**Yammer User Engagement Analysis**

In this project the dip in user engagement (which changed from 1442 users to 1266 users) was explored. Data was analyzed to find possible reasons for the dip.

Multiple different hypothesis were analyzed:

1. **Holiday**: The dip in user engagement was found suddenly in first week of August, which could be possible due to holiday and people not using the service because they were enjoying the holiday.

**Test**: To test this hypothesis, user engagement in every country was observed, because holiday would be related to certain country and if the user living in certain country showed the dip in user engagement that would indicate that the overall dip was because of holiday.

**Results**: The user engagement remained unchanged for most of the countries, however huge percent drop was seen in countries like Belgium, Hong Kong, Mexico, Pakistan and Venezuela. This could probably be the reason for the dip in user engagement.

However, analyzing the number of users that were dropped from these countries, it was found that the total number of users from these countries were very low, which suggests that this drop can not explain the dip in overall user engagement.

1. **Malfunction in specific event**: Next, I wanted to check if the drop is due to drop in any specific type of event or does all the events show nearly equal drop which contributes the overall dip in active users.

**Test**: To do this I looked at the weekly active users for each event type.

**Results**: There was observable decrease shown by all the event activities which was nominal for most of the event types, however some activities like login and homepage showed noticeable decrease. This suggests that the dip in user activity could be due to malfunction in loading the homepage or logging into the yammer account. Most likely it is the problem with the loading of the homepage, which will consequently lead to non-accessibility to login. Or there could be malfunction in the program, which logs the response from login or homepage.

1. **Malfunction in Email**: Next, I wanted to explore if the dip in user engagement is due to something being wrong with the various email related events.

**Test**: To do this I looked at the weekly active users for each email function.

**Results**: For various different email functions, no specific decrease was seen in most of the email activities. However, there was a significant drop in the email\_clickthrough event, which means that either the link in the email was not responding or the click to the link is not being registered by the program as an active user.

1. **Device related malfunction**: Next, I wanted to explore if the dip in user engagement is due to malfunction of program on specific device.

**Test**: To do this I looked at the weekly active users for each device.

**Results**: For various different devices, there was a drop in the number of weekly active users. However the drop was seen in lot of devices and in lot other devices the drop was not observed. However, a significant drop can be observed in iphone devices but not so much in notebook or chromebook devices.

Therefore, this was explored further.

1. **Device type related malfunction**: Because of the previous query which indicated drop in active users on some devices and not so much on others, I wanted to explore if the dip in user engagement is due to malfunction of program on specific type of device.

**Test**: To do this I looked at the weekly active users for each device were categorized into either computer, tablet or phone type of devices.

**Results**: There was a drop in the number of weekly active users specifically for phone users and tablet users. However, no significant change was observed for computer users.

This was explored further by looking at the percent change in the active users on specific type of device and how does that relate to total percent change. Significant change can be observed in phone and tablet users as compared to computer users.

This suggested that there was a malfunction of program that registers active users from either phone or tablet. That means the problem is with the app that is used on phone and tablets to record the number of active users.

**Conclusions:** Analysis of yammer user engagement data suggested that most likely there is malfunctioning of the program/app/code that people use to access yammer on phones or tablets. Within the program it also suggested that problem would be most likely at the homepage or login of the users. Also there is some noticeable problem with the email\_clickthrough function. When taken together it suggests that there is malfunction in the code to register any clicks either at the homepage or login or email\_clickthrough. The code for app needs to be revisited and fixed to register the actual number of people who are using the yammer.