Investigating a Drop in User Engagement - SQL Project

Introduction

This project uses data from Mode website, about a company called Yammer a bit of info about the company from the Mode website:

Yammer is a social network for communicating with coworkers. Individuals share documents, updates, and ideas by posting them in groups. Yammer is free to use indefinitely, but companies must pay license fees if they want access to administrative controls, including integration with user management systems like ActiveDirectory.

The problem we are investigating:

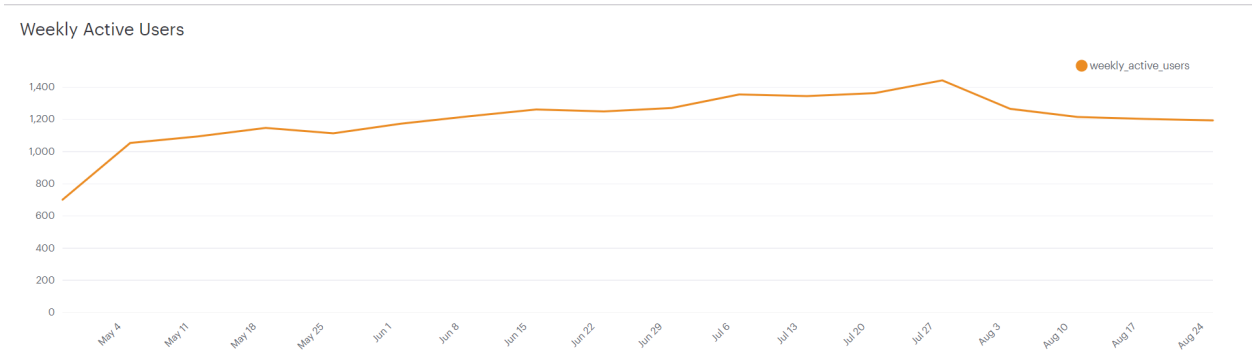

Figure 1. Weekly Active Users

A noticeable drop in engagement starting around the end of July and the beginning of August on Yammer.

Note: Yammer defines engagement as having made some type of server call by interacting with the product (shown in the data as events of type "engagement"). Any point in this chart can be interpreted as "the number of users who logged at least one engagement event during the week starting on that date."

Hypotheses

- **Issues with the Program:**

  Considering that bugs are common in applications and websites, there is a chance a bug is making the use of the program uncomfortable or an important feature is malfunctioning and causing retention issues with users. Approach:

  1. Check all activities to see if there is a dip in a specific activity to identify the issue.
  2. Investigate user feedback during this period. If there are any reported issues, bugs, or discomfort with new UI changes, address these concerns promptly to help regain user confidence and boost engagement.

- **Seasonal Factors / Cultural Events:**

  There might be a decrease in work output due to workers taking summer holidays in August or due to cultural events during this time. Approach:

  1. Check logging trends around the dip time period.
  2. Examine email engagement.
  3. Consider looking at historical data from previous years to see if there is a recurring pattern during this time. If there is a correlation with holidays or cultural events, it might explain the drop in engagement.

- **Layoffs in Companies:**

  A significant loss of workers in a company can lead to a dip in user engagement. Approach:

  1. Check the number of user IDs.
  2. Investigate if there is a correlation between user engagement drop and specific companies that experienced layoffs. Analyze data related to user creation and user activity to identify any trends or patterns that coincide with layoffs.

Solution

1. First we start by checking the growth of users on the platform, as its the fastest and easiest to start with:

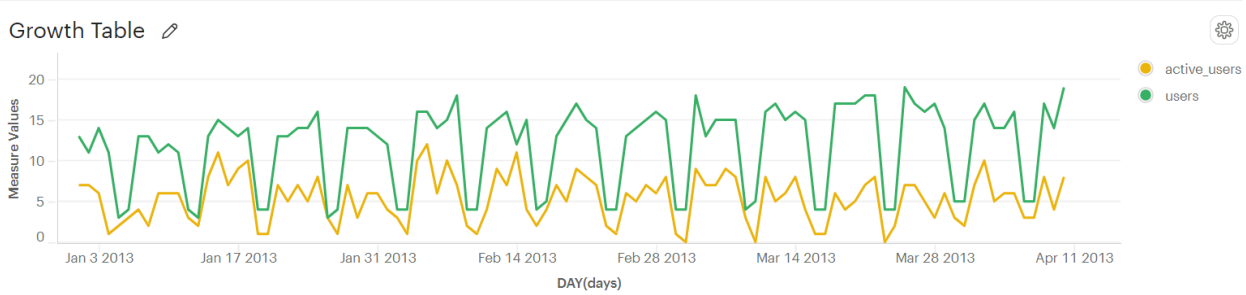

Figure 2. Growth Table

The growth seems to be behaving normally around the end of July and the beginning of August, high during the weekdays and low during the weekends. Therefore we can conclude that the issue is related to current users of the platform.

2. Next we will check the activity of the current users of the platform, we will separate them into groups:

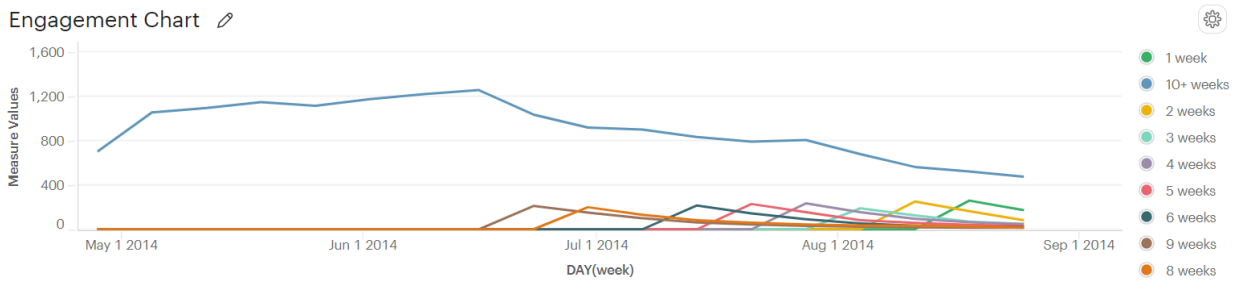

Figure 3. Engagement Chart

The engagement seems to dip for users whose age is 10+ weeks, therefore we can conclude that older users seem to suffer from retention issues while using the platform.

3. The issue seems to mostly be with older users, thus we will look into engagement with different device types:

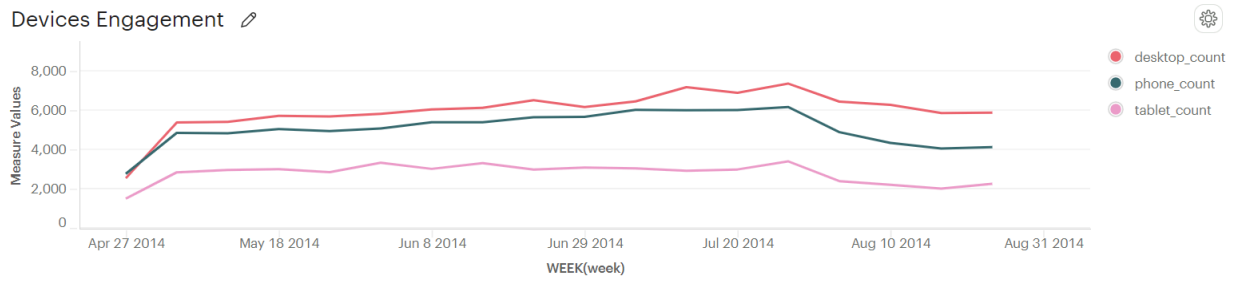

Figure 4. Devices Engagement

We can notice a drop in all different device types around the end of july and the beginning of august, for desktop the drop was ~12% (7344 to 6426), for phones it was ~20% (6149 to 4869) and tablets ~30% (3378 to 2373). Thus we can conclude that the biggest decrease in engagement was with users using the app whether it's on their phone or tablet. There must be an issue with app retention with older users of the platform.

4. Now we will check the email engagement for users:

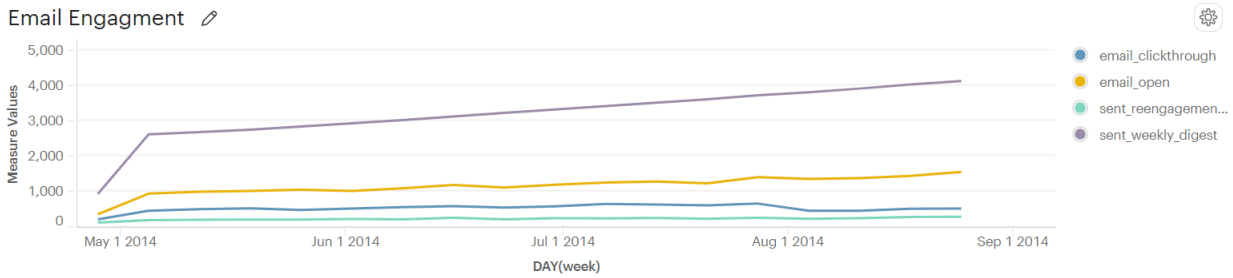

Figure 5. Email Engagement

We can immediately notice a drop in email clickthrough ~31% (633 to 432), it seems there is an issue with engaging the audience with the emails, which might have been one of the issues.

5. We will investigate the emails engagement a bit more and create a chart with kpis:

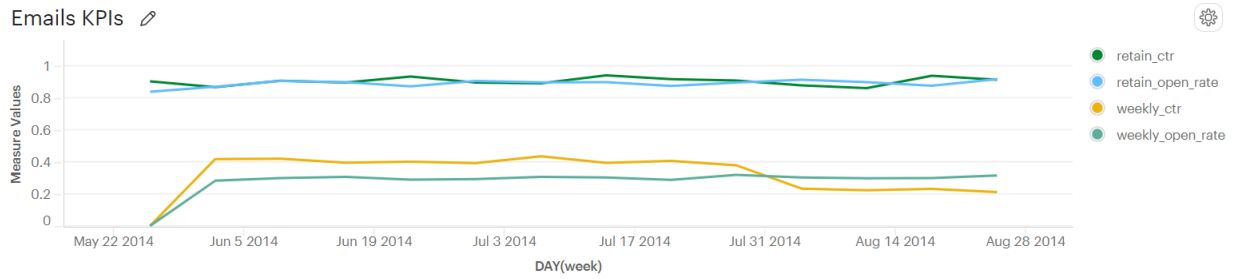

Figure 6. Emails KPIs

From figure 6 we can notice that the reaction CTR (click through rate) seems to be stable, the same for retain open rate and weekly open rate. As for weekly click through we can notice the same drop we noticed before.

Conclusion

We can conclude that the primary issues are within the Yammer application and email CTR. The significant drop in engagement on mobile devices and email clickthrough rates indicates these areas should be the focus of our efforts. This information should be taken to the product team to direct attention and resources accordingly.