# Drop in User Engagement

The problem

The head of the Product team walks over to your desk and asks you what you think about the latest activity on the user engagement dashboards. You fire them up, and something immediately jumps out.

The below chart shows the number of engaged users each week. 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."

You are responsible for determining what caused the dip at the end of the chart shown above and, if appropriate, recommending solutions for the problem.
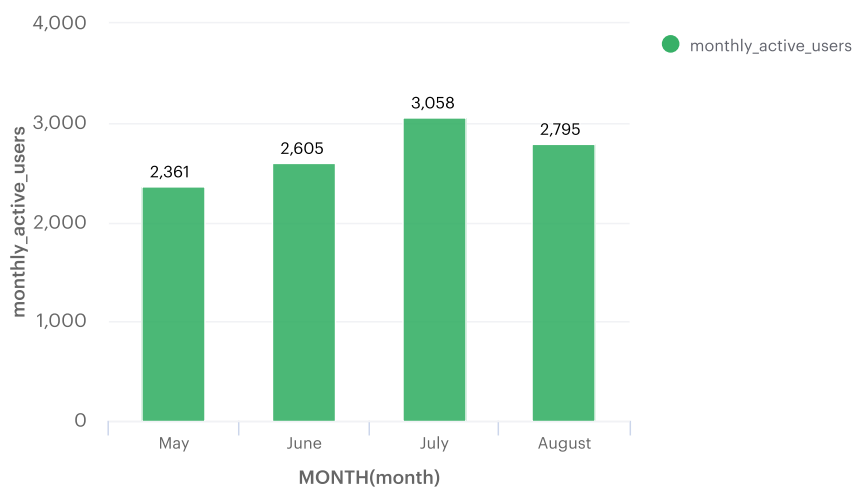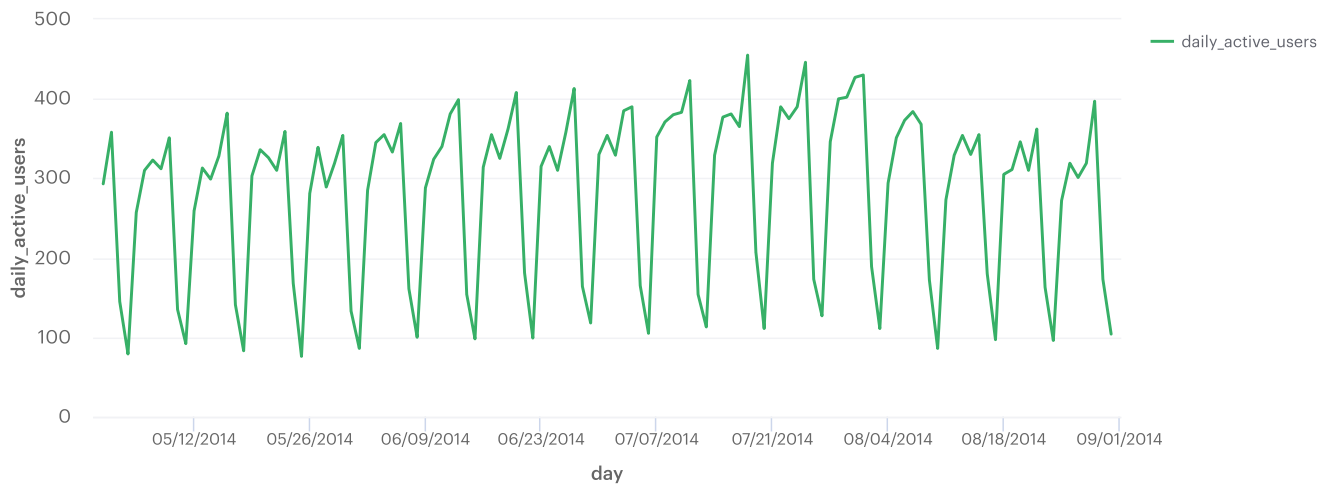
Weekly Active Users
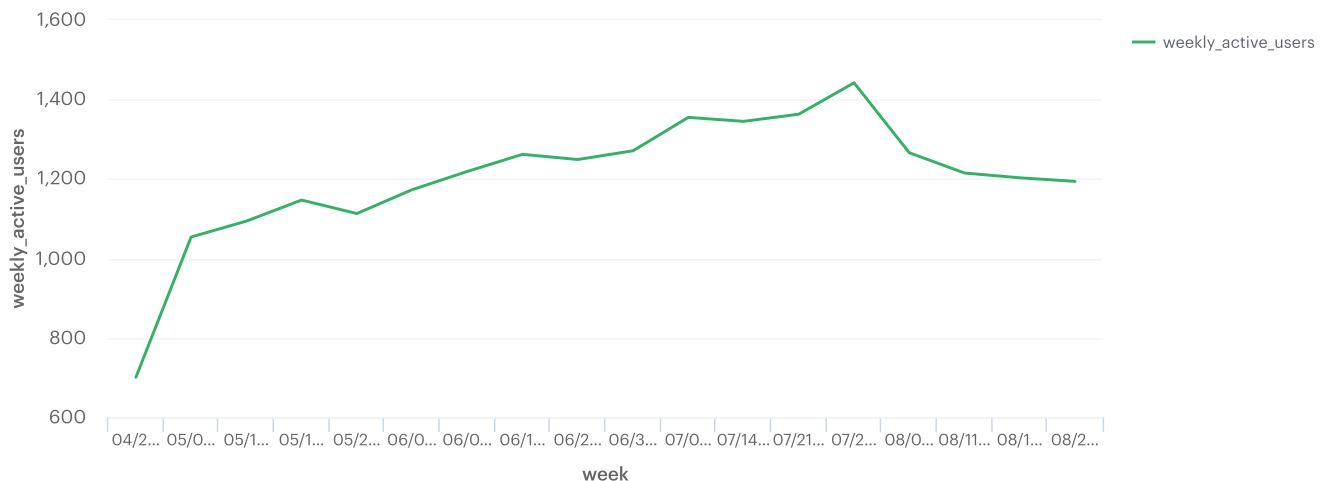
Initial Hypothesis : Holiday or Vacation

There is a user drop-off in the first week of August. Because the data is from the summer, it could be the reason that there are less number of users than usual which caused the dip. So, let's observe the active users monthly and daily.

Monthly Active Users

Daily Active Users

After observing the active users monthly its keen that holiday is not showing an impact on the user engagement which lead us to further questions like whether the dip is caused by old users or the new users. We can find this out by investigating the new user signups.

Where as the daily active users chart showed us that the user engagement growth hasn't changed much, which always remained high during the weekdays and low during the weekends.

So, Let's further analyze the trend of new user signups weekly and email usage of existing users.

Weekly Signups
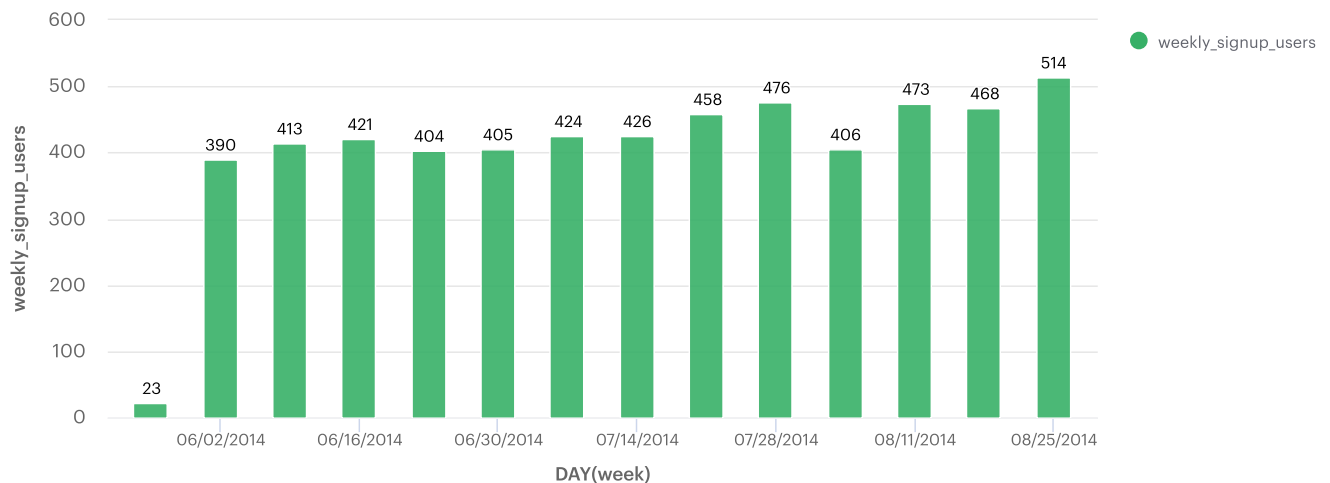
The weekly signup chart clearly shows that there is a sudden dip in the new user signup during first week of August which raises further questions about what changes might have happened during that week.
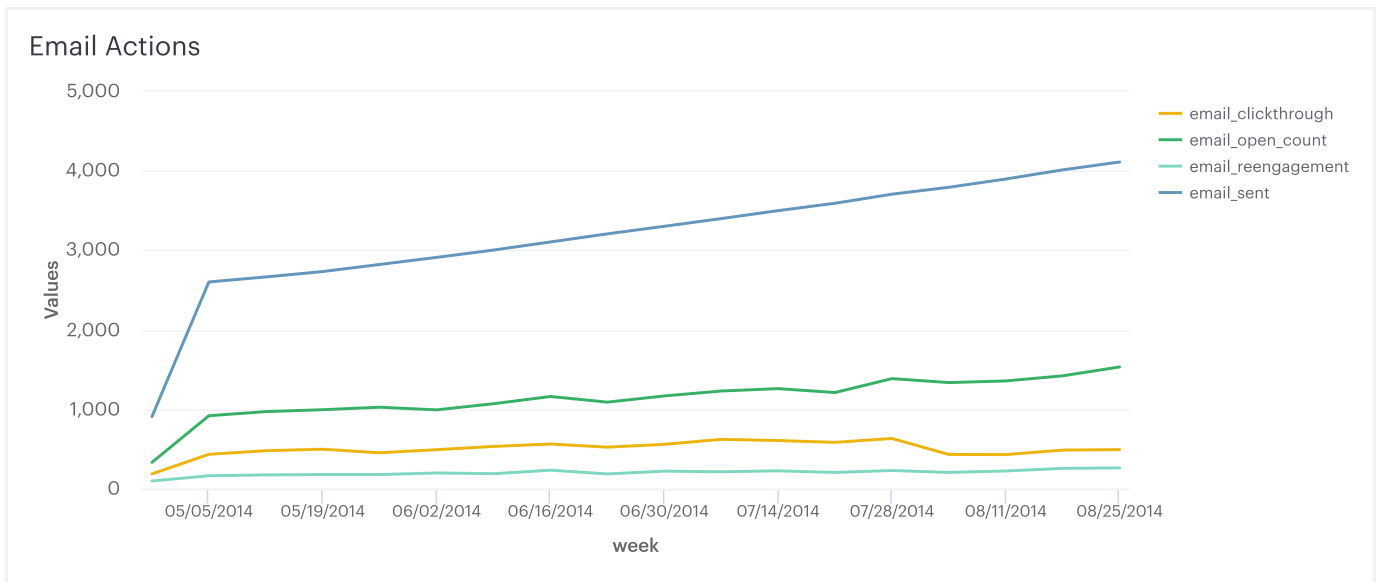
Email Actions

After investigating the email actions of all existing users, the email sent, open and reengagement seems to follow the previous trends where as email clickthroughs deviated with a sudden dip since first week of August.

This hints that some feature might have broken or crashed. Based on existing data, the best way to find out the broken feature is to observe the usage of devices as the features vary from one device type to another.
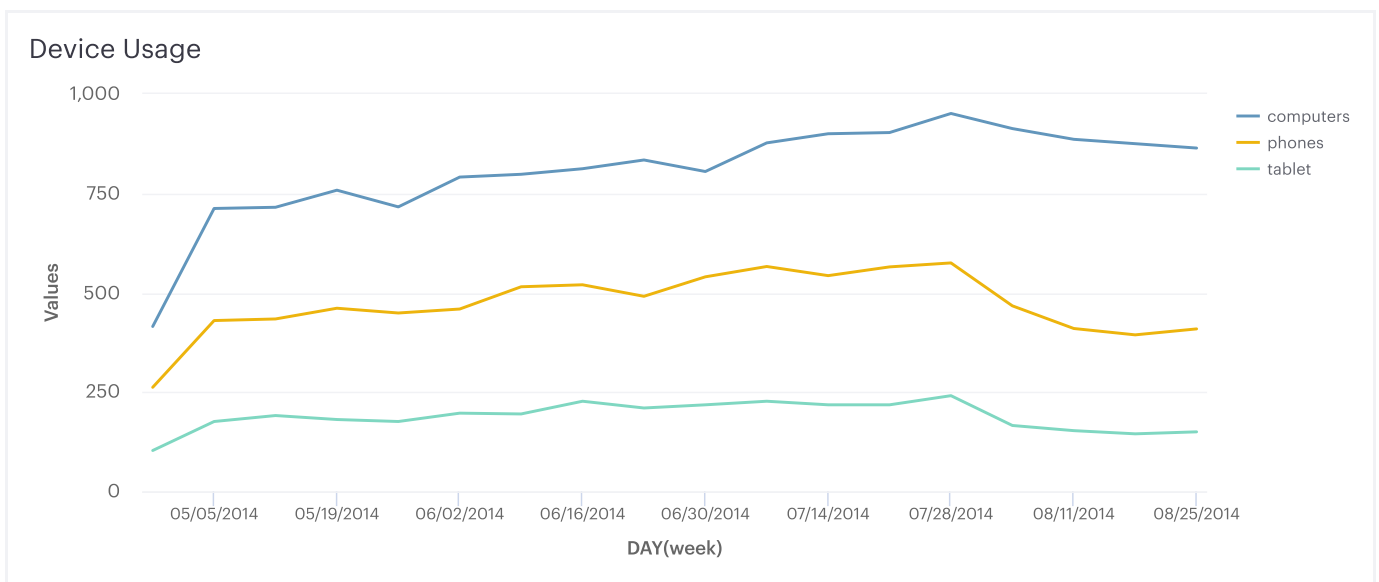
Device Usage

In Device Usage chart, the decline in usage of phones and tablets is quite evident suggesting that some feature related to mobile site or application is broken or crashed.

If I was an analyst at the company I would first like the company to test any updates or changes made on mobile applications and websites before implementing them, because mobile sites are much sensitive to changes as compared to desktop sites.