Company A

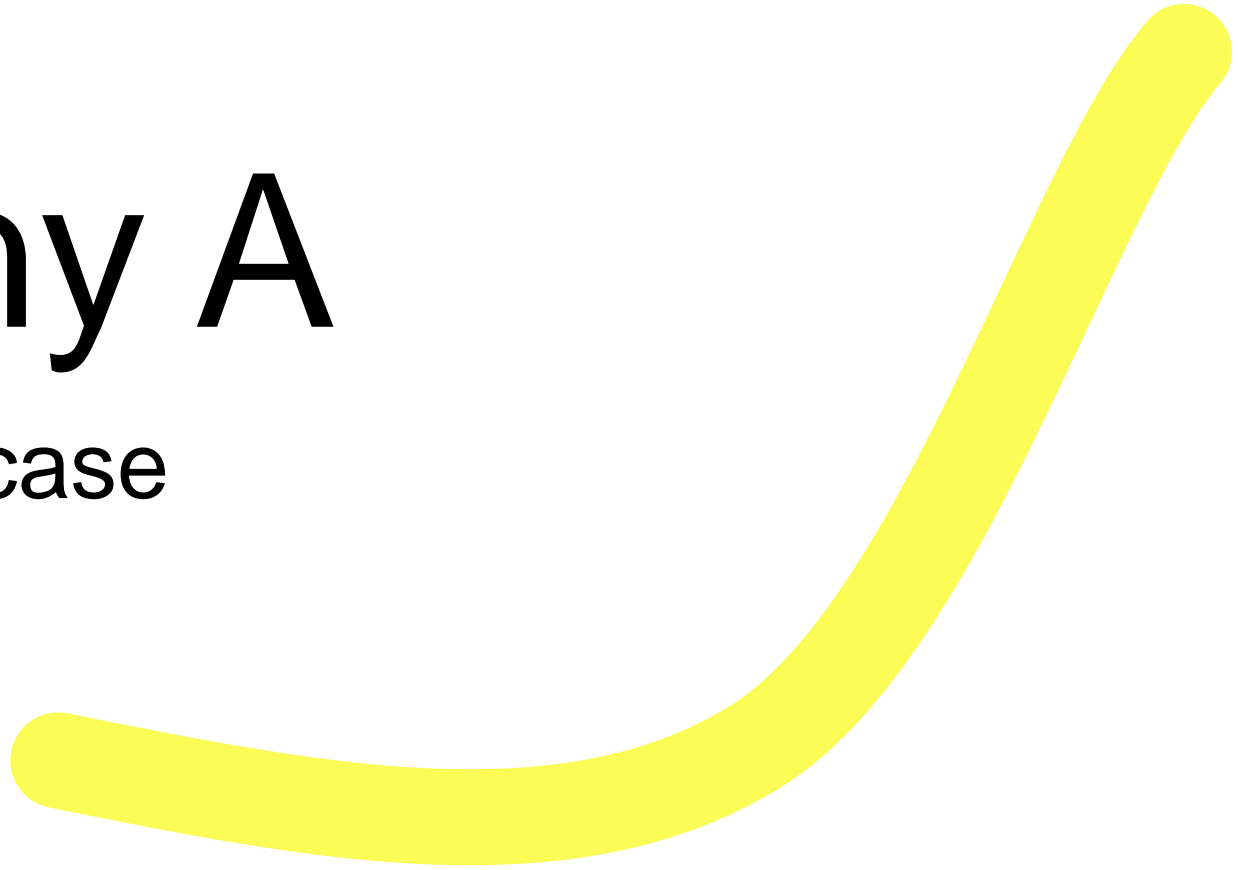## Chatbot analysis case

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Task description

Context:
One client is unhappy with chatbot performance
Target is to make 25% of conversations to be automated

Task:
Check the current bot performance and figure out possible points of growth

Dataset:
Include information about time, conversation result, understandable, client logging in and messages amount

Plan

1) Define current KPI level and the dynamic

2) Test hypothesis how amount of messages, logging and understandable influence on the result

3) Calculate possible scenarios
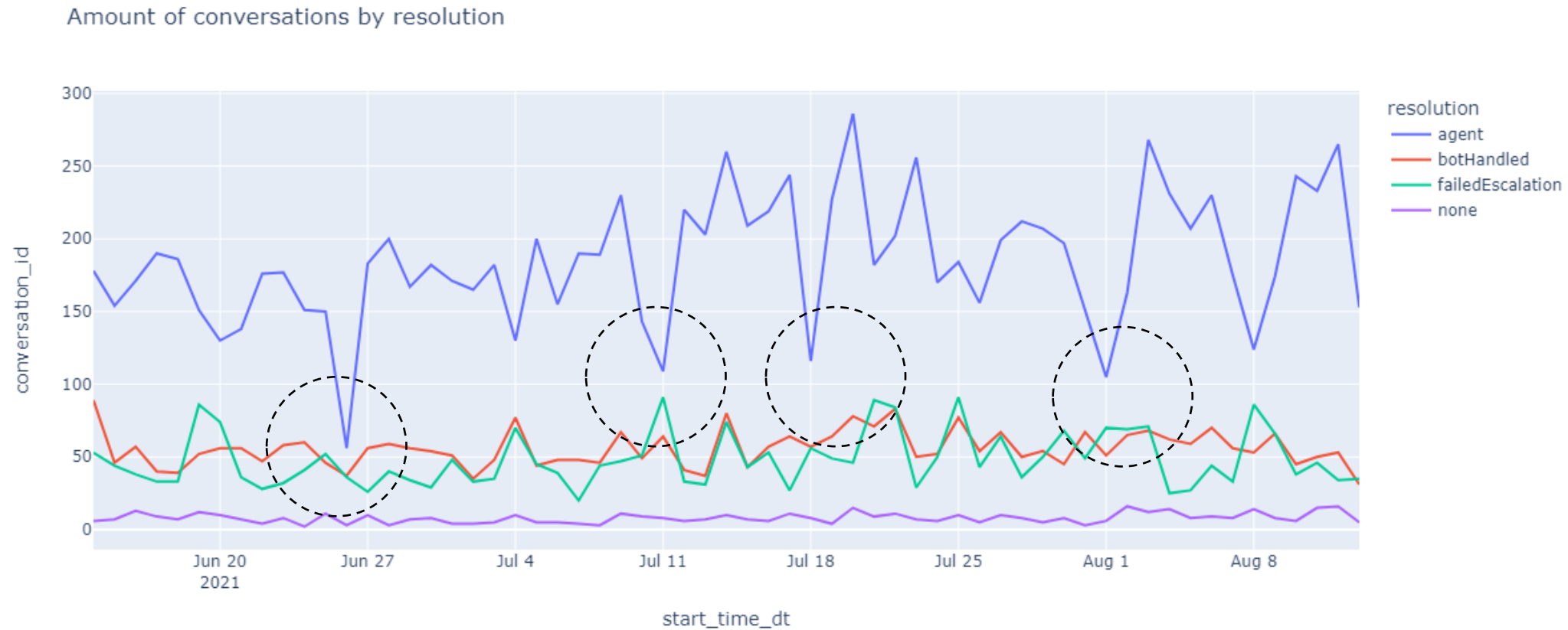
4) Suggest additional researches

Current KPI

Convertion to success and total conversations
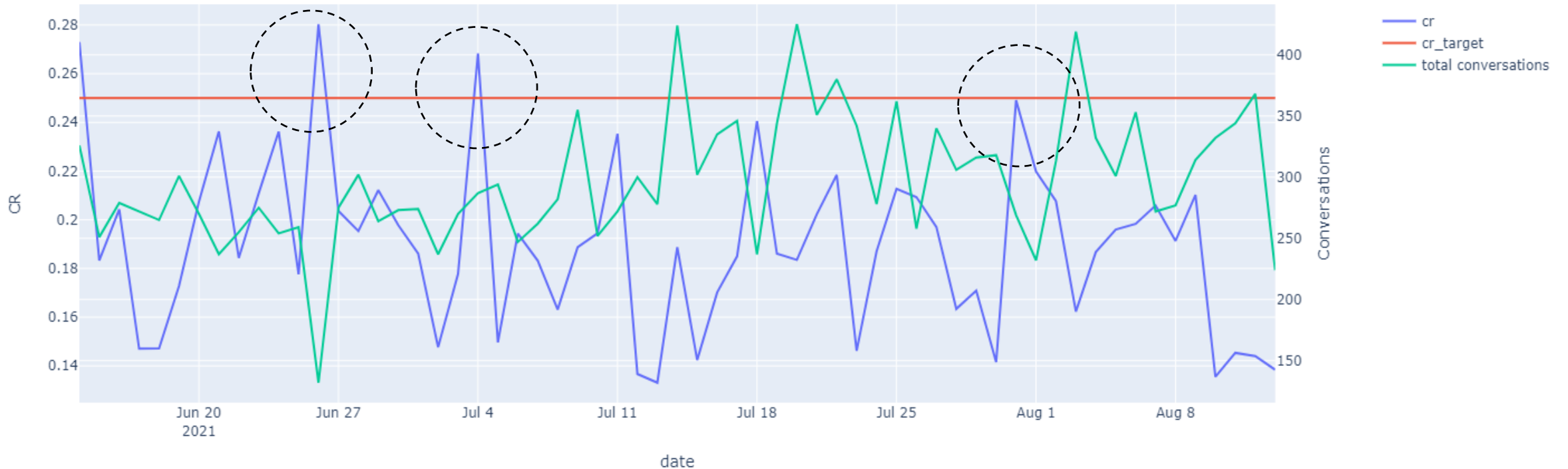
Current KPI level 19% (**-6 pp** to target) it is under target level almost at the all period

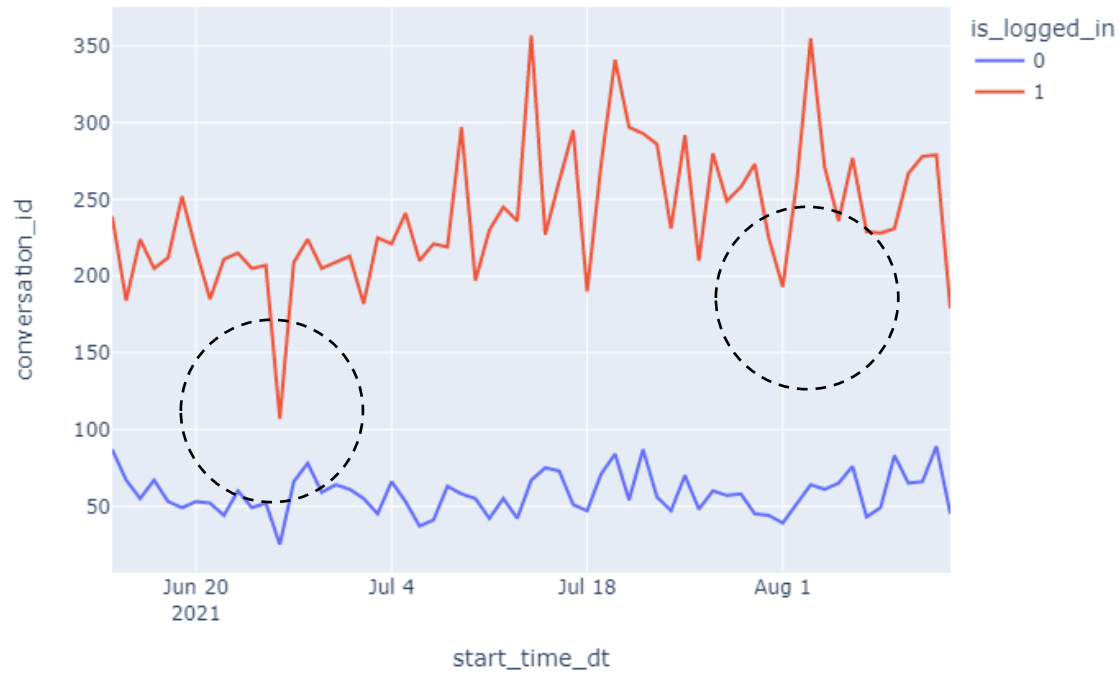At some days KPI exceed expectation, thus we need to research reasons

Dynamic research
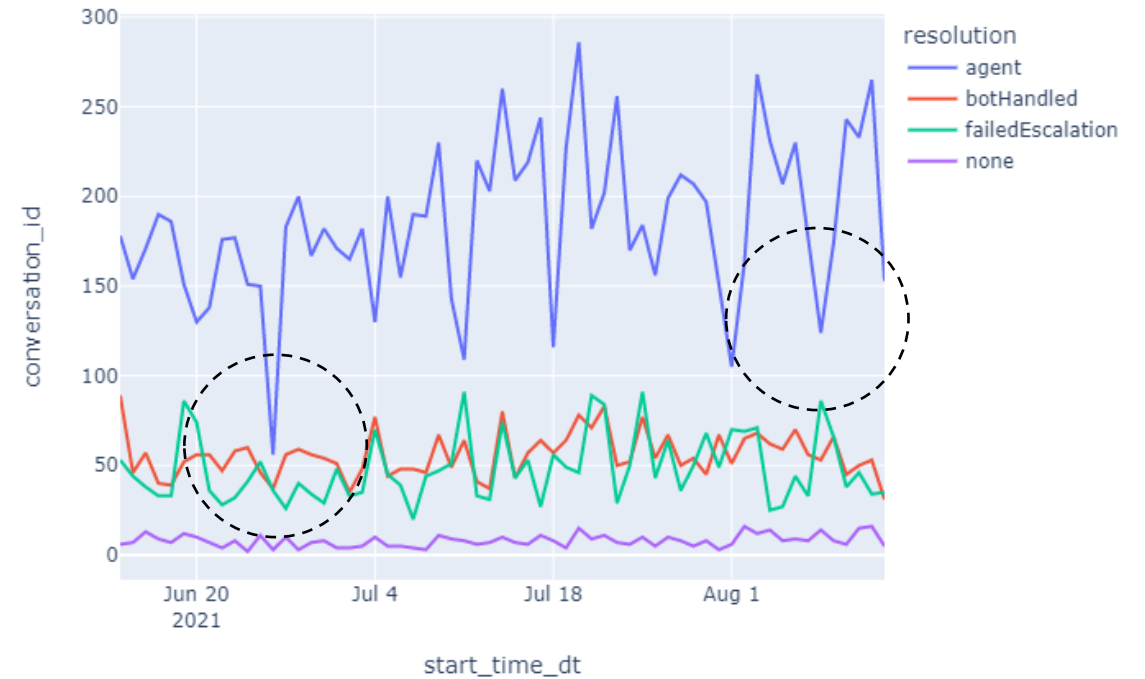
Amount of conversations by resolution

We can see at the same dates when we had KPI exceed there are drops in agent resolutions while handled status is quit stable all the time

Dynamic research

Amount of convertations by logged

Amount of conversations by resolution

There are drops of logged in conversations at the same date of agent resolution drops

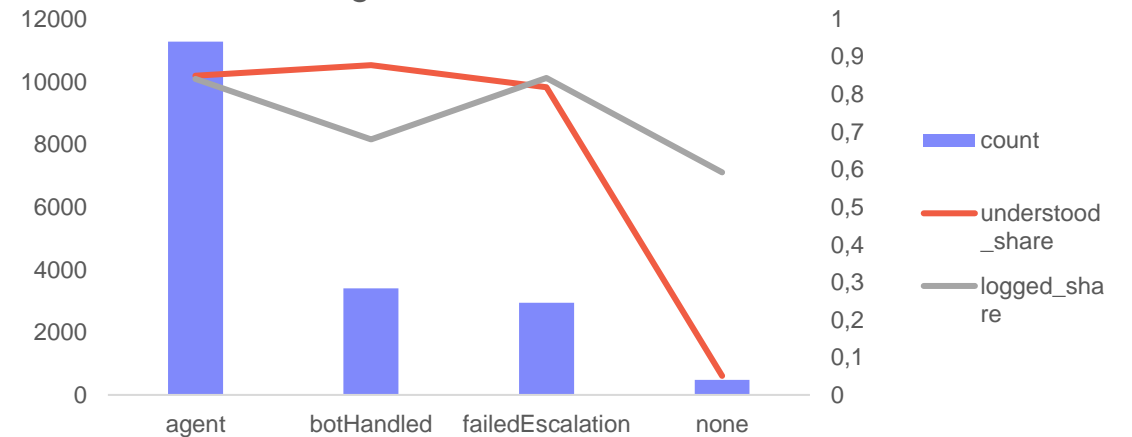Possibly logged in users prefer to use connection to agent

Structure

Totally we can see that biggest part of conversations are finished with agent contact while quit big amount are even failed. Thus first priority is to decrease failed contacts.

First insight is that among success connections bigger share of non-logged visitors while share of understand is almost the same. The biggest problem of none status is message recognition

Structure by resolution

- agent
- botHandled
- failedEscalation
- none

3%
16%
19%
62%
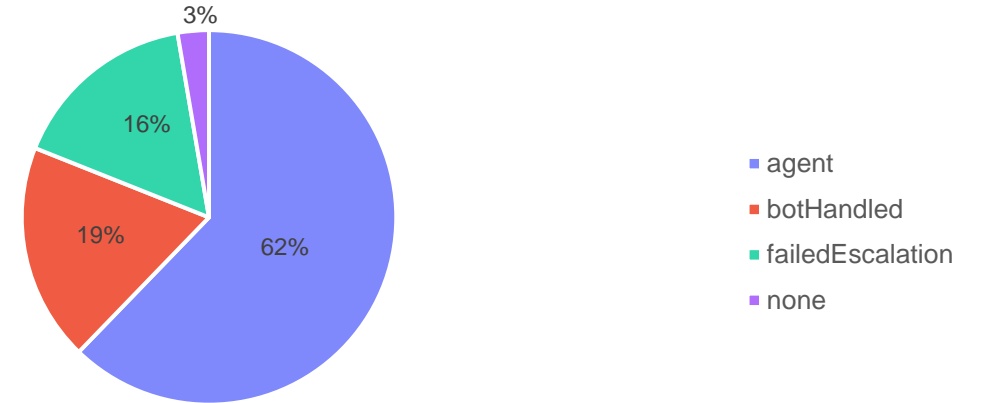
Login and understand share

- count
- understood_share
- logged_share

agent   botHandled   failedEscalation   none
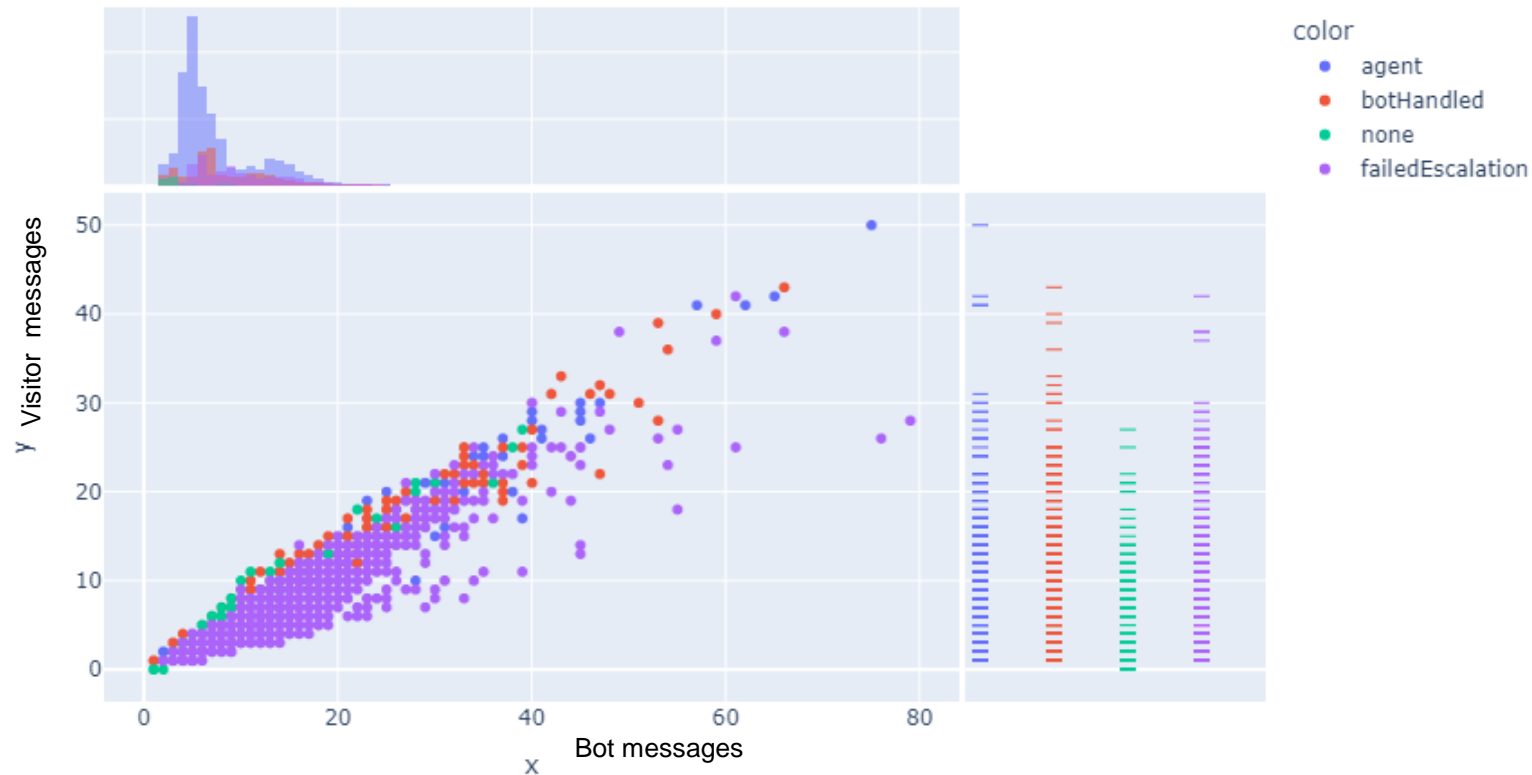
Attributes research

We have statistical significant difference in messages amount between different resolutions and if we compare only success resolution vs others there will be significant difference too.

Still there are not enough data to say that amount of message influence on the result, but we can assume that this factor may play role or overwise may be the result of success resolution

Distribution of conv by bot message amount
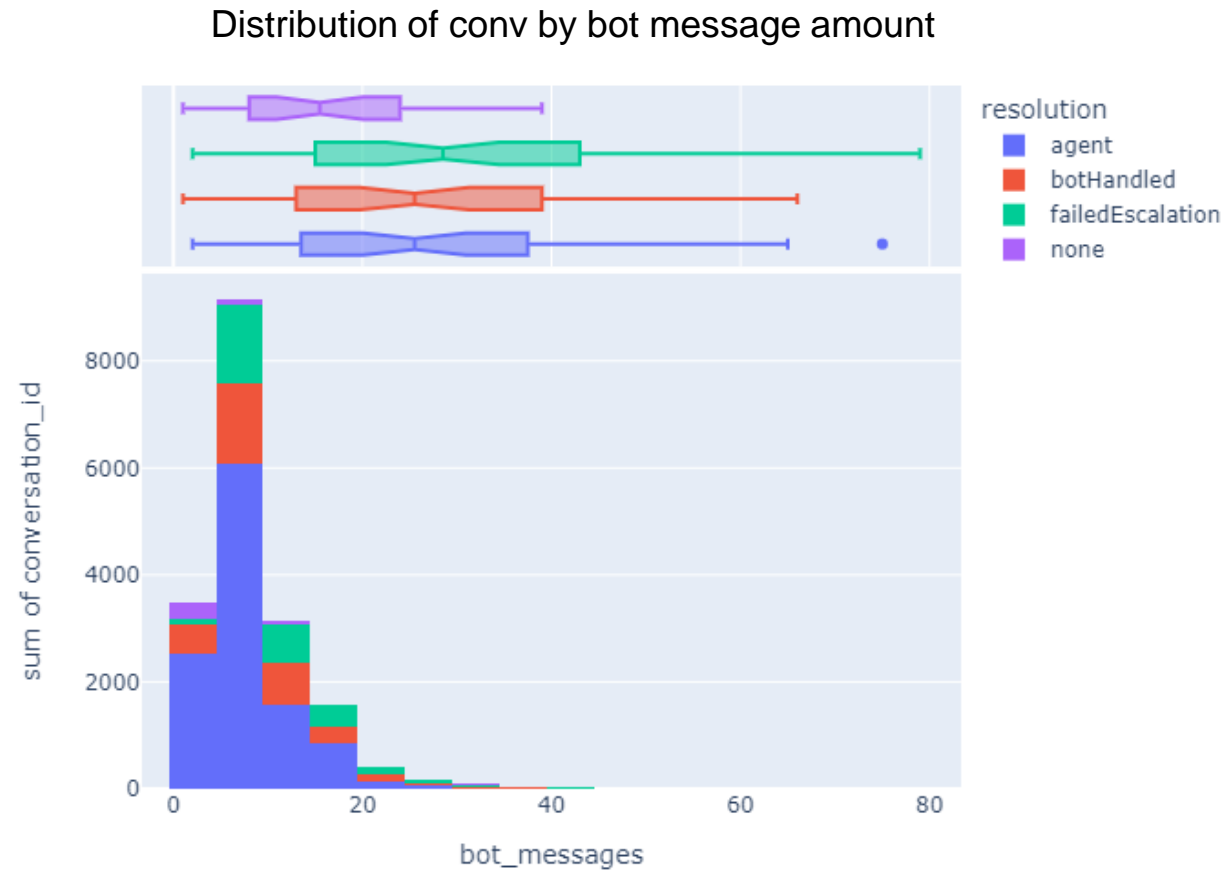
Attributes research
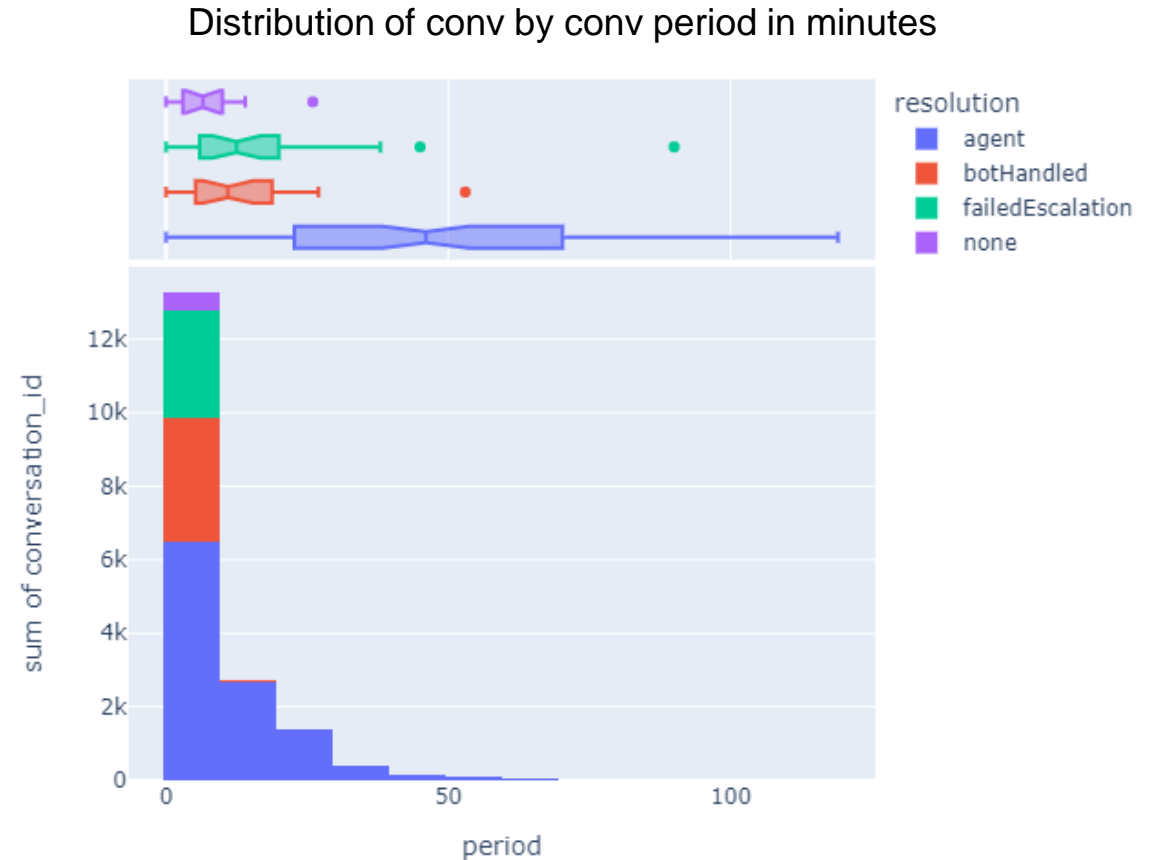

Correlation between visitors and bot massages

As a result we can see that it is really directly correspond. However in case of failed escalation amount of messages much more variant and bot write more messages than customers possibly it try to make connection with customer

Attributes research

Period of conversation is much differ in case of contact with agent. Possibly with is the result of waiting for agent response.
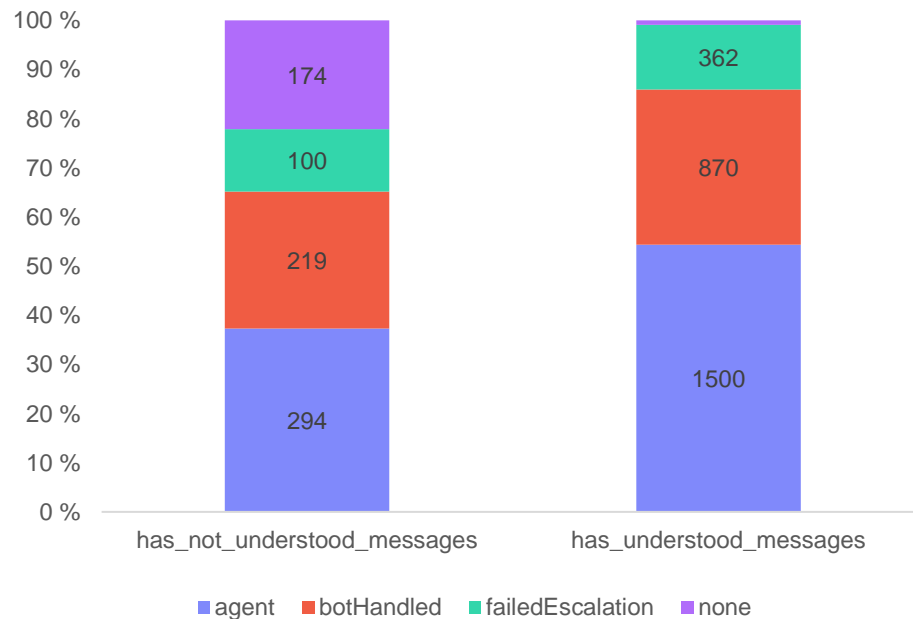
We can see how bot resolution allow to make conversation much faster

Failed conversation connection are also quit short possibly because customer do not desire to wait for response
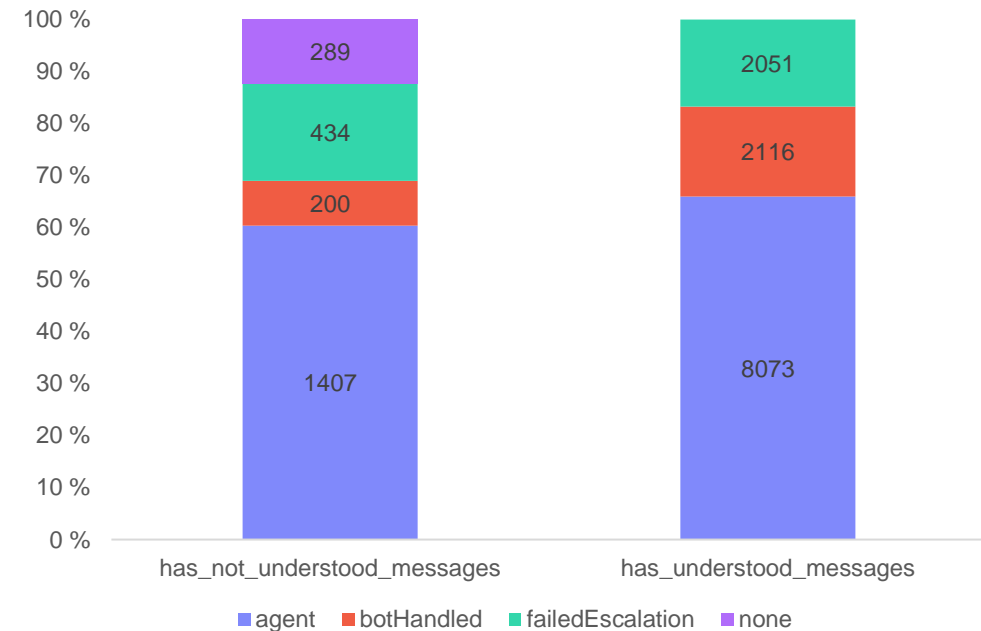

Distribution of conv by conv period in minutes

Attributes research

Not login structure by resolution and understand

	has_not_understood_messages	has_understood_messages
none	174	
failedEscalation	100	362
botHandled	219	870
agent	294	1500

Legend: agent ■ botHandled ■ failedEscalation ■ none ■

Login structure by resolution and understand

	has_not_understood_messages	has_understood_messages
none	289	
failedEscalation	434	2051
botHandled	200	2116
agent	1407	8073

Legend: agent ■ botHandled ■ failedEscalation ■ none ■
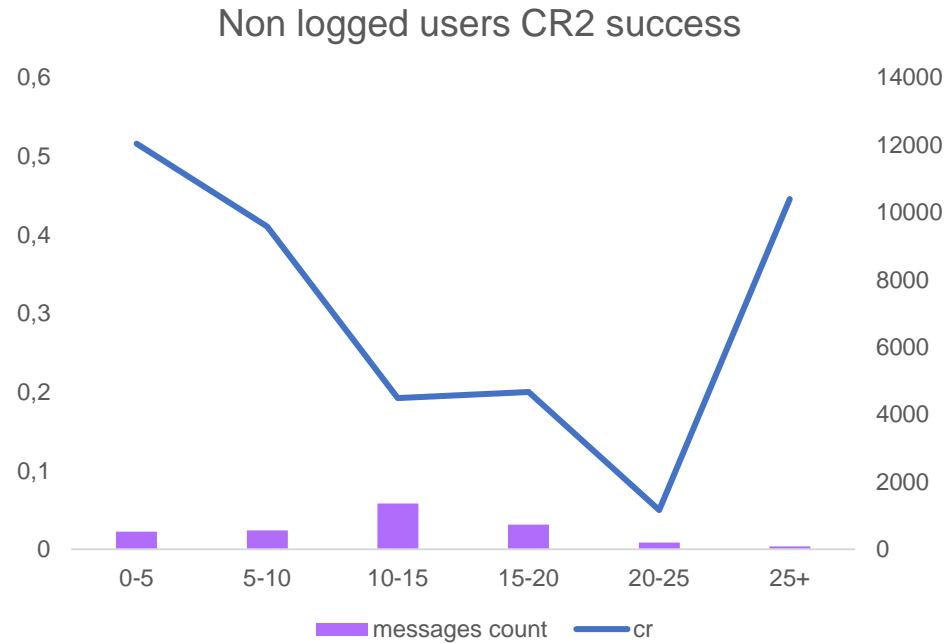
Again we can see that login users prefer to connect to the agent. Understand of the message also improve the success kpi but this factor is less important

Attributes research
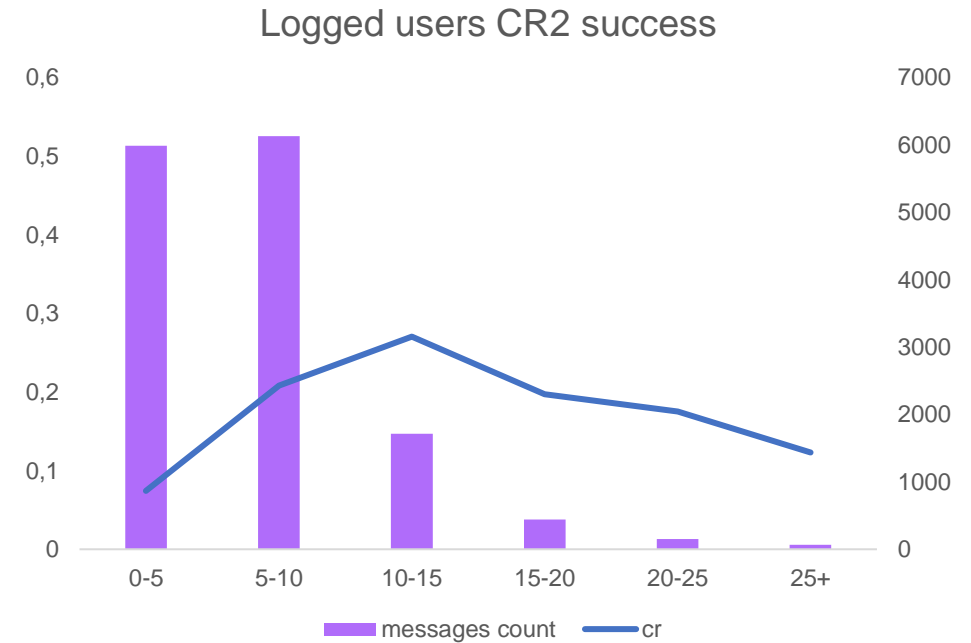
Non logged users CR2 success

Logged users CR2 success

Non logged users have a high success in the short conversations while logged users mostly prefer to turn to agent from the first messages and increase conversion to success in longer dialogs

Attributes research
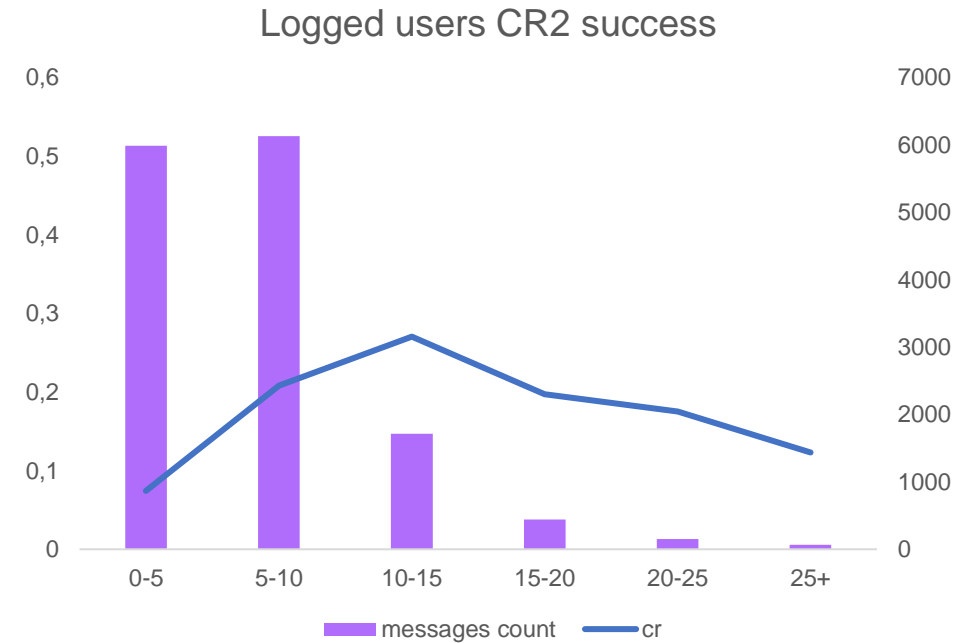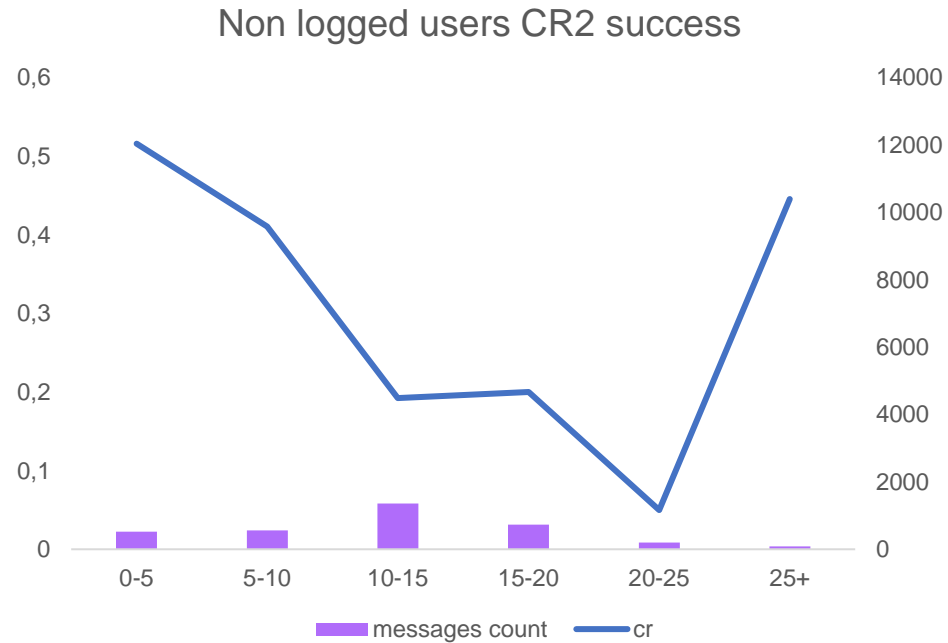
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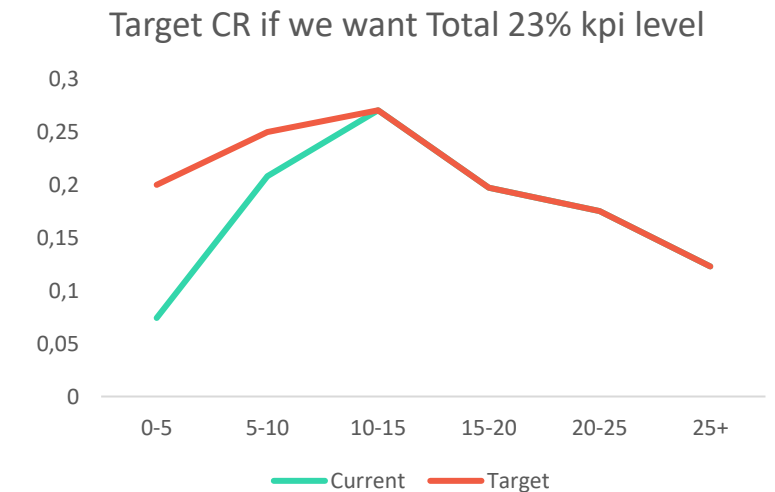
Scenarios

Scenario 1

Minimize None status messages by better recognition

Total messeges	18 114
Current success conv	3 405
KPI current	19 %
None status messages	488
KPI if we managed them	21 %

Scenario 2

Increase CR from first 10 messages for logged users in order to bring total CR of logged users at the 23% level

Total messages	18 114
Current success conv	3 405
KPI current	19 %
Non Logged users	3 544
Logged users	14 570
CR2 success among logged	15,9 %
CR2 success among non logged	30,7 %
If we improve CR amonged logged to 23% KPI will be	25 %

Target CR if we want Total 23% kpi level

Even if we absolutely exclude none status messages we will not achieve our goal.

There is also possible to use any combination of these scenarios.

Conclusions and suggestions

There are next possible **points of growth**:

- Improve CR to success for logged users from the very first messages

- Improve message recognition to minimize NONE conversation income

- Improve CR to success for non logged users in longer conversations

There are still a number of **open questions:**

- Why there were drops of logged in visitors conversations ?

- Why logged users prefer to contact to agent? Non-automated topics? Bad previous experience?

- How to improve message recognition?