1   Introduction

The report describes the planning for the next problem to solve. The responses from our interviewee are to support us as software engineers to deeply understand user problems, developing requirements, and enhance development in relevant prototype during early stages in the agile software development cycle. It is beneficial for software engineers, but also for students pursuing computer science or software engineering since the report demonstrates the important steps to solve real world problems in the fast-paced world that we live in.

2   Requirement Elicitation

Interview

Interviewee 1: Phillip Yeh

Email: nonogucci1234@gmail.com

Question 1

Does the like button (reactions) feature in the communication tool fulfil your needs in private/business use and what are the issues with them?

Interviewee:

Like button is important feature for me when I'm using a platform for work. It doesn't have to be fancy if I can express whether I like the messages or posts that people sent on chats. Sometimes having too many GIFS or reactions in a business orientated meeting can be chaotic and unproductive. However, when using the tool for private I wish there are more reactions available given sometimes it's hard to express my feelings in words but with wide range of options it's easier for me to just click a button without having to write anything. Ideally I wish all the platforms can support each other's reaction library, so it's not limited to just reaction buttons but as well as features like stickers (Line) and Gif which makes the tool easier and better to use.

Proposed solution:

Adapting the library support from other platforms can be difficult due to compatibility, licence, and copyright issue however it's possible for more reactions and even GIF style reactions to be adopted into our platform. As for distinguishing the uses in private and business situation we can probably develop a new feature for users to decide whether the channel/dm will be in business or private mode and thereby enabling the level of reactions allowed in the chats.

Question 2

Does the tool make your daily life more productive? If not, what are the areas that could be improved?

Interviewee:

In terms of business use its making life easier given everything can be done online. However more features will make it even better like voting system that allows voters to not just vote but as well as provide reasoning and the platform can automatically compile into excel format for data collection which is crucial in a large size meeting. Others including automatically taking the attendance of the attendees and produce it into a report after the meeting finished.

In terms of my private use though it can be unproductive given too much time can be spent on the platform chatting with friends. I hope there's a feature that displays the total amount of time spent each day and week per which friend etc. (Like what iPhone can do these days – time spent per app)

Proposed solution:

All the features can possibly be developed nonetheless huge portion of the development will lie on front-end term given a lot of features will need specific design and huge overhaul on the interface. In terms of the back-end development the developing speed should be relatively fast. One issue with the time usage is that we will probably see huge increase in data storage and thereby influencing the tool performance.

Question 3

Given there are many communication tool products on the market, what will be the major deciding factors for you to stick around a product among other competitors?

Interviewee:

Interface design, speed and call quality are probably areas I care about the most. I really don't like many products on the market that even though they have some super cool features but the interface is very hard to navigate and feels slow to use (like opening up the app doesn't feel speedy etc) and call quality is terrible. If it's stable and feels light with good photo call quality I'm happy to stick around with it.

Proposed solution:

Interface design is an area that requires front-end developers with design expertise to work on it so as a backend developer our focus should be on how we can make our platform more stable and speedier. Admittedly to achieve better performance there are lots to consider including the language our team uses for development (currently JavaScript). To pursue better performance inevitably we will probably have to switch to different developing environment which can be less efficient to develop considering JavaScript is a very forgiving and time-efficient language to develop with. As for the phone call quality, our product does not have the calling feature hence we will probably need to consider implementing this feature first.

Question 4

Notification is essential feature in the communication tool these days, anything specific about this feature that you don't like, or anything you want it to be improved?

Interviewee:

I hope I can customise the notification ringtone myself instead of the usual one that is provided. One more thing I don't like about the notification is that I can sometimes get several notifications at the same time and the one popped up first will be gone when the second notification comes in and hard for me to track who sent me the message.

Proposed solution:

Customised ringtone is totally doable. We can simply provide space in our datastore for the customers to store the ringtone they like and configure to whichever one they want to use in the setting. Obviously frontend will need to be redesigned to introduce this feature. As for the multiple notifications in the same I am proposing a separate drop-down menu button on top of the interface where you can just click it on it and view all the unread notifications, like the one on Facebook.

Interviewee 2: Ryokichi Asaka

Email: ryokichi.asaka@gmail.com

Question 1

Does the like button (reactions) feature in the communication tool fulfil your needs in private/business use and what are the issues with them?

Interviewee:

The like button is useful, but with the current communications tool I use, I can't see who reacted/liked a certain message in a chat. This makes it difficult for example when trying to arrange meetings at a certain time and getting people to respond by reacting to the message, but being unable to see who exactly responded.

Proposed solution:

This would definitely be implementable, but I would assume this would be more of a frontend thing, rather than something that would be implemented on the backend. For example if you were to hover your mouse over the react button, the frontend would be able to display the list of users who have reacted to the message, which is already stored in the datastore.

Question 2

Does the tool make your daily life more productive? If not, what are the areas that could be improved?

Interviewee:

Although these messaging platforms can be useful, they also can be quite a drain on my productivity, as being notified throughout the today can distract me from doing the more important tasks at hand. If there were a way to only be notified when important, that would be ideal.

Proposed solution:

This could be solved by creating a property for each user, where they have the option for when they want to be notified. For example, this could be

a) Everything

b) Only when tagged

c) Never. In the interviewee's case here

d) Sounds like it would be appropriate

When a message is sent, and the notification function is called, it will then check this notification property in the user object to see whether sending a notification is appropriate.

Question 3

Given there are many communication tool products on the market, what will be the major deciding factors for you to stick around a product among other competitors?

Interviewee:

The main factors for myself is how easy the product is to navigate, and change certain settings, as well as having my messages encrypted so as to ensure the privacy of more personal conversations I have with close friends and family.

Proposed solution:

Ease of navigation is more of a frontend issue. In regard to settings, we could make an icon on the frontend that is easy to spot, and then from there have a few different settings such as notifications (mentioned in next question), perhaps light/dark theme etc. With the message encryption, we could import a JavaScript library such as CryptoJs and then use a hash as the string assigned to the message sent, instead of the actual message itself.

Question 4

Notification is essential feature in the communication tool these days, anything specific about this feature that you don't like, or anything you want it to be improved?

Interviewee:

I like being able to customise my notification settings, so that I don't receive notifications for everything. For instance, when I am not working, I don't want to be bombarded by work related messages, so that I can relax and recharge for the next day.

Proposed solution:

The proposed solution to question two already addresses this for the most part. However, the given choices for notifications were a bit broader. With the more specific situation here, we would like to be able to enable notifications only in certain channels or direct message. Perhaps we could store another property in addition to the more general notifications one, which has an array of the dmIds/channelIds which the user is okay with being notified by.

3   User Stories

Interviewee 1:

1. As a worker, I want to host a big online Friday night drink so I can talk and drink with colleague while WFH.

   User Acceptance Criteria:

   - The channel can allow huge numbers of attendees
   - The channel can produce an attendance report after the meeting for bill-splitting purpose
   - The channel can support huge numbers of people talking on the channel without cutting out constantly
   - The notification can be turned off to avoid hundreds of notifications keep popping up when AFK
   - I can send funny GIFs or video that can be watched in the channel without going to external sites

2. As a worker, I want to host a meeting that allows me to not do any tedious tasks so I can focus on the meeting.

   User Acceptance Criteria:

   - The channel can allow people sending special notification to absent attendees' phone or email
   - The channel can invite attendees in advance and set up scheduled meeting time
   - The channel can disable GIF and video posting for a more efficient meeting.
   - The channel can record when did the attendee join and leave the meeting
   - The channel can launch a poll during the meeting with optional comment available to voters. The result and comments will be produced into an excel for data collection
   - The channel can ask host whether to record the meeting video
   - The interface should be simple and easy to use so even non-IT background attendees can navigate through it easily without others' help

3. As a worker/social person, I want to everyone to use the same tool as me so I can find them easily.

   User Acceptance Criteria:

   - The platform can support friend inviting from other platform and third-party reactions/stickers library.
   - The interface should look easy to register a new account
   - The platform should feel speedy to use

4. As a gamer, I want to communicate with my friends when solving quests.

   User Acceptance Criteria:

   - The platform should allow minimal lagging during multiplayer chat
   - The platform should allow game streaming and recording for content creation

4   Use-Case List

Interviewee 1 – Story 2:

- Step 1 – Meeting host creates a pre-scheduled channel meeting and insert all stakeholders that are to be invited
- Step 2 – Host decides the setting of the meeting – allowing unnecessary functions to be disabled during the meeting
- Step 3 - The host can decide how many reminders to be sent out to invitees before the meeting
- Step 4 – The pre-scheduled channel sends out invites to all invitees
- Step 5 – The channel sends out reminders to invitees as scheduled in advance
- Step 6 – Invitees respond back by accepting or declining the meeting invite
- Step 7 – The channel records attendance in the datastore
- Step 8 - Host starts the meeting and attendees joining the chat
- Step 9 – Attendee can choose to send notifications to stakeholders that have not shown up by clicking on the person's name in the absent list
- Step 10 – Host decides to record the meeting or not
- Step 11 – A poll to be launched
- Step 12 – The channel records the result of the poll and any optional comments from the voters
- Step 13 – Meeting finished and channel to automatically generate an attendance report, meeting log and any poll report
- Step 14 – The channel to download the recorded video and reports to the folder path designated by the host

5   Validation

Interviewee 1:

The use-case seems to align with the problems I have when in a business-oriented meeting. One more thing I would probably add is the privacy concern of some of the recorded content. It might need a feature where the platform should provide warning to the stakeholders on the information that is to be collected and they can choose to opt out if they do not wish their comments to be logged etc.

Interviewee 2:

This use case does not quite align with my biggest problems when using these communication apps. Attendance is very rarely an issue with scheduled meetings, as people have their own ways of keeping track of them. The recording feature would be quite useful, however. For some meetings it helps to be able to refer to certain things said, to make my own work easier.

6   Interface Design

Interviewee 1 – Story 2:

channels/precreate/v1 To schedule a channel to be created 15 minutes before the meeting starts.	POST	Body Parameters: (time, mode, isBusiness, isRecord) Return type if no error: {}	400 Error when time is empty or invalid
notifications/send/v1 To send a notification to absent attendees' email or phone	GET	Query Parameters: (userId, message, modeId) Return type if no error: {}	400 Error when the userId provided has no email or phone details in the datastore
meeting/invite/v1 To invite group of people into the scheduled meeting	POST	Query Parameters: (users, channelId) Return type if no error: {}	400 Error when the users array of objects contain an invalid userId
channel/mode/v1 To configure the channel into different settings for the meeting including automatic attendance report	POST	Query Parameters: (modeId, channelId) Return type if no error: {}	400 Error when the channelId is invalid
channel/record/v1 Given a channelId and modeId that the channel will automatically collect data of the meeting throughout the meeting	POST	Query Parameters: (modeId, channelId) Return type if no error: {recordId}	400 Error when the channelId is invalid
channel/poll/v1 To launch a poll in the channel and collect the result	POST	Query Parameters: (channelId, pollMode) Return type if no error: {PollId}	400 Error when the channelId is invalid
report/download/v1 To download reports or recording	GET	Query Parameters: (reportId, recordId) Return type if no error: {downloadId}	400 Error when both reportId and recordId are invalid

7

State Diagram