Customer Support Efficiency

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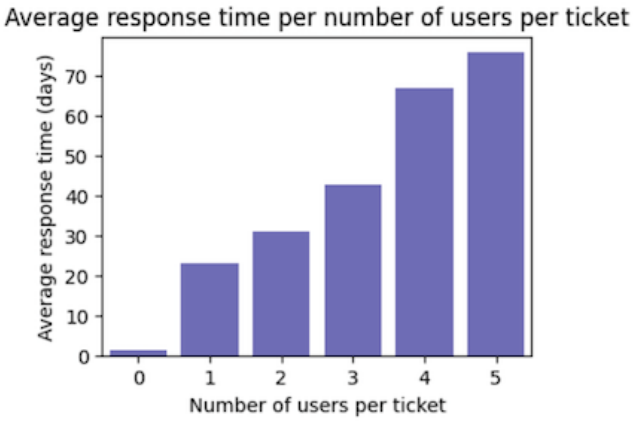
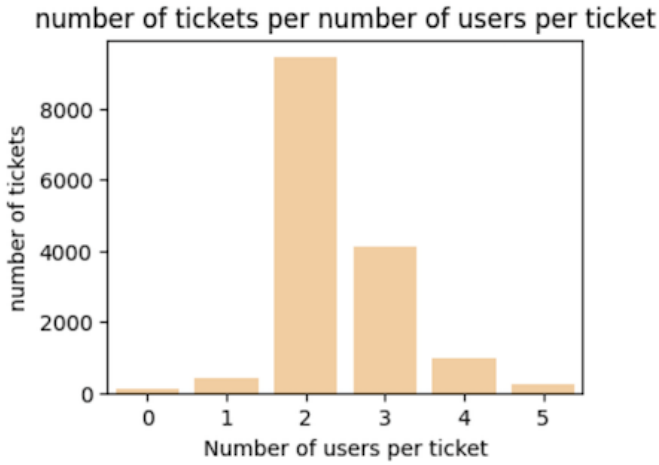
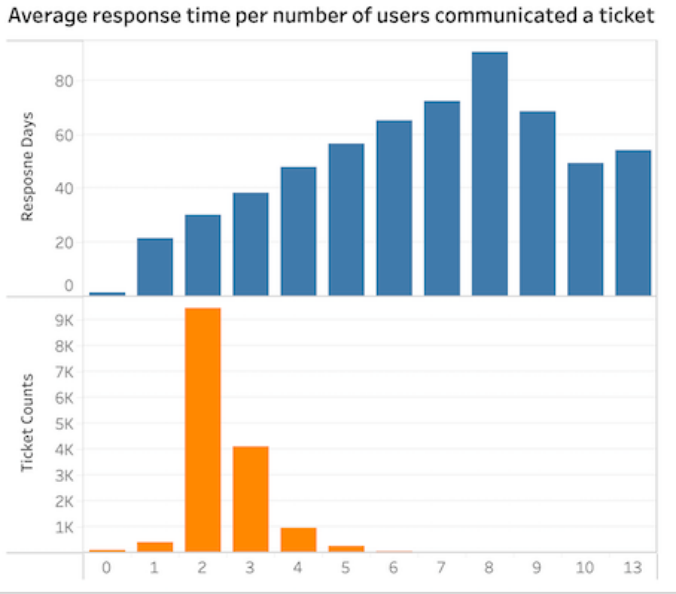
Last edited time	@May 21, 2025 6:29 PM

Note: In this context the average response(resolution) time refers to the average time needed for each category to complete the ticket and close the issue.

1. The number of users involved in each ticket vary from 0 to 13. It means different individuals communicate the assignee for the same topic. Does this delay the average response time? Yes.







This second figure was generated by excluding the outliers (>365 days) and also containing all number of users category.

- The number of ticket in each category is different and this may have impact on the average response. Three categories 2, 3 and 4 has 1000 or more tickets.
- Comparing the tickets communicated by 2 users and 3 users, there is an increase of 12 days for average response days and 36 days when communicated by 4 individuals.
- To rule out the effect of ticket numbers per category, I samples 3 independent dataframes of size between 4000 and 5000 rows from 2 users category and checked the average resolution time. The values are between 30 and 31 days, similar to the bigger dataframe.
- The 108 tickets with 0 users have no assigned person to handle them, they have all been deleted and have a subject label of ‘SCRUBBED’.

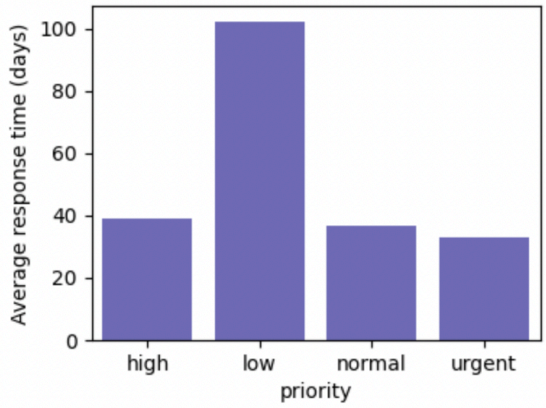
Possible Solution:

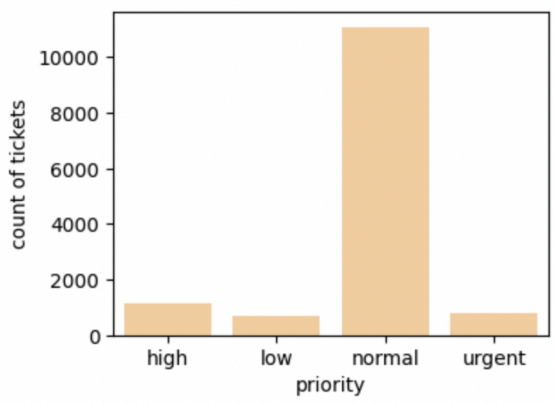
- A communication platform that restricts the number of unique users interacts the same ticket to 2 or 3 may improve the response time by >25%

Outlook:

- Communication by a single user further reduces the response time however, only ~400 tickets are included. So, for better comparison take multiple random 400 samples from 2,3, and 4 and compare if the difference it true.

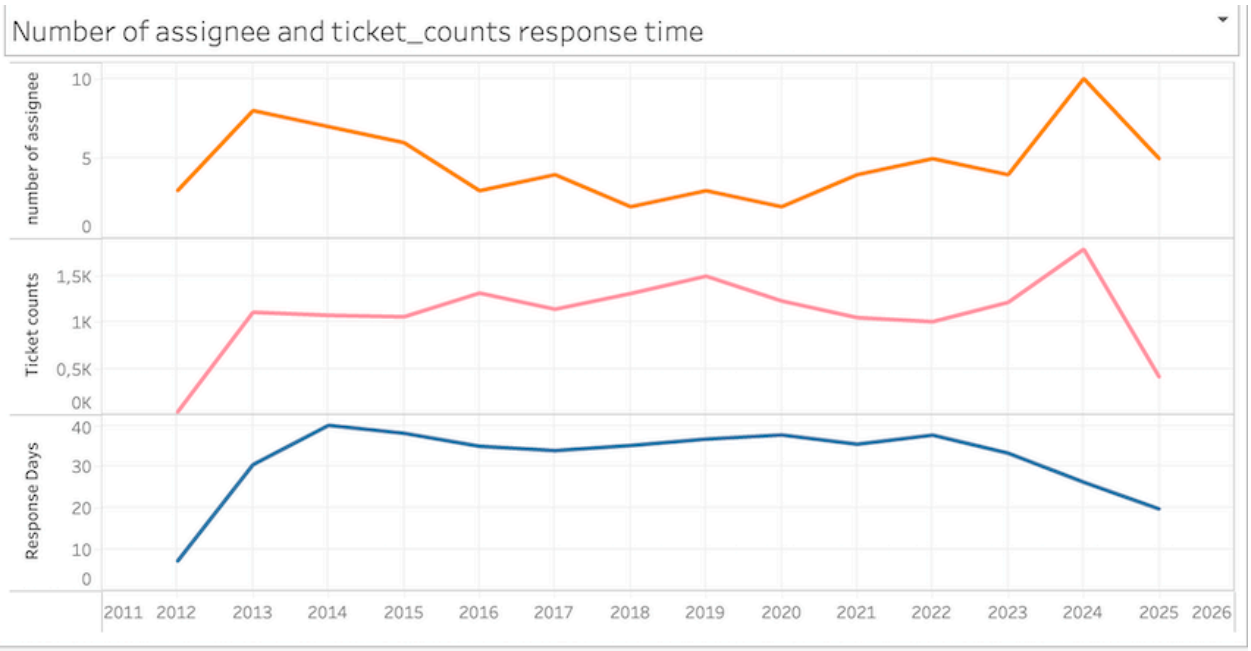
2. The priority of the tickets was also examined for possible effect on response time. Does setting the ticket to high priority increases the time of resolution?





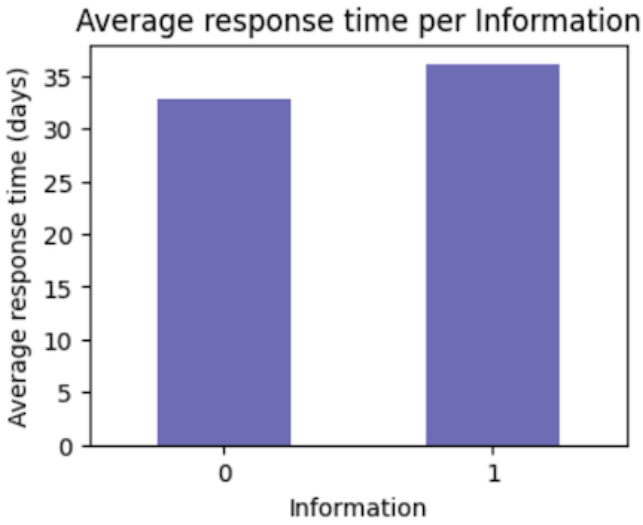
- Setting the priority to as urgent does not significantly affect the resolution time.
- Similarly, high priority tickets, surprisingly, did not improve the response time over the normal.
- Low priority ticket takes nearly 3x more time for resolution that the normal tickets.

3. The number of assignees available and the amount of request on the response time.



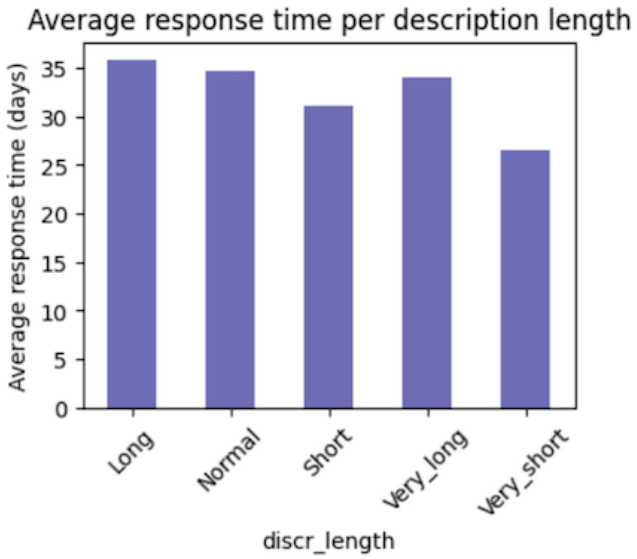
- The variation in response time is not due to the assignee that handles the case. For example, an assignee who handled 450 tickets took a similar response time to another assigned with 250 tickets per month.
- However, the number of assignee present per year seems to have some impact. In the years between 2016 and 2020 there were 2-4 assignees and the average response time is ~35 days. After 2020, the assignee number increased to 10 in 2024 and response time reduced to 26 hours while the ticket number also shows an increase by ~30% in 2024.
- Each ticket was handled by a one assignee and one group in the entire process, excluding the possibility that the issue is started from the beginning.

4. With the assist of ChatGPT, I identified words which have been mentioned most frequently in the description feature such as 'please', 'regards', 'text', 'license', 'server', 'new', 'information' etc. The average resolution time of the issue is not considerably affected by the use of these words.



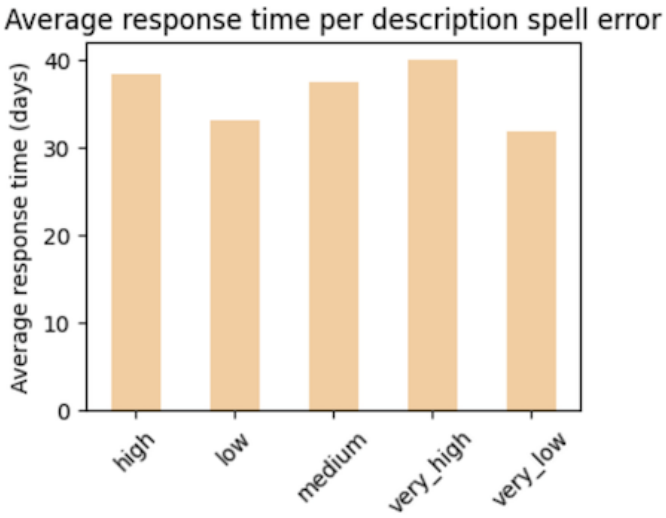
5. Does the length of the description influence the resolution time of the issue?

- The character length of the unmasked description was determined and categorised as ‘very_short’, ‘short’, ‘normal’, ‘long’ and ‘very_long’ on 5, 35, 65, 95 percentiles as ranges.
- The very_short description length of less than 160 characters reduces the response time by 20% compared to the very_long descriptions.



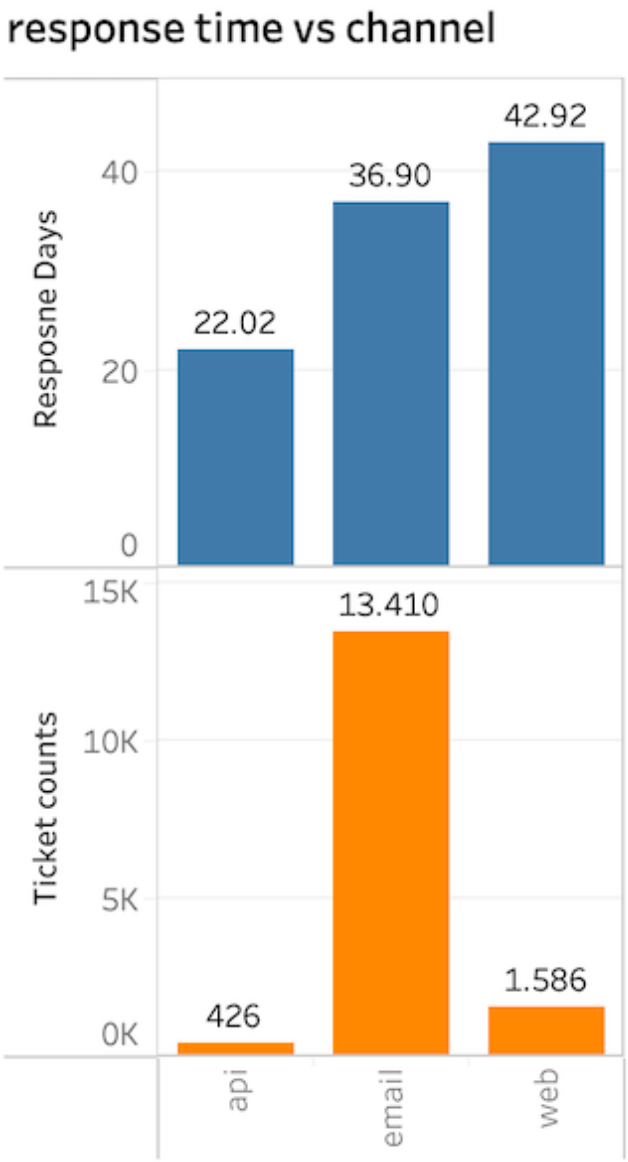
6. Does the readability of the description influence the resolution time of the issue?

- Using the python spell checker tool the number of spelling errors was counted in the description of each ticket.
- The errors were categorised as very_low, low, medium, high and very_high based on 5, 25, 50, 75 percentile ranges.
- Very low errors of less than 6 per description reduces the resolution time of an issue by ~20% when compared to a description with very high error of 32 or more per description.



7. Does the channel in which the issue submitted affect the resolution time?

- A total of 7 seven different channels are used to communicate issues. However, only api, email and web have been used 450 or more times.
- The resolution time reduced nearly by 50% when api is used compared to the web channel.



SUMMARY

The ticket resolution time is considerably affected by

- number of users per ticket
- number of assignee present per year
- the length of the description in the ticket
- the readability of the description
- the channel in which the issue is communicated.

These factors could be combined to create an optimum condition that considerably reduces the resolution time of a ticket.