

## The User Lifecycle



## Retention

Retention measures the stickiness of your users over time.

- **Daily New Users (DNU):** Number of users opening your game for the first time on a specific day.
- **Daily Active Users (DAU):** Number of users opening your game at least once on a specific day.
- **Daily Monthly Active Users (MAU):** Number of users opening your game at least once during a specific month.
- **Day N Retention**

$$\text{Day N Retention} = \frac{\text{Number of users retained on Day N}}{\text{Number of users who installed the app on Day 0}}$$

## Different Retention Types (Example: Day 28 retention)

One issue with retention is that there is no commonly-accepted definition of how it is calculated. Here is a round-up of the main three methods used to compute retention.

- ✓ Day(s) on which users need to open the game *at minima* in order to be considered retained (on top of Day 0).
- ✗ Example of a day on which opening the game does not make the users retained for the specific definition.

### • Full Retention (most restrictive)

Number of users who open the game every single day until Day N.



### • Classic Retention (most common)

Number of users who open the game on Day N specifically.



### • Rolling Retention

Number of users who open the game on Day N or any other day after that (haven't yet churned). Rolling retention = 100% - Churn.



## Engagement

- **Average Session Length**

Gives an idea of the amount of time users spend in your game on average.

$$\text{Average Session Length} = \frac{\text{Sum of the length of all sessions over a specific time period}}{\text{Number of game sessions completed in this time period}}$$

- **Daily Engagement (measured over a relevant time period)**

Shows how often users open your game per day, on average.

$$\text{Daily Engagement} = \frac{\text{Average number of daily sessions}}{\text{Average number of daily active users}}$$

## Virality

- **K-factor**

The k-factor is the viral growth rate of an app on a per-user basis. The global k-factor measures the total number of users which were introduced to the game by existing users, ie. not acquired organically nor through paid channels. The local k-factor only measures traceable viral mechanisms, such as Facebook invites.

### Global K-factor



■ Organic adoption
 ■ Paid acquisition
 ■ Acquisition through viral growth

### Local K-factor

K-factor = Nr. of invites sent to each customer  $\times$  conversion of each invite

## In-Game Monetization

- **Revenue**

- ▶ **Average Revenue Per User (ARPU)**

Shows the game's overall capacity to monetize.

$$\text{ARPU} = \frac{\text{Total revenue generated over a given period}}{\text{Number of unique users over this period}}$$

- ▶ **Average Revenue Per Paying User (ARPPU)**

Gives a good idea of how product changes affect monetization.

$$\text{ARPPU} = \frac{\text{Total revenue generated over a given period}}{\text{Number of unique paying users over this period}}$$

- ▶ **Average Revenue Per Daily Active User (ARPDau)**

Useful to estimate Customer Lifetime Value.

$$\text{ARPDau} = \frac{\text{Total revenue generated during a specific day}}{\text{Number of daily active users on this specific day}}$$

- **eCPI**

eCPI is a measure of the effective price you pay to acquire one user. It takes into account the discount effect of organic and viral installs.

$$\text{eCPI} = \frac{\text{Marketing budget spent}}{\text{Total number of users acquired (paid + organic + viral)}}$$

- **Monetization Rate**

Measures the proportion of paying users out of the total amount of players.

$$\text{Monetization Rate} = \frac{\text{Number of paying users over a specific time period}}{\text{Total number of active users over this period}}$$

- **Customer Lifetime Value (LTV)**

