Lo-Fi Prototype

CS147 Studio: Accessible Design for Different Abilities
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The Support you need, guilt free.

 Disabilities often lead to a sense of guilt in asking for help on a daily basis. In order to eliminate this feeling of a burden from the lives of those who need assistance, we introduce **Safety Net**, a help-request platform that leverages one's personal, trusted network to decentralize the asking process. Add friends, family, and trusted individuals to your entourage so that next time you need to ask the inevitable, you are supported by the ones you love. If you don't have a network, you can connect with one of our trusted community partners. Your net will be notified and see how helpful they've been to successfully distribute the deeds for you, leaving you to simply select helpers from your net.

Sketches

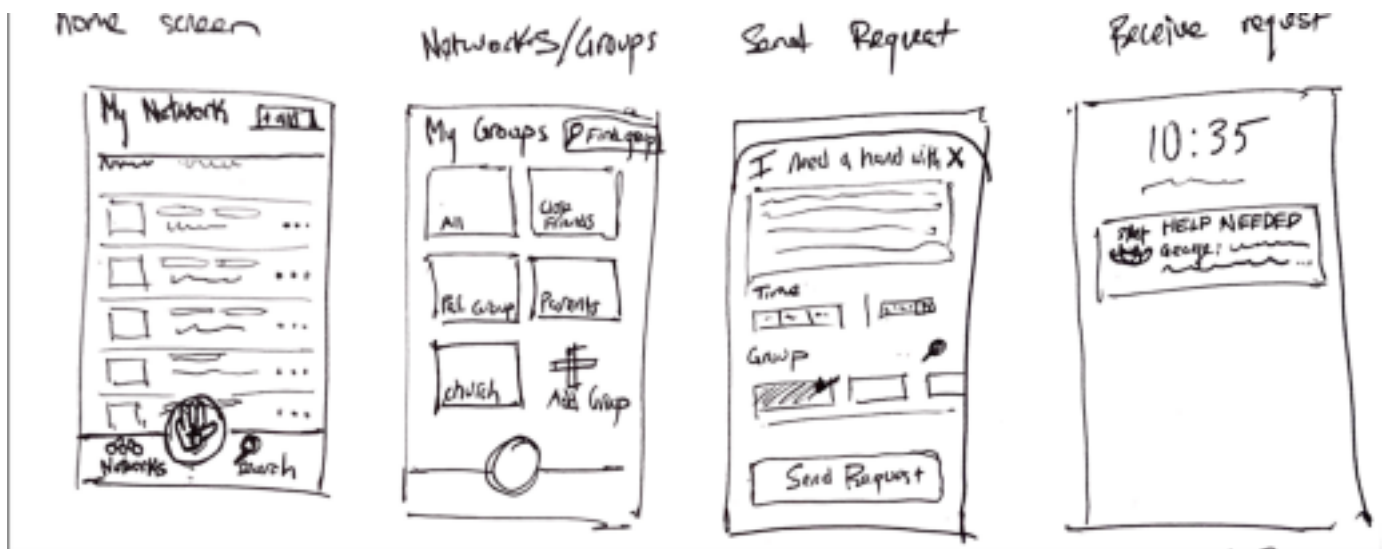**Figure 1.** This is a native tablet with a large interface

Figure 2. This interface displays a native mobile design

Figure 3. This shows a variety of wearable options including a necklace, bracelet, and wristband
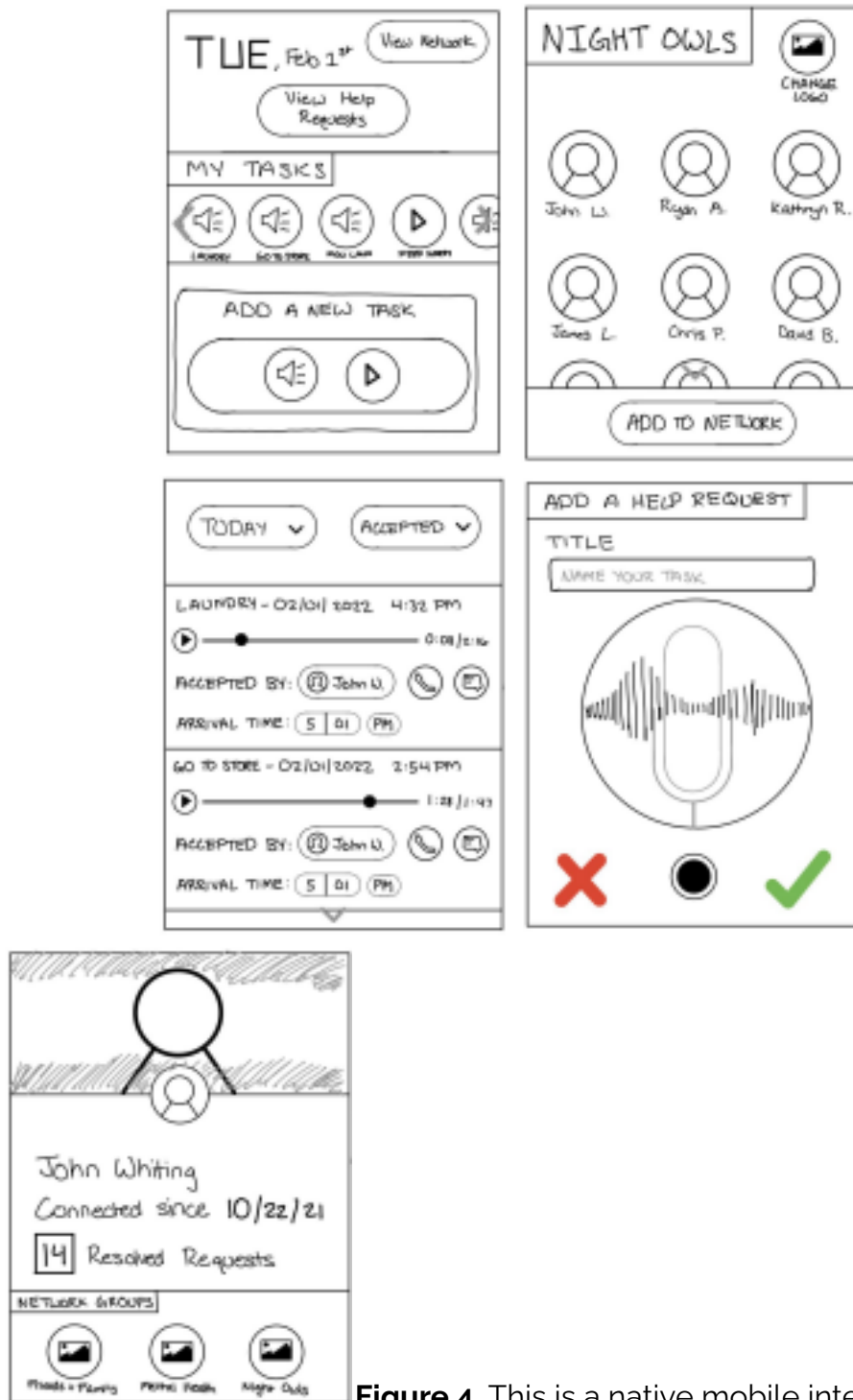
Figure 4. This is a native mobile interface based in voice interaction

Figure 5. This is a solely chat-based mobile interface system

Selected Interface Design

Our top designs were **Mobile Interface** and **Wearables**.
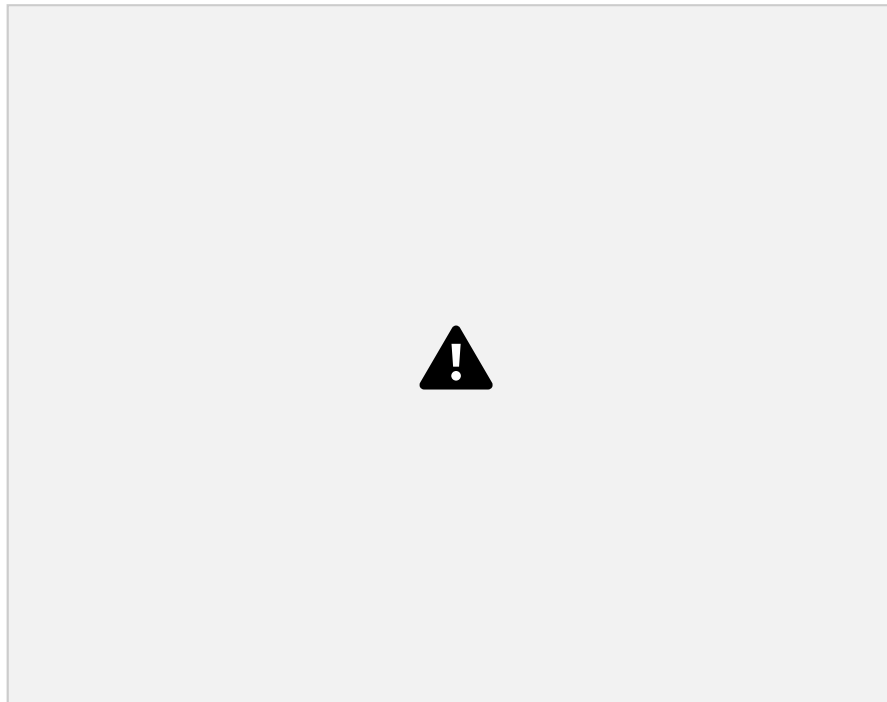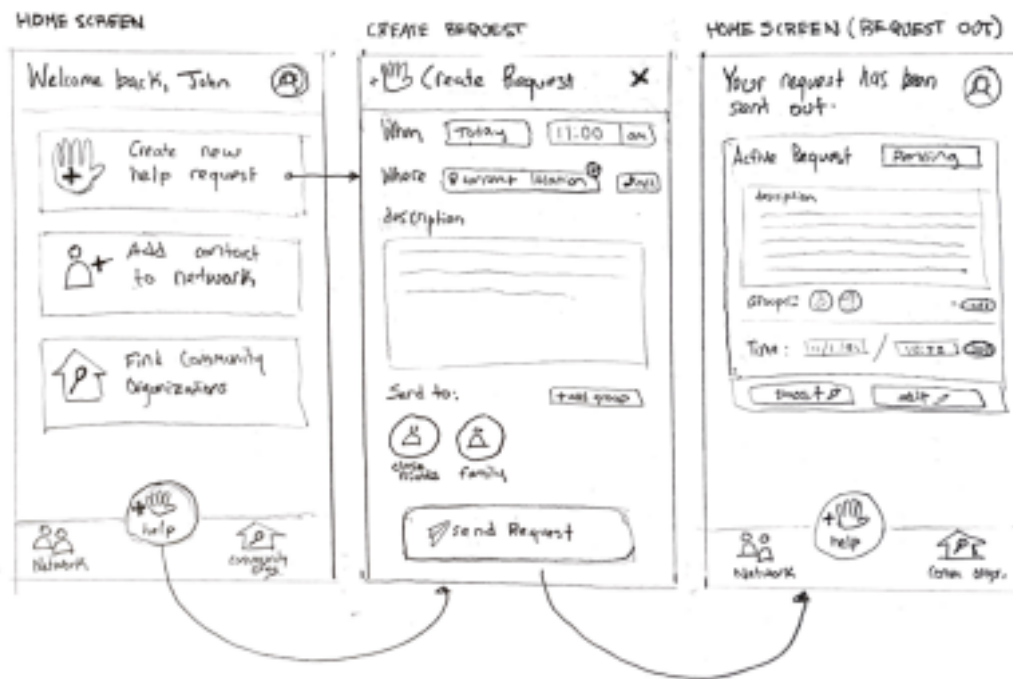
Mobile Interface

Figure 6. This is a mobile interface with features that focus on requests and networks
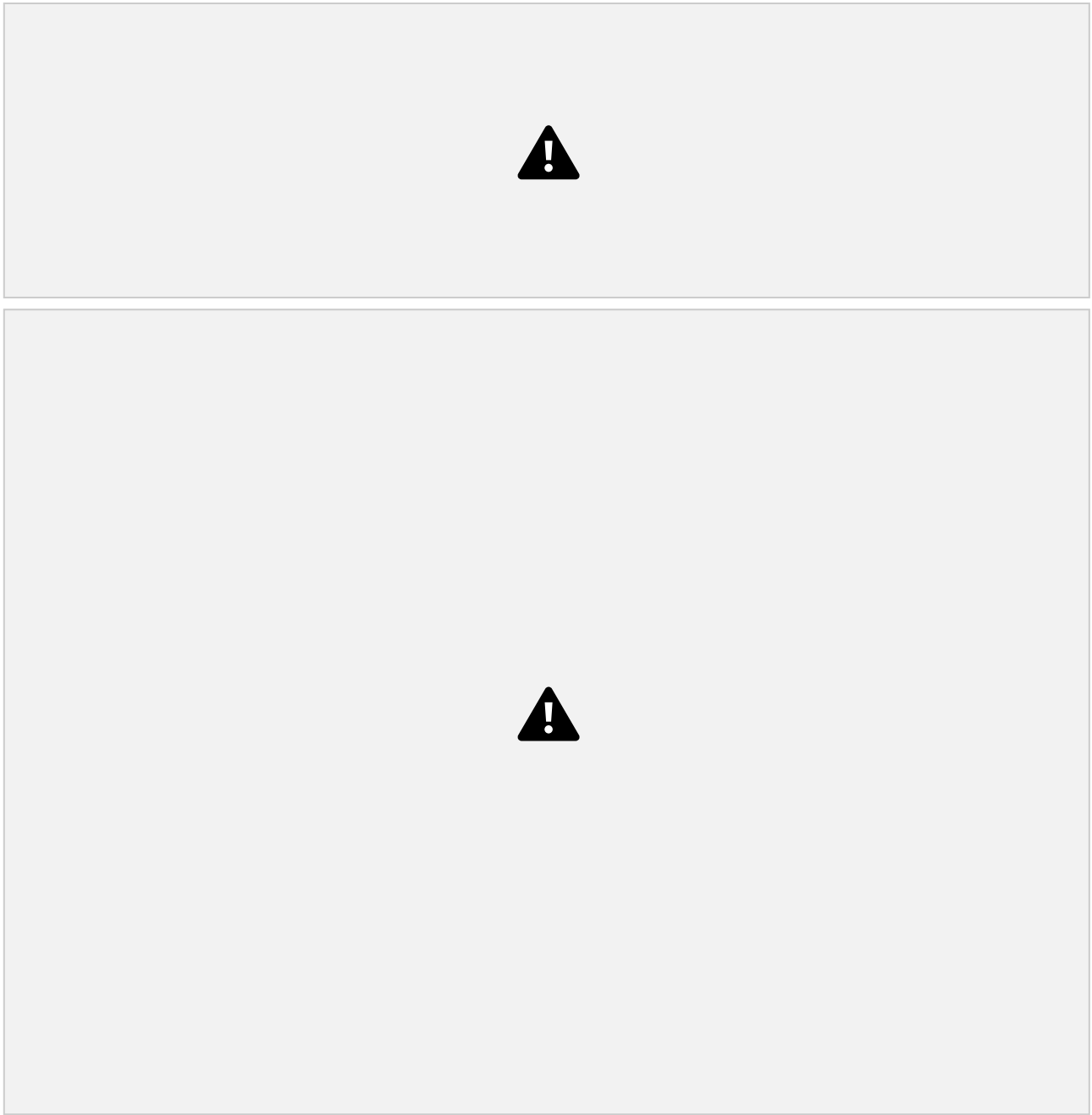
Wearables

Figure 7. This is a wearable interface based on an Apple Watch design

	Pros	Cons

Mobile	● Accessible to more users (most people already have a smartphone) ● Larger interface (ease of use) ● People are already used to sending for assistance over the phone eg. texting and calling ● Potentially more options for UI designs and interfaces since there is more surface area to include more features as opposed to a wearable interface that may become cluttered easily (eg. boost, researching orgs, creating groups)	● Less accessible for some users (visually impaired/motor disabilities) ● Easy for notifications to get "lost" among other notifications
Wearable	● Always on meaning more people would see notifications faster ● More options for interaction with application other than touch (can potentially do more with voice)	● Potential additional cost to buy the wearable ● Smaller interface (harder to read) ● May be easier on users receiving help requests but harder on those sending them because of the small interface ● Most people will always have their mobile phone on them but may not always wear their wearable

Reasoning

Our team chose a **mobile interface** because….

- <u>Accessibility:</u> Users need to be able to request help whenever they need it ●

UI Task Flows

Simple: Send a request

Moderate: Create a new friend group

Figure 9. Add a new friend group task flow

Complex: Connect with a new community organization
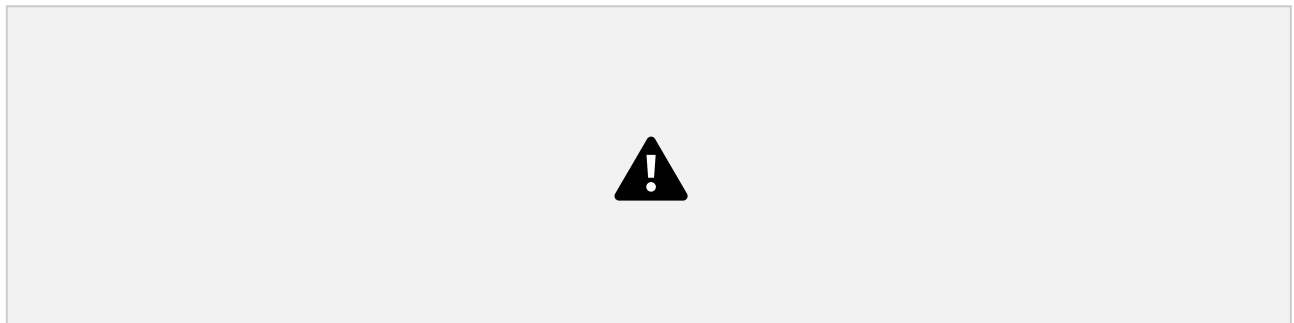
Figure 8. Add a community organization task flow

Prototype

Prototype Description

Our prototype was drawn on paper and uploaded to Marvel Pop. **Any one task could be accessed from the end of another one**. It is organized into four main sections resulting in 25 pages:

- **Section 1:** This section consists of the home screen which includes our three task options of sending out a request, creating a new "net" group, and connecting with a community organization for additional support. In addition to the main screen, the bottom navigation consists of three buttons that serve the same function as the three on the main screen but use icons instead of text.
- **Section 2:** This section begins with the "create a request" screen in which the user can set a date, time and description of the request. The user then is led to a

screen that allows them to select who they would like to send the request to which is grouped into the individuals, groups, and communities categories. The final page shows the user their sent request with details including the status, date, time, and who it was sent to as well as an option to "boost" the request (send out another notification).

- **Section 3:** This section refers to creating a new group beginning with an interface that allows the user to name their new group. The user can then select which individuals, groups, or communities they would like to add to their new group. The final screen shows the new group inserted among the existing groups with a "new" tag in the upper right hand of the icon.
- **Section 4:** This section encourages connecting with community partners. The user is led to an interface that allows them to explore communities sectioned into "popular, recently added, and near you" categories. Alternatively the user can search an organization by name and add them in that manner as well. The final screen shows the new community inserted among the existing communities with a "new" tag in the upper right hand of the icon.

Tasks:
- Send out help request
- Create new friend group
- Search for and add new community organization

Testing Methodology

Participants

Our participants consisted of one sibling of a person with a disability, one caretaker of someone with a disability, and a Stanford student. We intentionally tested on diverse users, particularly including someone who was a caretaker, because we wanted a variety of interactions and wondered if our feedback would vary based on whether the person would be using the application for requests for themselves or on behalf of another individual.

Team Roles

Facilitator: Ryan
Demo-er/recorder: John
Note taker: Kathryn
Observer: JR

Environment

We tested over Zoom by sharing screens and using the Marvel prototype program.

Procedure

- Solution overview + platform demo
- User creates help request (simple)
- User creates new friend group (moderate)
- User searches for and add new community organization (complex) ●
Wrap up questions and comments

Usability Goals

- Clear understanding of icons and unmarked buttons
- Ease of use/following order of screens

Test Measures

- Erroneous navigation clicks
- Questions on higher level concepts (post overview)
- Facial expressions

Results

After an analysis of our testing results, we found four major themes forming:

1. Community organization role was unclear

One major connection between all participants was that they needed more information about the role of the community organizations within the application. A source of confusion revolved around the belief that users could add organizations to join the community of that organization rather than using that organization as a source of people to add to your help "net."

2. Separation of network into individuals, groups, and community organizations had mixed reviews

The categorization and organization of our screens was a controversial topic in our findings. Users either appreciated the separation of their network into these subgroups, or conversely found that it was unclear how groups differed or could be used in different situations.

3. Users didn't understand certain features, but had good intuition about what they would do

Most of the icons that did not have as much textual context to them were a source of questions during testing, but when prompted to guess, were able to infer the purpose of the buttons. The three features that caused this confusion were the "help" and "community organization search" buttons on the home screen as well as the "boost" button on the request screen.

4. Loved to see how new groups added were highlighted on the main screen immediately after
All of our participants expressed verbal and facial interest in the feature that shows your newly added group or community highlighted on the network page. This feature appeared to add some satisfaction to the user as they were able to tactically view the outcome of their task completion.

Discussion

The prototype testing for our SafetyNet mobile interface was extremely successful in analyzing our design choices and informing our team on how to proceed with future models.

Our four major takeaways from testing prompted our team to brainstorm potential solutions to the points of tension between our users and the preliminarily designed interface.
The first of these UI changes is to consolidate the buttons we use on a screen that have the same functionality. Many users were confused by the presence of multiple buttons that would essentially lead them to the same page and seemed to want more consistency in the design features. We hope that creating one button or icon per function would eliminate some of this confusion that we observed in testing.

Another feature we plan to alter is adding additional information about community organizations. We see this manifesting in two different design models—we could either create an information page for each organization with stats about their size, mission, history, or we could link the website of the organization so that the user could be directed to the site and conduct their own research. At this moment, we are still debating the tradeoffs between these two methods of change.

We also found a source of confusion in some ambiguous buttons within our design system such as the "boost" feature. One avenue we are exploring in addressing this is to have a guided tutorial system, most likely consisting of pop-up information bubbles, that inform the reader of the functionality of some aspects of our application during their first interaction.

In conclusion, our team gained valuable insight and suggestions from our testing process that allows us to target sources of confusion heading into more developed prototype models.

Appendix

Sample Consent Form

Testing Notes

Participant 1:

Send task

- Was going to press the "+ hand" button at the bottom but then saw the "create help request" at the top
- Confusing as to why there were two functions for the same thing, unsure which one to click
- Clearly able to add friends
- Seeing that it's pending—active request
- Likes options to boost edit
- Thinks boost is like "tinder style" where through payment/reward you have certain amount boosts per day to send
- Boost resends push notification if no one has responded

Form group

- I think if it's people I am going to be friends with then I'll go to network
- Easy + button to add people
- Noticed you had to hit save twice (save to view selected group & save to confirm)—not confusing but inconvenient

Comm Org

- Found add comm group easy
- Sees the search icon
- "Oh" —good reaction to groupings of "popular, recently added, and close to you"
- Hit add twice (select the community org from search list and then add them to your network)

Feedback:
-hitting things twice was confusing bc it was named the same thing
-help button at bottom was confusing
-had a hard time going back to home page
-are there ways to check-in on help requests after you send them -more info on orgs-what it is, how big it is, how comfortable they feel with them
Participant 2:

Send task

- Went straight to "create a new help request button"
- Auto today's date is nice
- Send to: + button — easy to add
- See request is out
- Boost is intuitive (bump/calling attention)

New group

- Adding easy
- Likes that you can see new group immediately in my groups and has "new' tag on top right corner

Comm org

- Went straight to community search button on bottom icon bar
- Search for groups
- Noticed that they were "close to me"

Feedback:
-Join community org—thinks he's joining the organization rather than them becoming a part of your network
-likes separation of groups, comm orgs, and people
-don't want to have to select every single person
-there's some stuff I would ask different groups of friends for so the groups was really useful
-wasn't sure if bottom buttons led to same place

Participant 3:

Send task

- Went straight for create new help request button
- Where do I submit?
- Going to hit send to
- Now I can see everyone it's being sent to
- Pending is helpful
- I can see time, date and people I sent to

- What does boost mean (unclear that notifications were sent)

Form group

- Great now I can see there's a new group
- Likes the my network screen (easy to understand)

Comm. Org

- What are these groups (groups that I can be a part of?)
- Now I can see that they're in my community org list

Feedback:

- Not totally clear what comm org v groups v people are different
- "Tutorial" descriptions for first time through
- Would use comm org more bc would just text friends