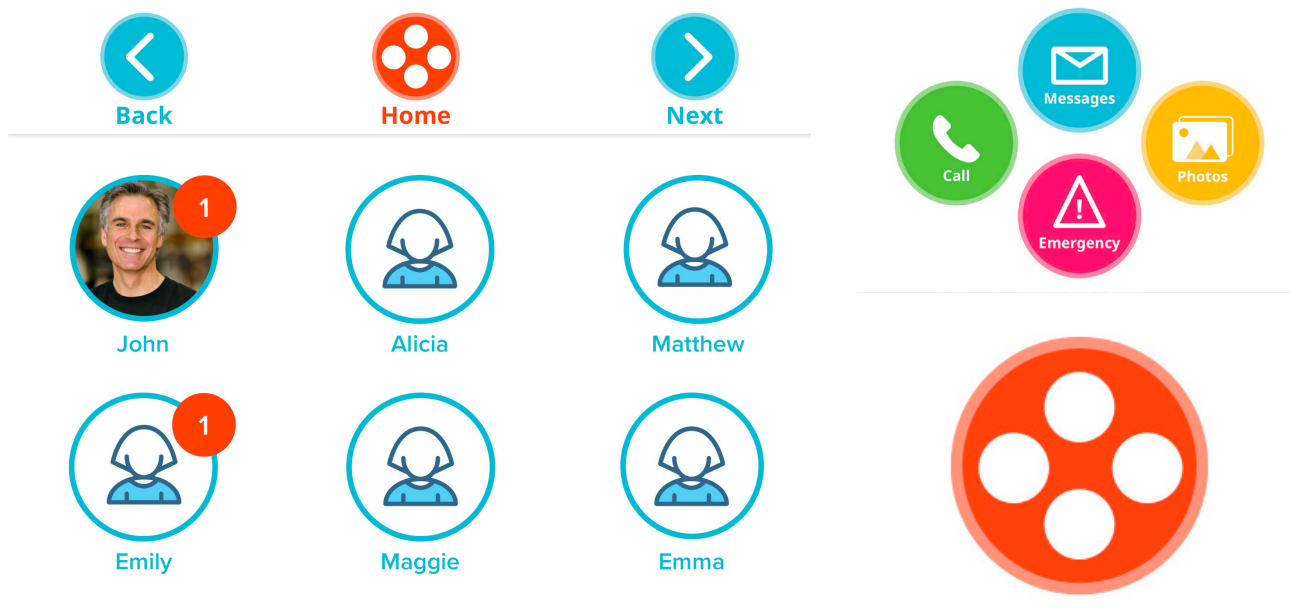
The first few usability testing were conducted in the nursing home with older adults who had little to no experience with iPads or any touch screen technology. I noticed that all of them took the time to intently scan each screen from the top left corner to the lower right corner before they make any move. Even though they took their time, they barely made any mistakes. I could see their nervousness to make any mistakes so they made sure that they fully understood each part of the screen before they acted. The major problems were as follows:

#### **Cannot find Home**

They did not understand what “Home” means in the context of this technology. Once they leave the home screen they do not know what I mean by going back to “Home” because it is an unfamiliar way of using this term. In the first version of the app, I used a house icon with the word “Home” right beside it, but they still do not understand it. I realized that the icon for “Home” should remind the user what home is.



Thus, the new icon for the home screen is four circles that forms a diamond, which emulates the modules button on the home page. It aims to provide a double reminder that you are going back to the page that looks exactly like this image with the text that says “Home.” The icon color was orange instead of the original colors of the modules because the form is already enough to draw the connection for the user and orange is the brand color which tells the user that it is the default page where you can find everything or restart.

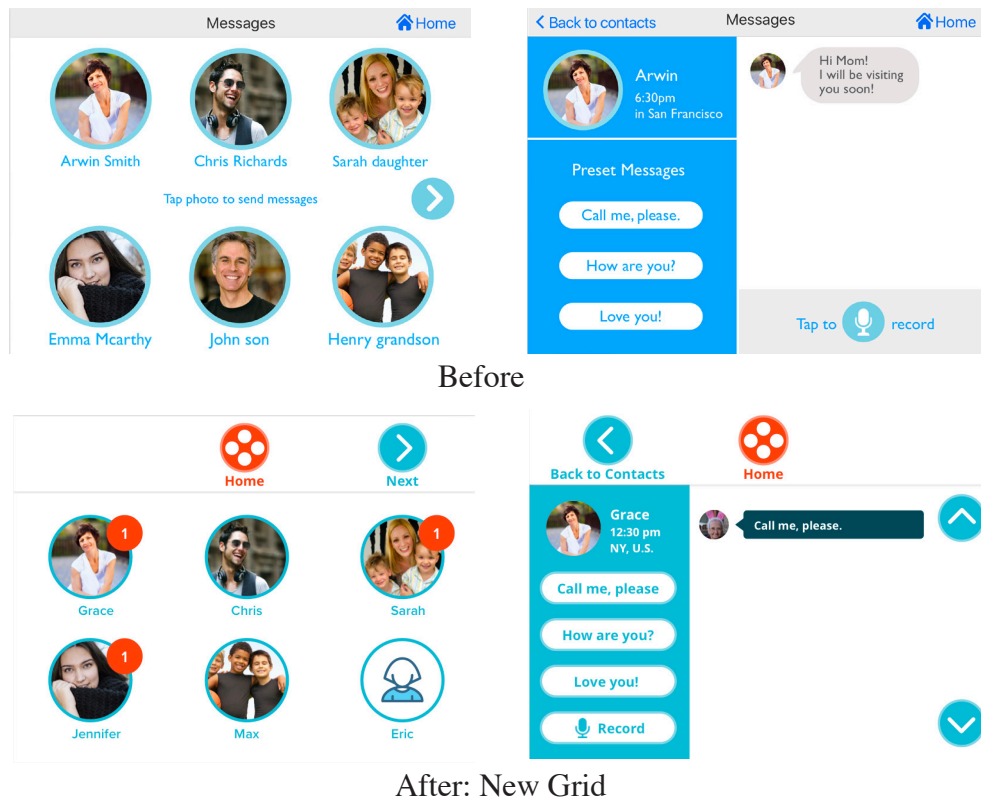


### Navigation Confusion

Another major confusion was navigation throughout the app with Back and Next buttons which was centered vertically on each side while there is still a navigation bar on top which allows user to exit the module with the “Home” icon. These two similar navigation wasn’t clear and was not consistent throughout all the modules. It left the user uncertain. During the midterm review, Professor Roland Graf helped me realize that the issue is not caused by the wording, but it is about consistency and the fundamental architecture of the app. He talked about how I should set specific guidelines for each design decision that I made such as:

1. Navigation should be consistently in the same place
2. All buttons have the outline so people do not press the rounded pictures thinking that they are buttons as well
3. Limit the button sizes to three

From the feedback I received, I wireframed the app again and realized that all navigation tools can be at the top bar which saves space and keeps everything consistently in the same place. The “Home” button is always centered while the “Next” button is on the right and “Back” button on the left. To avoid any confusion with the buttons, I removed all outlines for non-buttons, such as profile pictures.



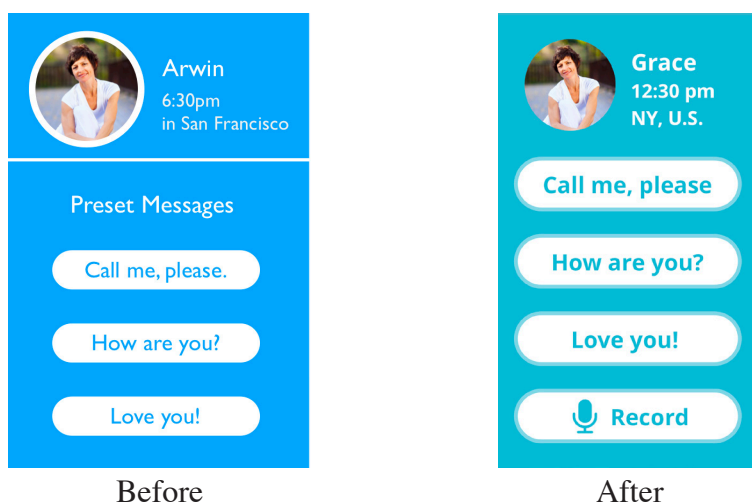
On the other hand, the older adults in the Turner Resource Center who mostly live independently with more experience with iPads and other touchscreen devices made way more mistakes and got more confused with the app but they were way faster in navigating through the app. This group of older adults did not scan the page as diligently as the previous group because they are no longer nervous about using this type of technology so they scan the page more quickly to get the gist of the screen and then act. They are more for trial-and-error because they are used to it. This group of users are truly testing the intuitiveness of the design because users do not read anymore, they scan.

### **Confused with what is and what is not a button**

In Messages, they mistake the messages as preset messages because the shape containing the text looks very similar. The staggering of text messages was not clear with who sent what messages because it is unfamiliar to them. I imitated the design for iMessages where the incoming messages appears from the left and outgoing messages from the right. I thought having the pictures of the user and the person in the conversation was enough to indicate who sent the message but I did not consider how jumpy the reading process is, from one side to the next

while moving downwards for more messages.

To clarify the separation between preset messages buttons and messages, the message boxes are more rectangular and it takes neatly on top of another. No matter how long the text is, the length of the boxes are always the same. To distinguish the incoming messages from the outgoing messages are its colors, light blue and dark blue. This allows the user to read directly from top to bottom without any trouble.



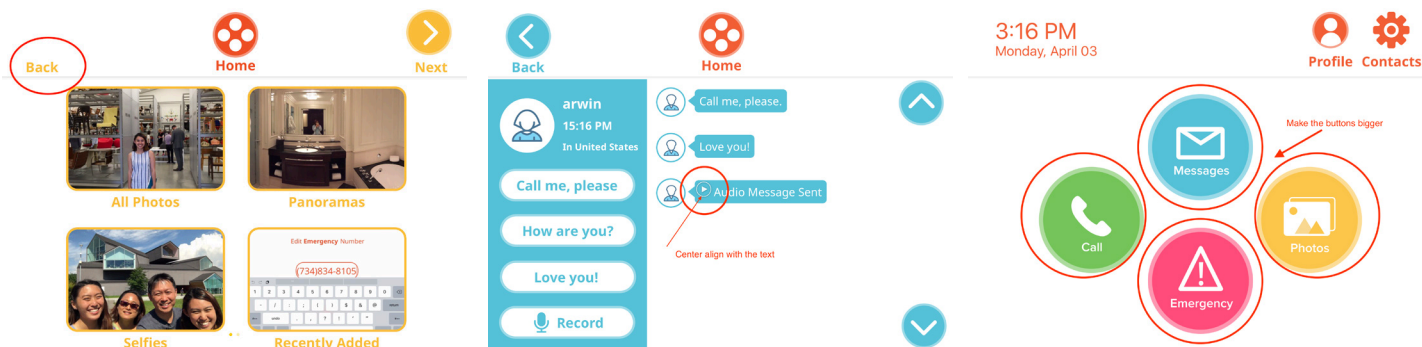
After the user testing with the more independent older adults, I found that the less experienced adults in the nursing home inadvertently gave me false confirmation on how effective the design was. They made less mistake not because the design was perfect, but because they read and think about each part very carefully. I do not see the struggle in their actions because they were sorting through all the possibilities in their minds. Thus, the design needs to be so intuitive that the older adult who has experience with iPads can navigate through without mistakes while the learning curve for the older adults with no experience is easier and not nerve-racking.

All of the older adults liked the big interaction area and readable text that did not strain their eyes. Moreover, they admired the high contrasting colors that allowed them to easily distinguish where they were in the app. The double cues that reminded them which modules they were in helped them remember what they were meant to do.



## Working with Freelancers

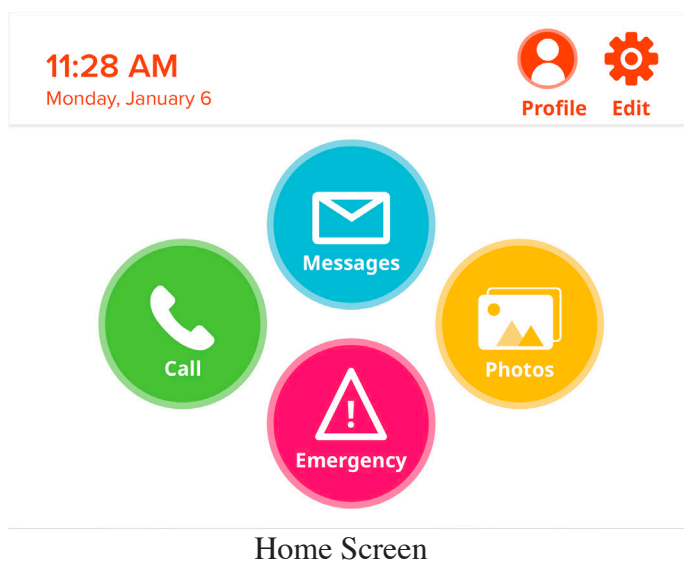
As soon as I had the second to the last prototype done, I worked with my friend Alex Cox who helped me hire freelancers from UpWork to build the app so I could have a working app to test with and get on the AppStore to have beta users. At first, we worked with Sergey who was a front end developer from the Ukraine who was very efficient and detailed-oriented so the version was beautifully made in three weeks. As the project progressed, we needed to set up the back-end so we could start assigning accounts and store data for the users, so we hired Harshal from India. He agreed that Ohana could be done within three weeks but he continuously pushed back the deadline and did not follow the design that we send to him. Elements would not be aligned and there would be bugs every other time. We should have stopped working with him, but we both had no experience in hiring freelancers, (while I do not have an engineering background) and it was difficult to understand set reasonable expectations. As a result, we continued working with him for a little over three months. We finally got our fully functioning app. Throughout the process, Alex and I tested it constantly and gave him feedback on Trello, which is a website that help teams to communicate with each other about the progress of projects. When I redesigned my app, I only needed to reprogram the front-end so I we hired a professional front-end developer, Jake, from the UK instead of Harshal. When Jake received the file, he told us that the code that Harshal made was terrible and difficult to work with especially with changing the font. Despite the challenge, Jake pulled through and reprogrammed the design in two weeks, which was just on time for the final exhibition. From this experience, I learned that as a user experience designer, I definitely need to learn how to code to understand the feasibility of my design ideas, set reasonable expectations, and keep track of a project's progress effectively.



Examples of how I give feedback to the developers

## IV. Creative Work

Older adults want to stay connected and informed. Current technologies are often challenging to use. Ohana offers an easy way to reach out to others and access the information they need. The challenge is how to design an app that is accessible and usable to older adults without patronizing them. Thus, throughout the project, I kept in mind that “usability is about people and how they understand and use things, not about technology”<sup>12</sup> (“Don’t Make Me Think). From talking to and observing the older adults that I worked with, I set up these design guidelines to follow:



1. Big interaction area: Older adults who has tremors may have a hard time aiming for the button to tap if it is small; therefore, by giving them a bigger area, it is easier to aim.

2. Big text (30pt and above)

3. High contrast: Contrast to make sure the older adults who have visual impairment can see clearer or are able to guess by seeing the clear difference in colors and shapes (if they cannot see text or icons).

4. No ambiguity

5. Double cues for each button: Every module has its own color so the buttons follows the color of its module so the user won't be confused with which module they are at. Each button also has text to remind what it does such as “Next” or “Back” besides its icon.

6. Consistency: Based on Krug: “The main thing you need to know about instructions is that no one is going to read them—at least not until after repeated attempts at “muddling through” have failed.”

Therefore, it is important that all screen's navigation system and logic are consistent with each other so it becomes a habit. It is a success if the user does not have to re-learn or re-figure out again every



time he or she uses it.

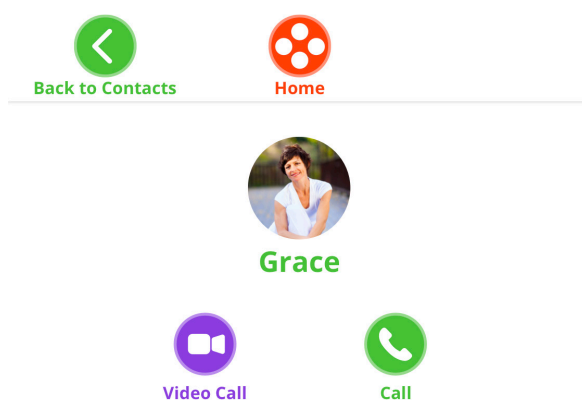
7. Simplicity: It is always tempting to add more because it is easier to explain and direct instead of designing the elements so it is intuitive without instructions. However, every extra element is a potential distraction, so it is important to remove as many unnecessary elements as possible. Cut down to the bare minimum to the point that it is very clear what the major interaction is in each screen.

To simplify their familiar interactions, I removed all the complicated gestures that may prolong the learning time and only implemented one type of interaction which is just a tap like how they interact with a physical button. To imitate a button, all interactive areas are circular and with an outline to show depth. The “Home” screen and the settings screen are orange, which shows that they are the foundations of the app because orange is the brand’s main color. I chose to use the Google font Noto, because it has all languages in the whole world, while it is beautifully designed. Ohana aims to go on the market and be translated into different languages soon because I think it will resonate in other cultural environments as well.

Here are the key features of Ohana:

### Call

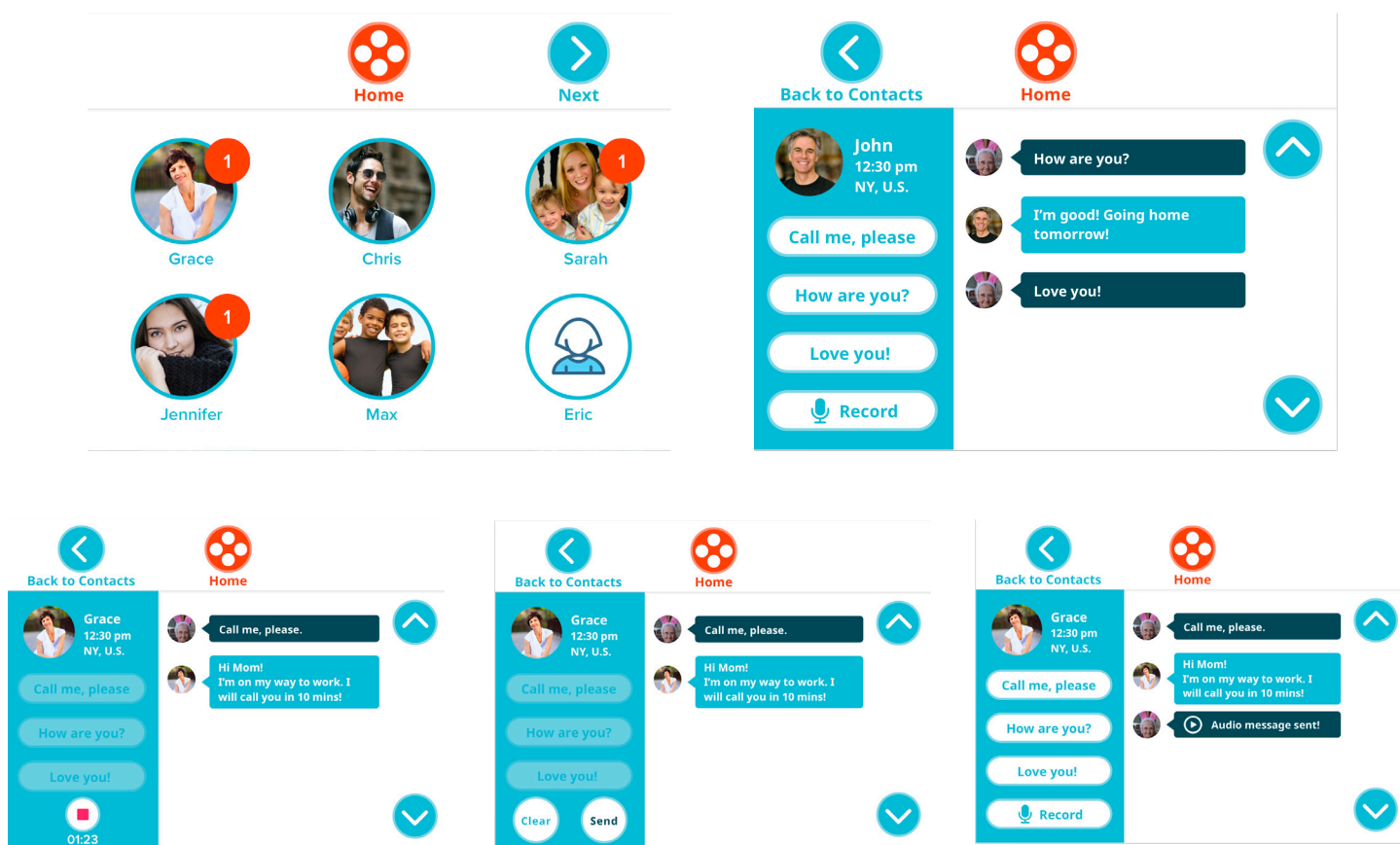
Easy access to contacts with large format imagery and easy to read text. Provides two options of calling: video and audio.



### Messages

Allows users to take initiative with preset messages and voice messaging. Displays the contact’s time zones. Many older adults stopped reaching out to their families because they did not want to disturb or demand attention from them. Plus they are only comfortable with calling, which is a more

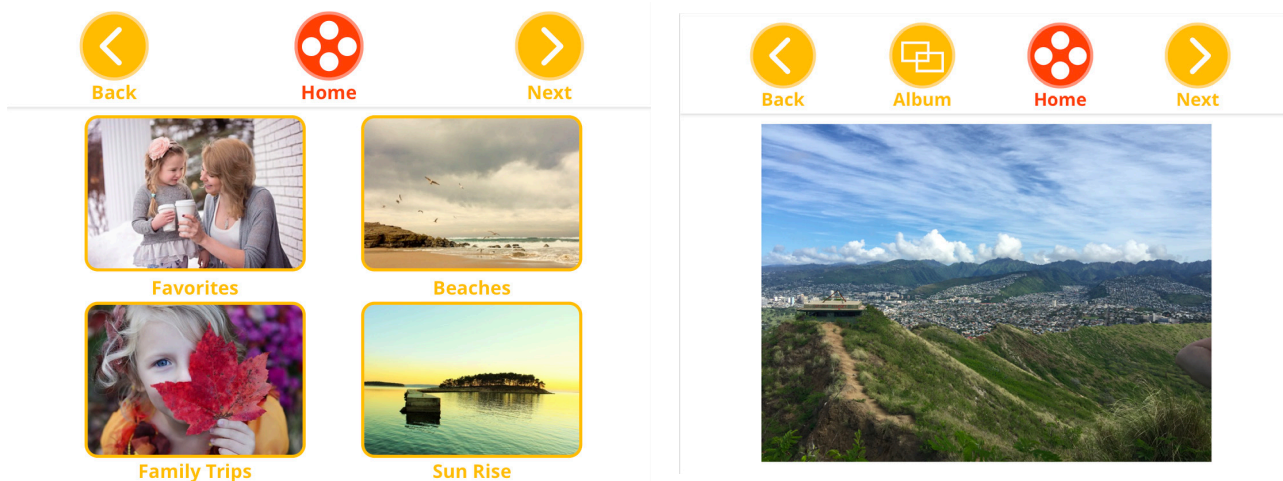
demanding gesture. On the other hand, the younger generation has all sorts of preferences for communications tools in different social situations so why not introduce instant messaging to older adults? This is because typing and the instant messages are unfamiliar to them. In addition, typing is difficult on a touch pad, but most of them mentioned that they are most comfortable and confident when using their voice. The goal is to allow the older adults to take the initiative of reaching out so I contrived a set of preset messages, enabling them to reach out with one tap. If they want to customize their messages, they can send voice messages. Moreover, each contact's profile tells the user where the contact is and what time it is there which is meant to help people live in different time zones.



Record Messages

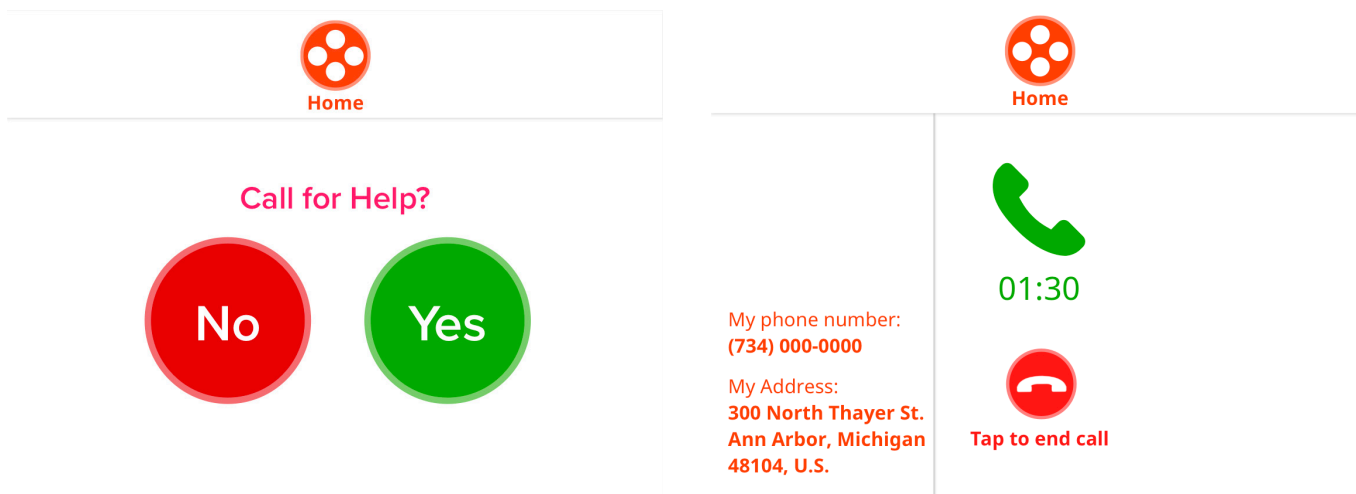
## Photos

Currently, many older adults wait for their families to visit and show them updated family pictures. Since they cannot see their family members' pictures anytime on Facebook, they feel left out. To solve this issue, Ohana autosaves pictures from family and friends so that our older adults can stay involved in their loved ones' lives.



## Emergency

When I heard about how my friend's grandfather called 911 and stayed at the hospital for a week while no one in the family knew about it until he was released from the hospital, I was appalled. As a result, in Ohana, when 911 is called, everyone in the user's emergency contacts will be automatically notified. Plus when the call goes through to 911, their information will pop up, so if they get nervous and forget their address or phone number, it is already there right in front of them.



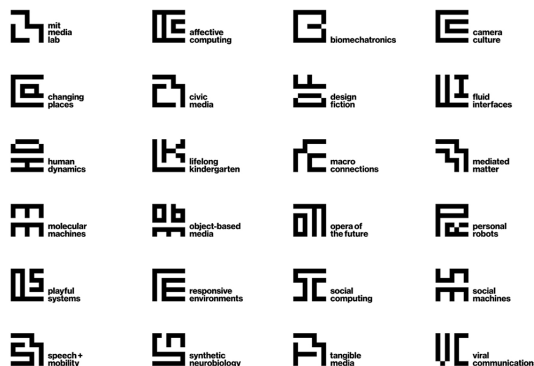
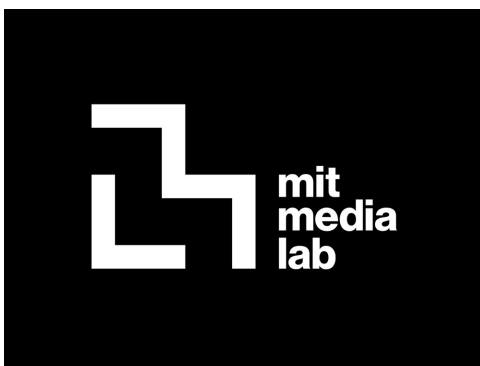
## Branding

Since Ohana will be on the real market, it needs to have a brand so I look to my product and list down how I want people to feel when using this app. I came up with descriptors such as love, warmth, balance, harmony, and simple. I was inspired by Prem Krishnamurthy's modular logo for his project on Salt Museum<sup>13</sup>

which is flexible for different exhibitions, but at the same time, people recognize it because of the signature form of the type. The brand was not based on one logo but it was recognizable because of the changes within the form of letters. It also allowed the brand to change based on time and occasion, which provides lots of flexibility as to what the museum wants to show and express.



Then I looked more into dynamic logos, and the MIT logo<sup>14</sup> really struck me as successful because it extends to sub-logos for the departments within the school. Since the form of the logo is so modular, the designer rearranged the shapes to create new sub-logos for each department, which reflects their own individual personalities while still maintaining a similar look and feel with the bigger brand.



The more I learned about it, the more I saw the connection and how a dynamic logo can benefit Ohana as a brand since the plan for this app is continuously adding new modules that will benefit the older generations. It would be great if the logo can deconstruct and make icons for each module. From there, I sketched out multiple types of logos, and I determined that logo type might be the best solution since Ohana's "O" fits perfectly with the feeling of harmony, reminding users of the product's name. I started thinking of concrete metaphors that provide inspirational imagery, then I thought of connection. How do people connect? What do

14 LaBarre, Suzanne. "MIT Media Lab's Brilliant New Logo Has 40,000 Permutations [Video]." Co.Design. March 30, 2012. Accessed April 21, 2017. <https://www.fastcodesign.com/1663378/mit-media-labs-brilliant-new-logo-has-40000-permutations-video>.

we do when we first make the connection with someone? We hug! From this point, I sketched out my logo with modular parts while simultaneously expressing the warmth and love of a hug through the logo.



ohana

### *Exhibition Design*

I want to create a space that presents where this app would live in an older adult's home but at the same time is very simple and clean, just like Ohana. At first, I wanted a room with a lounge chair and a big projection with an emotional product video that showcased the value of this product. Beside the lounge chair would be a side table with the app. When I realized there may not be enough space in the gallery for such a display, I started planning my exhibition based on one wall and minimal floor space. My second plan was to have a TV to present my product video with the iPad on the table along with my post card, business card, and comments book. However, I thought the TV would take too much attention away from the iPad itself which I want people to interact with since it is fully functioning. Thus, the final design was to have tall poster (3.5 feet wide and 8 feet tall) to showcase the importance of the app and its major features. Then people can actually experience it on the iPad sitting down so that the iPad is still the major focus of this exhibition.





## V. Conclusion

Currently, Ohana is an iPad app that connects older adults to their loved ones and their community through unified and simplified interactions that cater to their need and style. While the need for this type of product is strongly confirmed by the usability tests and exhibition show, this app will not be a permanent service that will fit the next two decades of older adults. Technology is also changing and replacing the old in the fastest rate in history. For instance, when I was developing Ohana, Amazon came out with Alexa, an artificial intelligence software which is controlled with voice and can perform a variety of functions, from playing music to controlling lighting. In the future, integrating voice-controlled AI like Alexa with a screen through which

people can still get visual feedback will be the next step. Ohana is not intended to be just an iPad app, but it is a service that caters to older adults and will continue to evolve with new technologies that become available and the habits of the new group of older adults.

Ohana is on the Appstore now so my friend, Alex Cox, and I will continue designing and improving Ohana and hopefully it can make real impact in the lives of older adults and their families everywhere in the world. The next steps are figuring out a business and marketing plan for Ohana and then beginning to synthesize the new data we get from real users. After that, we will design the new modules that allow older adults to be more independent and help them maintain a better quality of life.



## Bibilography

Buchanan, Gizmodo.com Matt. "How Steve Jobs Made the iPad Succeed When All Other Tablets Failed." Wired. November 02, 2013. Accessed April 21, 2017. <https://www.wired.com/2013/11/one-ipad-to-rule-them-all-all-those-who-dream-big-are-not-lost/>.

Haederle, Michael. "Technology Fear Stops Older Adults From Logging On Computer - AARP Bulletin." AARP. August 29, 2011. Accessed April 21, 2017. <http://www.aarp.org/technology/innovations/info-08-2011/elderly-fear-of-technology.html>.

"It's that simple." Yo. Accessed April 21, 2017. <https://www.justyo.co/>.

Krug, Steve. Don't Make Me Think. 3rd ed. U.S.: New Rider, 2000.

Playgallery. YouTube. December 02, 2015. Accessed April 21, 2017. <https://www.youtube.com/watch?v=aV-Jxx2ylrp8>.

LaBarre, Suzanne. "MIT Media Lab's Brilliant New Logo Has 40,000 Permutations [Video]." Co.Design. March 30, 2012. Accessed April 21, 2017. <https://www.fastcodesign.com/1663378/mit-media-labs-brilliant-new-logo-has-40000-permutations-video>.

Smith, Aaron. "Older Adults and Technology Use." Pew Research Center: Internet, Science & Tech. April 03, 2014. Accessed April 21, 2017. <http://www.pewinternet.org/2014/04/03/older-adults-and-technology-use/>.

Wang, Chiao-Wen. Connecting Generations. <https://docs.google.com/a/umich.edu/forms/d/e/1FAIpQLSdT-vaJJQbF3Us6SekIOWXnfYGJvs4qTIIQGtuoWMrFwjBTJjQ/viewform>. October 25, 2016.

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Email: warwin@umich.edu

Website: arwinwang.com