

AMENDED Exhibit 1149

PLAINTIFFS' OMNIBUS OPPOSITION TO DEFENDANTS' MOTIONS FOR SUMMARY JUDGMENT

Case No.: 4:22-md-03047-YGR

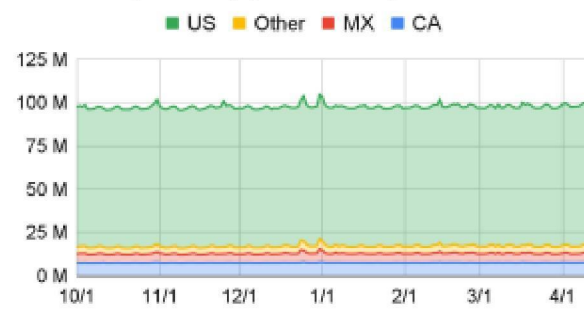
MDL No. 3047

In Re: Social Media Adolescent Addiction/Personal Injury Products Liability Litigation

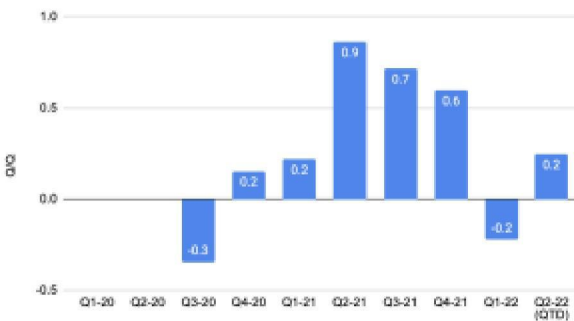
NA DAU By Country (T7 Indexed)



NA DAU By Country (T7 Absolute)



US Baseline DAU Q/Q Growth



Attribution by Age. ^{J7}

Throughout this investigation we have uncovered some quality issues with our age data (many known, some new). We don't plan to discuss each issue (summarized in the [appendix](#)) in this meeting, but we are partnering with our data science colleagues to improve the age data quality and align on a consistent methodology for reporting on age trends.

For context, there are two main sources of age data:

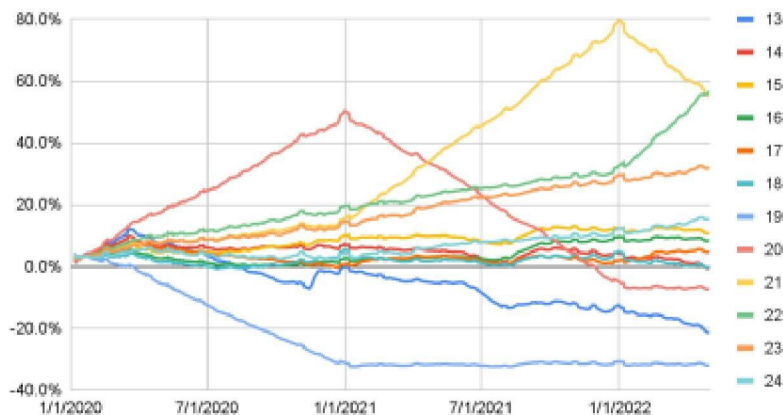
1. Reported age – self reported by the user in registration
2. Inferred age – a prediction [model](#) which aims to determine and override a user's reported age if we deem it to be "untrusted" (e.g. age >100, equal to the default in registration)

The chart below shows why it has been so tough to make sense of the reported age data. We have a large group of users with birth year = 2000. In the example below, age 20 DAU grows in 2020 then declines in 2021 and 21 year old DAU grows in 2021 and declines in 2022. We suspect that registration defaulted to the year 2000 at one point, but have not been able to confirm this.

Page 6 Comments

- L5 I think this is a good summary of what the differences/issues are but where are we incorporating the insights around how much age up, age in and actual departures we are seeing that [REDACTED] is working on? I think it is important that we level set the org how much aging up is to be expected on a given month so we can start looking at trends with that in mind.
[REDACTED], 5/5/2022 01:06 PM
- J6 [REDACTED] to provide an update
Jonathan Jaklitsch, 5/5/2022 01:39 PM
- J7 Yep, have those numbers ready and will summarize and put in in the after 3pm due to the back to back meetings now.
[REDACTED] 5/5/2022 02:06 PM

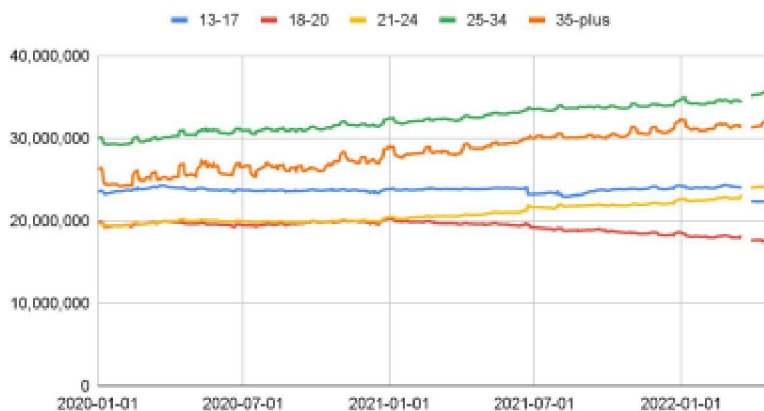
NA DAU by Reported Age



DAU growth by age indexed to Jan 2020

We have traditionally used inferred age in our reporting because it helps to correct for untrusted ages, however when we don't have enough data to come up with a reliable prediction for inferred age, the model reverts to the reported age. This is problematic and we believe that the decline in NA 18-20 weekly active users we showed last week is partially artificial – a result of the high number of year 2000 birthdays (these users age out of 18-20 starting in 2021, the date on the inflection point in the 18-20 line below).

NA: Weekly Active Users by Inferred Age



Now with the historical context out of the way, it's clear we need to shift our approach for reporting on age trends. We have aligned on a new approach to fix a user's age (in this case to Jan 2020 levels) which helps account for the year 2000 birthday issue. As shown in the chart below, the trends look much more reasonable (no 18-20 sudden decline) when we report on fixed age. The Q/Q softness from Q4-21 to Q1-22 in NA DAU is mainly driven by a slowdown in growth in 18-24 (as well as the unknown reported ages, which account for 10% of total NA DAU).

Page 7 Comments

L8 Fix a user's age to what?
 [REDACTED], 5/5/2022 12:31 PM

J9 cc @ [REDACTED]

Fixed as of a point in time (Jan 2020 in this case) to avoid the issues we've seen in the reported age view shown above.

[REDACTED] to confirm
 Jonathan Jaklitsch, 5/5/2022 12:56 PM

J10 confirmed
 [REDACTED], 5/5/2022 02:03 PM

J11 Based on the graphs below, it looks like 18-24 has the largest Q/Q drop in Q1. Compared to PY 35+ is actually down the most. I'm still getting lots of mixed signals here. I wonder if DAU is even the right place to start with age. I think we may want to start decomposing it and then look for differences across demos in the inputs (and back checking against DAU/the output) from the model below
 cc @ [REDACTED]
 Jacob Andreou, 5/5/2022 02:23 PM

J12 You're correct -- updated. This comment was originally referring to the longitudinal trends over but then we narrowed the focus to explaining the Q1-22 softness.

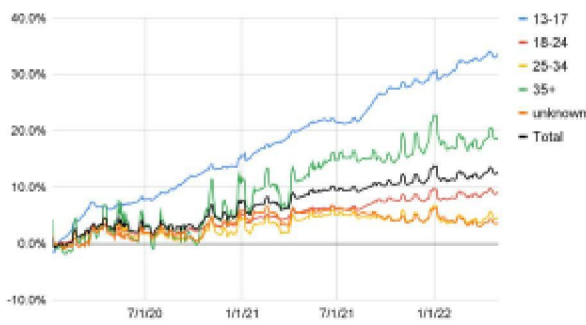
Think we should talk in person to align about next steps with the age data. If we're going to focus on age, aligning on the methodology and source (reported vs inferred vs fixed) is the most important starting point IMO.
 Jonathan Jaklitsch, 5/5/2022 03:02 PM

J13 What is unknown?
 Jacob Andreou, 5/5/2022 02:21 PM

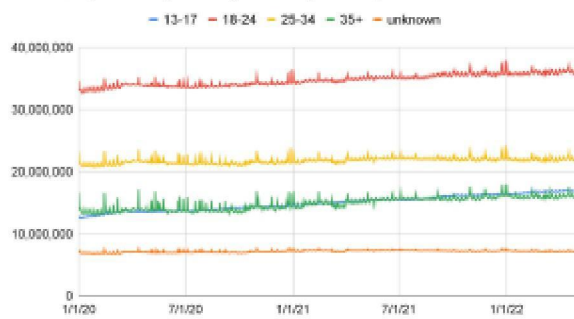
J14 Birthday input wasn't originally required in reg, so we still have a decent portion of OG users without a birthday. It also accounts for "untrusted" ages (e.g. a user claiming to be 150).
 Jonathan Jaklitsch, 5/5/2022 02:55 PM

J16

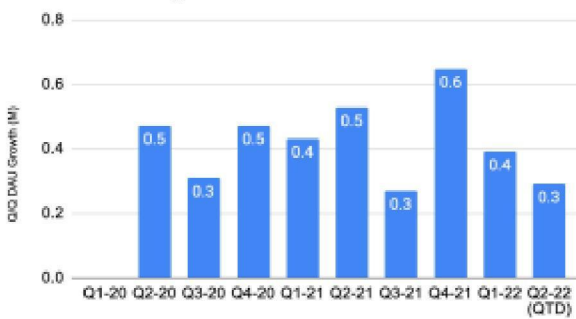
NA DAU By Fixed Reported Age Bucket (T7 Indexed)



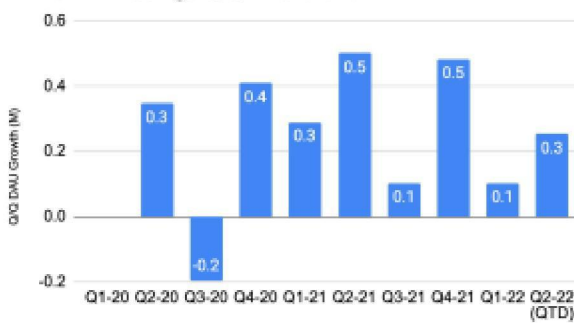
NA DAU By Fixed Reported Age Bucket (Absolute)



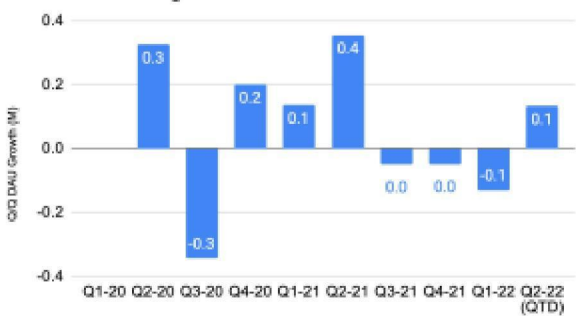
NA 13-17 Fixed Age Q/Q DAU Growth



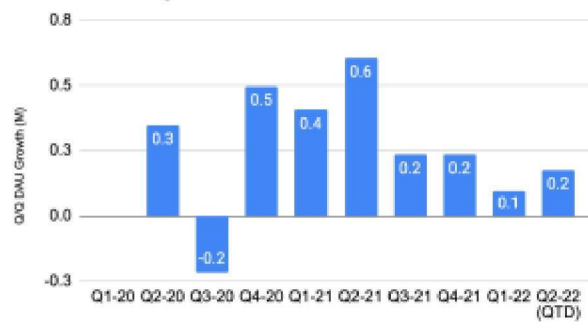
NA 18-24 Fixed Age Q/Q DAU Growth



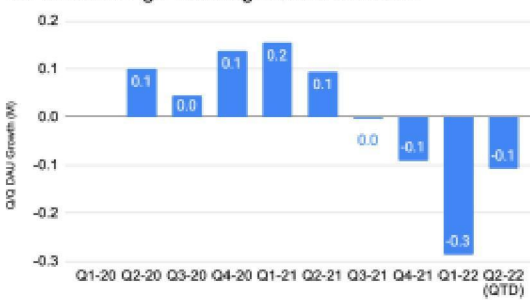
NA 25-34 Fixed Age Q/Q DAU Growth



NA 35+ Fixed Age Q/Q DAU Growth



NA "Unknown Age" Fixed Age Q/Q DAU Growth



CPV Metrics. J17

Page 8 Comments

L15 I think we need to validate this approach with what we are seeing among groups with inferred age=reported age. Jack, can you incorporate that work?

██████████, 5/5/2022 01:07 PM

J16

@██████████

Jonathan Jaklitsch, 5/5/2022 01:39 PM

J17

to add

Jonathan Jaklitsch, 5/5/2022 12:23 PM