Xian Wu UX Portfolio

UX Research-Telepresence Needs Assessment

Objectives: Understanding older adults' perceptions (e.g., opinions and concerns) about telepresence technology

Methodology: qualitative, semi-structured interview with 10 users

Results: Coded interview data indicated target population were open to adopt telepresence.

My role:

- Developed interview script and study material such as video demos
- Recruited participants
- Main interviewer for all interview sessions
- Developed coding scheme, analyzed coded interview data via MAXQDA
- Compiled study results and scientific findings into conference submission (Wu et al., 2016)

Example of telepresence

UX Research-Telepresence Needs Assessment Cont.

DRAFT

Participant Calling Script for Telewellness

1. **Answering Machine (leave the following message and be sure to speak your name clearly)** Hi, this is _____ calling from the Human Factors and Aging Lab at Georgia Tech. We are contacting you about your interest in participating in the Telewellness Technology Interview research study. Please give us a call at 404-894-8344 and ask for Jordan, if you would like to hear more about the study. Thanks!

2. **If a live person….**
   Hi, this is _____ calling from the Human Factors and Aging Lab at Georgia Tech. We are contacting you about your interest in participating in the Telewellness Technology Interview research study.

   <pause and wait for their response>

   - **IF not interested:** Thank you for speaking with me. Would you be interested in being called for studies in the future? *(NOTE ANSWER)* Have a great day. Goodbye!

   - **IF interested:** Great! For this study you will be interviewed about your attitudes about technology usefulness. Let me take the next few minutes to tell you about the research study and if you wish to participate I will be asking some questions to determine your eligibility criteria, this should take about 5 minutes.

3. **"Are you between the ages of 50-79?"** <if "yes" then continue, if "no" then thank them for their time and politely excuse them from the study>

   - **IF NO:** Sorry, but we are only able to include people who are between this age range for this study. I appreciate your time. Would you like to leave your name and contact info so that we can contact you in the future when we are doing studies that require participants to be within your age range? (*if yes get info]*Thank you, Bye!

4. **IF YES:** Are you a Native English speaker? *NOTE ANSWER* _____
   <If participants ask about why they need to be native English speakers, tell them that the study uses knowledge of the English language, and that we need all participants to be at the same experience.>

   - **IF NO:** Thank you for speaking with me. Are you interested in being called for experiments in the future? (*NOTE ANSWER* _____ Have a great day. Goodbye.

5. **Do you have any mobility limitation? (By this we mean having serious difficulty walking or climbing stairs)** <if "yes" then continue, if "no" then thank them for their time and politely excuse them from the study>
6. **IF YES, What is the nature of your mobility impairment?** (Write down any notes on underlying cause, upper/lower body limitations etc. on participant calling list).

DRAFT

   - **IF NO:** Sorry but we are only able to include people who have mobility limitations for this study. I appreciate your time. Would you like to leave your name and contact info so that we can contact you in the future when we are doing studies that require participants to be within your age range? (*if yes get info]*Thank you, Bye!

7. **IF YES:** Did your mobility impairment begin before 50? <if "yes" then continue, if "no" then thank them for their time and politely excuse them from the study>

   - **IF NO:** Sorry but we are only able to include people who have had a mobility impairment before the age 50. I appreciate your time. Would you like to leave your name and contact info so that we can contact you in the future when we are doing studies that require participants to be within your age range? (*if yes get info]*Thank you, Bye!

8. You meet the criteria for our study. **For this study, we are conducting interviews discussing the attitudes and acceptance of telewellness technology. Participants in this study will complete a questionnaire at home (approximately 30-40 minutes) and will be interviewed in person (approximately 1 hour). The interview session can take place at your home at a time that accommodates your schedule. We will compensate you $30 for completing the study. If you are unable to complete the research study, you will be compensated $15 per hour of your time.**

   The following dates are available for a morning or afternoon appointment:

   What is most convenient for you?

9. **Once scheduled say:** You can complete the pre-study questionnaire online or we can send you a packet in the mail to complete. What method do you prefer?
   - **IF PAPER:** We will mail you the packet. In the packet, there will be a letter and a questionnaire. What is your home address? (get info). *Please complete the packet before your appointment and have it with you at that time.*
   - IF ONLINE: Okay. We will email you a link to complete the questionnaire online. **Email participant with the following text.**

DRAFT

Hello,

Thank you for your interest in completing the TechSAge Minimum Battery as part of the **[INSERT NAME of STUDY].** Please follow the steps below to complete the survey:

1. Click the survey link: http://www.surveygizmo.com/s3/1792823/Minimum-Battery
2. Enter your code **[Insert study ID assigned to Participant]**
3. Click 'Next' and begin the survey
4. Answer all questions and submit;

Note: If you wish to save and continue the survey later, click the "save and continue later" button at the top of the survey screen. You will be prompted to enter your email, where your saved survey will be sent.

Thank you,

[INSERT CONTACT INFO]

For your appointment, please bring:
- If you wear glasses/contacts, be sure to wear/bring them.
- May I confirm your address and contact information?

10. **In closing say**: If you have any questions after receiving the packet or do not receive it within a week of our call, please call **404-894-8344 and ask for Jordan**. We look forward to seeing you. Goodbye.

Recruitment calling script

UX Research-Heuristic Evaluation

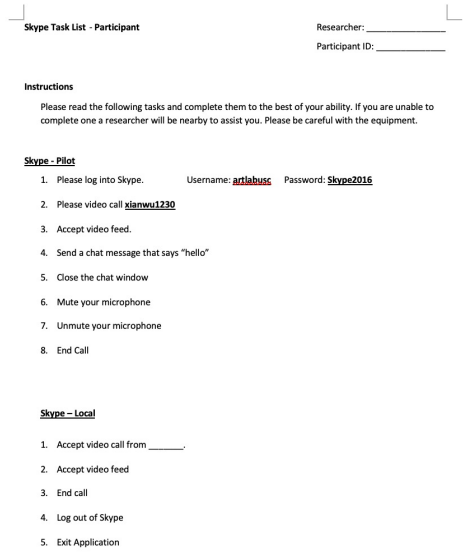
Objectives: Investigate how the design of telepresence holds up usability standards

Methodology: Nielson Norman's 10 heuristic principles plus five extra principles that cover all aspect of telepresence

Procedure: 3 evaluators individually assessed 3 types of telepresence (i.e., BeamPro, Kubi, Skype) by performing a list of tasks in a real-home environment

My role:

- Created task list
- Moderated the finalizing and debriefing sessions
- Summarize findings and submit to conference proceeding (Wu et al., 2017)



Skype Task List - Participant

Researcher: _____

Participant ID: _____

Instructions

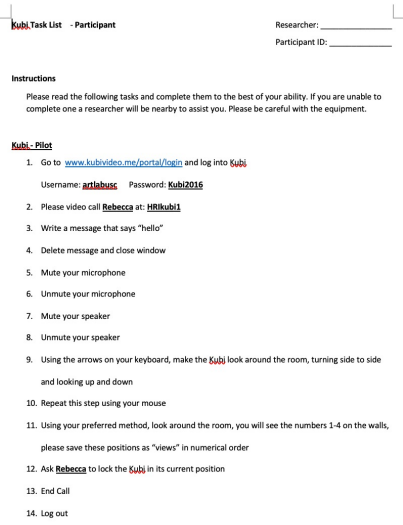
Please read the following tasks and complete them to the best of your ability. If you are unable to complete one a researcher will be nearby to assist you. Please be careful with the equipment.

Skype - Pilot

1. Please log into Skype. Username: **artlabusc** Password: **Skype2016**
2. Please video call **xianwu1230**
3. Accept video feed.
4. Send a chat message that says "hello"
5. Close the chat window
6. Mute your microphone
7. Unmute your microphone
8. End Call

Skype – Local

1. Accept video call from _____.
2. Accept video feed
3. End call
4. Log out of Skype
5. Exit Application



Kubi Task List - Participant

Researcher: _____

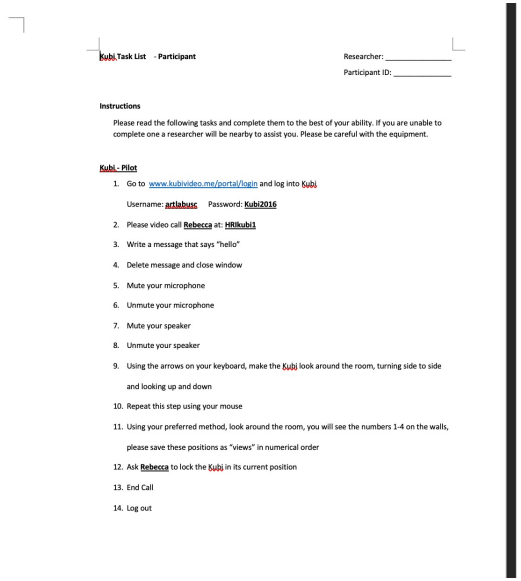
Participant ID: _____

Instructions

Please read the following tasks and complete them to the best of your ability. If you are unable to complete one a researcher will be nearby to assist you. Please be careful with the equipment.

Kubi - Pilot

1. Go to www.kubivideo.me/portal/login and log into Kubi
   Username: **artlabusc** Password: **Kubi2016**
2. Please video call **Rebecca** at: **HRIkubi1**
3. Write a message that says "hello"
4. Delete message and close window
5. Mute your microphone
6. Unmute your microphone
7. Mute your speaker
8. Unmute your speaker
9. Using the arrows on your keyboard, make the Kubi look around the room, turning side to side and looking up and down
10. Repeat this step using your mouse
11. Using your preferred method, look around the room, you will see the numbers 1-4 on the walls, please save these positions as "views" in numerical order
12. Ask **Rebecca** to lock the Kubi in its current position
13. End Call
14. Log out



Kubi Task List - Participant

Researcher: _____

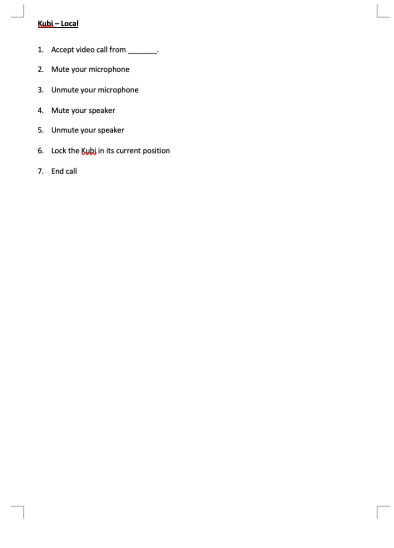
Participant ID: _____

Instructions

Please read the following tasks and complete them to the best of your ability. If you are unable to complete one a researcher will be nearby to assist you. Please be careful with the equipment.

Kubi - Pilot

1. Go to www.kubivideo.me/portal/login and log into Kubi
   Username: **artlabusc** Password: **Kubi2016**
2. Please video call **Rebecca** at: **HRIkubi1**
3. Write a message that says "hello"
4. Delete message and close window
5. Mute your microphone
6. Unmute your microphone
7. Mute your speaker
8. Unmute your speaker
9. Using the arrows on your keyboard, make the Kubi look around the room, turning side to side and looking up and down
10. Repeat this step using your mouse
11. Using your preferred method, look around the room, you will see the numbers 1-4 on the walls, please save these positions as "views" in numerical order
12. Ask **Rebecca** to lock the Kubi in its current position
13. End Call
14. Log out

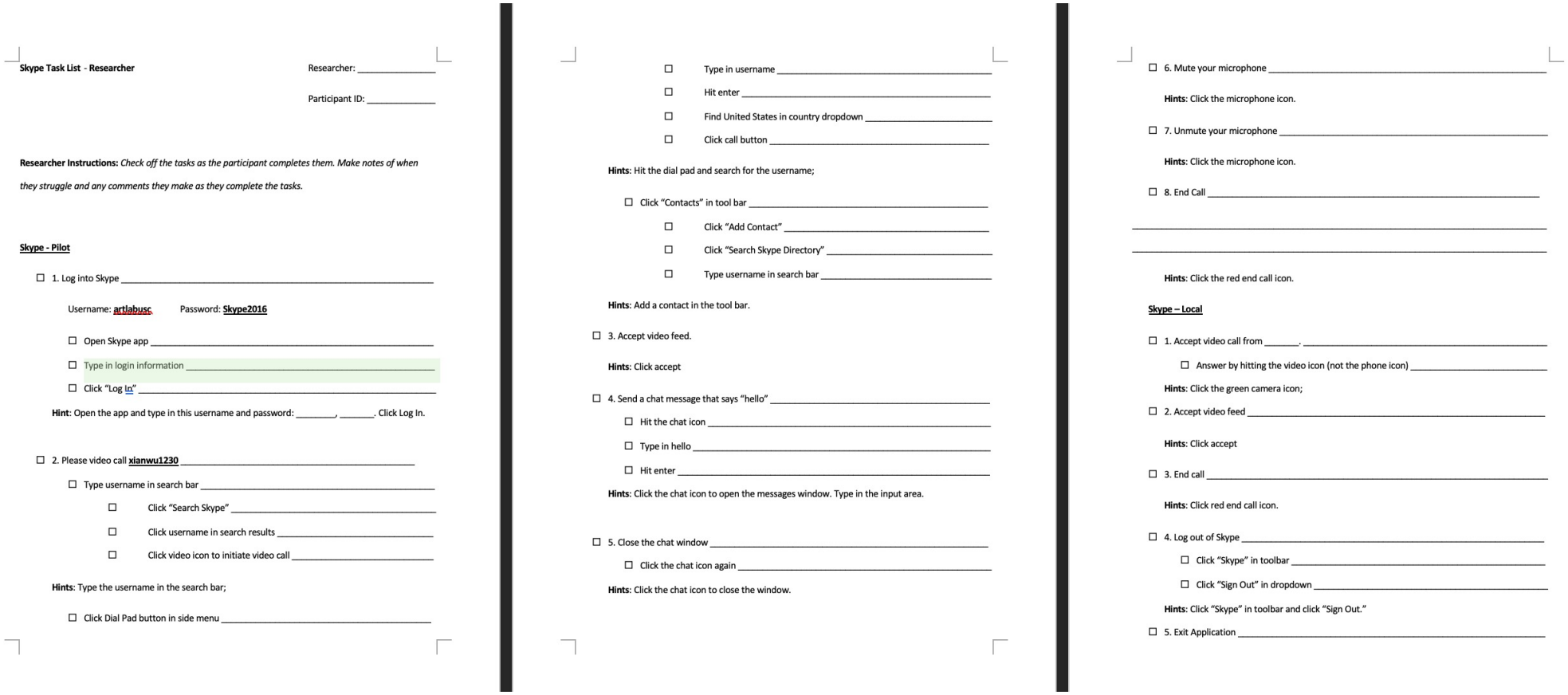


Kubi – Local

1. Accept video call from _____.
2. Mute your microphone
3. Unmute your microphone
4. Mute your speaker
5. Unmute your speaker
6. Lock the Kubi in its current position
7. End call

User tasks for different system

UX Research-Heuristic Evaluation Cont.



Skype Task List - Researcher Researcher: _____

Participant ID: _____

Researcher Instructions: *Check off the tasks as the participant completes them. Make notes of when they struggle and any comments they make as they complete the tasks.*

Skype - Pilot

☐ 1. Log into Skype _____

Username: **artlabusc** Password: **Skype2016**

☐ Open Skype app _____

☐ Type in login information _____

☐ Click "Log In" _____

Hint: Open the app and type in this username and password: _____, _____. Click Log In.

☐ 2. Please video call **xianwu1230** _____

☐ Type username in search bar _____

☐ Click "Search Skype" _____

☐ Click username in search results _____

☐ Click video icon to initiate video call _____

Hints: Type the username in the search bar;

☐ Click Dial Pad button in side menu _____

☐ Type in username _____

☐ Hit enter _____

☐ Find United States in country dropdown _____

☐ Click call button _____

Hints: Hit the dial pad and search for the username;

☐ Click "Contacts" in tool bar _____

☐ Click "Add Contact" _____

☐ Click "Search Skype Directory" _____

☐ Type username in search bar _____

Hints: Add a contact in the tool bar.

☐ 3. Accept video feed.

Hints: Click accept

☐ 4. Send a chat message that says "hello" _____

☐ Hit the chat icon _____

☐ Type in hello _____

☐ Hit enter _____

Hints: Click the chat icon to open the messages window. Type in the input area.

☐ 5. Close the chat window _____

☐ Click the chat icon again _____

Hints: Click the chat icon to close the window.

☐ 6. Mute your microphone _____

Hints: Click the microphone icon.

☐ 7. Unmute your microphone _____

Hints: Click the microphone icon.

☐ 8. End Call _____

_____

_____

Hints: Click the red end call icon.

Skype – Local

☐ 1. Accept video call from _____. _____

☐ Answer by hitting the video icon (not the phone icon) _____

Hints: Click the green camera icon;

☐ 2. Accept video feed _____

Hints: Click accept

☐ 3. End call _____

Hints: Click red end call icon.

☐ 4. Log out of Skype _____

☐ Click "Skype" in toolbar _____

☐ Click "Sign Out" in dropdown _____

Hints: Click "Skype" in toolbar and click "Sign Out."

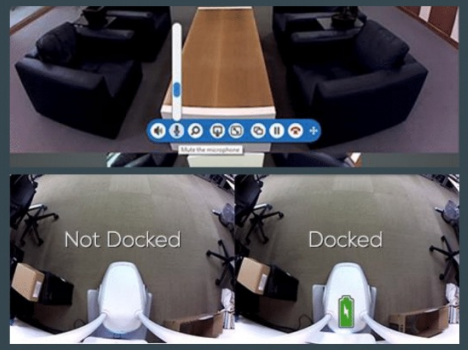
☐ 5. Exit Application _____

Researcher tasks for different system

UX Research-Heuristic Evaluation Cont.

BeamPro GUI Issue: 4. Control Issues: b. Pilot User

- Difficult to adjust in-session settings
- Parking
  - Prolonged/awkward goodbye when parking
  - Pilot must dock properly for Beam to charge



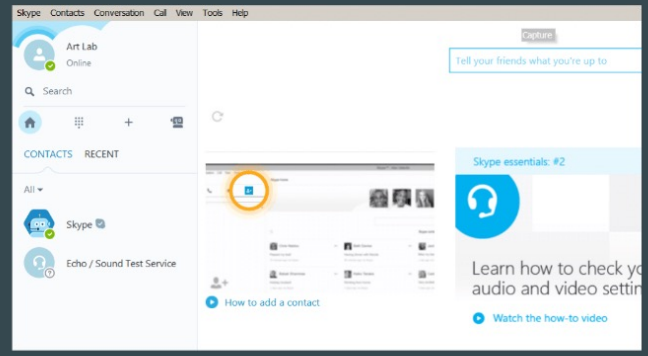
https://www.suitabletech.com/documentation/pilot-guide/

Heuristics Violated: 1. Visibility, 2. Match, 3. Control, 5. Error Prevention, 7. Flexibility, 14. Immersive

Severity Rating: 2 & 1

Skype Issues: 2. Search Bars

- Visibility of search bars not apparent
  - Sometimes lack a blinking cursor

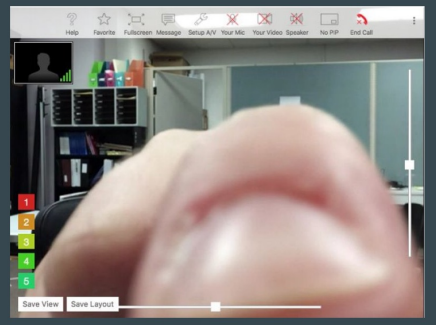


Heuristics Violated: 1. Visibility, 2. Match, 3. Control, 4. Consistency, 5. Error Prevention, 7. Flexibility

Severity Rating: 1 - 4

Kubi Hardware Issues: 2. Menu

- Location of control features near camera
- Hidden from view too quickly
- Only way to adjust microphone input and speaker output is muting or unmuting (must go through iPad settings to adjust)



Heuristics Violated: 1. Visibility, 2. Match, 3. User Control, 4. Consistency, 5. Error Prevention, 7. Flexibility

Severity Rating: 2 - 3

Example of issues identified

UX Research-Heuristic Evaluation Cont.

Task	User	GUI / Hardware	Issue	Heuristics Violated	Severity
Drive Around/ Field Test	Both	Hardware	The base of the unit is too close to the floor. Different surfaces- some hard to drive on and issues when switching surfaces- especially when driving over lips between doors (get stuck sometimes and owner would have to help by moving beam base) Base of the Beam is very close to the ground and can catch on things easily. If it gets stuck there's no way for the pilot to unstick it since they're remote. Beam is awkward for local user to move about and can be dangerous if something is stuck beneath and local has to do some lifting to pull whatever is stuck out of wheels. If the pilot is driving around your home and they get caught on a rug, door lip, or something on the floor, it is often difficult to get the BEAM un-stuck. If the Beam rolls over a mat on the floor, it is possible the mat will get stuck up in the wheels and under the base. The pilot is not able to do anything from here, requiring the local user/owner to find a way to push the beam off (which pushing the beam in general is awkward) or (what we had to do) get down on the ground next to the base, lift it and pull the mat out from under the wheels. The beam is quite tall and awkward to lift from the ground and not very light.	3, 5, 7, 11, 12	5
Beam session	Both	GUI	General connection problems- lots of connection issues causing audio and video delays and interruptions. The local users are not aware when pilot side is frozen (unable to hear or see movements by local user) and may keep talking. Lots of pixelating on video when local people move (if bad connection).	1, 9, 14, 15	5
Beam in/ start session	Local	GUI	Beam does not allow for local user to answer or decline calls. Only control over people calling is inviting users. (Privacy Issues)	3, 12	5
Connect beam to network	Local	GUI	Without 5ghz wifi, there could be serious connection issues in the home.	7, 15	4
Driving around	Pilot	Both	Camera is not very clear; camera issues. Often hard to see some things when driving and sometimes hard to tell if they are 'drive-over-able' or not. [screenshot of tape on floor at expo] Hard to see small objects/changes in surfaces in dim light, especially when rugs are close to the same color as the floor- could cause beam to get stuck. Hard to see cords (could easily run over one and pull down lamp or something).	1, 2, 3, 5, 11, 12, 14	4
Drive around	Pilot	Hardware	There is no sensor in the back to prevent accidentally rolling over/backing over something. (Accidentally hit back arrow when I was not looking at keyboard and almost ran over someone's foot)	5, 4, 11, 12, 13, 14	4
Driving around	Pilot	Hardware	The Beam's ability to sense objects is not consistent. Objects have to be a certain size and certain height off the floor to be perceived. This can cause issues when things such as cords or feet are in the path and are not sensed by the beam or seen by the pilot. (only senses wider objects several inches off the floor) Hard to see cords (could easily run over one and pull down lamp or something).	4, 5, 11, 12, 13	4
Invite user	Local	GUI	Figuring out how to add a user can be confusing. There are multiple menu options it could be located under.	1, 2, 5, 8	3
Beam in/ start session	Local	GUI	The notification that someone is calling in is very short and not very loud.	1	3
Beam session	Both	GUI	Due to the lack of notifications, it is hard to tell whether a session is frozen or not. It can be difficult to tell at first if caller has lost their connection. When there are connection issues (on either side) there are not always notifications letting you know there's been a problem.	1, 9, 15	3
Conversation	Pilot	Hardware	Moving head in general. No way to turn 'head' without turning entire body (which is often irritating because the keyboard disables during times it's not being used) No way to move screen up and down when having seated conversations.	3, 7, 14	3
Adjust volume settings during beam session	Local	Both	Local user is not able to control the volume. They must ask the pilot to turn down their microphone if the volume is too loud.	3, 14	3
Setup beam	Local	GUI	Initial setup (network connection) is confusing and lacks instructions/steps that walk you through it onscreen.	1, 9, 10, 15	2
Beam setup	Local	Hardware	To set up the wifi, the local user must have a wired keyboard with usb connection. The usb port in the beam is difficult to find as the panel is somewhat hidden. Once we found the panel it was hard to open and put back.	1, 10,	2
Beam session	Local	Hardware	Only way of knowing beam is properly docked is if green light is on. Screen does not tell you when session ends that it is not properly docked and charging. There is no easy way to get it to charge if it is not properly docked. Must pull it out/maneuver it into position yourself.	1, 5, 9	2
Drive Around	Pilot	Hardware	Hard to tell how close you are to something when camera far above objects.	1, 2, 3, 11, 12, 14	2
Drive Around	Pilot	Hardware	Wheels stick out little further on either side of base and catch on things if you are too close to something.	1, 2, 3, 5, 11, 12, 14	2
In-session settings	Pilot	GUI	Controls while in call: microphone specifically – hard to control volume dragging. This created a problem when I tried to turn up the mic only a little bit and it accidentally went up all the way, scaring people in the local environment. The lack of ability to gradually increase the volume in small increments (without knowing special keyboard controls) can make controlling the volume sometimes difficult.	3	2
Change off screen settings in session	Pilot	GUI	Not easy to get back to beam session from settings. Not all settings are easily accessible to change while in a beam session. The pilot must go into the 'options' section (taking them out of the drive mode screen) to change other settings. It's also confusing on how to get back to the beam session. There is a small window in the top that's the video feed (which, when clicked, takes you back to drive mode) but it is not always easily noticed. If you go back to the 'beams' window on the menu, the beam button is grayed out and not clickable to go back to current session.	1, 7, 14	2
Share screen	Pilot	GUI	It is not completely clear what the screen sharing button does. Sometimes cannot bring certain things up. Not clear why it brings up a black screen sometimes. Messes up the navigation window.	1, 5	2
Drive around	Pilot	GUI (iOS App)	No arrows to drive around, must do it by touching and dragging on screen, meaning your thumb (or whatever finger you use) covers a good portion of the screen, obstructing view of path.	1, 3 ,11, 12	2
Drive around	Pilot	GUI (iOS App)	The iOS App is slow to respond to user controls.	1, 3, 4, 11, 12	2
Beam session	Pilot	GUI	Pilot controls and in session settings sometimes notify you when you change them but not always.	1, 4	1
Invite user	Local	GUI	The only way give a user the ability to call in through the beam is to add them on the website. There is no way to do this through the app.	4, 7	1
Parking/ Docking	Both	GUI	Nice that they changed it so if you let up on P it will allow you to continue. However, makes for awkward prolonged goodbye and pilot may not want to sit there and deal with parking it since they have to hold it down until it says docked to make it charge.	2, 3, 14	1

Example list of issues that violated the heuristics

UX Research-Heuristic Evaluation Cont.

Skype	Kubi	BeamPro
Improve search bars •Place them in areas users expect to find search bars •Appearance more like what users expect •Add a button to run search	Menu icons need visible indicator when feature is active	Raise base slightly off floor
Visibility of menus •Remain visible (do not hide when small enough to leave on screen) •Visible indication of active menu items	Televideo system should return to original position after pilot ends call	Lower sensor and add one to back
Compatibility between operating systems	Televideo systems with touchscreen controls should place menus at the bottom of the screen, far away from the camera	Adjustable height and pan/tilt screen
Flexibility in controls and settings	Allow user control and flexibility in controlling settings	Auto park after beam out (no awkward/prolonged goodbye)
	Provide user experience when pan/tilt that eliminates dizziness or disorienting experiences	Touchscreen (setup, settings in session, call screen)
		Phone app or remote that affords owner privacy (call screening) and control(volume settings, night-mode)

Design Suggestions for the systems

UX Research-Redesign and Evaluate Telepresence UI

Objectives: Redesign telepresence UI for older adults

Methodology: mix: qualitative, quantitative; semi-structured interviews, user testing with 30 users

Results: Redesigned version yielded a higher System Usability Scale

My role:

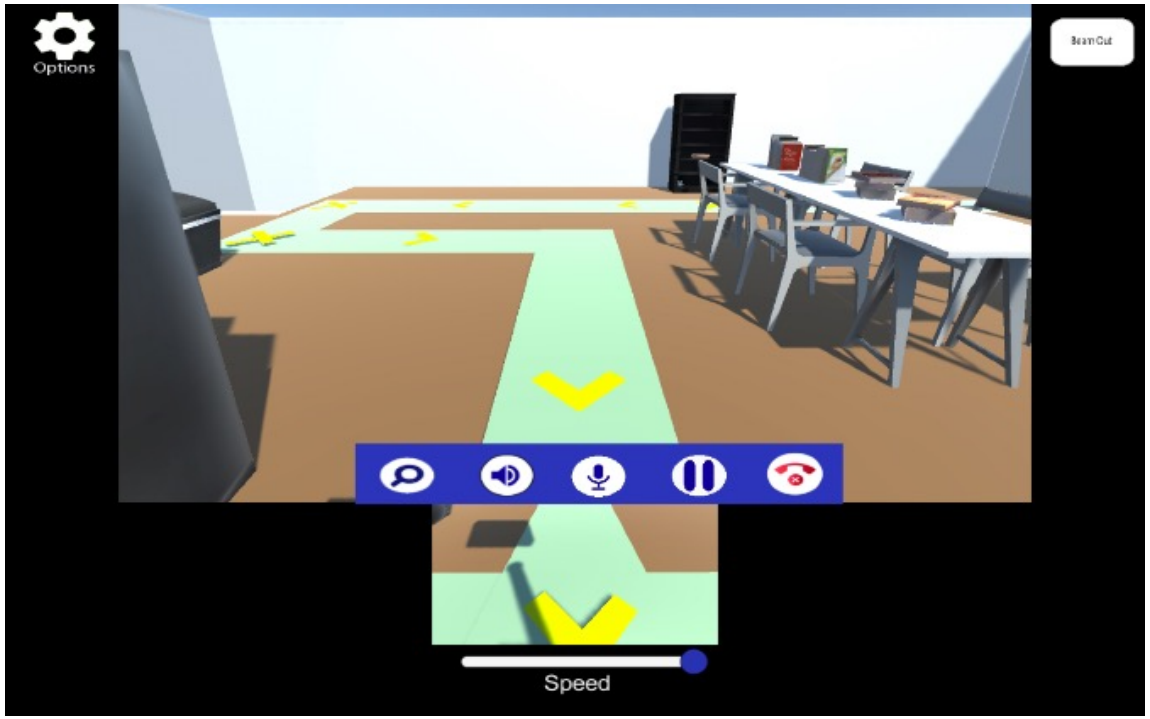
- Designed two UIs: control version and experimental version
- Developed interview script and study material such as questionnaire design, task development
- Recruited participants
- Main moderator for all user testing sessions
- Analyzed both interview, observational, and questionnaire data; final study results submitted to journal publication (Wu & Beer, 2021; Wu et al., 2021)

UX Research-Redesign and Evaluate Telepresence UI Cont.

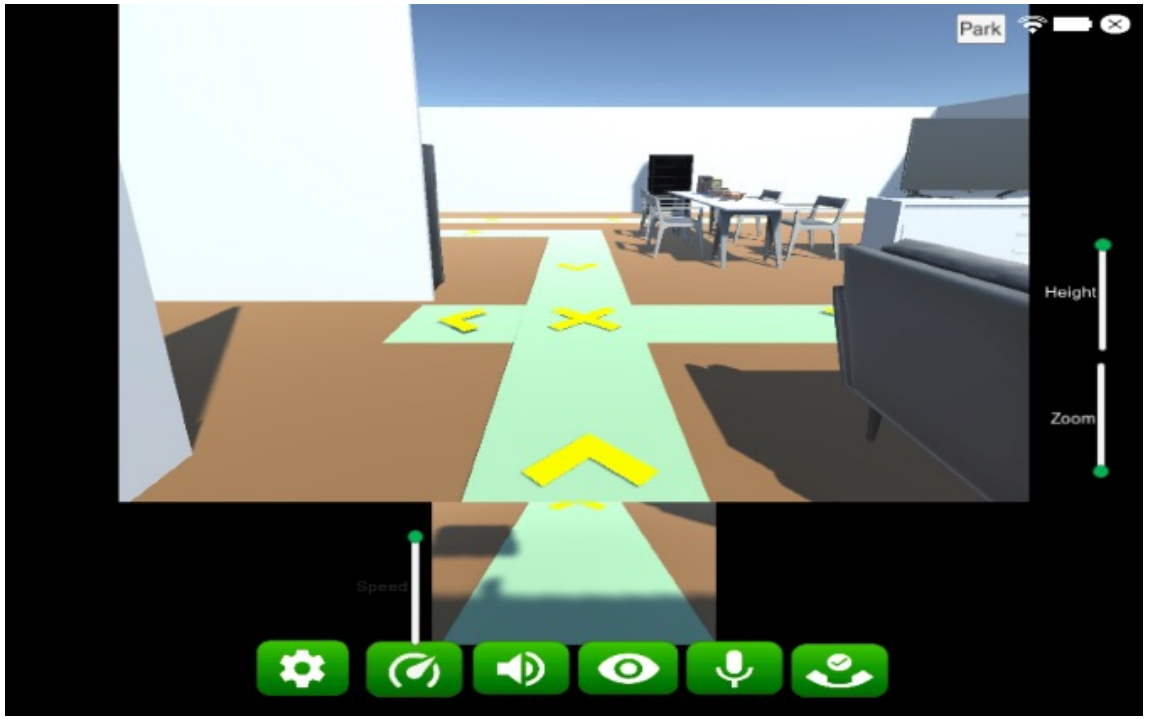
Category	Variable	Design choices
Vision presentation guidelines	Color	Warm color is preferred
	Color contrast	High color contrast
	Color discrimination	Avoid using colors in blue-green or colors of the same hue
	Font size	Minimum acceptable font size is 14 adjustable font and graphic size
	Font case	Avoid using uppercase for long text; only use uppercase on short text that draws user's attention
	Illumination	Increase the level of illumination
	Simple visual presentation	Avoid visual clutter
Design guidelines for cognitive decline	Icons	Use icons that are easy to recognize; provide description to each icon
	Instructions	Use simple and short instructions
	System feedback	Simple, short and clear feedback
Design guidelines for physical/motoric decline	Height	Adjustable height of the system

Design considerations for redesigning the UI

UX Research-Redesign and Evaluate Telepresence UI Cont.



Control UI



Experimental UI

UX Research-Redesign and Evaluate Telepresence UI Cont.

Telepresence Interface Usability Testing Interview Script

Materials

- Laptop
- Video cameras
- Digital audio recorders (2)
- Extra batteries (AAA's)
- Testing script (3 copies)
- Timer
- Note pads and pens for note taker
- Pens/pencils for participants
- Consent form (2 per person)
- Media release form (2 per person)
- Questionnaires (bring extras)
- New participant database forms (bring extras)
- USB Mouse
- Copy of Usability Testing documents

Key

- Researcher 1
- Researcher 2

Researcher 1

Conducting the interview, help when participant tests the systems.

Researcher 2

Support Researcher 1, give feedback, and help with paperwork;
Review and obtain informed consent and media release form.

Questionnaire Review

Researcher collects questionnaires and reviews for completeness. Any missing questionnaire items can be filled out prior to the introduction. If time does not allow, then complete missing items after study completion.

- *Minimum Battery*
- *Video Conference Technology Usage Questionnaire*

Introduction

Hello, I am _____. I am a _____ at the University of South Carolina. _____ will be assisting me today. I will take notes and video record the session. We are here because we want to understand your opinions and attitudes about a usable, privacy-enhanced telepresence system for older adults. Telepresence technology can be defined as technology that allows a person to feel or appear to be present in a location through video. One use would be virtual communication between people located in two different places. This allows a person to feel or appear to be present, even though they are located remotely. For example, I could be located in another state and using tele-video technology, video into this location and communicate with you. That would be an example of using tele-video technology.

Topic and goal

Our goal is to better understand what older adults think about a usability and privacy enhanced telepresence system. Your information will help us to conduct research on this topic and, ultimately, to develop telepresence technologies that are more useful and easier to use.

There will be two sessions. You will have the opportunity to test telepresence system with a generic UI and telepresence system with PUTA (**P**rivacy-enhanced **U**sable Telepresence for **A**ging) UI. After each testing session we will ask you to answer some questions and fill out some questionnaires.

Procedure

Our session will take approximately 2 hours.
There is no rush during the session. There will also be an opportunity to take a 5-minute break after we test each tele-video system.
Please sign the consent form.

- *Consent form*

Are there any questions? Do you need to use the restroom or get water before we get started?

Generic UI User Testing

	Complete generic UI usability testing for each individual
Now I would like to give you an opportunity to use the telepresence with generic UI. I will give you your tasks one after another and observe your actions on each task. In this part there will be **16 tasks**, please read each task carefully and complete it to the best of your ability. If you have major question on one task and are unable to complete it, I will be here to assist you. Please tell me what's going on through your minds as you do the tasks, in another word, think out loud.	*Start video camera* *Start timer* *Hand each task one after another to participant* *Take notes*

Now you've completed all 16 tasks on the generic UI, I will ask you couple questions about this UI:

- *What do you find it's easy to use of this interface?*
- *What do you find it's difficult to use of this interface?*
- *What would you want to change about this interface?*

Now I would like you to complete couple questionnaires.
Distribute questionnaires
Please complete the questionnaires to describe your experience using the generic UI.

- *Perceived Usefulness Questionnaire*
- *Perceived Ease of Use Questionnaire*
- *System Usability Scale*

Do you have any other comments on this interface?

Do you need to use the restroom or get water before we continue?

PUTA UI User Testing

	Complete PUTA usability testing for each individual
Now I would like to give you an opportunity to use the telepresence with a usability and privacy enhanced UI-PUTA. I will give you tasks one after another and observe your actions on each task. In this part there will be **16 tasks**, please read each task carefully and complete it to the best of your ability. If you have major question on one task and are unable to complete it, I will be here to assist you. Please tell me what's going on through your minds as you do the tasks, in another word, think out loud.	*Start timer* *Hand each task one after another to participant* *Take notes*

Now you've completed all 16 tasks on PUTA UI, I will ask you couple questions about this UI:

- *What do you find it's easy to use of this interface?*
- *What do you find it's difficult to use of this interface?*
- *What changes do you like about this interface? Why?*
- *What would you want to change about this interface?*

Now I would like you to complete couple questionnaires.
Distribute questionnaires
Please complete the questionnaires to describe your experience using the generic UI.

- *Perceived Usefulness Questionnaire*
- *Perceived Ease of Use Questionnaire*
- *System Usability Scale*

Do you have any other comments on this interface?

Interview

Screenshots of each interface
To start, we will discuss first ONLY generic UI. For the next few questions please try not to compare it to PUTA, we will discuss comparisons later.
Okay so first, please tell me what you liked about the generic UI.
Please tell me what you disliked about generic UI.

Next, we will discuss ONLY PUTA. For the next few questions please try not to compare it to the generic UI.
Okay so first, please tell me what you liked about PUTA.
Please tell me what you disliked about PUTA.

Okay now I will ask you some additional questions, and I would like you to compare both interfaces. Which interface was the most easy to use? And why? *(Encourage them to talk about all three).*
Which interface did you like the best? And why? *(Encourage them to talk about all three)*
Which interface did you perceive has more privacy enhanced features? List some features.
Which system would you like in your home, imagine cost is not an issue. Why? *(Encourage them to talk about all three)*

Post-Interview Questionnaire

Distribute questionnaires

- *Privacy Attitudes Questionnaire*
- *Interface Comparison Questionnaire*

Debriefing

Thank you for your time today. Your input will help us to develop a smart presence system that is more useful and easier to use for specific group. It is very important that you do not discuss this study with anyone else until the study is complete. Our efforts will be greatly compromised if participants come into this study knowing what is about and how the ideas are being tested. Thank you again for your participation!

Usability testing script

UX Research-Designing UI for Socially Assistive Robot for Persons with Dementia, A Clinical Trial

Objectives: Design and develop a Socially-Assistive Robot (SAR) system for persons with dementia (PWD), who are living in assisted living facilities. The system uses Augmented Intelligence (AI) to communicate with the PWD in natural language. The system engages PWD via activities such as storytelling and simple games.

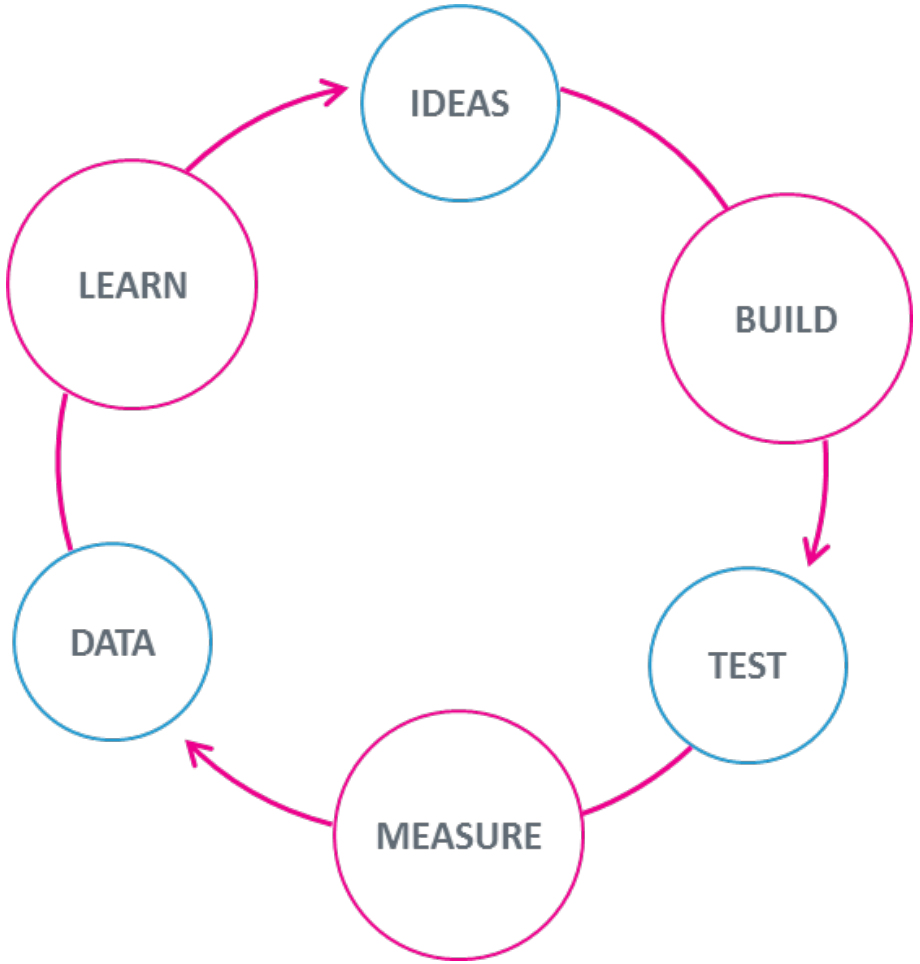
My role:

- Lead UX researcher in a 5-member UX team
- Journey map development
- Task analysis
- In depth literature review regarding technology design and older adults
- Voice interface error handling

Product Design-Improve UX on Shim Measurement

Objectives: Redesign mobile app for mechanics on the shop floor to more accurately measure shims

Methodology: Iterative design process

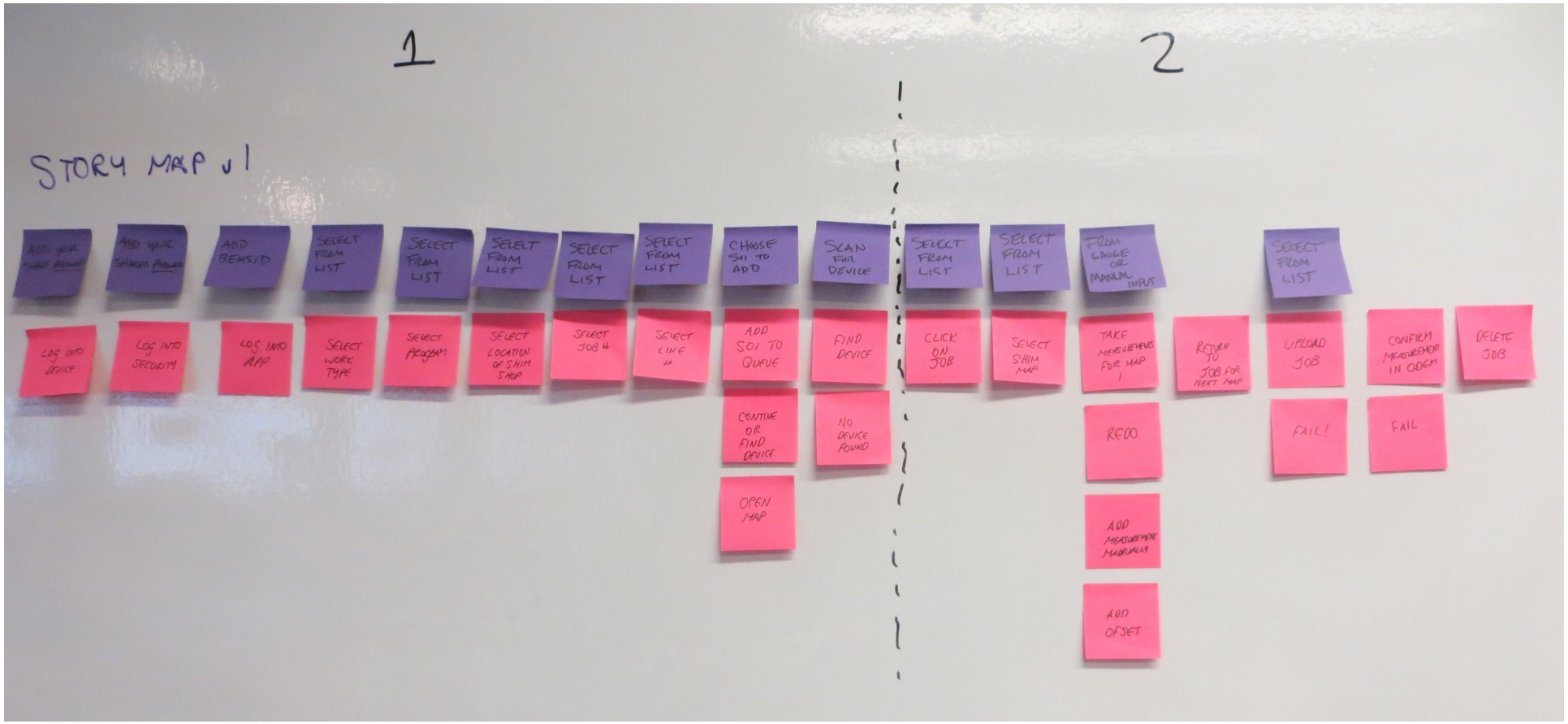


Product Design-Improve UX on Shim Measurement Cont.

	Business	Product	Engagement
Goals	○ Reduce manual build ○ Save labor cost ○ Try our best not changing business logic ○ Pivotal development process ○ Working product	○ Automate the measurement process ○ Identify product “fat” ○ The product is responsive to multiple platforms ○ Fast and easy to use ○ Robust ○ Offline and online capability ○ Stable integration ○ Quick recovery ○ Provide reliable support	○ TDD ○ Capturing end-users behavior ○ Continuous integration ○ Xamarin ○ Cloud Foundry ○ Better developer ○ Design for multiple platforms ○ Change in team culture ○ Critical active learning ○ Get
Anti-Goals	○ Executive goals vs. product goals ○ Mix and match features of legacy and new app ○ JAVA ○ iOS ○ Working pass 4 pm ○ Working to deliver product by June ○ Maintain in-house Bluetooth firmware ○ Firewall gateway etc. ○ Support phone allocation ○ PCF install/debug ○ Distraction with run support ○ Ignore deadline		

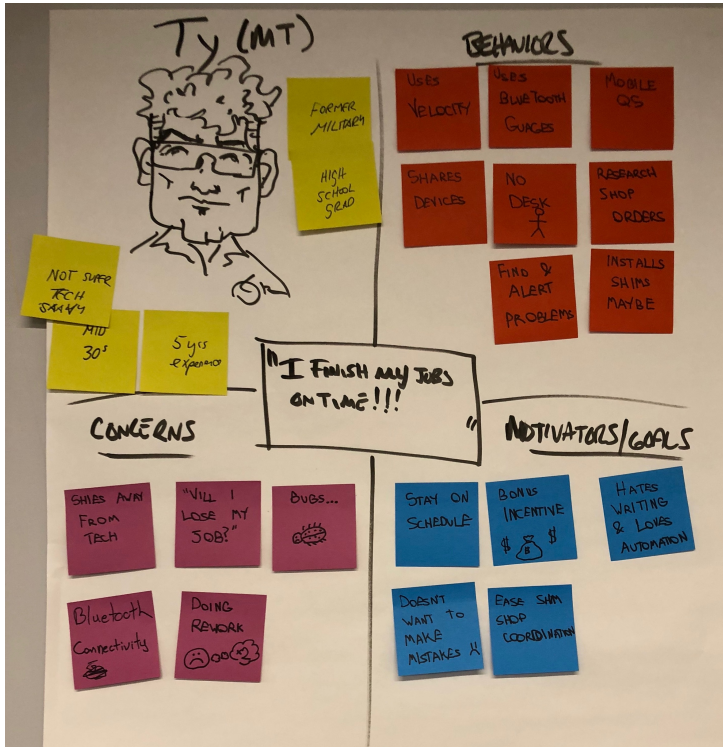
Goals and Anti-goals

Product Design-Improve UX on Shim Measurement Cont.



Customer Journey Map + Service Blueprint

Product Design-Improve UX on Shim Measurement Cont.



MOBILEQS Persona

Measurement Planner

Demographic

- Quality Planning/ Engineer
- Manufacturing Engineer
- Proficient in creating measurement plan on Excel
- Author measurement plans
- Measurement plans are required by Design Engineering
- Work with Velociy, CMES, REDARS, DELMIA, Mantis

Needs/ Pain Points

- Author measurement plans so that MTs can perform their work (ME writes what hey own, QE writes what they own)
- MobileQS has not been deployed to Premier programs. No process that supports the tool and does not integrate with CMES.
- Manage measurement plans correctly
  (1 SOI can consist of many measurement plans, 1 measurement plan can consist of many effectivties)
- Copy at measurement plan level
- Import and export files to excel and ability to sync with the tool (Check-in and Check-Out for import and export feature)
- Bond and Ground, nominal and lower is always "0"
- Group code should be organized in alphanumerical order
- Created plan can be stored in the system for future reference
-

Ideas

- Connect user profiles with DELMIA
- Need to get people to understand MobileQS value
- Managing measurement plan
  (Click on IP --> See all the plans on a new page)
- Select MES before IP
- The system should know what program user is supporting by user profile
- Get Effectivity from REDARS, enable copy & paste

MOBILEQS Persona

Gauge Administrator

Demographic

- Quality Tech/Metrology
- Work in metroology/ cal cert lab
- Proficient in using CMIS
- Downstream customer = MT

Needs/ Pain Points

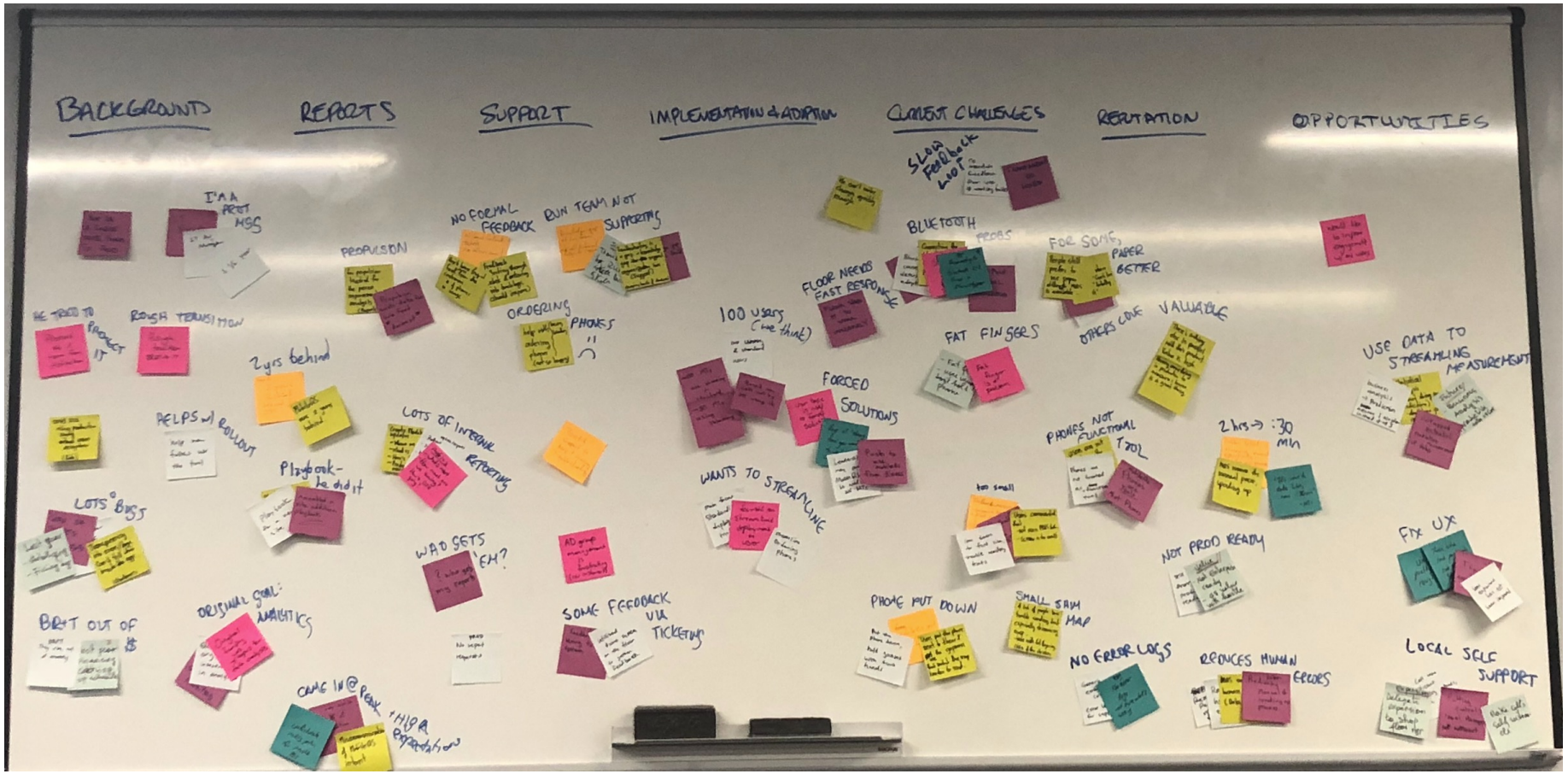
- Main goal is to make sure that the gauges are up to date, nothing is out of calibration (Responsible for making sure gauge calibration date is up to date)
- Something that notifies the "out of calibration date" gauge 10-15 days before
- Entering gauge information on CMIS is tedious, need this to be simpler
- Interacting with 2 different systems (CMIS & Legacy Website)

Ideas

- A new system should connect with CMIS database

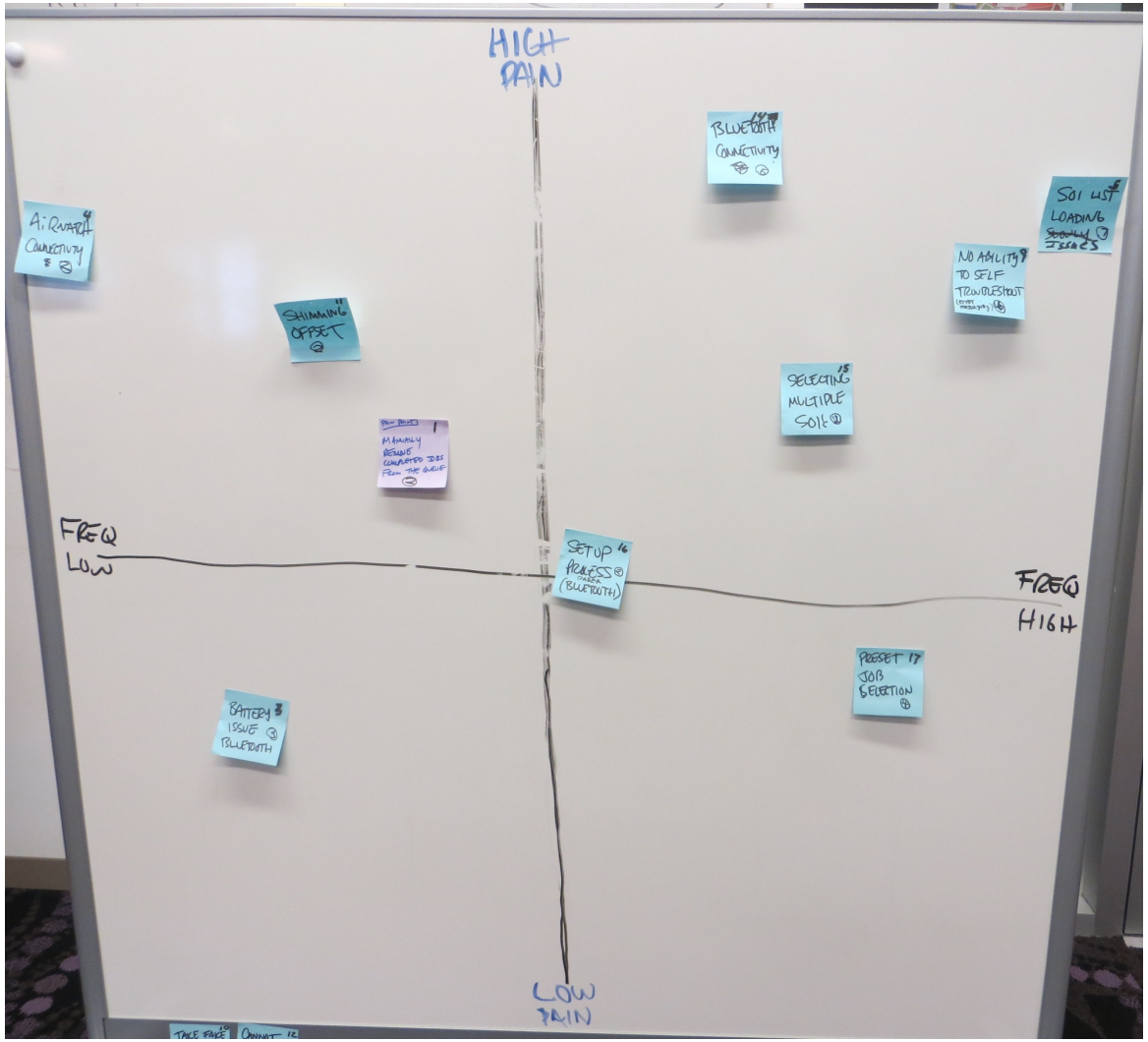
Personas for different user groups

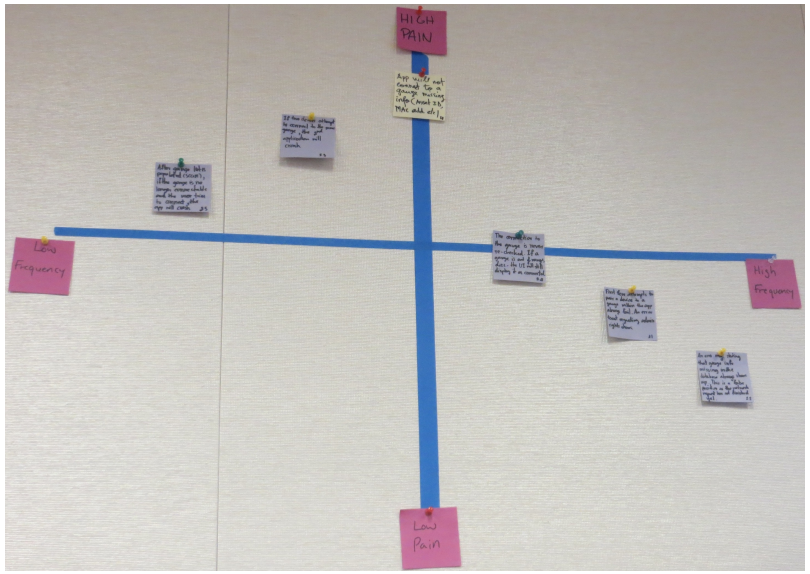
Product Design-Improve UX on Shim Measurement Cont.



Stakeholder Interview and Synthesis

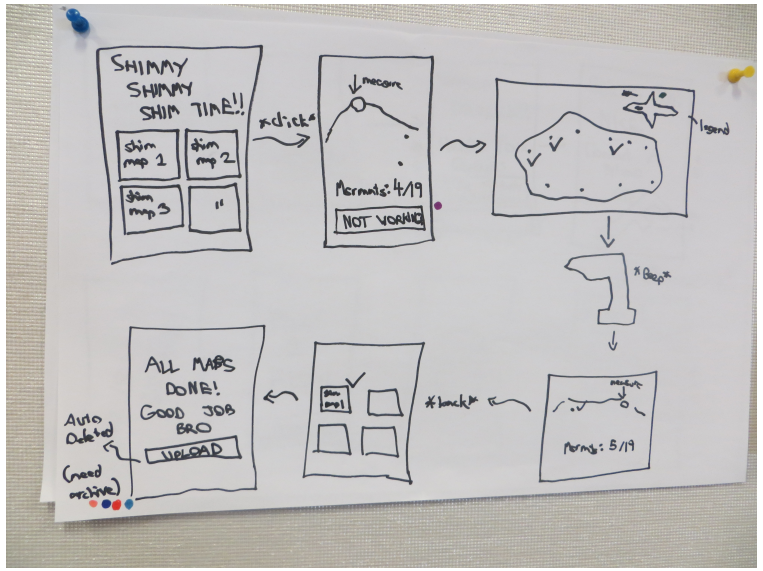
Product Design-Improve UX on Shim Measurement Cont.

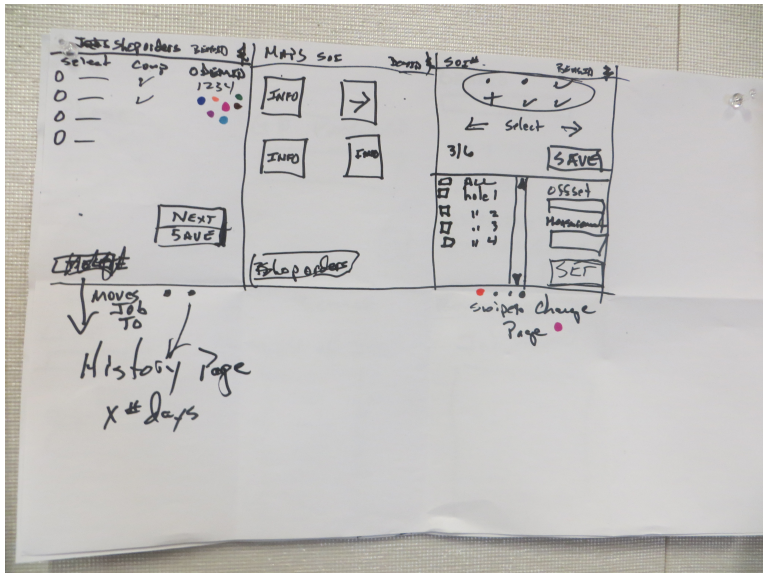


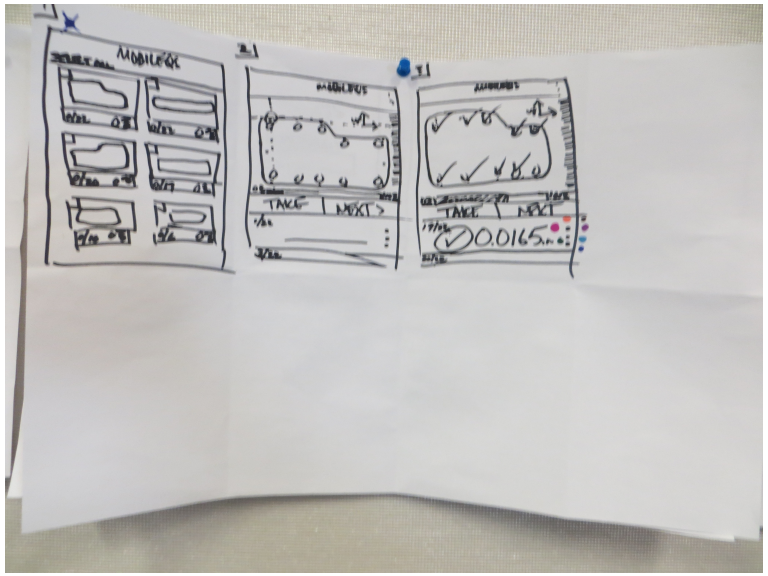


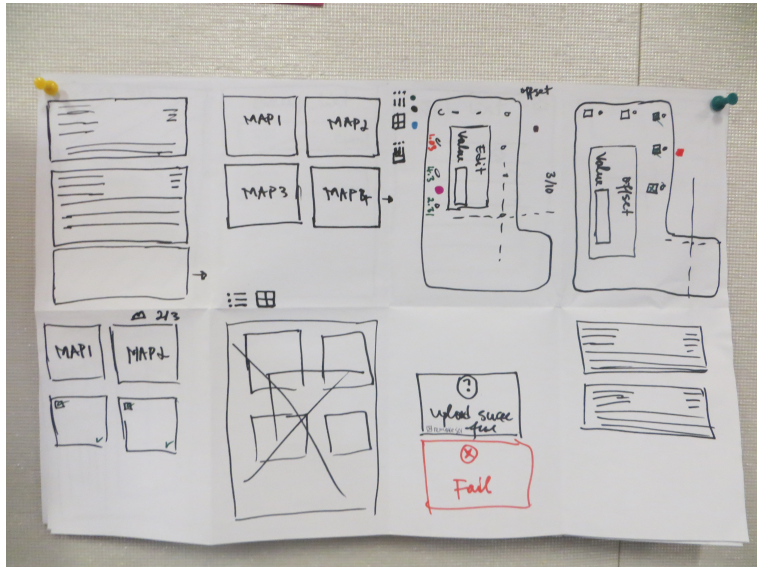
Problem Prioritization

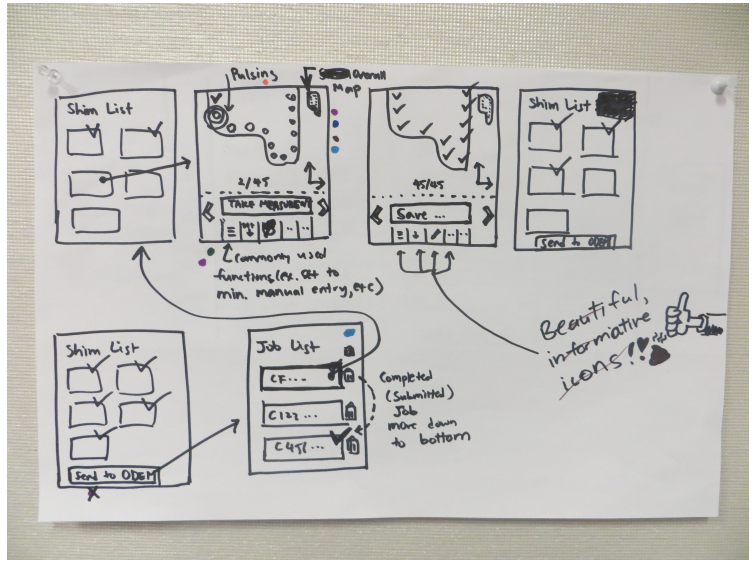
Product Design-Improve UX on Shim Measurement Cont.





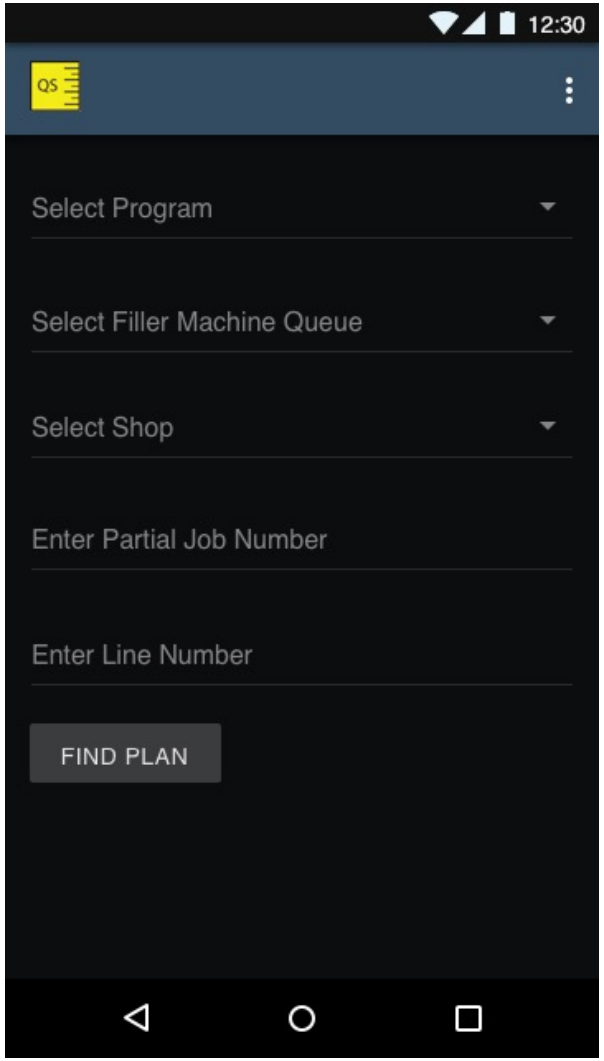




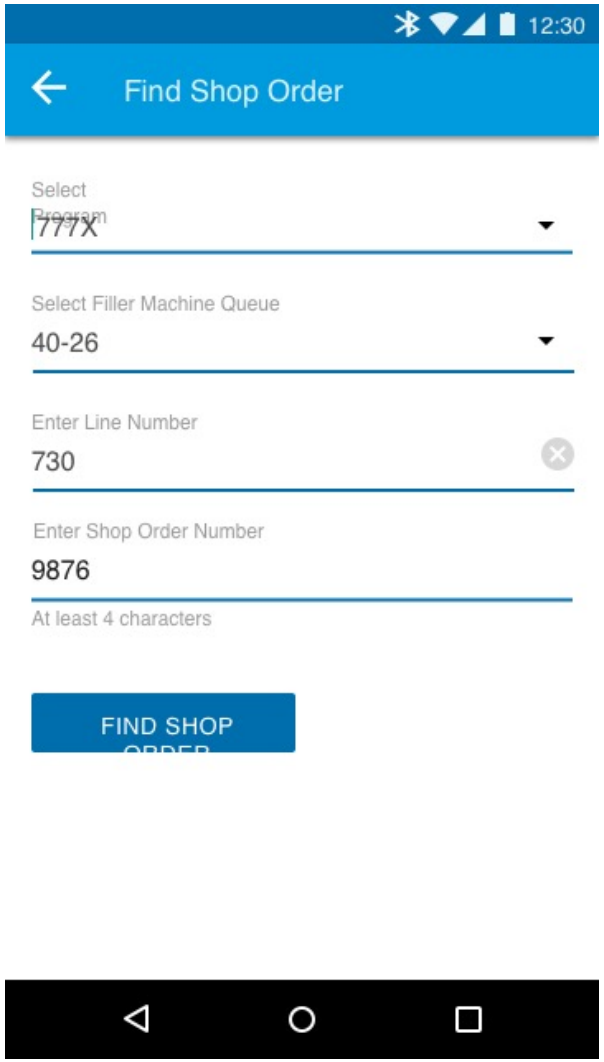


Design Studio

Product Design-Improve UX on Shim Measurement Cont.



Before



After