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13 Key Mobile Game Metrics That Developers MUST Track



(This article was originally published on [Udonis' blog](#).)

Me: Proper tracking of mobile game metrics is non-arguably the MOST important thing in

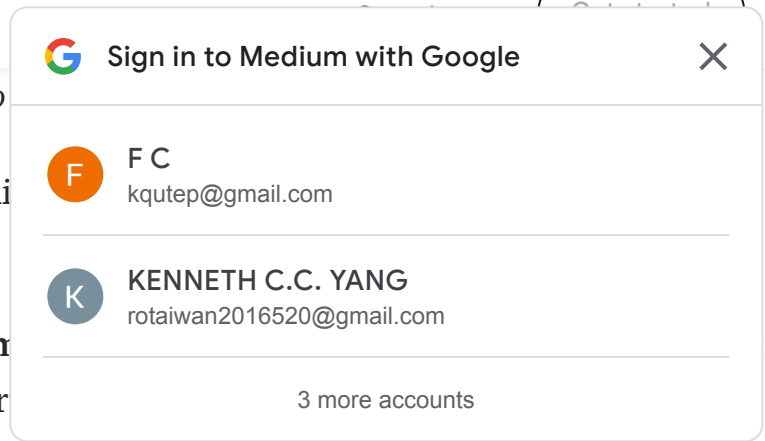




(That is the most common reaction I get to

The truth is, if you think that the only thing you like to play — you are not right.

Don't get me wrong — **the game itself** not something is going to work on the first try



Only a very small percentage of mobile games are considered a financial success.

That's why the proper tracking of mobile game metrics matters the most. It makes a clear differentiation between one-time/ first-time developers and game companies that hit success almost every time they launch.

When things don't work out on the first try — you'll know what's not working & then start optimizing towards better performance.

These are the most **important mobile game metrics every game developer** should be looking at.

1. Installs

The mobile game business is a business of volume. That means that you're going to make your mobile game a financial success only if you manage to get a large user base.

The number of installs is a fundamental mobile game metric because it ultimately **showcases the success or failure** of your mobile game. If you don't acquire a large number of users, you won't be able to earn a significant amount of ad revenue or money from in-app purchases or subscriptions.

Also, you'll use the number of installs in pretty much every formula for secondary metrics, such as retention, ARPU, and so on...

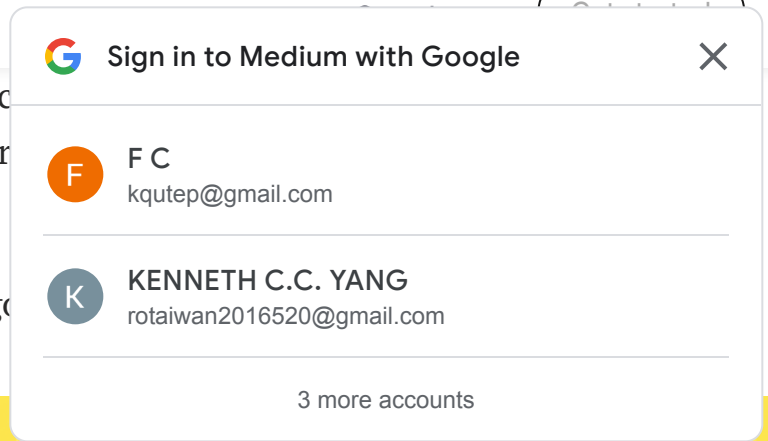
2. DAU — Daily Active Users





Have in mind that some companies will track different user actions. This metric is specific to your game is.

The usual formula for calculating DAU goes like this:



Number of users who opened your app in a day = DAU



Daily Active Users Formula

For example, the popular mobile game Archero had between 500 thousand and 1.25 million daily active users in 2020. That was reflected in their multimillion-dollar revenue stream.

3. MAU — Monthly Active Users

MAU or “monthly active users” defines unique users who used the app at least once in the last month (30-day period).

To qualify as an MAU, a user just has to log in — he doesn’t need to engage with the product. With that being said, having a high MAU doesn’t mean you’re going to have high user engagement.

The ratio of two interconnected metrics, DAU and MAU, shows you how well your game retains users.

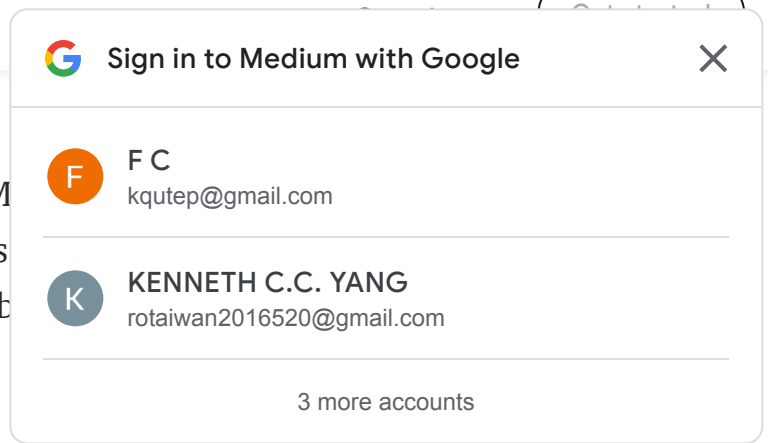
Number of users who **= MAU**





Monthly Active Users Formula

For example, a hit casual game Project M just a couple of months of release. That's developer out there. It shows you it can b



4. Stickiness Rate

By dividing DAU over MAU, you're able to see your **stickiness rate**. This gives you an insight into a really important question — how many monthly users are daily users?

$$\frac{\text{DAU}}{\text{MAU}} = \text{Stickiness rate}$$

Stickiness Rate formula

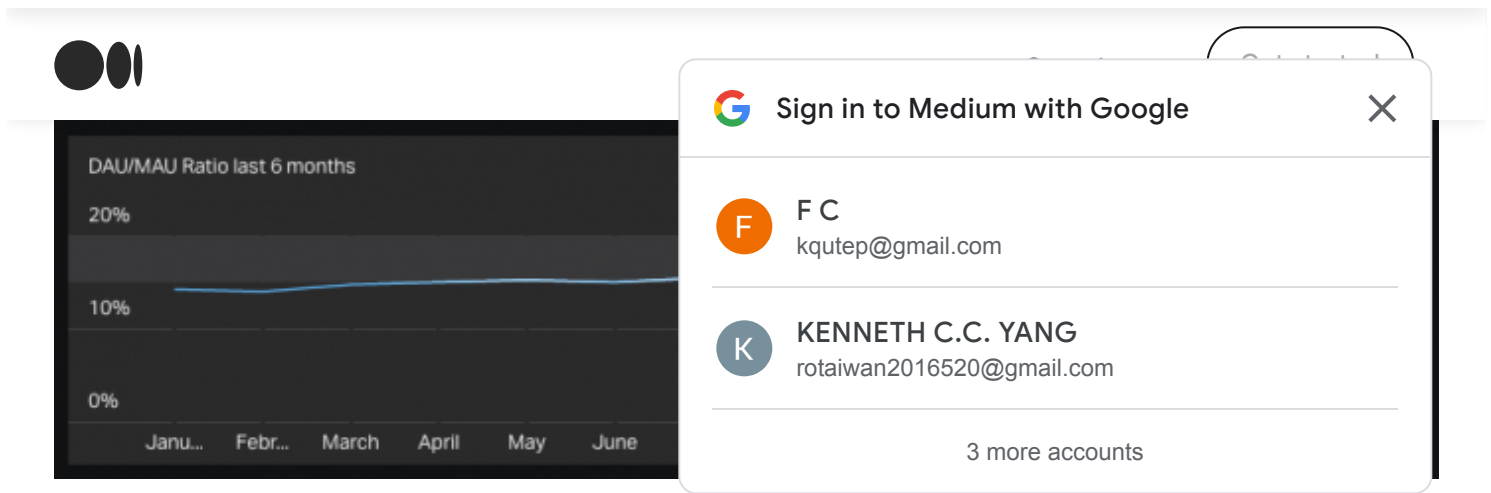
Also, an effective way of measuring your stickiness rate is when you combine your Power users and Loyal users.

Power users are people who use your app 10+ times per month and Loyal users are people who return to your app within 3 months of their first session.

A Silicon Valley analyst, Andrew Chen analyzed over **125 million mobile games and apps** that had over **10,000 downloads on Google Play Store**. Here's what he found out:

- the average app loses 77% of its users in the first 3 days of the install
- after a month, 90% of users stop using the app.
- after 3 months, 5% of users will continue using it.






Source: Geckoboard DAU/MAU Ratio

In conclusion, if you manage to get your users to play your game for the first 3 days, they're much more likely to continue playing it over a longer period of time.

5. RR — Retention Rate

Retention rate is one of the most important metrics to track in mobile games because it directly impacts your revenue numbers.

Calculating your retention rate is pretty easy and you can follow a formula that goes like this:

$$\frac{\text{Number of users who use your app in a set period of time}}{\text{Number of users who used your app in a previous time period}} = \text{Retention rate}$$


Retention Rate Formula

The retention rate gives insight into game performance and general user experience. Mostly, we keep track of **day 1**, **day 7**, and **day 30** retention rate mobile game metrics so we can know if our games are built to last. However, you can also measure day 60 and 90 retention to get even more insights into how many players stick around.



drastically increase. Day 1 retention of 30% is a good sign. On the other hand, if a game's day 1 retention is very low, it's back to the drawing board. So, if you're not seeing good retention, and move on to the next project.

Day 7 Retention — This is usually a turn of mind for many users. How much users like the game, interface, and how much they want to continue playing your game.

Day 30 Retention — This is when your customer base has shrunk and the remaining users are the ones who play it on a weekly or even daily basis. Expect that day 30 retention will be much lower than day 1 or day 7 user retention. The players that remain after a month are your loyal users. They like the game. They play it regularly. They're in it for the long run. They're much more likely to make an in-app purchase or watch ads to advance in the game.

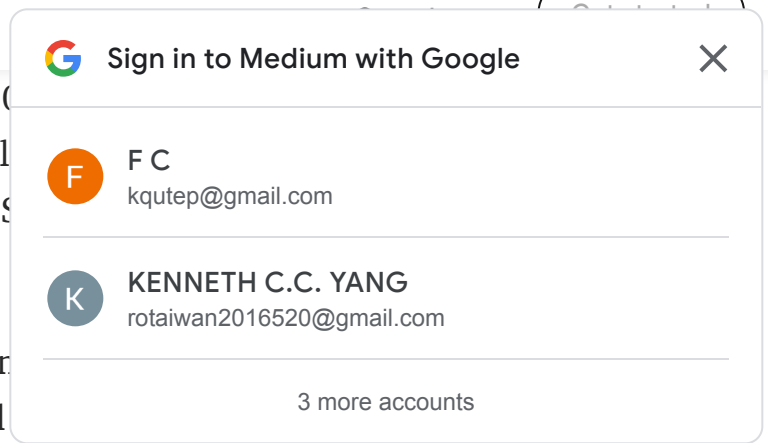
According to GameAnalytics, here's what the average user retention for the top 25%, median, and bottom 25% of mobile games was in 2020. Note that this is an average for all mobile game genres. Some genres have higher retention, while others have lower user retention.

Day 1 retention

- 14% for the bottom 25% of games
- 22% for median games
- 32% for the top 25% of games

Day 7 retention

- 1.5% for the bottom 25% of games
- 4% for median games





- 0% for the bottom 25% of games
- 1% for median games
- 3% for the top 25% of games



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6. CR — Churn Rate

Churn rate is the exact opposite of the **retention rate**. You keep track of lost users (the ones who uninstalled your app). In other words, the churn rate measures the percentage of users that stop playing the game over a period of time.

1 - Retention rate = Churn rate



Churn Rate formula

Most app owners lose more than 90% of new users in the first month after the install, according to Clevertap.

Why Do People Uninstall Games?

The most common reason(s) for uninstalling the game are **crashes & bugs**.

A study by uSamp found that **freezing (76%)**, **crashing (71%)** and **slow responsiveness (59%)** were the primary bugbears when it came to app problems. If you're not fast when it comes to solving bugs — tough luck. **62% of users will uninstall the app** if they continuously experience crashes, freezes, or errors.

If your game isn't riddled with bugs and you're still losing users — the problem lies somewhere else. The game may be too complex (for users to understand), maybe your

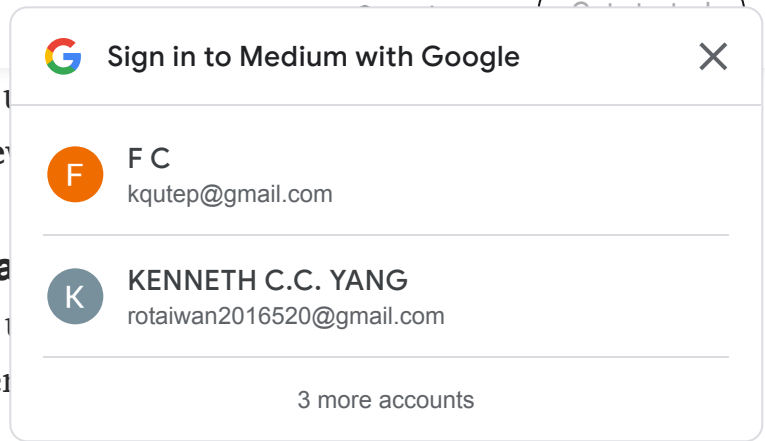




Still don't understand why the users are...
question can often be found **in the review**

Here's What Analysts at Google Say

A Google study showed that 38% of app...
on a certain service, and 25% of app user...
personalized content.



Updating your game's interface or adding something new to your game will encourage users to come back and start playing it again.

7. ARPU — Average Revenue Per User

ARPU or “Average Revenue Per User” is a metric that will help you understand whether your business model/monetization strategy works (or not).

When you're acquiring users via different marketing channels, you'll see that the ARPU can vary from channel to channel.

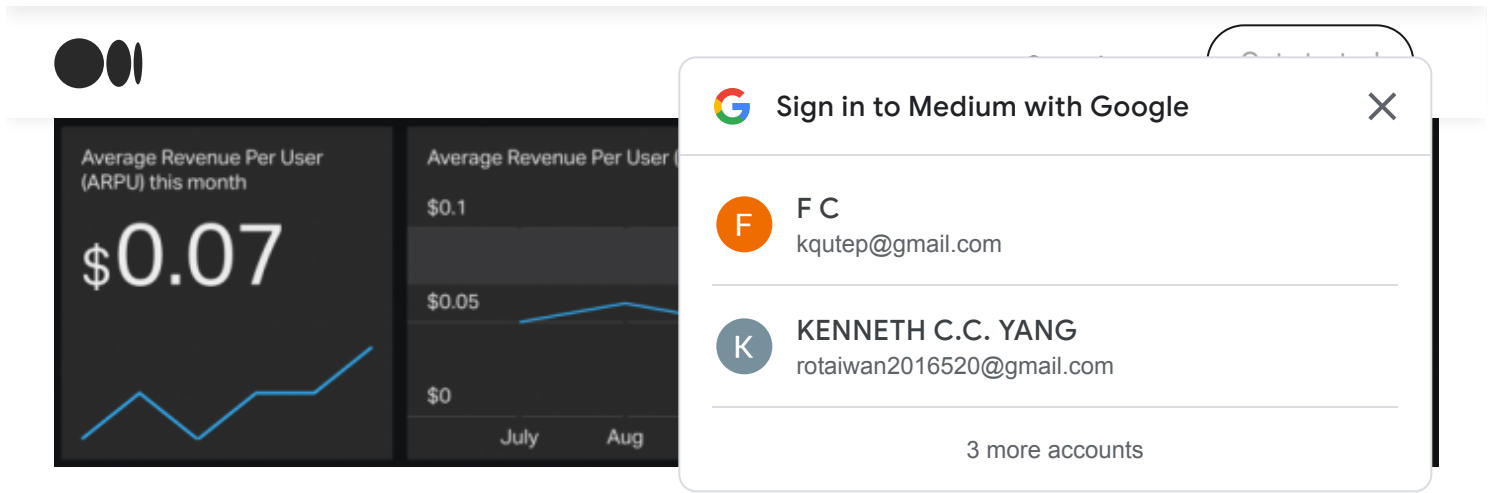
Keeping a track of **ARPU per channel/source** can help you understand what channel is making you money. Calculating **ARPU** is easy. Divide the **revenue** with the **number of users** in a specific period of time (i.e. day — **ARPDau**, week — **ARPWau**, month — **ARPMau**).

$$\text{ARPU (time period)} = \frac{\text{REVENUE (time period)}}{\text{USERS (time period)}}$$


ARPU Formula

Want to know what's your **ARPDau** or **ARPWau**?





Source: Geckoboard

8. LTV — Lifetime Value

LTV or “Lifetime Value” is one of the most important financial mobile game metrics. It is designed to show you the total revenue that you generated (per user) from the start until the end of their lifetime with your game.

How to calculate LTV?

To calculate LTV, there are 3 variables you need to have in mind: monetization, retention, and virality. Here’s one of the models that you can use for calculating LTV:

$$\text{ARPD AU} \times \text{AVG USER LIFETIME (DAYS)} = \text{LTV}$$


LTV Formula

Why is LTV important?

Why is LTV the most important financial metric out of all mobile game metrics?

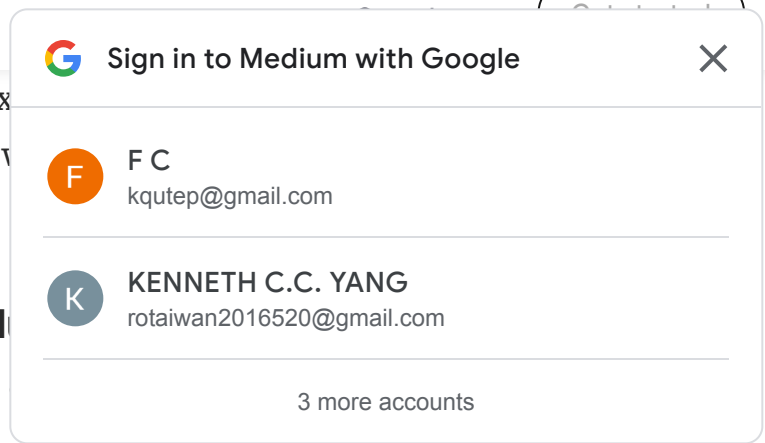
Because it defines your marketing strategy and profit margins. How much can you spend to acquire a user (CPA)? Definitely not more than you’re going to earn. This insight is very



Of course, you can't know what **CPI** to expect. But you can know what's your goal **CPI**, and compare it against it.

9. ATV — Average Transaction Value

ATV or “Average Transaction Value” is the average app purchase or transaction.



Driving higher-value purchases will also bring higher value users while you're able to establish a one on one connection with them.

Calculating **ATV** is done by dividing your ad spend with the number of orders you've taken.

$$\frac{\text{TOTAL REVENUE}}{\text{NUMBERS OF ORDERS TAKEN}} = \text{ATV}$$


ATV Formula

10. TTP — Time to purchase

Let's say you launched your app and users are starting to engage. How much time has passed between the download and the first purchase?

What is the value of that purchase? This metric can improve your ad placements and your in-game offers. **Converting your users into buyers** is done by identifying your conversion goals. Most of the games use different levels, achievements, in-app purchases, or in-game items for conversion.

This excellent report brought by Morevisibility will show you how to keep track of this





CPI or “**Cost Per Install**” is mainly connected to digital ads to gain downloads. Advertiser pays for the ad they clicked on.

The model for calculating **CPI** is quite simple. It's the number of installs.



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$$\frac{\text{AD SPEND}}{\text{NUMBER OF INSTALLS}} = \text{CPI}$$



CPI Formula

Why are **CPI** campaigns crucial? Because it's a metric that can grow your audience, organize your advertising budget and most importantly — increase your revenue.

The average CPI varies depending on:

- The country
- Platform (Android vs. iOS)
- Ad format

To exemplify, the average iOS CPI in the U.S. stands at \$2.37, it is \$0.98 in China, while Brazil is significantly cheaper with a \$0.22 CPI. With all the variable factors in mind, the global CPI averaged at \$2.24 in 2020, according to ironSource.

12. Session Length

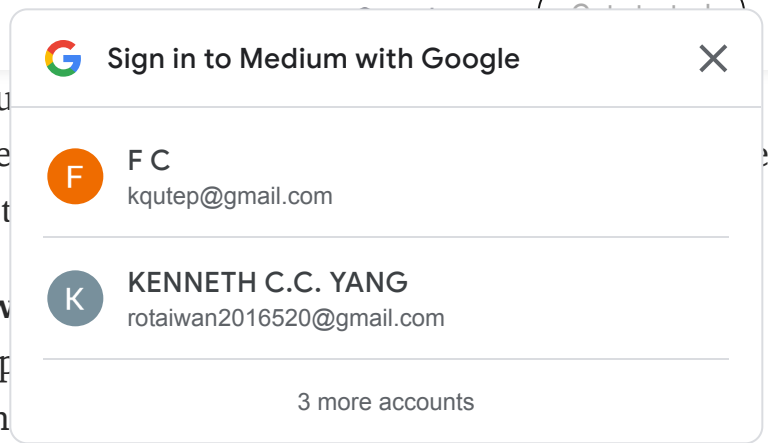
Session length measures the amount of time a user spends actively playing a mobile game. The session starts when the app is opened and lasts until it's closed or the user





This metric is an important indicator of user engagement on the following assumption → the longer the session length, the better the gameplay experience and is performing better.

Session lengths are highly **variable** between different app types. For example, casual games are the genres that stand out with longer session lengths.



Meanwhile, the average session length stands at 4–5 minutes (Soomla). In a word, a good session length is different for every mobile game genre.

13. Session Count

Session count is the **average number of sessions** played per user in a given period of time. For example, in a day, week or month.

This metric falls into the group of engagement metrics, along with session length, retention, churn rate, and others. However, it is most commonly observed along with session length.

Unlike most metrics on this list, you don't need a special formula to track session count.

Every time a user opens and closes your game, this counts as a session. If they open and close the game, for example, 10 times in a day, the session count will be 10.

When it comes to desirable session count, the rule is — **the more the better**. If you manage to get the users to have a big number of sessions (long or short), this is a good thing for your game. If the game's session count is high, this means the game is engaging enough for players to check it out regularly.

High session counts give you an indication that your game has the power to make users addicted to your game. Consequently, this **affects one particular metric — stickiness**.





Top classic games average at six sessions
casual and mid-core games average at 3 c

Mobile Game Metrics & Next Steps

By following these 13 **mobile game met**
guaranteed. Just remember that the mos
valuable users. When you understand their behavior, you'll be ready to develop a superb
business plan.



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