

Zapier Interview – Peer Document

Analysis of Active Daily Users and Churn

Overview

The goal of this analysis is to illustrate the relationship between monthly active Zapier users and churn while pinpointing areas of opportunity for the business to reduce churn or maintain/increase retention. I used a mixture of R and SQL to approach this problem because they are the languages, I'm most comfortable using.

For this analysis, I looked at the tasks used table with the following attributes:

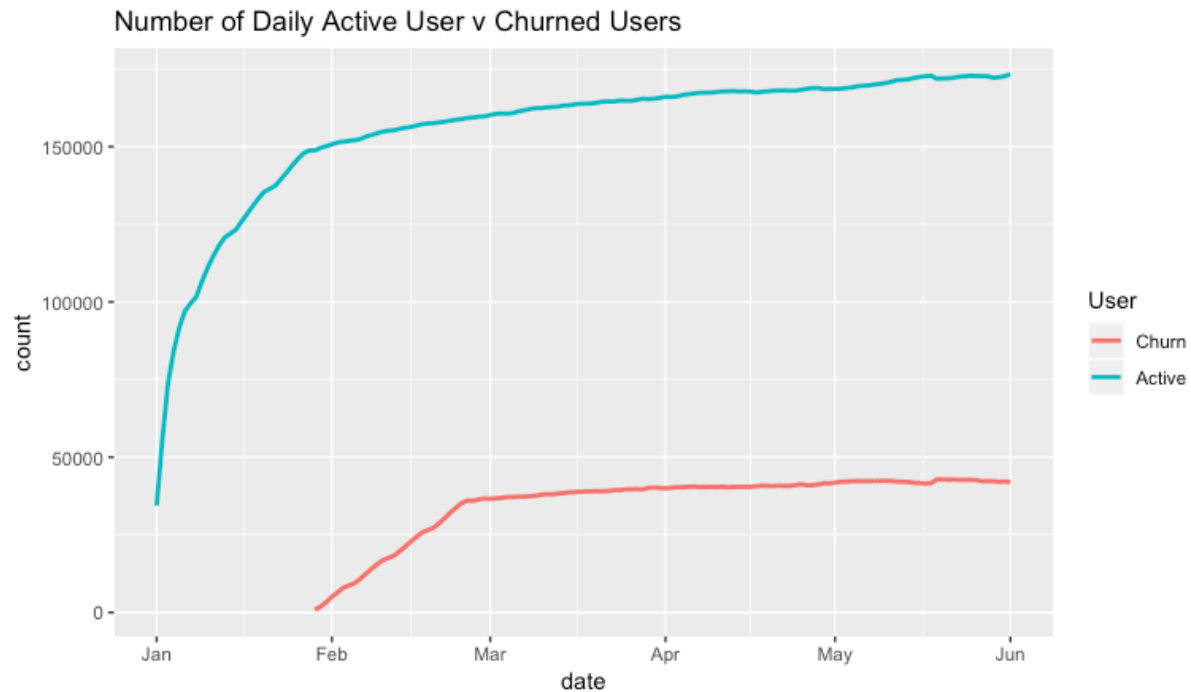
- **Data Timeframe:** 01/01/2017 – 06/01/2017
- 10,547,587 rows of data
- 319,573 unique user IDs
- 315,777 unique account IDs
- 21,823 users with 0 tasks for the time period

Considerations

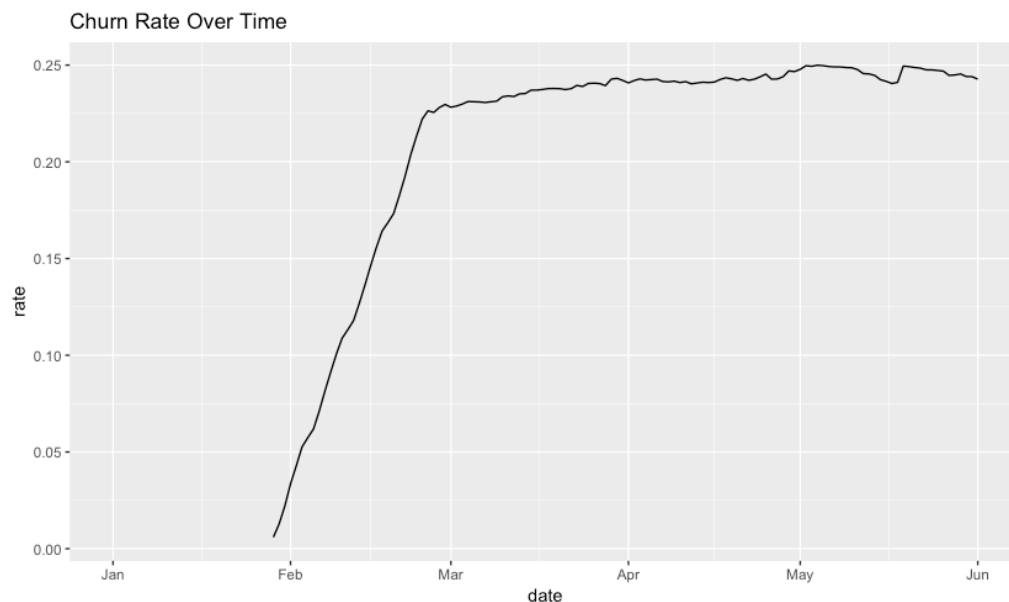
1. Since the goal is to investigate the relationship between active and churned users, I'm removing users who never had any tasks recorded during the time frame. They were technically never active and therefore would not be able to churn.
2. I did see an account ID with the value -1. Since the data for the users looks reasonable, I'm leaving this data in the analysis.
3. My approach was to identify periods of time by user where each user was active then cross reference those time frames with inactivity. The periods of inactivity represent when users contribute to churn. Using these intervals, we can count by day the number of active and churned users.
4. Since I wanted to prioritize business insights, I focused on characterizing users by activity in order to draw some distinctions between people who never churn and those who do and those who do and then re-engage.

Stakeholder Analysis

For this analysis, I wanted to start out with a general look at the number of daily actives against those that contributed to churn for that day. While both lines have a sharp increase initially, the number of daily active users is increasing over time. The number of users contributing to churn appears to be stabilizing over time.



This stabilization in daily churn can also be seen when looking at a daily snapshot view of the churn rate.



For this analysis, I focused on not only users who leave, but also users who never churn. It's helpful to start this look at users by not solely focusing on users who leave. If they leave, they might never come back. Rather than prioritizing re-engagement, we should focus on what characterizes a user who never churns and encourage those qualities in other users through business intervention.

We can do this by looking at our users defined as three separate groups.

- 1. Active Users who Never Churn**
- 2. Active Users who Churn and Re-Engage**
- 3. Active Users who Churn and Never Come Back**

Active Users who Never Churn

- On average, they have a higher number of average tasks per user at ~60 tasks per user.
- They seem to be more consistently engaged with the mean time between tasks of about 3.1 days.
- There's almost a 1-to-1 relationship between the number of billing accounts and users. However, of the ~200 billing accounts with multiple users, about 130 accounts are associated with users that never churn.

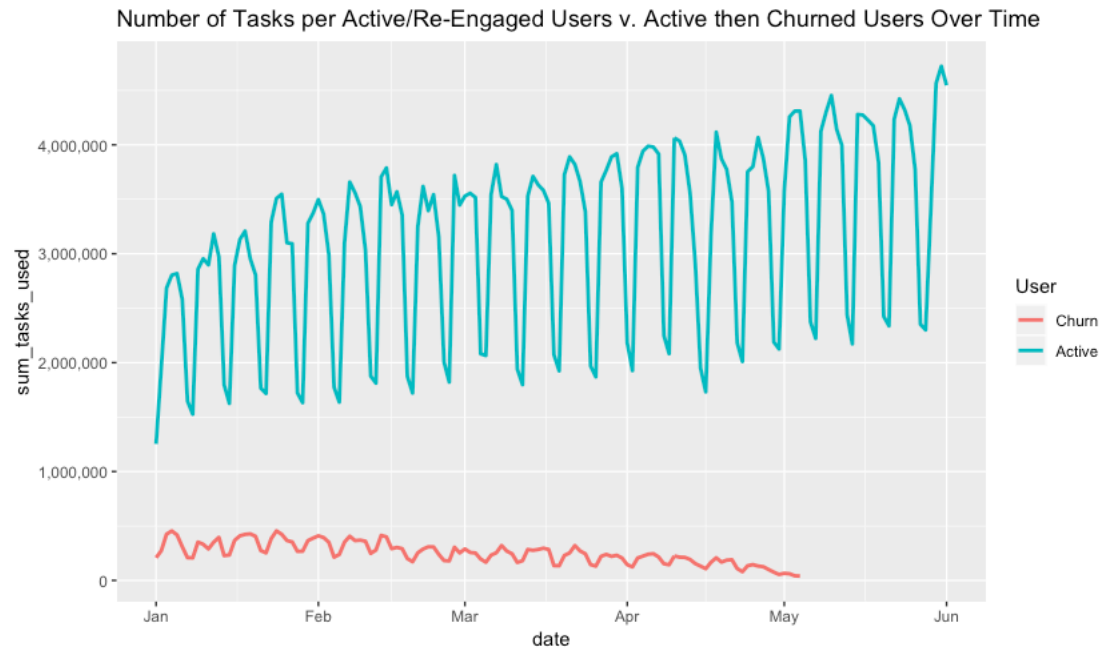
Active Users who Churn and Re-Engage

- On average, they have a higher number of average tasks per user at ~17 tasks per user.
- Their engagement is pretty consistent as well with the mean time between tasks about 3.4 days.

Active Users who Churn and Never Come Back

- On average, they have a higher number of average tasks per user at ~27 tasks per user.
- Their engagement is pretty consistent as well with the mean time between tasks about 3.5 days.

The differences in tasks per user between these groups can be seen better when visualized.



Specifically notice the drop off for active users that churn never come back. There's an overall downward trend in their activity.

Recommendations

Expand the number of users per billing account by perhaps offering multi-user discounts.

Educate existing users on how to create more app integrations in order to increase the number of tasks per user.

Create a marketing campaign that targets users when they haven't performed any tasks after 3-4 days to see if they can be re-engaged.

Additional next steps

I would recommend further analysis of re-engaged users specifically. I would like to understand on average how long it takes for them to come back and what type of activity drop off occurs before they churn. This might help inform marketing efforts. For example, more data pertaining to individual users could be helpful in understanding churn. Additionally, a time series analysis of churn over time may reveal underlying seasonality or trends. I would improve the process documentation and expand on my initial findings.