Investigating a Drop in User Engagement

Possible reason for dig in user retention.

Answer: There was a continuous increase user engagement from May 1 to July 28. From July 29’th onwards, there was a sudden drop in user engagement. There could be few reasons for such a drop

1. A new product competing with Yammer was launched in the market that competes directly with offerings given my Yammer
2. Issue with functionality that didn’t let a section of users to access Yammer may be via computer or tablet or phone
3. Marketing event done in Early May and on July 21 that resulted in huge spike in user engagement.

* 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?

Lets find out daily signups

SELECT DATE\_TRUNC('day',created\_at) as day,

COUNT(\*) AS all\_users,

COUNT(CASE WHEN activated\_at IS NOT NULL THEN u.user\_id ELSE NULL END) AS activated\_users

FROM tutorial.yammer\_users u

WHERE created\_at >= '2014-06-01'

AND created\_at < '2014-09-01'

GROUP BY 1

ORDER BY 1

Daily signups doesn’t show us any abnormal thing about new users signup. So most likely the dip in engagement is coming from existing users

2. Now figure out how long does it take for users to drop out of Yammer

SELECT DATE\_TRUNC('week',z.occurred\_at) AS "week",

AVG(z.age\_at\_event) AS "Average age during week",

COUNT(DISTINCT CASE WHEN z.user\_age > 70 THEN z.user\_id ELSE NULL END) AS "10+ weeks",

COUNT(DISTINCT CASE WHEN z.user\_age < 70 AND z.user\_age >= 63 THEN z.user\_id ELSE NULL END) AS "9 weeks",

COUNT(DISTINCT CASE WHEN z.user\_age < 63 AND z.user\_age >= 56 THEN z.user\_id ELSE NULL END) AS "8 weeks",

COUNT(DISTINCT CASE WHEN z.user\_age < 56 AND z.user\_age >= 49 THEN z.user\_id ELSE NULL END) AS "7 weeks",

COUNT(DISTINCT CASE WHEN z.user\_age < 49 AND z.user\_age >= 42 THEN z.user\_id ELSE NULL END) AS "6 weeks",

COUNT(DISTINCT CASE WHEN z.user\_age < 42 AND z.user\_age >= 35 THEN z.user\_id ELSE NULL END) AS "5 weeks",

COUNT(DISTINCT CASE WHEN z.user\_age < 35 AND z.user\_age >= 28 THEN z.user\_id ELSE NULL END) AS "4 weeks",

COUNT(DISTINCT CASE WHEN z.user\_age < 28 AND z.user\_age >= 21 THEN z.user\_id ELSE NULL END) AS "3 weeks",

COUNT(DISTINCT CASE WHEN z.user\_age < 21 AND z.user\_age >= 14 THEN z.user\_id ELSE NULL END) AS "2 weeks",

COUNT(DISTINCT CASE WHEN z.user\_age < 14 AND z.user\_age >= 7 THEN z.user\_id ELSE NULL END) AS "1 week",

COUNT(DISTINCT CASE WHEN z.user\_age < 7 THEN z.user\_id ELSE NULL END) AS "Less than a week"

FROM (

SELECT e.occurred\_at,

u.user\_id,

DATE\_TRUNC('week',u.activated\_at) AS activation\_week,

EXTRACT('day' FROM e.occurred\_at - u.activated\_at) AS age\_at\_event,

EXTRACT('day' FROM '2014-09-01'::TIMESTAMP - u.activated\_at) AS user\_age

FROM tutorial.yammer\_users u

JOIN tutorial.yammer\_events e

ON e.user\_id = u.user\_id

AND e.event\_type = 'engagement'

AND e.event\_name = 'login'

AND e.occurred\_at >= '2014-05-01'

AND e.occurred\_at < '2014-09-01'

WHERE u.activated\_at IS NOT NULL

) z

GROUP BY 1

ORDER BY 1

LIMIT 100

This shows us that people who joined prior to 10 weeks back have shown drop in engagement

3 Try to find out user engagement based on type of device used

SELECT DATE\_TRUNC('week', occurred\_at) AS week,

COUNT(DISTINCT e.user\_id) AS weekly\_active\_users,

COUNT(DISTINCT CASE WHEN e.device IN ('macbook pro','lenovo thinkpad','macbook air','dell inspiron notebook',

'asus chromebook','dell inspiron desktop','acer aspire notebook','hp pavilion desktop','acer aspire desktop','mac mini')

THEN e.user\_id ELSE NULL END) AS computer,

COUNT(DISTINCT CASE WHEN e.device IN ('iphone 5','samsung galaxy s4','nexus 5','iphone 5s','iphone 4s','nokia lumia 635',

'htc one','samsung galaxy note','amazon fire phone') THEN e.user\_id ELSE NULL END) AS phone,

COUNT(DISTINCT CASE WHEN e.device IN ('ipad air','nexus 7','ipad mini','nexus 10','kindle fire','windows surface',

'samsumg galaxy tablet') THEN e.user\_id ELSE NULL END) AS tablet

FROM tutorial.yammer\_events e

WHERE e.event\_type = 'engagement'

AND e.event\_name = 'login'

GROUP BY 1

ORDER BY 1

LIMIT 100

The result shows that users that were accessing via phone had a drop in engagement. So it looks like there were mobile users who stopped using the app after 10+weeks due to an issue with mobile app(a recent change in the app could be an explaination)

Also from 7/28 to 8/4, there was a drop in reengagement emails to the customers from 230 to 206. This could also be one of the reason why users who were on the website for 10+ more weeks didn’t come back on the site. This can be found easily be this query

SELECT DATE\_TRUNC('week', occurred\_at) AS week,

COUNT(CASE WHEN e.action = 'sent\_weekly\_digest' THEN e.user\_id ELSE NULL END) AS weekly\_emails,

COUNT(CASE WHEN e.action = 'sent\_reengagement\_email' THEN e.user\_id ELSE NULL END) AS reengagement\_emails,

COUNT(CASE WHEN e.action = 'email\_open' THEN e.user\_id ELSE NULL END) AS email\_opens,

COUNT(CASE WHEN e.action = 'email\_clickthrough' THEN e.user\_id ELSE NULL END) AS email\_clickthroughs

FROM tutorial.yammer\_emails e

GROUP BY 1

ORDER BY 1

Followup.

Inform the head of the product that there could be an issue with the mobile app and it’s important to check it . Also Yammer needs to send more reengagement emails to clients to come back on the site.