

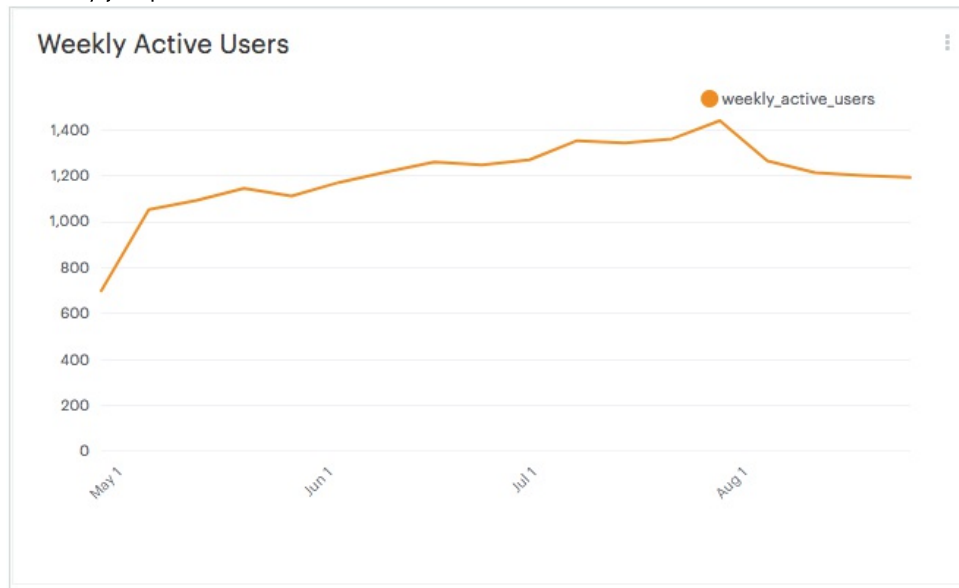
# Springboard Assignment - Yammer

## Investigating a Drop in User Engagement

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#### THE PROBLEM

You show up to work Tuesday morning, September 2, 2014. 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:



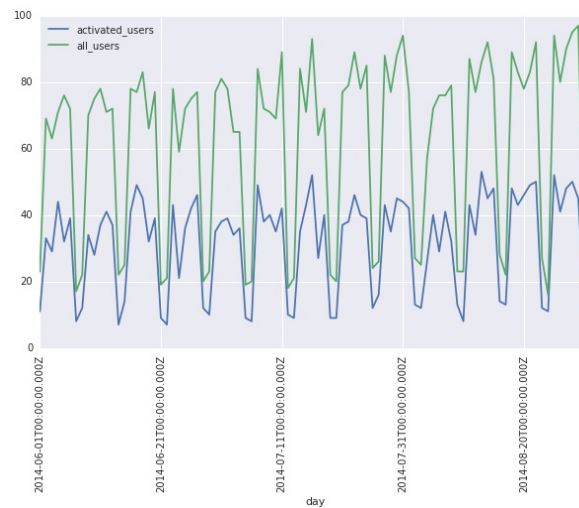
Address the following questions:

- Do the answers to any of your original hypotheses lead you to further questions?
- If so, what are they and how will you test them?
- If they are questions that you can't answer using data alone, how would you go about answering them (hypothetically, assuming you actually worked at this company)?
- What seems like the most likely cause of the engagement dip?
- What, if anything, should the company do in response?

Hypotheses:

- Holiday or vacation: perhaps a country or large group of users were absent from work during this time
- Search engine changes that would impact the ranking of the site
- Broken tracking code: a certain type of event is not being tracked at all
- Delivery method: is the type of device impacting user retention?

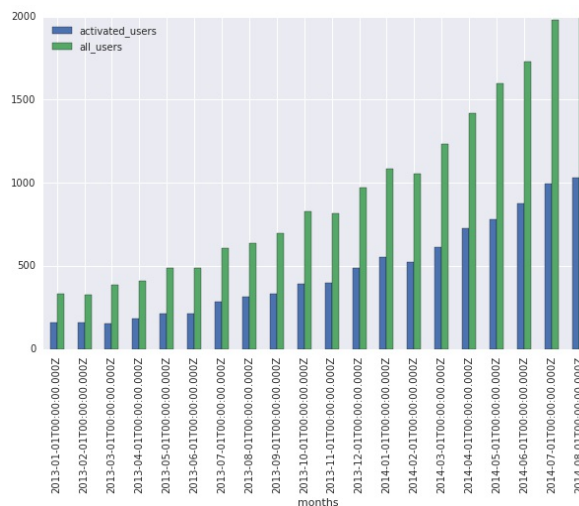
## Weekly Activation Rates



The chart above shows that the user activation is steady over time. It gives a general upward trend of growth in total users and shows that on weekends people are not signing in very much. This is likely because they are not at work.

Next we will look at monthly active users as this drop occurred over the summer when people take time off. A seasonal comparison can be effective unless growth is so strong it makes year over year comparisons difficult.

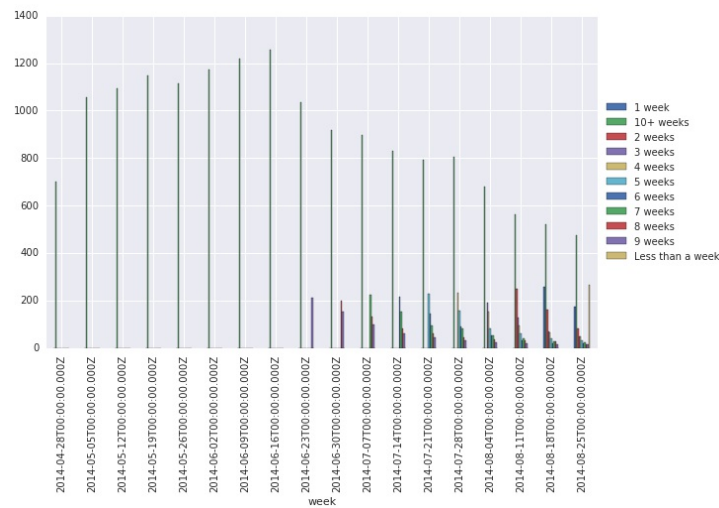
## User Growth by Month



In the above chart we show the monthly users for the last 19 months. It is clear that the number of users keeps growing and that performing a seasonal verification is not going to confirm much for us in regards to the sudden drop in active users in August.

The previous two charts indicate that the first three hypotheses are unlikely. The customer base appears to be growing and weekly activation rates are steady. Vacation/seasonality appear normal, the user base is growing and there isn't a drastic drop in activity that would indicate a tracking problem.

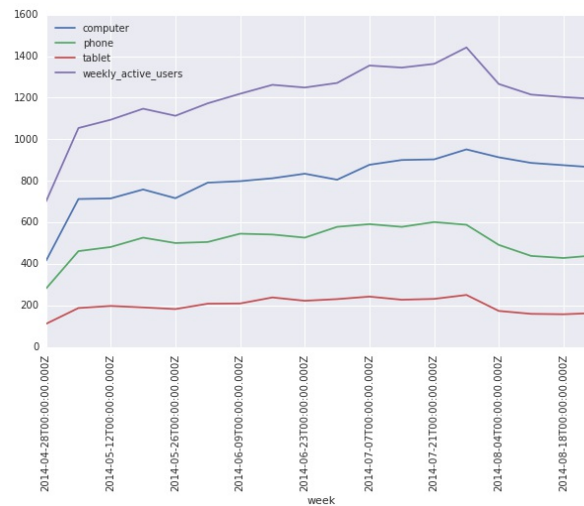
## User Age and Activation



The users who signed up 10 or more weeks ago are dropping off steadily. Perhaps this indicates the users grow weary of the product or how it is designed for user experience. User retention is likely an underlying issue of the August drop.

Let's take a closer look at the type of devices being used on the application.

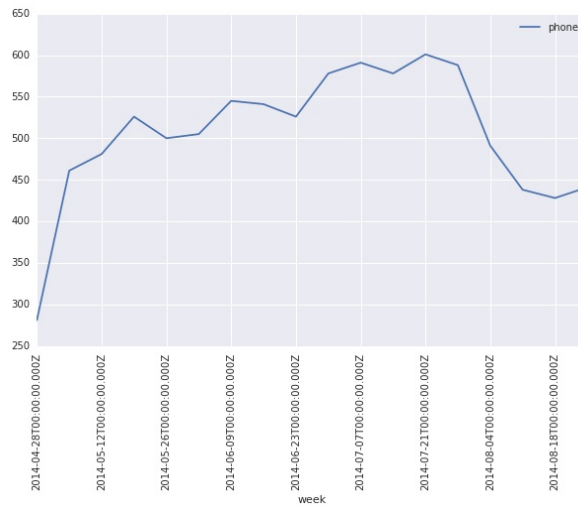
## User by Device Type



The figure above shows activation by device type as well as a total weekly active users series. Phone and Tablet both dropped sizeably. Phone users appear to have dropped off more drastically. Let's take a closer look...

We can now filter the data further and look at just the phones.

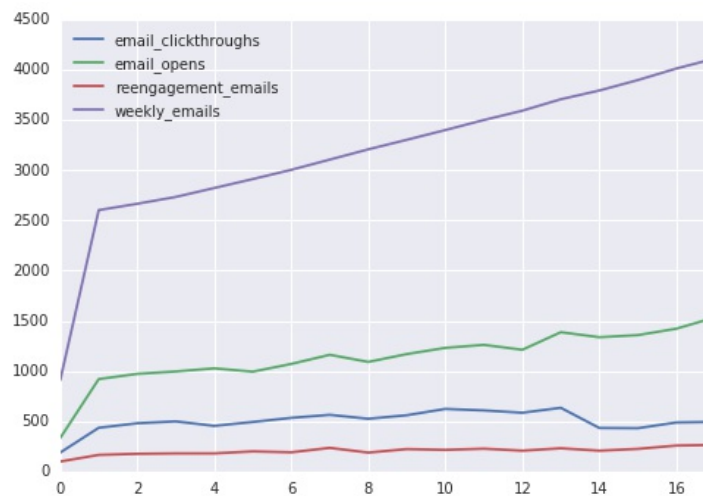
## Device Type = Phone



It's quite clear that there is a large relative drop off in the phone category.

The case study indicates that emails are used to bring people back to the app. Let's check and see what is happening within the data related to the emails.

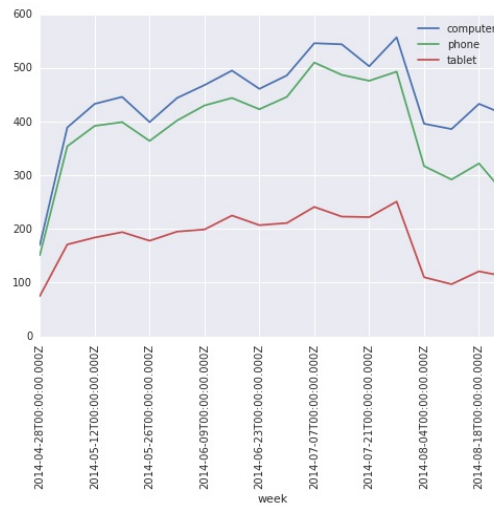
## Email Activity



The quantity of emails that are opened experienced a blip whereas the 'email\_clickthrough' dropped off considerably.

There is likely something wrong with the email that is sent. It may not be clear to users where to click or it may be that longer term users have grown tired of the product.

## Email Clickthrough Activity by Device Type



The figure above is a closer look at the data on email activity. I joined the tables together and filtered for 'email\_clickthrough' using a WHERE statement. This shows that on a gross user basis the mobile platforms each lost more email clickthroughs than the computer platform. This may be enough to indicate that we should look further in to the reasoning behind this but doesn't point out a cause.

## Conclusion and Follow-Up

The head of product should be made aware the problem seems to be with mobile use and the email activity. Older users just aren't coming back to the application as much as they did previously.