Zapier take home test

F Devlin | December 2018

Objective: understand the relationship between monthly active users and churned users

Monthly active user: A user is considered active on any day where they have at least one task executed in the prior 28 days.

Churn: A user is considered to be churn the 28 days following their last being considered active.

Data: We are looking at a subset of data from Jan 1, 2017 - June 1, 2017.

Note that we are looking at a *subset of data* and as we are calculating 28 day rolling metrics - **MAU/churn trends are misleading for the first ~60 days of the time period**.

- ~60 days as MAU is a 28 day look back metric, and churn is a 28 day look back metric on MAU. Therefore we see MAU rise rapidly for the first 28 days and then stabilise and following that churn rise rapidly and then stabilise.

Exec summary

1. **MAU is growing over time**; but we **project that MAU growth rate will decline** towards EOY.
    a. MAU growth is fairly steady and consistent at around +0.8% per day. At the end of the period there are 175,092 MAU of the product.
    b. With a simple projection we expect to see 5.0% growth over Q2 (April-June) whereas growth will slow to 2.1% over Q4 (Oct-Dec).

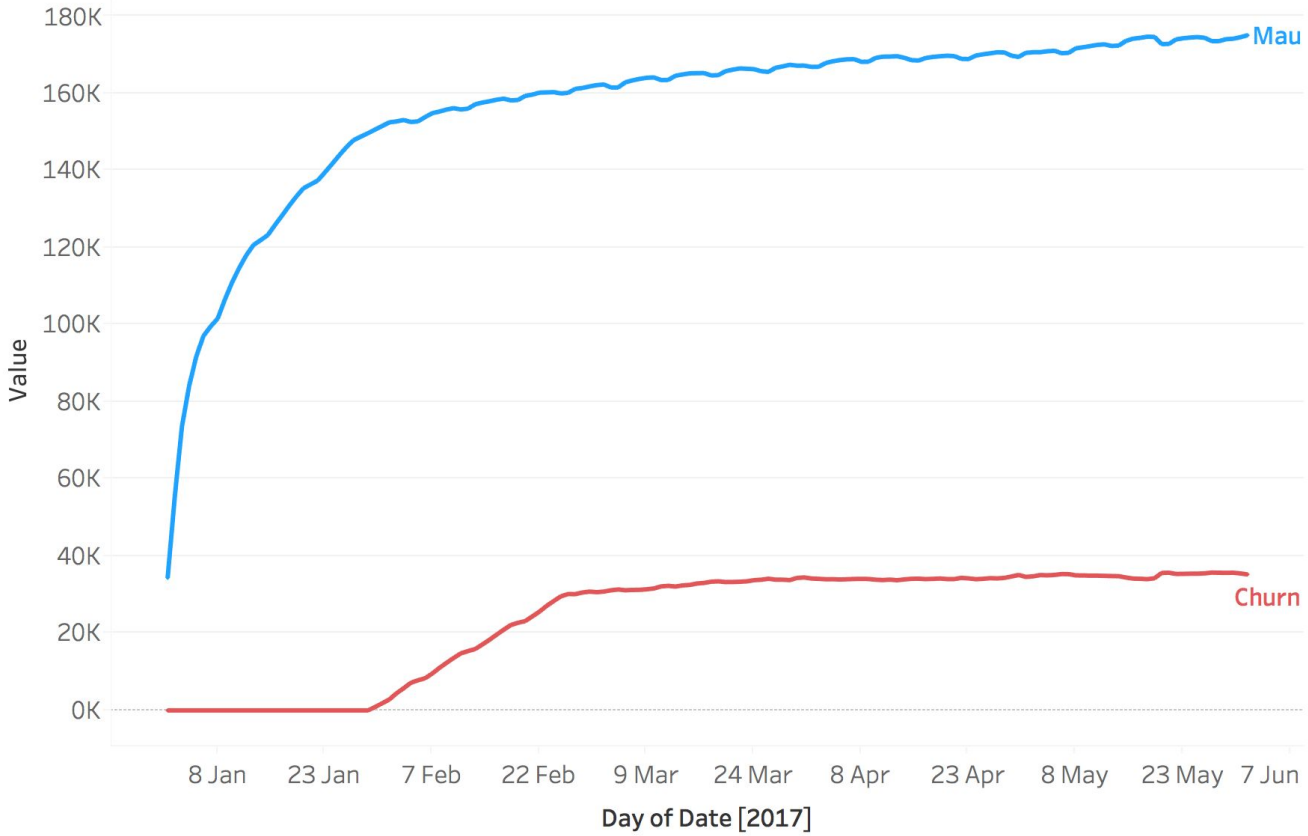
2. **Churn is high, but steady and consistent** at around ~35k customers, and churn is 20% of MAU per day.
    a. Reducing churn will allow MAU to grow at a quicker rate. MAU growth = new MAU + return MAU - churn. Currently the absolute growth is ~150 customers per day and so any small increase in churn would mean negative growth.
    b. When we look at daily cohorted retention, the May cohort appears to be retaining at a much lower rate than younger cohorts. This is an early indicator that June churn might rise.

3. 🌤**Recommendation: more work to understand *why* MAU growth is plateauing** by focusing on levers we can move
    a. new MAU is very low (~1,300 users per day) -> can we dig deeper to understand if this is a way we can grow our engaged user base? How is our marketing/onboarding funnel performing?
    b. With more detailed data understand the reasons/behaviours that are leading to churn, with the view to identifying actionable churn.
    c. Start measuring DAU/cohorted DAU; allows us to understand drop offs quicker e.g. lower performance of May cohort would not be picked up by MAU until June .

Detailed analysis

MAU (overall)

Metrics: MAU and Churn
Why is this important/useful? Overview of the two metrics we are trying to understand



Key insights:

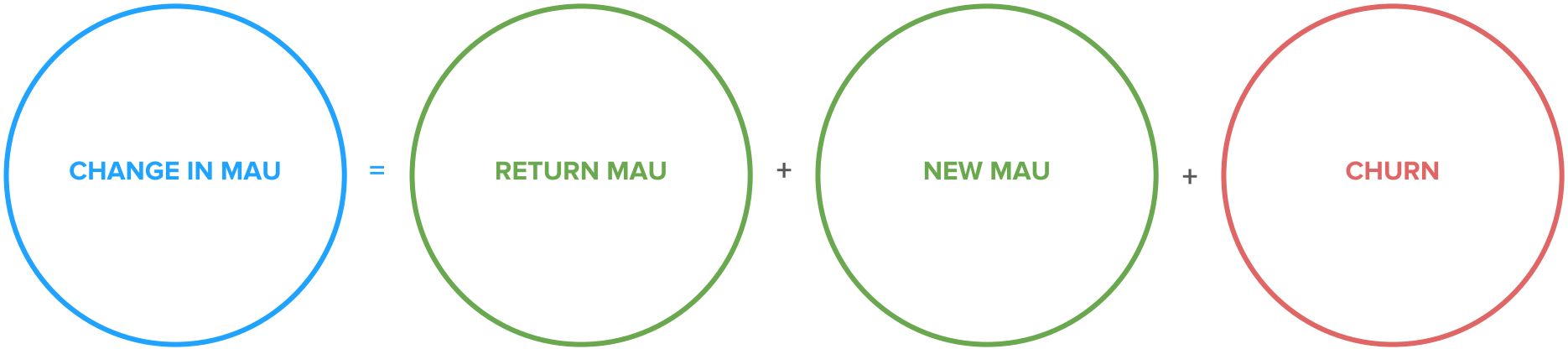
For the first 28 days MAU grows rapidly as customers engage with the product for the first time *within that time period*. We do not focus on this as this is misleading due to sampling (see slide 2).

From the second half of the timeframe, **MAU growth is fairly steady and consistent at around +0.8% per day**. At the end of the period there are 175,092 MAU of the product.

From around March onwards, churn is steady and consistent at around ~35k customers and **churn is 20% of MAU per day**.

MAU (growth)

Metrics: Change in MAU, returning MAU, new MAU, Churn
Why is this important/useful? In order to better understand MAU growth we want to understand the component parts of growth and how they are changing over time



MAU(t) - MAU(t-1)
Difference in MAU from one day to the next

These are customers who were not a MAU the day before, but are active today. However this is **not the first time** they have ever been counted as active.

These are customers who were not a MAU the day before, but are active today. This is the **first time** they have ever been counted as active.

These are customers who were counted as an MAU the day before but not counted as as MAU today.

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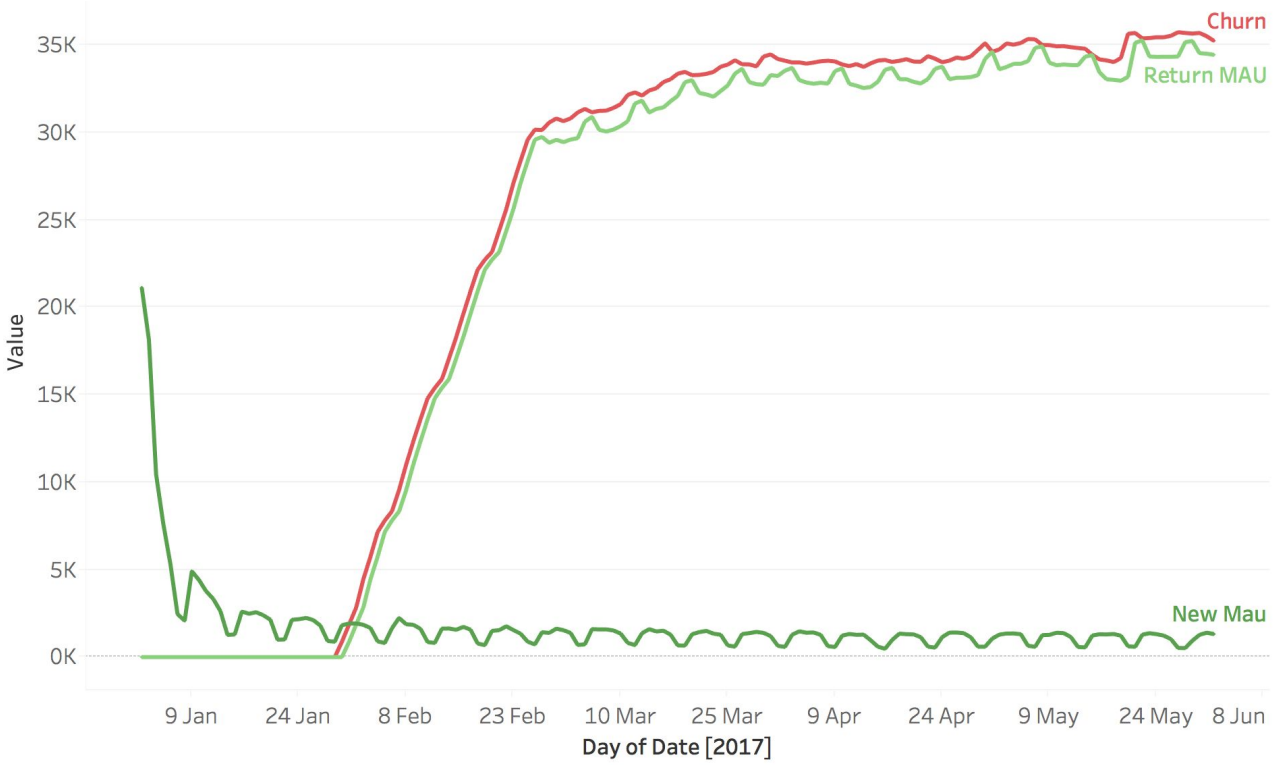
Metrics: Change in MAU, returning MAU, new MAU, Churn
Why is this important/useful? In order to better understand MAU growth we want to understand the component parts of growth and how they are changing over time



Key insights:

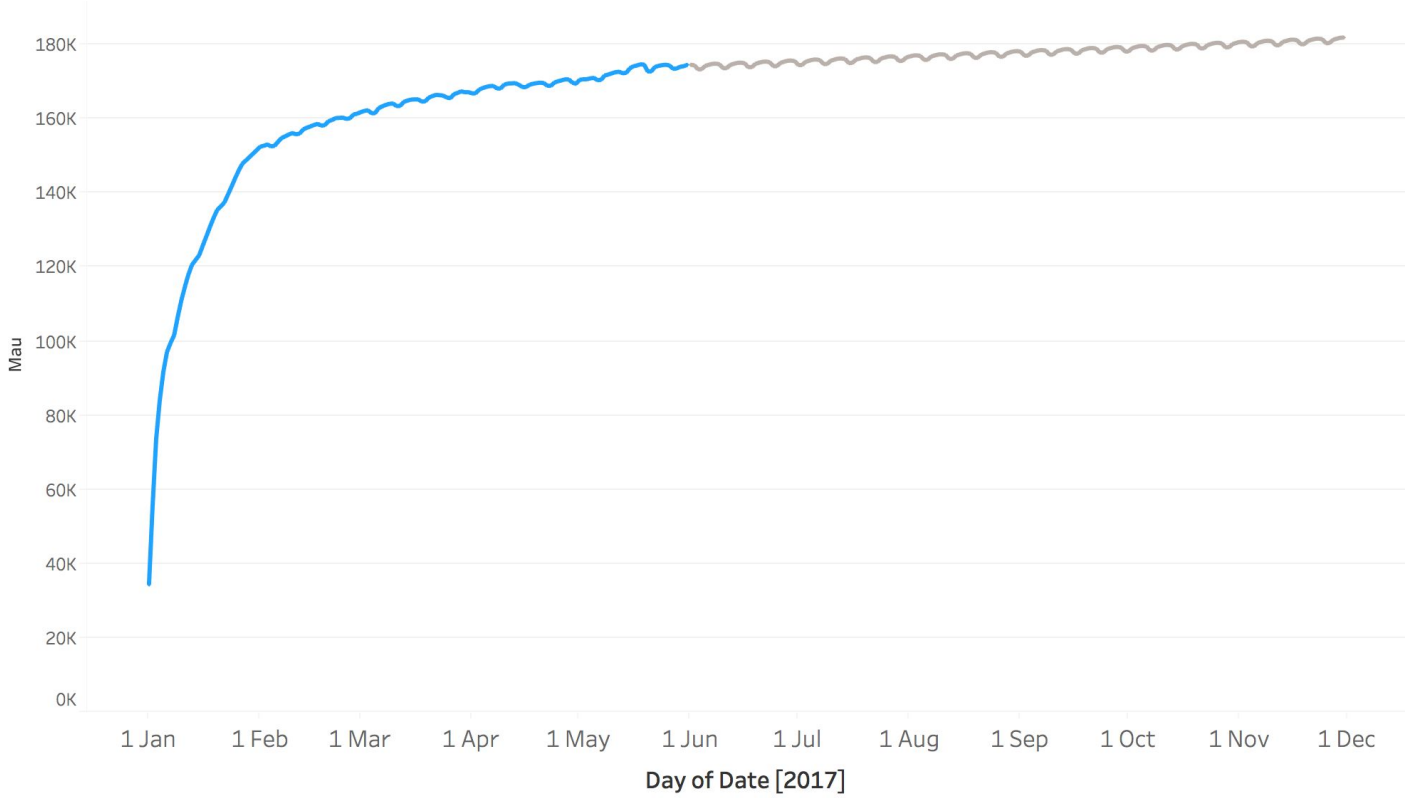
For the first 28 days new MAU is high as customers engage with the product for the first time within that time period. Note that we are counting the first interaction within the timeframe as new MAU; although part of this should be return MAU - however we cannot separate this without earlier data.

Looking at data from March onwards (where this data issue is less prominent) the **majority (97%) of positive growth (return + new) is from return MAU ->** customers who become MAU again after a gap in activity. **Growth from new is only 3%**.

For the majority of days, new + return > churn which is why (on average) MAU is growing. Although the delta is small ~150 per day.

MAU (extrapolated)

Metrics: MAU
Why is this important/useful? Allows us to see how we expect growth to look like over a longer timeframe



Key insights:

If we assume the three levers that drive growth (new MAU, return MAU, churn) remain on the same trend then we will see **overall MAU growth decline** towards the end of the year.

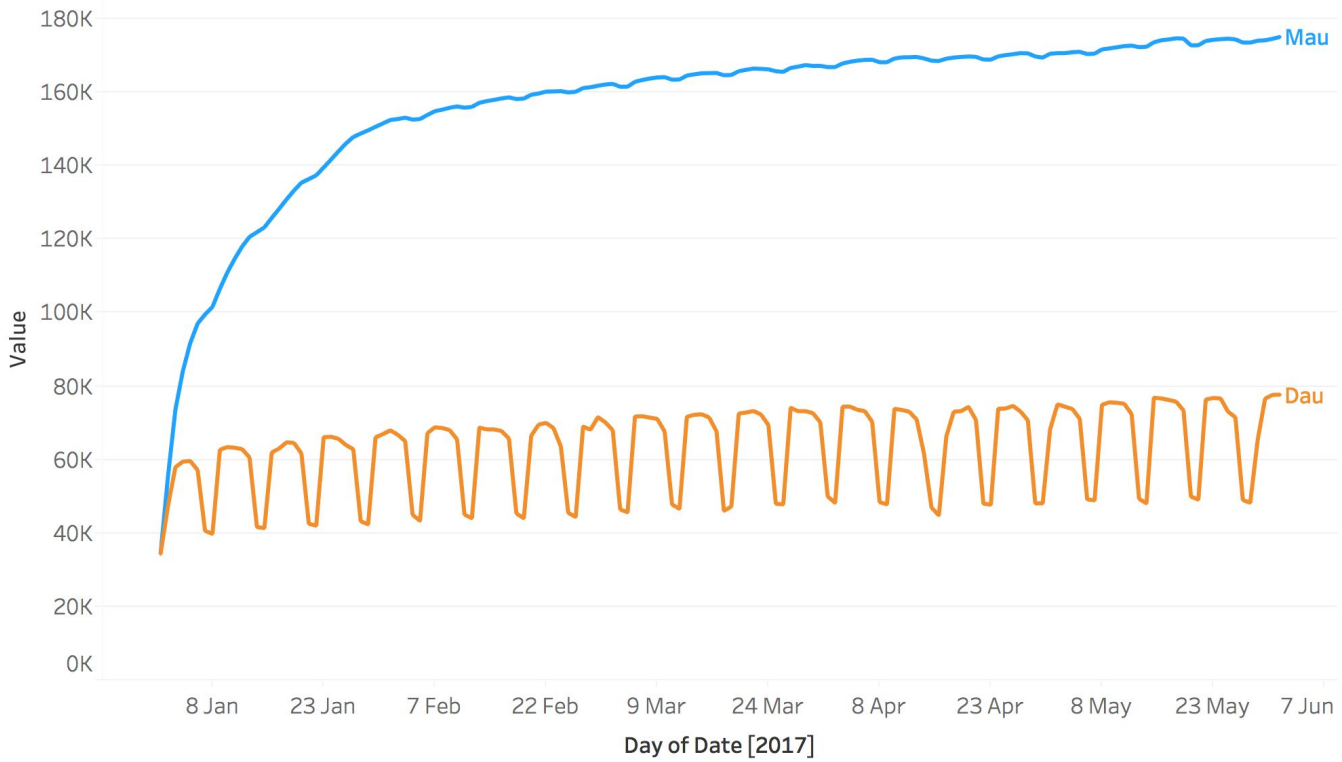
We see 5.0% growth over Q2 (April-June) whereas this growth has slowed to 2.1% over Q4 (Oct-Dec).

In order to keep this number growing, it will be important to reduce churn and/or grow the number of customers who (i) use the product for the first time (top of funnel) or (ii) re-engage customers who have become inactive.

DAU vs MAU

Metrics: MAU over time, DAU over time

Why is this important/useful? Comparing MAU to DAU gives a sense of stickiness of the product. E.g. a DAU/MAU ratio of 50% would mean that the average user of your app is using it 14 out of 28 days in our monthly time frame



Key insights:

DAU shows a weekend/weekday trend - much higher usage on the weekdays than weekends. This generally implies a product that is used more frequently for business vs by consumers.

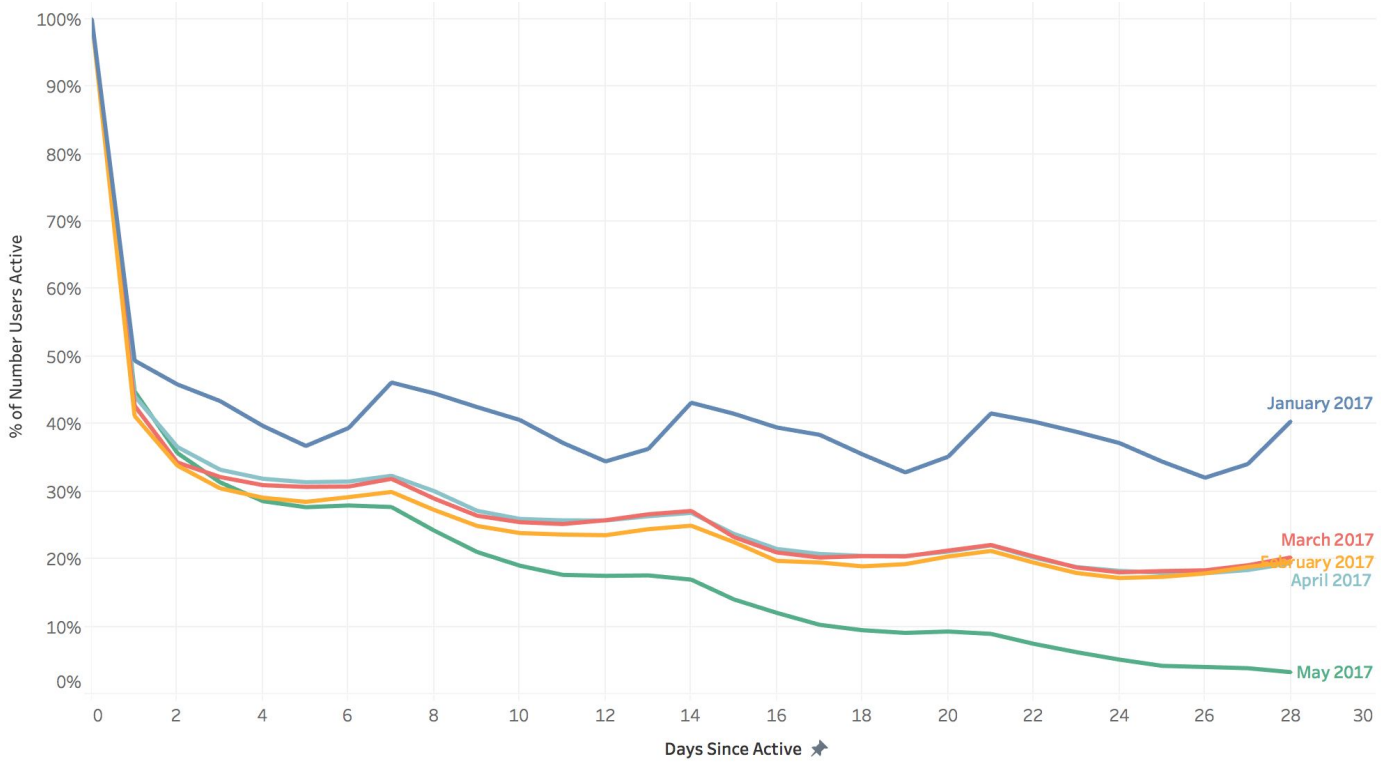
DAU is around 39% of MAU.

This means that customers are using the product *on average* 11 days out of the 28 days.

This is a strong DAU/MAU ratio - for context a standard DAU/MAU ratio is around 10-20%. Whatsapp is the industry lead with 70+% DAU/MAU ratio.

DAU cohorted retention

Metrics: Cohorted DAU, cohorts are the month that the customer was first active
Why is this important/useful? Allows us to understand the drop off from first use of the product to long term engagement. Also indicates whether any change (good or bad) in newer vs older cohorts.



Key insights:

We don't focus on the Jan cohort as it includes existing and new customers (due to sampling) & so is not a fair comparison.

Aside from Jan, cohorted retention is v. similar for Feb/March/April **but notably lower for the May cohort**.

In order to understand this more, it would be useful to (i) add contextual data to understand the type of customer in this cohort and (ii) measure this against any changes in the product/first run experience.

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Thank you!

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