# Planning for the next problems

# W17B—Eagle

## Elicitation:

We interviewed three target users currently using teamwork-driven communication tools:

Ziyan Gao: ziyangao@yahoo.com

Echo Han: 1974147363@qq.com

Edward Cui: 2388895717@qq.com

Ziyan Gao and Echo Han are currently using apps: Tencent Meeting and Ding Talk respectively. Meanwhile, we invited Jiyuan Cui to experience our Streams.

**Interviewee Ziyan Gao** (ziyangao@yahoo.com)

Have you ever used any teamwork-driven communication tools?

Ziyan Gao: I am currently using Tencent Meeting.

Why do you choose this teamwork-driven communication tool?

Ziyan Gao: I mainly use this tool to communicate online with my workmates, demonstrate software to my colleagues, and do live meeting.with my team members to collaborate on projects and record our important meeting notes after every meeting.

Do you have any bad experiences or anything you think can be improved with that communication tool?

Ziyan Gao: I think the function I need most is the 'have read' function. Because our team members live in different time zones, sometimes I send them messages and they do not reply to me soon. I hope there is a 'have read' function after each message, so I can know they just have not seen my message rather than ignore my message.

**Interviewee Echo Han** (1974147363@qq.com)

Have you ever used any teamwork-driven communication tools?

Echo Han: I have been using Ding Talk for a long time. What do you mainly use Ding Talk for?

Echo Han: I use Ding Talk. I use this to communicate with my team members to collaborate on projects and record our important meeting notes after every meeting.

Do you have any bad experiences or anything you think can be improved with that communication tool?

Echo Han: Definitely, when in the group chat, some people you are not familiar with may send some very disgusting words or dirty messages. I really hope there could be a function to turn those bad words into **. In addition, I need a function that can highlight important messages like telephone numbers and email addresses.

**Interviewee Edward Cui** (2388895717@qq.com)

Could you please try the Streams we made and give us some feedback?

Edward Cui agreed with us and tried our Streams for two days.

What do you think about our Streams?

Edward Cui: It is an awesome teamwork-driven communication tool, but I think there are two main things that can be improved.

Which two things do you want us to improve?

Edward Cui: For me, I have a lot of stakeholders to meet and communicate for different purposes so I need to created lots of Channels and DMs when I used them, I would like to have a function that can let me classify Channels and DMs, and a function that allows me to rename them and add description of the channel and DM.

## Analysis & Specification - Use Cases

### User story for interviewee 1: Ziyan Gao (ziyangao@yahoo.com)

As a software engineer, I want to see if the messages have been read by the person I sent to. So that it gives an indication that whether the person I talk to has received the message or not, also when I haven't seen the message, I don't want people to think I ignored their message.

### User acceptance criteria:

1. Need to see if the person talked with has read the message or not.
2. Need to show if the current user has read the message from the person talked to.
3. Can go to setting and disable this function, if done that, both sides cannot see the 'read status'.

### Use case:

Step 1. The user sends a direct message to someone

Step 2. Check if the user turned on the 'have read' function

Step 3. According to the choice, send this information to the backend.

Step 4. Display the status of the sent message in the interface.

Step 5. Return the read status to both users.

### User story for interviewee 2: Echo Han (1974147363@qq.com)

As a uni student, I don't want to see messages that are offensive or any bad words. That makes me uncomfortable and annoyed. It really affects my mentality when I see these languages.

### User acceptance criteria:

1. Need to block bad words into **.
2. Need to be able to turn this function on and off for what the users feel like.
3. Once this function is off, all the messages will appear as themselves like before.

### Use case:

Step 1. The user sends a direct message to someone

Step 2. Check if the message contains any bad words.

Step 3. If yes, appear that word as **** in the interface.

Step 4. Save the origin word in the data store as a backup.

Step 5. If the user disables this function, the origin words will be displayed in the interface.

Step 6. Return the list of messages with the protected messages.

### User story for interviewee 3: Edward Cui (2388895717@qq.com)

As a marketing employee, I want to classify all my channels and dms and rename them to better organize them and prevent spending time on finding a certain channel or dm.

### User acceptance criteria:

1. Need to contain an icon to classify channels and dms.
2. Need to be able to rename the channels and dms as well as adding descriptions.
3. For channel or dm that just joined. Add it into the default group.

### Use case:

Step 1. The user selects a certain channel or dm.

Step 2. The user clicks the icon to move that channel or dm into a new or created group.

Step 3. If the group has existed. The backend will create the specified group and add the selected channel or dm into that group.

Step 4. If the group does not exist. The backend will move the selected channel or dm straight into the group.

Step 5. Return the new classified groups.

## Validation

### Validation for interviewee1:Ziyan Gao (ziyangao@yahoo.com)

To what extent does the above functionality solve the problem you proposed to solve?

Ziyan Gao: We all know it's annoying when people don't respond to messages when we're working on a project. To some extent, this function prevents people from being unable to reply to the message after reading, because some will argue that they didn't see the message later in order to make excuses for not responding to messages on time. Once someone has read the message, I will know. In this case, there is a greater chance that someone will reply to the message.

### Validation for interviewee1: Echo Han (1974147363@qq.com)

Does the above function improve the experience of using this app? Does the function meet your expectations?

Echo Han: Yes. When I do a live webcast or product demo to a select group on Ding Talk, It is terrible to have online violence especially when some people abuse it indiscriminately. It is necessary to screen out bad language, so the function mentioned above is useful. Identifying phone numbers and email addresses in text for quick copying improves efficiency, which helps me a lot when many people are in the same channel.

### Validation for interviewee1: Jiyuan Cui (2388895717@qq.com)

Whether the grouping function is useful in software and whether it satisfies your requirement?

Jiyuan Cui: The grouping function is very useful and efficient. When users become deep users of Streams, there will be lots of channels and dms that the user joined. It is easy to get lost. The function mentioned above is good.

## Interface Design

Input/Output types changed from specification

| **Variable name** | **Type** |
|---|---|
| (outputs only) named exactly **messages** | List of dictionaries, where each dictionary contains types { message_id, u_id, message, time_created, reacts, is_pinned, read_by, hightlight_word } |
| read_by | List of user ids |
| hightlight_word | List of string |
| (outputs only) named exactly **channels** | List of dictionaries, where each dictionary contains types { channel_id, name, within_group } |

| | |
|---|---|
| within_group | Dictonary of group {<br>group_name : [list of channel_id],<br>} |
| group_name | String |
| new_group_name | String |
| old_group_name | String |

Interface to satisfy three requirements:

| **Name & Description** | **HTTP Method** | **Data Types** | **Exception** |
|---|---|---|---|
| channel/messages/v3<br>Given a channel with ID channel_id that the authorized user is a member of, return up to 50 messages between index "start" and "start + 50". A message with index 0 is the most recent message in the channel. This function returns a new index "end" which is the value of "start + 50", or, if this function has returned the least recent messages in the channel, returns -1 in "end" to indicate there are no more messages to load after this return. Then, Mark the user as a read user in all of these messages. | GET | **Parameters:**<br>{ token, channel_id, start }<br>**Return Type:**<br>{ messages, start, end } | **InputError** when any of:<br>● channel_id does not refer to a valid channel<br>● the start is greater than the total number of messages in the channel<br>**AccessError** when:<br>● channel_id is valid and the authorized user is not a member of the channel |
| message/send/v2<br>Send a message from the authorized user to the channel specified by channel_id. Meanwhile, automatic filtering of dirty words, telephone numbers, and email | POST | **Parameters:**<br>{ token, channel_id, message }<br>**Return Type:**<br>{ message_id } | **InputError** when:<br>● channel_id does not refer to a valid channel<br>● length of the message is less |

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|---|---|---|---|
| addresses. Replace dirty words into ***, highlight telephone numbers, and email addresses. Note: Each message should have its own unique ID, i.e. no messages should share an ID with another message, even if that other message is in a different channel. | | | than 1 or over 1000 characters<br>**AccessError** when:<br>● channel_id is valid and the authorized user is not a member of the channel |
| message/senddm/v1<br>Send a message from authorised_user to the DM specified by dm_id. Meanwhile, automatic filtering of dirty words, telephone numbers, and email addresses. Replace dirty words into ***, highlight telephone numbers, and email addresses.Note: Each message should have it's own unique ID, i.e. no messages should share an ID with another message, even if that other message is in a different channel or DM. | POST | **Parameters:**<br>{ token, dm_id, message }<br>**Return Type:**<br>{ message_id } | **InputError** when any of:<br>● dm_id does not refer to a valid DM<br>● length of message is less than 1 or over 1000 characters<br>**AccessError** when:<br>● dm_id is valid and the authorised user is not a member of the DM |
| channels/listall/v3<br>Provide a list of all channels with grouping, including private channels, (and their associated details) | GET | **Parameters:**<br>{ token }<br>**Return Type:**<br>{ channels } | N/A |
| channel/join/v3<br>Given a channel_id of a channel that the authorized user can join, adds them to that channel. | POST | **Parameters:**<br>{ token, channel_id } | **InputError** when any of:<br>● channel_id does not refer to a valid channel |

| | | | |
|---|---|---|---|
| Put this channel into the user’s default group | | **Return Type:**<br>{} | ● the authorized user is already a member of the channel<br>**AccessError** when:<br>● channel_id refers to a channel that is private and the authorised user is not already a channel member and is not a global owner |
| channel/invite/v2<br>Invites a user with ID u_id to join a channel with ID channel_id. Once invited, the user is added to the channel immediately. In both public and private channels, all members are able to invite users. Put this channel into the user’s default group | POST | **Parameters:**<br>{ token, channel_id, u_id }<br>**Return Type:**<br>{} | **InputError** when any of:<br>● channel_id does not refer to a valid channel<br>● u_id does not refer to a valid user<br>● u_id refers to a user who is already a member of the channel<br>**AccessError** when:<br>● channel_id is valid and the authorised user is not a member of the channel |
| channels/create/v3<br>Creates a new channel with the given name that is either a public or private channel. The user who created it | POST | **Parameters:**<br>{ token, name, is_public }<br>**Return Type:** | **InputError** when:<br>● length of name is less than 1 or more than 20 characters |

| | | | |
|---|---|---|---|
| automatically joins the channel. Put this channel into the user’s default group | | { channel_id } | |
| group/create/v1<br>Given a group name. Create an empty channel group for the user to edit or add channel | POST | **Parameters:**<br>{ token, group_name }<br>**Return Type:**<br>{ } | **InputError** when:<br>● group_name exist |
| group/name_edit/v1<br>Given a new_group_name and an old_group_name. Update the group_name with the new name. | PUT | **Parameters:**<br>{ token, new_group_name, old_group_name }<br>**Return Type:**<br>{} | **InputError** when:<br>● old_group_name does not exit<br>● new_group_name exist |
| group/move/v1<br>Given a channel_id and a group_name. Find the channel that the user is joined, and move the channel from the original group to the particular group | | **Parameters:**<br>{ token, channel_id, group_name }<br>**Return Type:**<br>{} | **InputError** when:<br>● invaild channel_id<br>● invaild group_name |

## Conceptual Modelling

- Read_by

When a user joins and enters the particular channel

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He can check a range of messages

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Once he check the latest message, all of the member in this channel will know this user has read all the messages

- Filter

When a user joins and enters the particular channel or dm

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He sends an message with dirty words, telephone numbers, and email addresses

↓

After he send, all of members in this channel will see a message with ***, highlight telephone numbers, and email addresses

- Grouping

When a user creates or joins or is invited into the particular channel

↓

The channel is list in a default group for this user

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The user can create a group, edit a group name and move a channel into this group