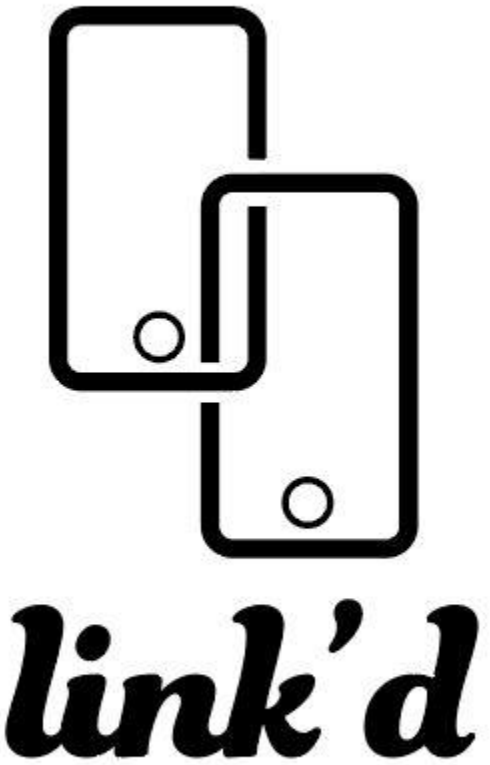

Low Fidelity Prototype Report

CS 147 Winter 2022

Nick Feffer, Roberto Guzman, Simge Girgin

1. Introduction

- Mission

Our mission is to create a customizable instant messaging hub for people who use multiple instant messaging platforms to communicate with their family, friends and coworkers.

- Problem Solution Overview

The problem we identified was the difficulty of using multiple messaging platforms with same person because of not being able to keep track of multiple chat histories. We asked: how might we help people remember their previous conversation in a different app? Our solution is to create an app that links different instant messaging platforms, with in-app response.

2. Sketches

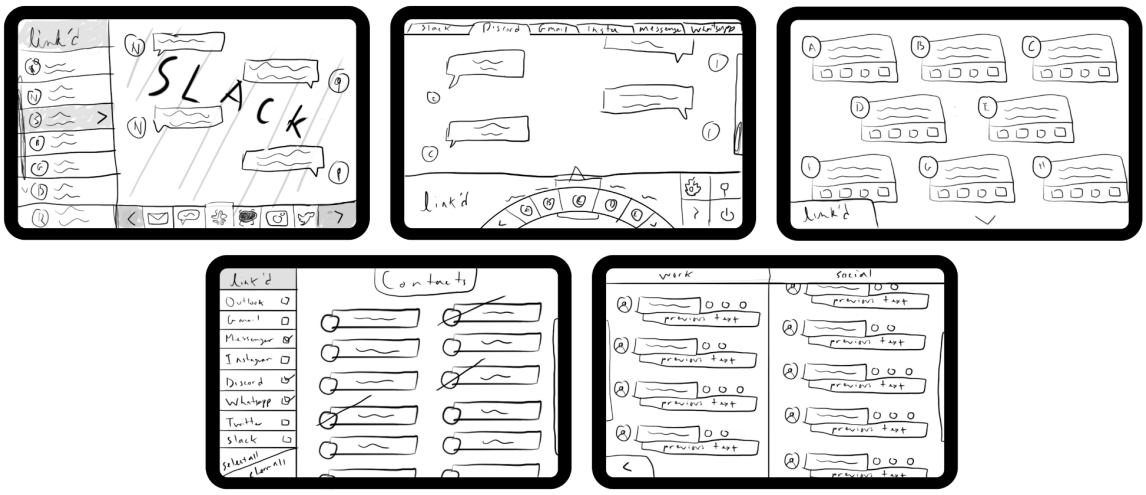

Figure 1: Tablet realization with chat windows, all recent chats, contacts, and a separated window for work and social chats.

Figure 2: AR realization with facial recognition for contacts, quick updates on messages/social, record talks, add new contacts, send and receive messages, and view social media.

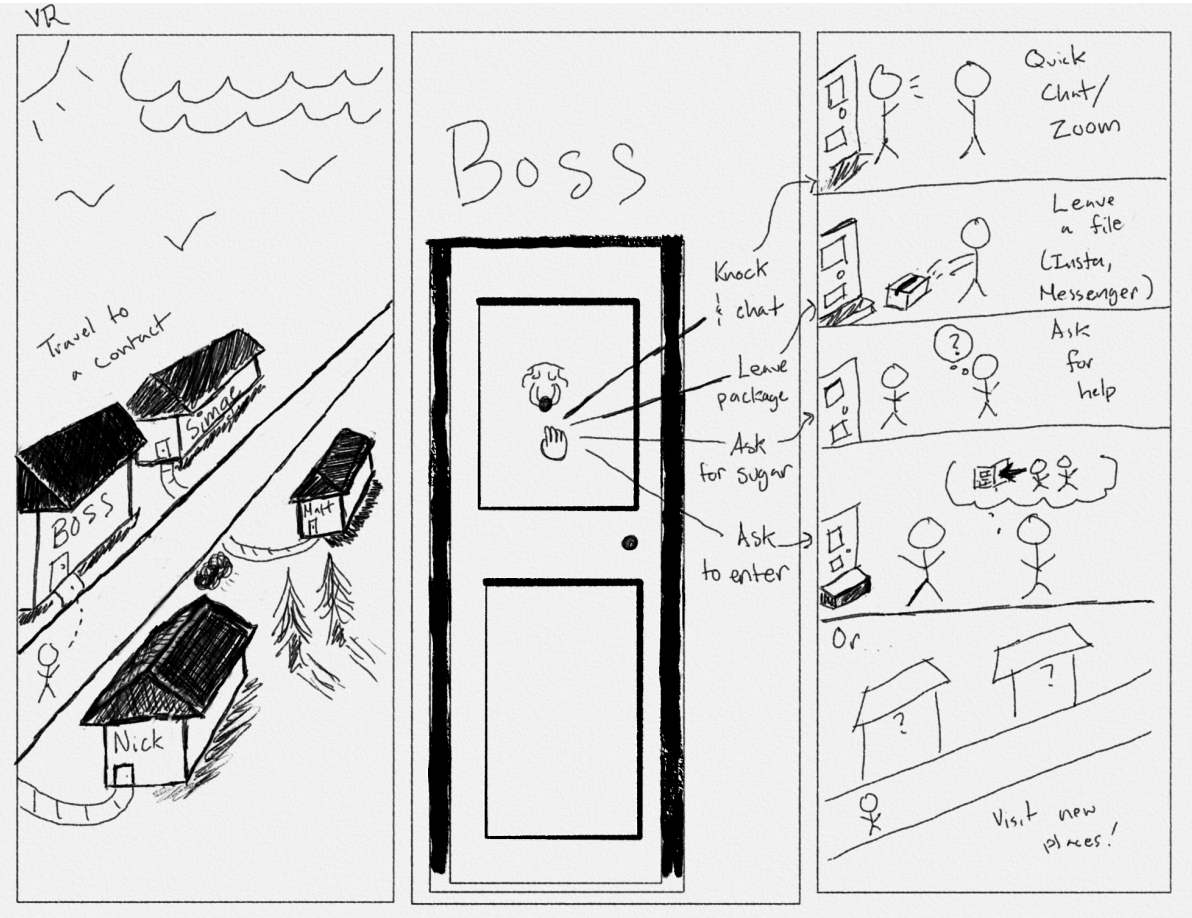

Figure 3: VR realization with ability to visit the “house” of a contact, collaborate virtually, leave messages/files, and explore other houses near you.

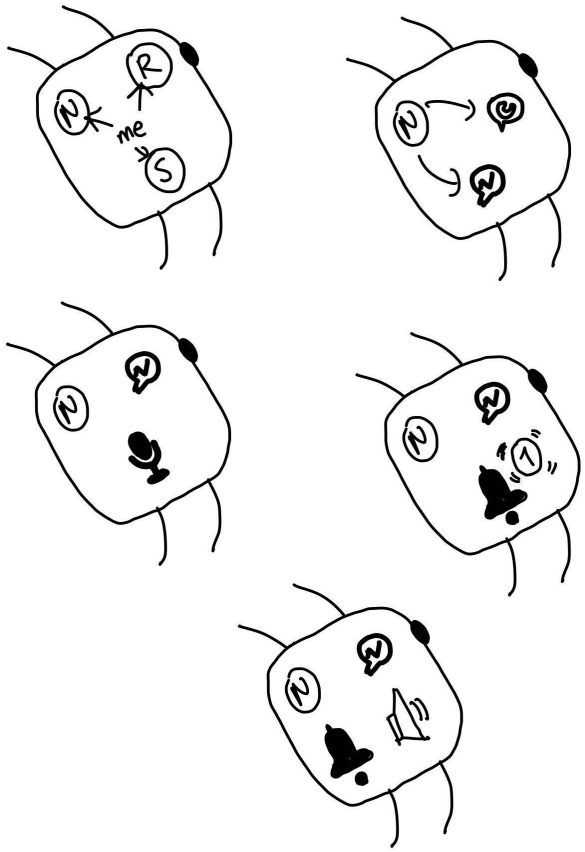

Figure 4: Apple watch realization with contact network, connected app centered at user, voice recording and listening to a message.

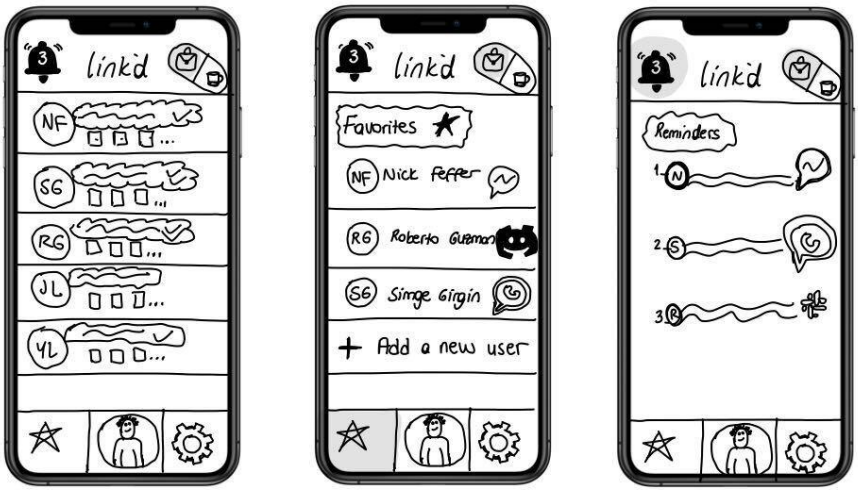

Figure 5: Mobile phone realization with recent chats, favorite contacts, reminders, work apps and chat windows.

3. Selected Storyboards

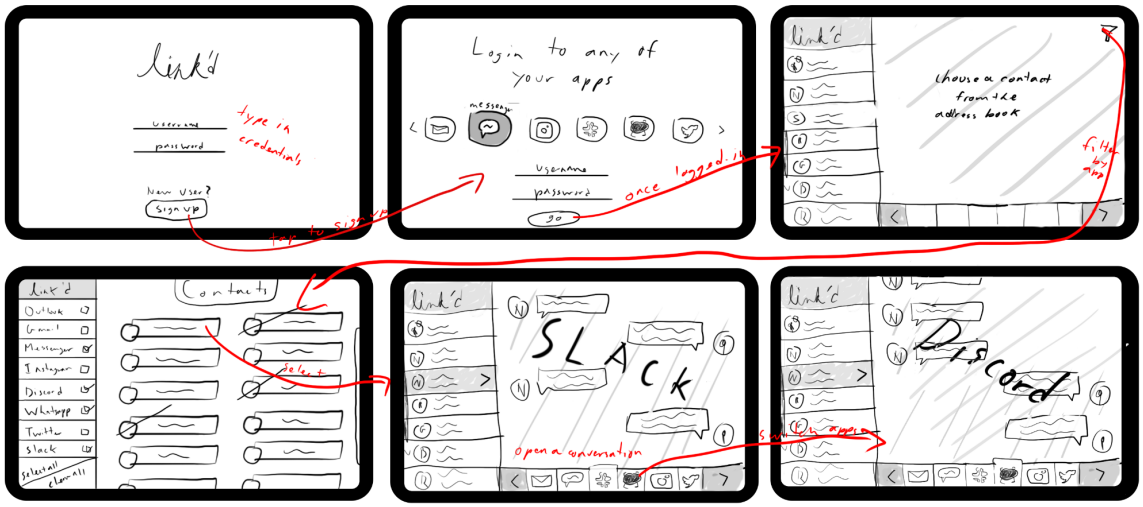

Figure 6: Tablet storyboard

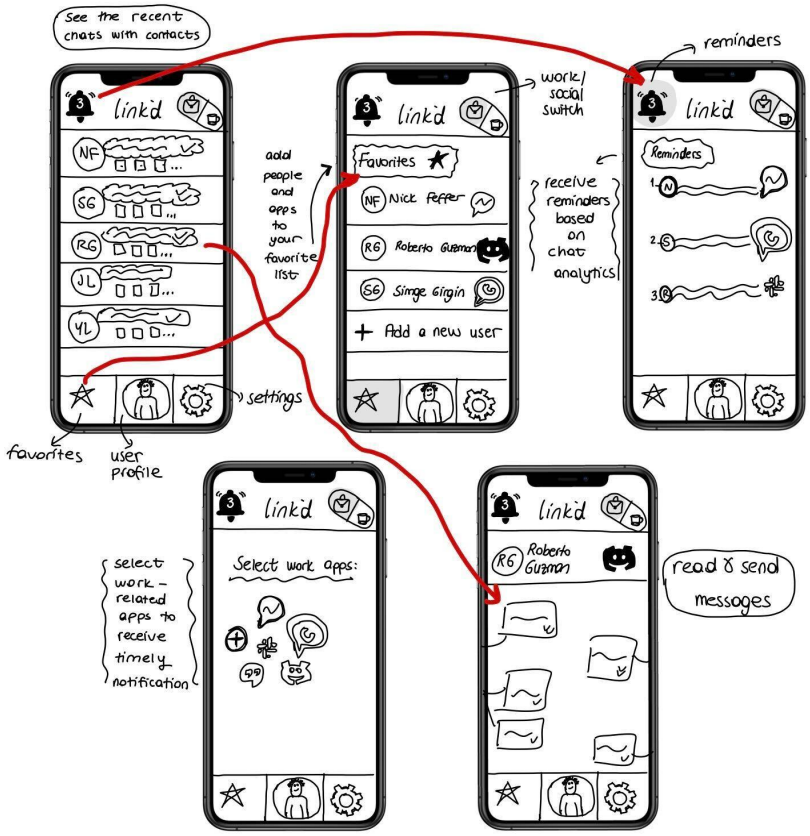

Figure 7: Mobile storyboard

4.Low Fidelity Prototype

a. Selection rationale

	Pros	Cons
Mobile	- Meshes naturally with instant messaging - Targets large audience of cell phone users	- Smaller screen so UI fits less info - Could feel redundant with apps already on phones
Tablet	- View work and social chats simultaneously - Large screen for UI display	- Not really used for messaging much - Could feel too similar to desktop computers

Based on the pros and cons listed above, we decided to move forward with the mobile app for the low-fi prototype stage. We incorporated some of the pros listed for the tablet as we reconfigured the mobile app.

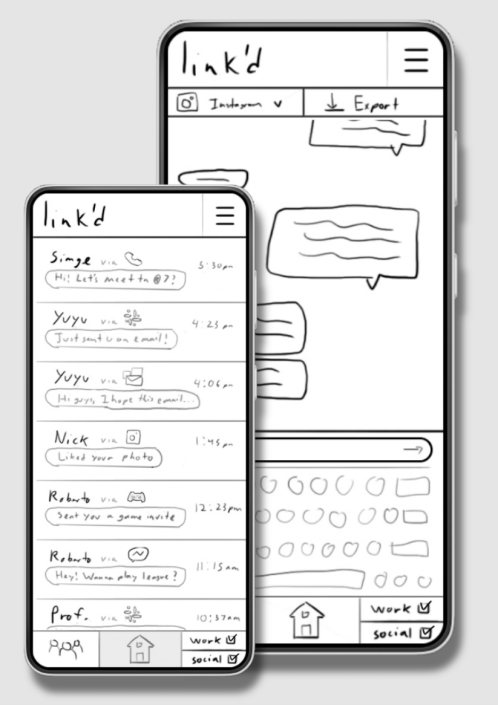

Figure 8: Mobile realization demo

b. Tasks

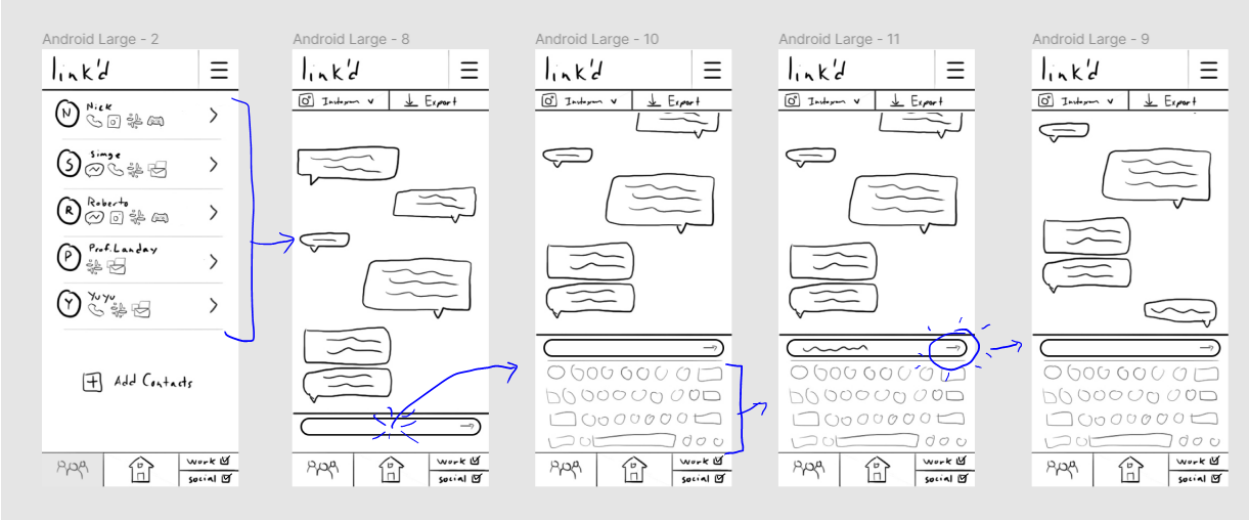

Figure 9: Task flow for sending a message

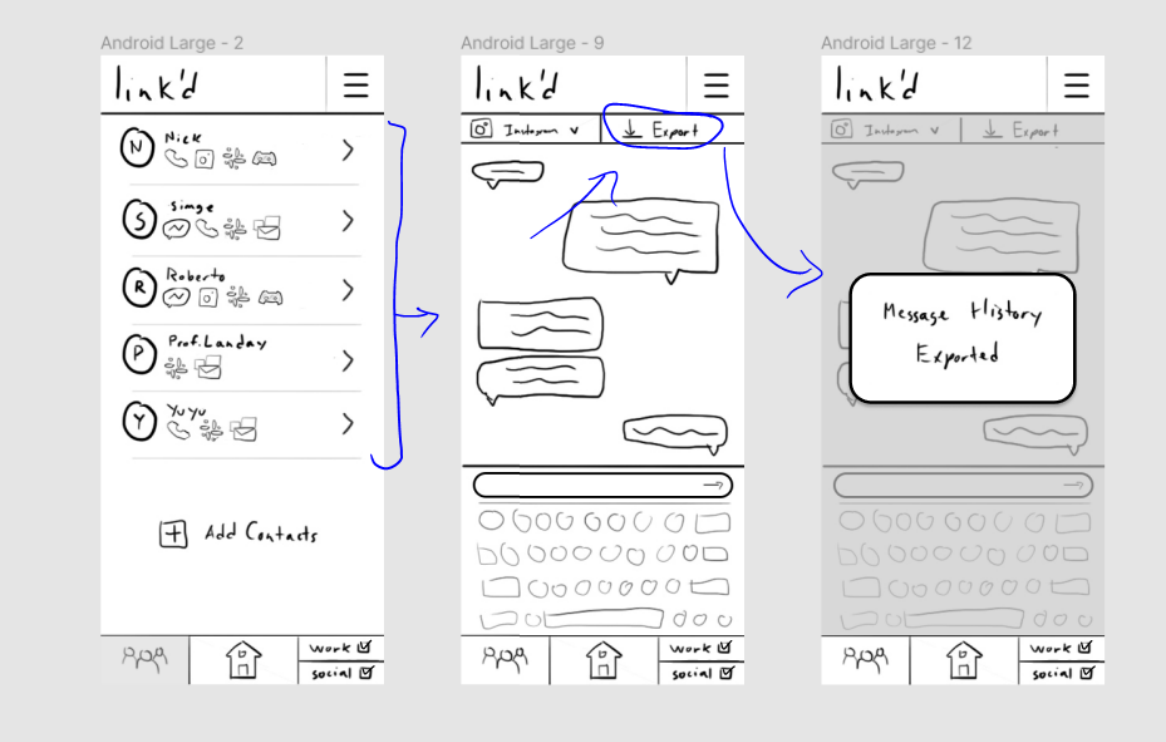

Figure 10: Task flow for exporting the chat history

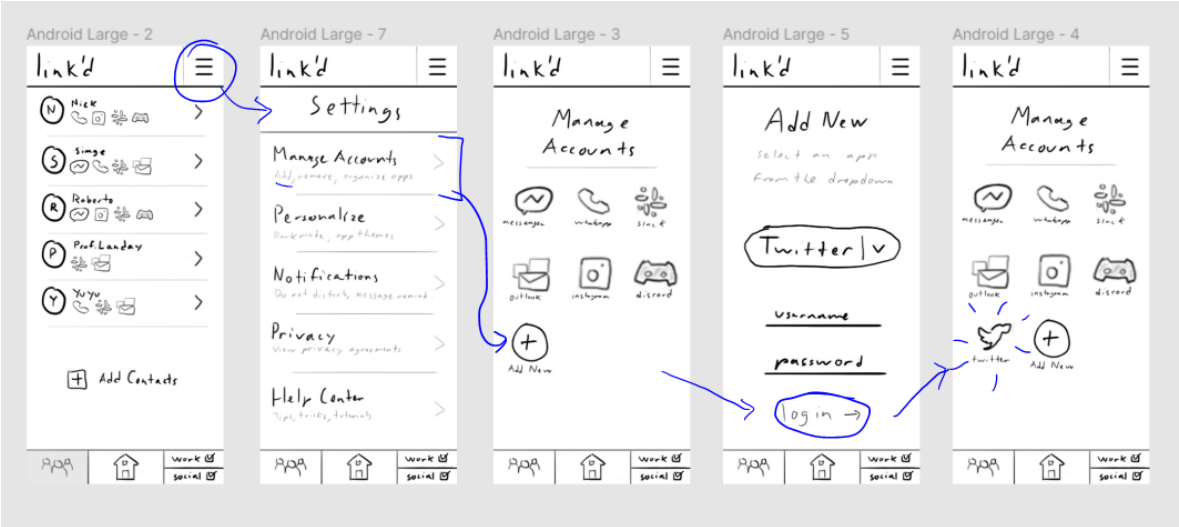

Figure 11: Task flow for adding a new instant messaging platform

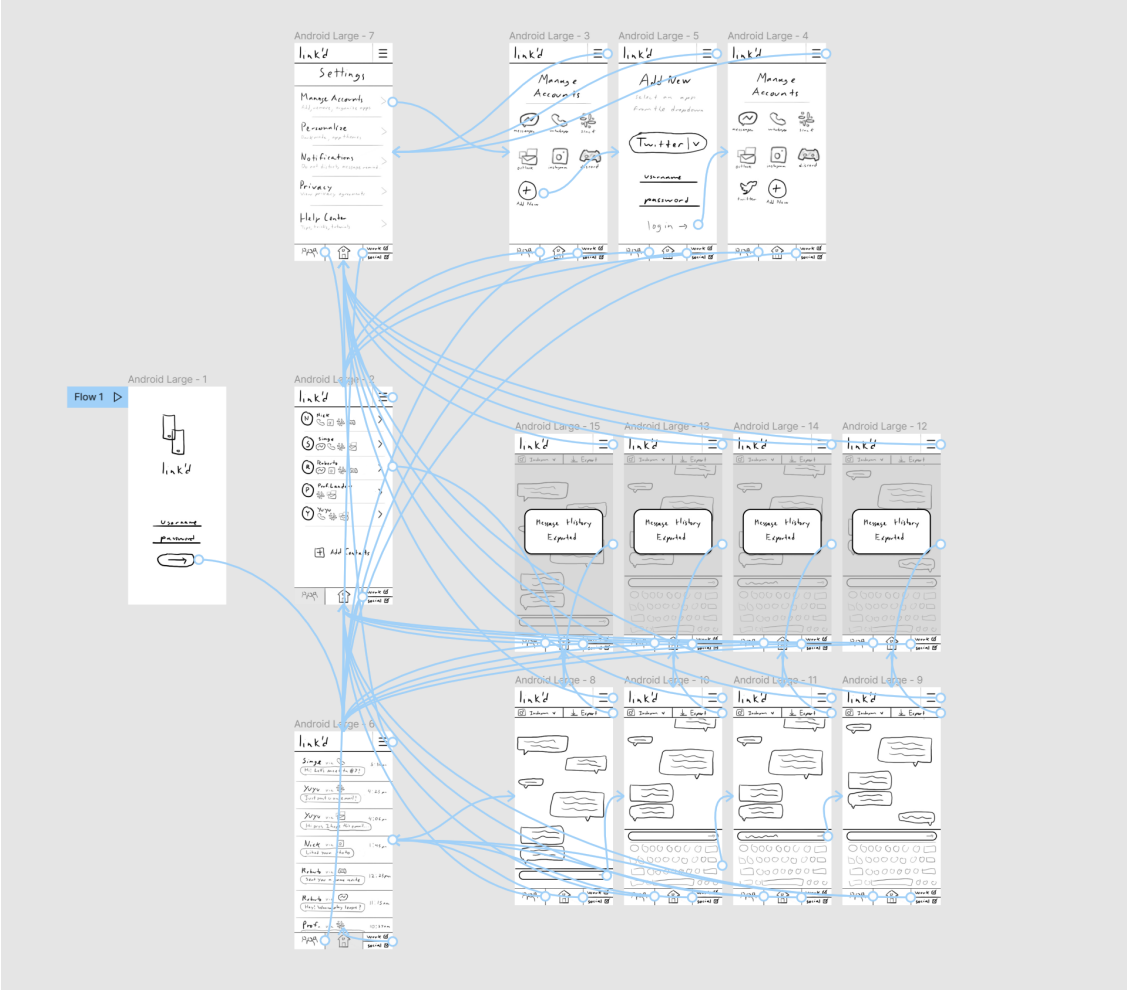

Figure 12: Full view of prototype

5. Testing Methodology

a. Participants

We recruited three participants through e-mail and phone calls:

Gorkem: 28 year-old electrical engineer working for a self-driving car company in Mountain View, CA. He both collaborates with his colleagues in-person and overseas using remote collaboration tools with IM features.

Marco: 21 year-old biology student at Stanford. He works for the Cantor Art Museum and does virtual/in-person tours while also being a full-time student. Uses multiple IM tools to communicate with friends and coworkers.

Mary: 25 year-old nursing student. She does a mixture of in-person and online classes. She uses Discord for most of her IMing, but her classes require her to use a variety of other tools to communicate with teachers and medical staff.

Our criteria for selecting participants was that they are using at least two different IM platforms to chat with friends or coworkers. In addition, we tried to differentiate each participant according to their field of study and profession.

b. Environment

We selected Zoom to conduct the prototype testing. We asked participants to share their iPhone screen after opening the low-fi prototype in Figma.

c. Tasks

- Simple: Send a message which can be accomplished with 4 clicks,
- Moderate: Export the chat which can be accomplished with 3 clicks,
- Complex: Link a new instant messaging platform which can be accomplished with 5 clicks.

d. Usability Goals

We determined two usability goals:

- Robust
- Efficient

To test robustness, we counted the total number of wrong clicks each user made. To test efficiency, we recorded the total time each task took for each user. Our success criteria was 0 wrong clicks and less than a minute to complete each task.

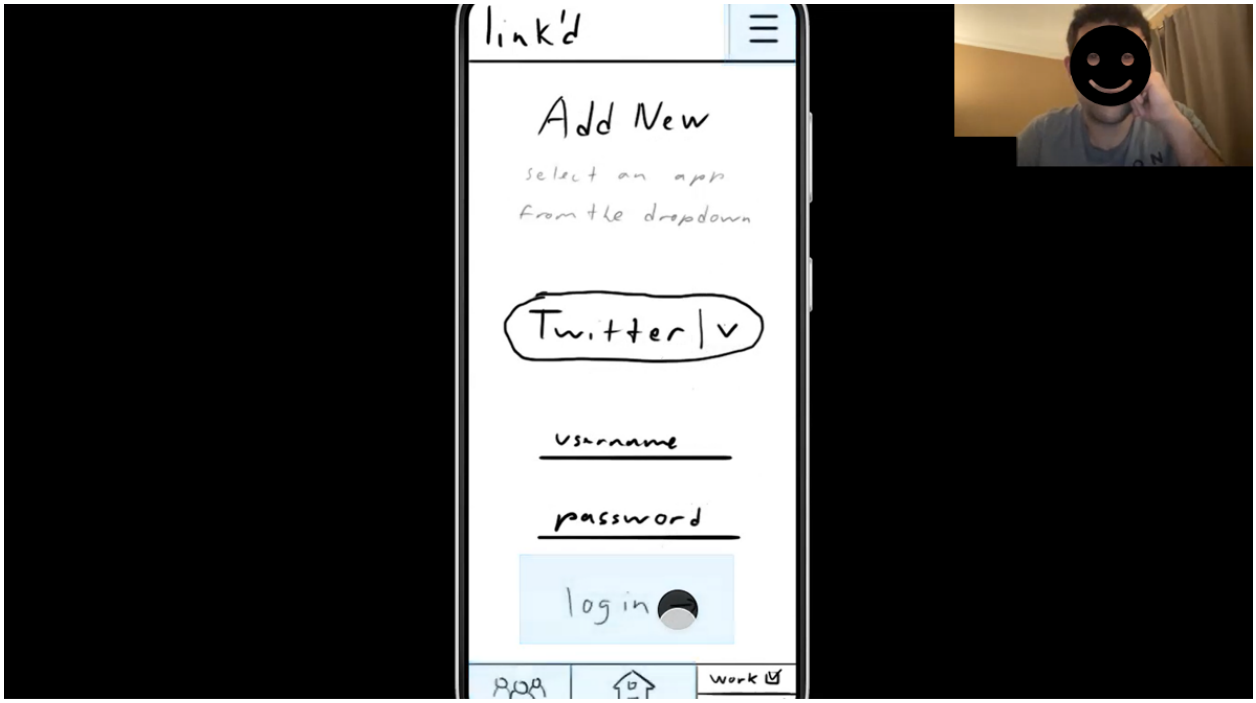

Figure 13: Testing environment on Zoom.

e. Procedure

1. Introduce ourselves and briefly preface the class and project.
2. Ask for consent to participate and record.
3. Briefly outline the experiment and Figma prototype.
4. Ask the participant to share their iPhone screen. If they do not use an iPhone, ask the participant to share their desktop after they open the Figma prototype link we sent.
5. Have the participant perform each task starting with simple, then moderate, and lastly complex.
6. Ask the participant for feedback on the apps features and for any potential additions.

f. Key and Other Test Procedures

Success:

- Completing each task in under a minute.
- Clicking on the correct buttons and navigating intuitively.

Failure:

- Failing to perform a task in under a minute.
- Clicking on the wrong buttons and signs of confusion.

g. Team Member Roles

- Greeter: Nick
- Facilitator: Roberto
- Observer: Simge

6. Results

Participant 1

Task Overview
Task 1: Send message - very intuitive (11 seconds)
Task 2: Exporting chat history - easy to find (15 seconds)
Task 3: Adding new platform - slight difficulty (40 seconds)

liked...

- The organization of the messages on the home tab.
- The home tab was organized by the most recent messages sent showing first.
- Grid for showing apps (on the Manage Accounts page) is good, organized and easy to find.
- The ability to differentiate contacts from work and social to while trying to relax on breaks or focusing on work.

didn't like...

- The home tab might be a little disorganized because of the possibility of having many messages from one person but from different apps.

questioned...

- How organized the page would stay with more apps added to link'd.
- Need for export chat history.
- No confirmation was asked during exporting.

would like...

- Differentiating when someone has two accounts for the same app (work instagram and social instagram).
- Dealing with an app like Slack that allows a user to be a part of multiple channels.

Participant 2

Task Overview
Task 1: Send the message - no issue (15 seconds)
Task 2: Export - took a bit of time to read (20 seconds)
Task 3: Adding a different platform - user trouble (2 minutes)

like...

- The concept of IM hub

didn't like...

- Conflicting and not intuitive to have an Instagram drop-down button in the chat window. He thought he could add a new platform from there.
- Adding a new account because he could not figure out the path required. He checked the Settings page but did not fully read the "Manage Accounts" section. Then he checked the contact page, work and social buttons, the main menu, and finally went back to Settings -> Manage Accounts.

questioned...

- The difficulty to track all conversations with one person - separate apps might be easier to keep Messenger conversations separate from Instagram for example."

would like...

- Search for a user specifically, then he would like to see all the apps they are chatting at.
- Search for a person's conversation on a specific app for example "chats with Yuyu on Discord."

Participant 3

Task Overview
Task 1: Send message - no issue (10 seconds)
Task 2: Export chat history - no issue (12 seconds)
Task 3: Add a new platform - no issue (30 seconds)

like...

- The aesthetic of the app - very inviting and "clicky."
- Simple UI that was easy to follow.
- The idea of splitting their home from work to social.
- Freedom of not downloading work/school apps on phone. Link'd would allow her to get past having to download them since all she would have to do to use messaging is add an account.

questioned...

- The purpose of exporting a conversation meant.

7. Discussion

General observation from the interviewees shows that the UI design is very friendly and easy to follow. Participants enjoyed having sufficient content on the pages to explore and piece together what the app was about. However, there were some incidents that brought to our attention places of improvement.

For most participants, they were able to execute all tasks easily and in under 1 minute. One participant did get lost when trying to complete our final task. They spent a good amount of time clicking on a drop down menu where they had thought they could add a new platform. For future iterations, it might prove best to include an area in the messaging page where you can easily add a new platform and flesh out menus and drop down bars..

We also found that all our participants asked for the need of the second task which is to export chat history. It seemed improbable to our participants that they would ever have the need to export chat history. One participant also mentioned that screenshots streamline this process. In the future, coming up with a probable task to replace our moderate task would be better.

Overall, participants really enjoyed the idea of our app, and link'd proves itself to be something that is desired. To be able to access all messages from different IM platforms in one place is an attractive idea to our participants. Participants especially liked the Twitter-style feed page that allowed them to see all their messages.

8. Appendix

a. Critical Incident Logs

1- User progressed correctly without hesitation
2- User progressed correctly with hesitation
3- User progressed with trial-and-error and made mistakes.

Participant One

Incident	Incident Log
Didn't understand the purpose of the icons	1
Didn't find the buttons to complete their tasks	1
Clicked on a wrong button	2
Didn't feel that a particular feature is necessary	2
Didn't understand the purpose of the task	2

Participant Two

Incident	Incident Log
Didn't understand the purpose of the icons	1
Didn't find the buttons to complete their tasks	3
Clicked on a wrong button	3
Didn't feel that a particular feature is necessary	1
Didn't understand the purpose of the task	1

Participant Three

Incident	Incident Log
Didn't understand the purpose of the icons	2
Didn't find the buttons to complete their tasks	3
Clicked on a wrong button	1
Didn't feel that a particular feature is necessary	3
Didn't understand the purpose of the task	3

b. Blank Consent Form

Consent Form

This student team is interviewing and observing as part of the coursework for Computer Science course CS 147 at Stanford University. Participants provide data that is used to understand the possible opportunities of the design. Data may be collected by interview, observation and questionnaire.

Participation in this experiment is voluntary. Participants may withdraw themselves and their data at any time without fear of consequences. Concerns about the experiment may be discussed with the researchers (Nick Feffer, Roberto Guzman, Simge Girgin) or with Professor James Landay, the instructor of CS 147:

James A. Landay
CS Department
Stanford University
650-498-8215
landay at cs.stanford.edu

Participant anonymity will be maintained by the separate storage of names from data. Data will only be identified by participant number. No identifying information about the participants will be available to anyone except the student researchers and their supervisors/teaching staff.

I hereby acknowledge that I have been given an opportunity to ask questions about the nature of the research and my participation in it. I give my consent to have data collected on my behavior and opinions in relation to HybriCo's research. I also give permission for images or audio/video recordings of me being interviewed to be used in presentations or publications, as long as I am not personally identifiable in the images/video. I understand that I may withdraw my permission at any time.

Name _____

Participant Number _____

Date _____

Signature_____

Witness name _____

Witness signature_____