



GLOBAL MARKET TRENDS

# Mobile Gaming Benchmarks

60K game devs | 100K games | 1.2 billion MAU



With insights from:  tenjin

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# About this report

GameAnalytics is a free tool that helps game developers and publishers around the world to better understand their players. Our aim is to shine a light on how the mobile games market is performing for all key metrics, using aggregated data from 1.2 billion monthly players.

## How to read our graphs

Inside, you'll find two separate graph types, showing three different quantiles. Here's a breakdown of what to expect:



### 1. Yearly Timeline Graph

This is all of the genre data aggregated to show industry trends over the last year.



### 75th quantile (top 25%)

Any game with a metric near the yellow line or bronze triangle is performing in the top 25% of games. Good job!



### 2. Genre Benchmarks Graph

This graph shows the top, median, and under-performing titles for all app store genres.



### 50th quantile (median)

Games here sit in the middle compared to all others on our network. They have potential, but likely need improving.

We've widened the range for top performing and bottom performing quantiles (previously the top 15% and bottom 15%). So the charts may vary slightly when compared to the 2018 benchmarks report.



### 25th quantile (bottom 25%)

Games with KPIs near this gray line or arrow are amongst the lowest performers compared to industry averages.

## Insights from tenjin

In this report, you'll now find data for both eCPM and CPI, so we can now give you a comprehensive look at how product analytics meets marketing analytics - thanks to the help from our friends at Tenjin.

VIP Report

## What makes a smash hit?

Learn about the **top 5%, 10%, and 20%** of games...

Check out the free version of **Benchmarks+ here.**



# About our network

To give you a clearer view of our analysis and data, here's a percentage breakdown of our portfolio of games per region. See for yourself just how large our sample size really is:



**Up to 100K  
games studied**

Analysis of almost 100K games which are currently active on the app stores.



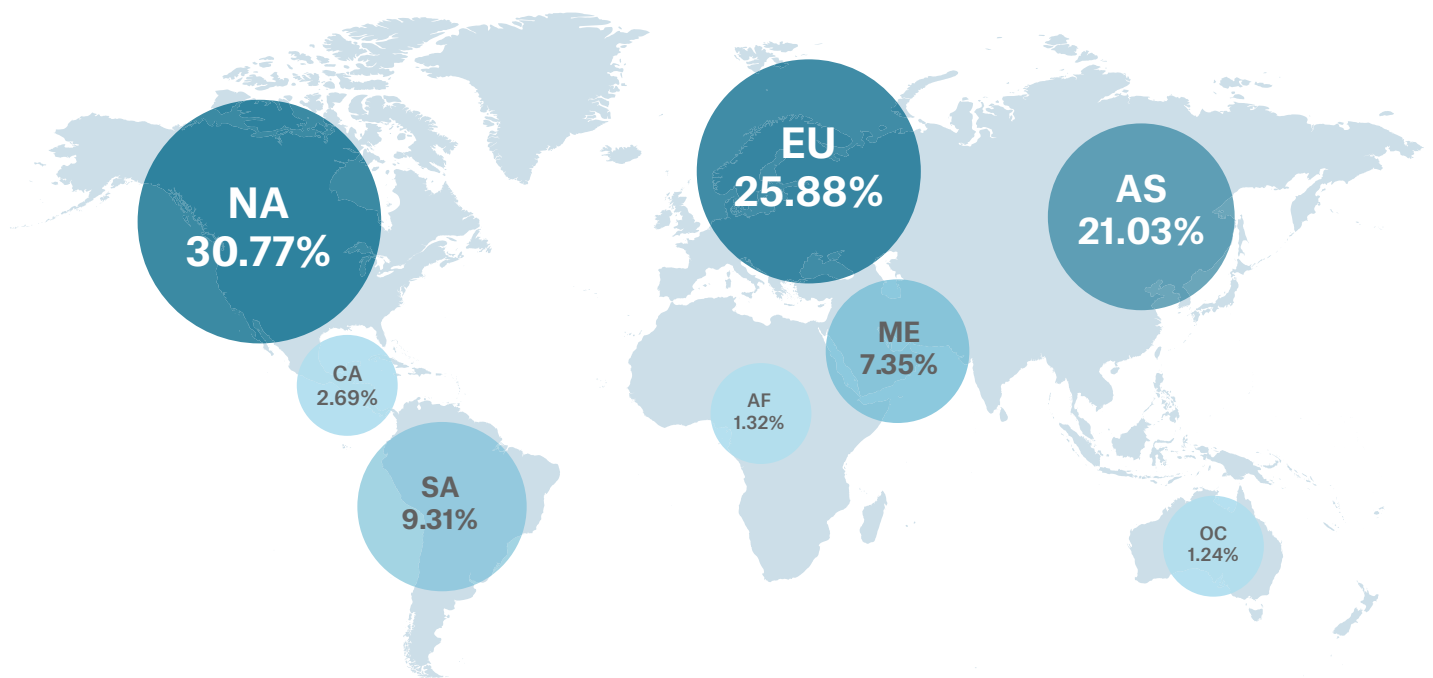
**From 1.2  
billion MAU**

Our analysis presents findings from 1.2 billion monthly active players.



**Over a full  
calendar year**

Data for a full calendar year, running from July 1st 2018 to June 30th 2019.



**Please note** - we're certified by KidSafe+ and officially COPPA compliant, which means we do not store or process data about children. So, in this report, you'll notice that we've decided to remove the 'Kids', 'Education' and 'Family' genres from our graphs and data.

# Key takeaways



- Page 9

## These are your retention targets...

**D1 of 35%**, and **D7 of 11%** upwards. Any higher, and your game is doing great.



- Pages 18 & 20

## Players are spending less

Year-on-year, both ARPPU and ARPDAU has **dropped by around 15 - 20%**.



- Page 10

## 4% D28 retention is considered good

That said, "classic games" are seeing double this, with retention **up to 10%**.



- Page 19

## But mid-core still drives revenue...

Multiplayer, Role Playing, and Strategy make the most, **with ARPPU up to \$24**.



- Page 12

## Median session length is around 4-5 mins

However, the top 25% are seeing **7 - 8 mins** (and bottom 25% seeing only 2 - 3 mins).



- Page 21

## ...and is converting a bigger % of players

For ARPDAU, Role Playing and Strategy games take the lead, converting **5-7x more** than the other genres.



- Page 13

## Players can't put down Card & Casino games

People still play Casino & Card games for the longest, with sessions **up to 22 minutes**.



- Page 22

## Is there more interest in ad-based revenue?

Conversion is dropping, suggesting devs are focusing less on IAP and more on **ad-based revenue**.

## What does this all mean?

Whilst industry data suggests that mobile gamers are spending more, in-app purchase data for ARPDAU and ARPPU have declined by about 15-20% for casual games, suggesting a greater shift towards F2P, with more emphasis on ad-based monetization. It seems that mid-core titles are generating the lion's share of IAP revenue, now more than ever.

## How much potential do games have?

Day 1 retention looks at how many players return after 1 day of playing a game. You'll want to use this KPI to get a quick impression of your game's potential.

### At a glance...

- ♦ If a game has more than **35% day 1 retention**, then it's doing well.
- ♦ Anything **below 30% retention** generally needs improvement, especially for many casual games.
- ♦ Classic games take the lead for this metric, with the top 25% of games in Trivia and Word having D1 retention as **high as 43%**.

### If your day 1 retention is low...

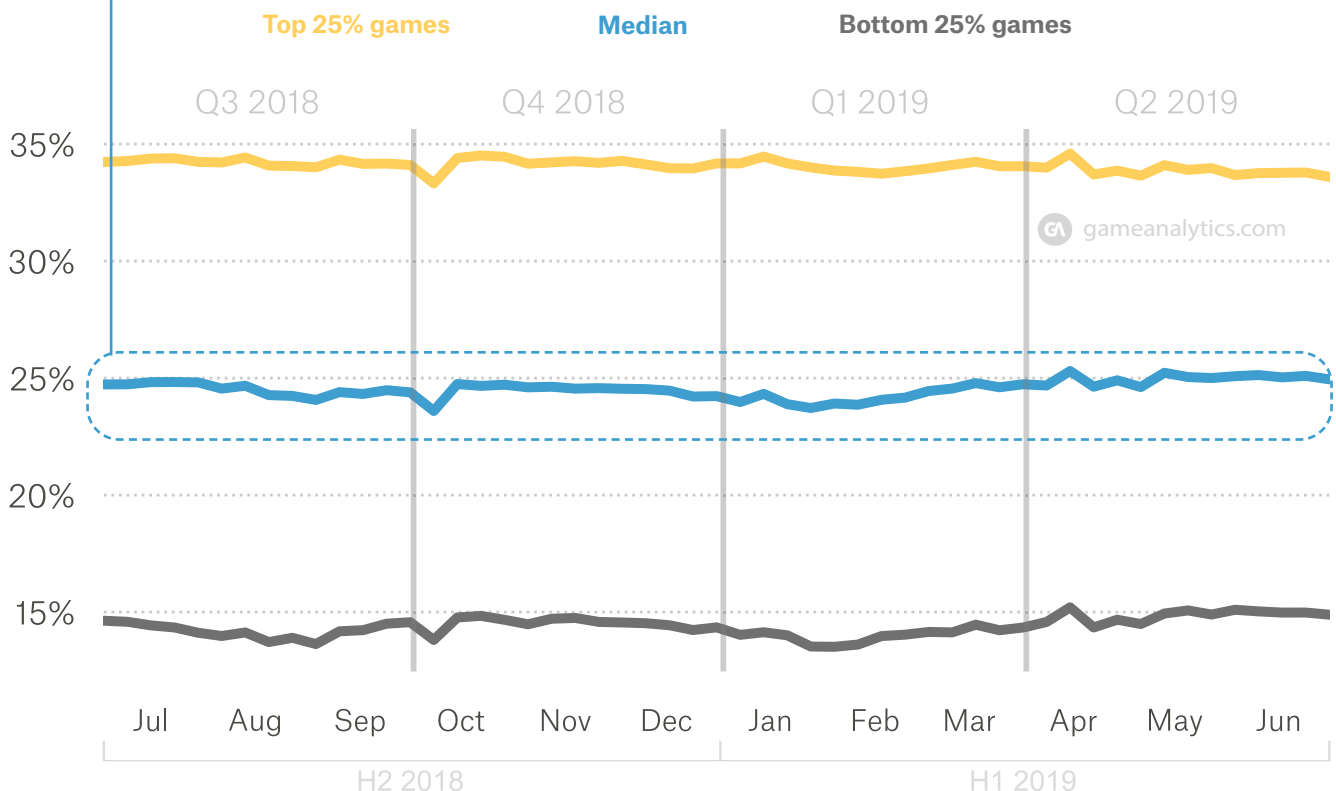
If a game has low day 1 retention, then it's probably going to need a massive overhaul.

Many studios drop under-performing titles (sometimes killing games with anything less than 35%). Although this can be a hard decision to make, it's sometimes better to cut losses and move on to the next project.

Back to the drawing board!

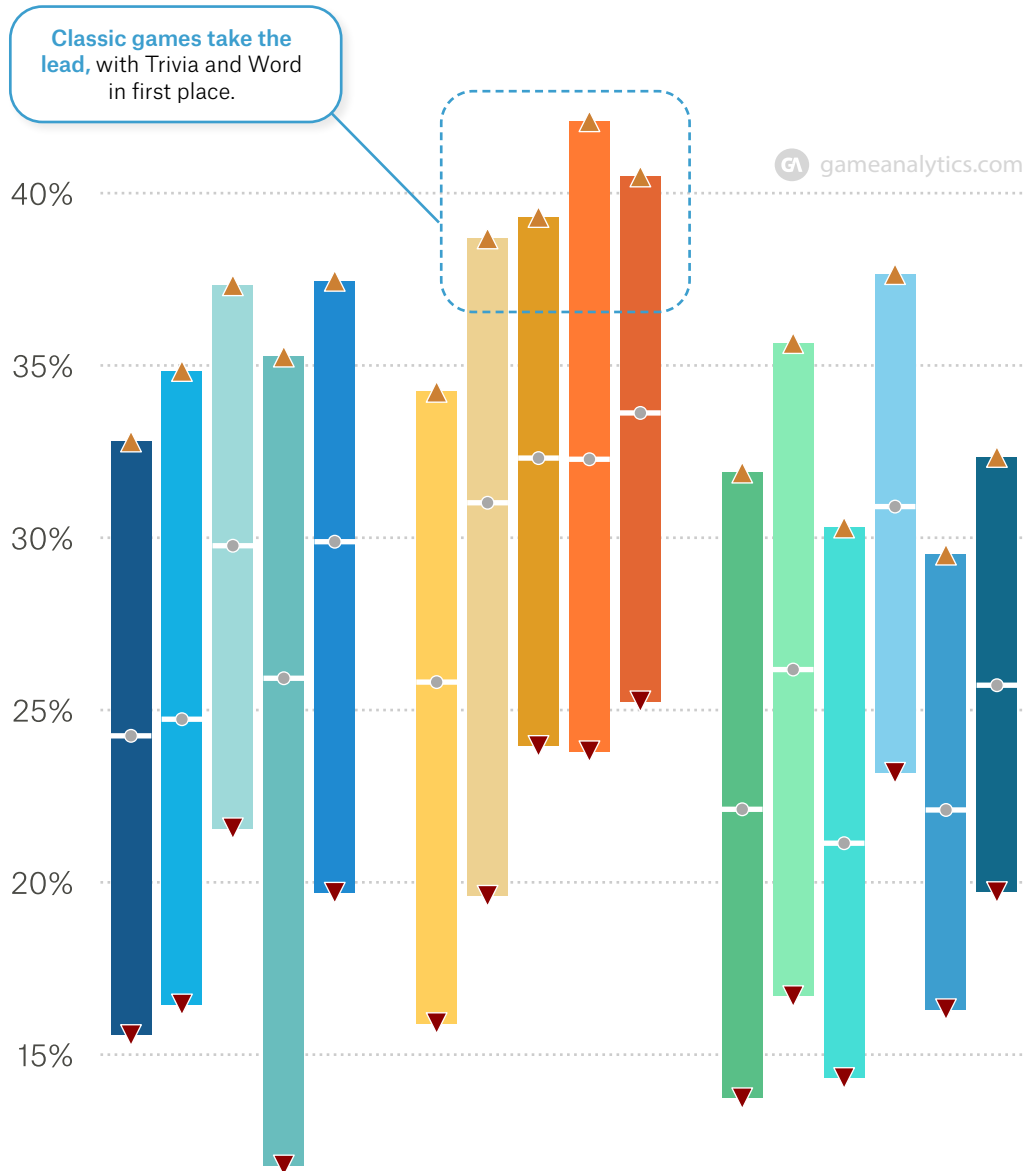
The average for most games is around 25%, but some of the most successful titles see 35% D1 upwards.

### Day 1 Retention - Yearly Timeline



## Day 1 Retention - Genre Benchmarks

▼ Bottom 25% of games      —●— Genre median      ▲ Top 25% of games



### Casual

- Action
- Adventure
- Arcade
- Casual
- Puzzle

### Classic

- Board
- Card
- Casino
- Trivia
- Word

### Mid-core

- Multiplayer
- Role Playing
- Simulation
- Strategy
- Racing
- Sports

## Are players still coming back after a week?

Similar to day 1 retention, day 7 looks specifically at players who come back to a game after a week of playing. Naturally, this will be lower than day 1 retention.

### At a glance...

- ♦ Card and Casino games are catching up with the Word genre, with the top performing titles in these genres having **up to 18% day 7 retention**.
- ♦ Retention tends to **decrease around Christmas** and summer holidays.
- ♦ Classic games perform the best for day 7 retention, whereas mid-core games tend to be **between 5 - 8%**.

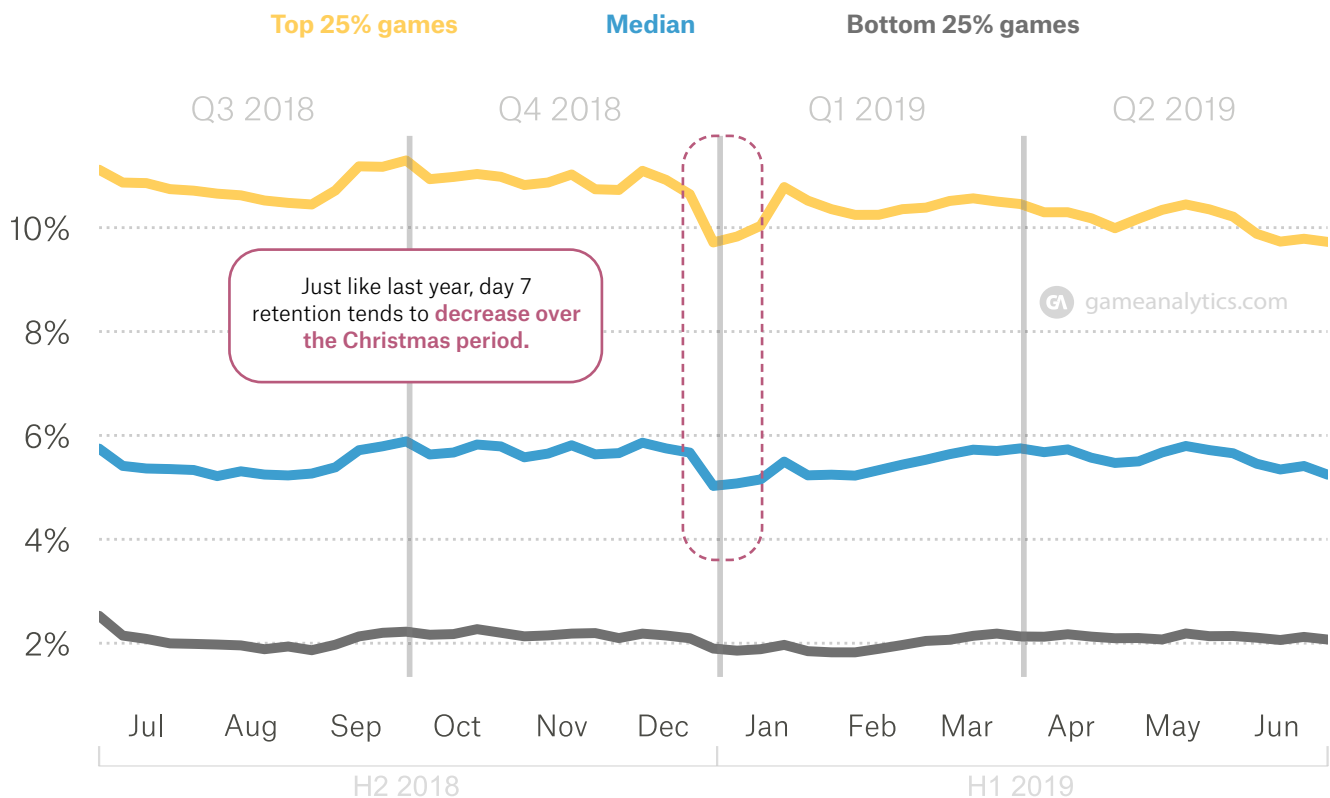
### Perfect your core game loop

Players can lose interest in repetitive things easily, which is a valid reason why day 7 retention can suffer.

When repeating core loops in games, it's important to make sure players can unlock new content, be that items, areas or levels. Don't let them get bored!

Good to know!

## Day 7 Retention - Yearly Timeline



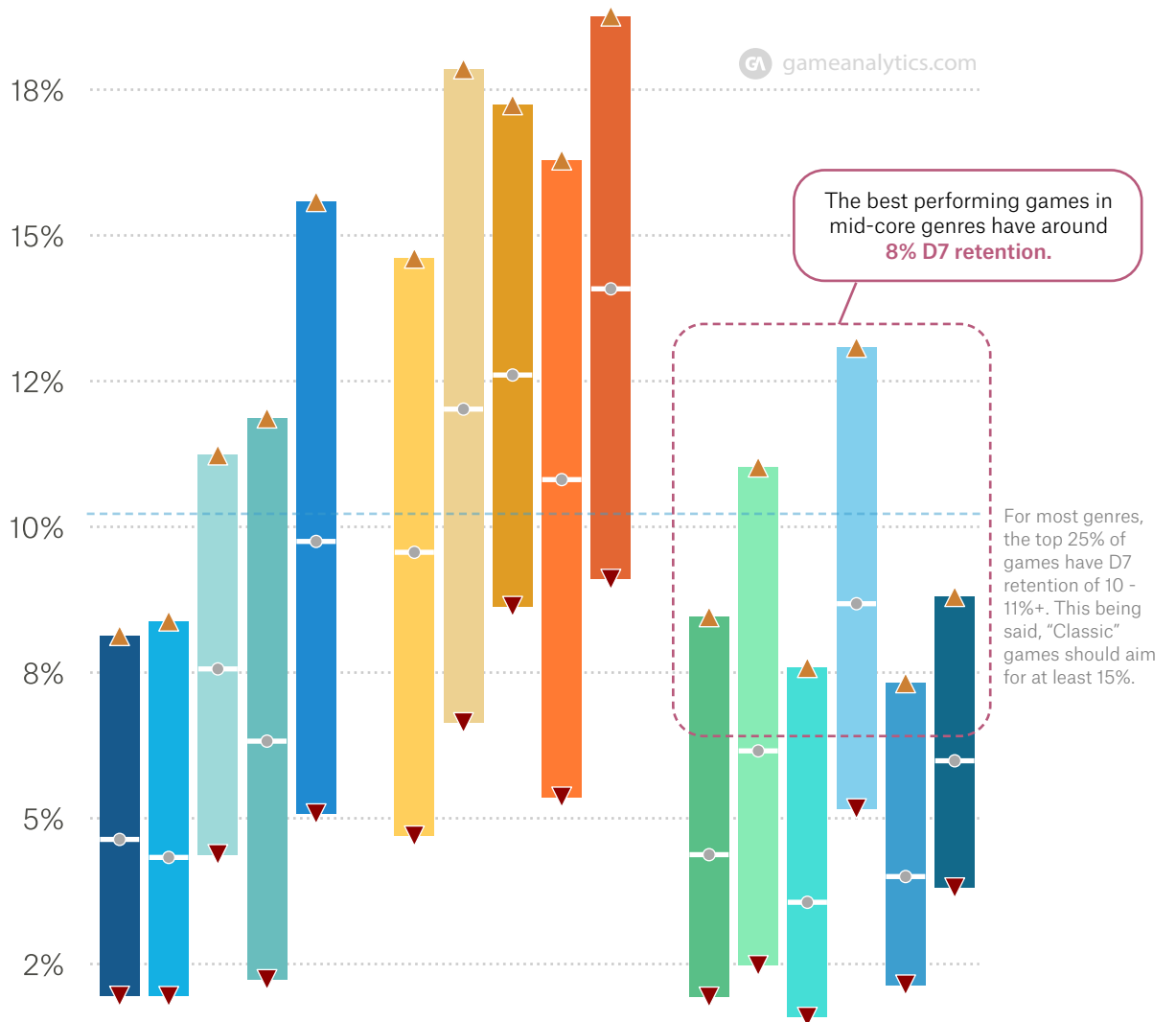


## Day 7 Retention - Genre Benchmarks

▼ Bottom 25% of games

—●— Genre median

▲ Top 25% of games



### Casual

- Action
- Adventure
- Arcade
- Casual
- Puzzle

### Classic

- Board
- Card
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- Word

### Mid-core

- Multiplayer
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- Sports

## Players that come back after 28 days are truly engaged.

With so much competition out there, retaining players for a full month can be tricky. Normally, developers can expect to see a dramatic drop-off when it comes to day 28 retention.

### At a glance...

- ◆ D28 retention of **4% upwards** is good, however if you have a “classic type” game, then aim for double.
- ◆ The bottom **25% have a D28 retention of 0.5%**, showing how difficult it is to retain players for a full month.
- ◆ Word and card games are in the lead, with the top performing games having **day 28 retention as high as 12%**.

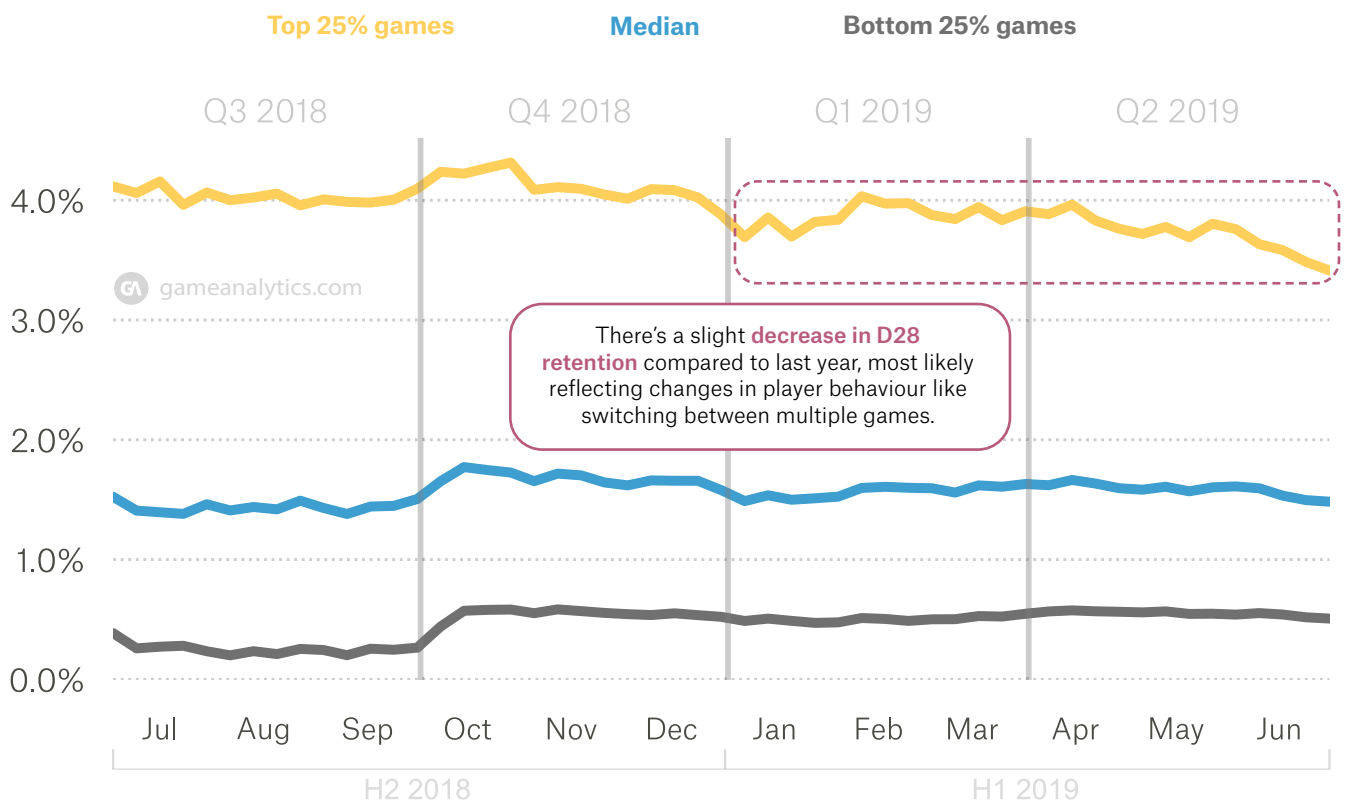
If players are still playing after 28 days, they really love that game. But then what?

### Consider the endgame

The endgame is important to keep players engaged. Although tricky to design, great endgames allow users to continue enjoying core gameplay.

PVP modes, daily challenges and leaderboards are all great options to keep users excited.

## Day 28 Retention - Yearly Timeline



## Day 28 Retention - Genre Benchmarks

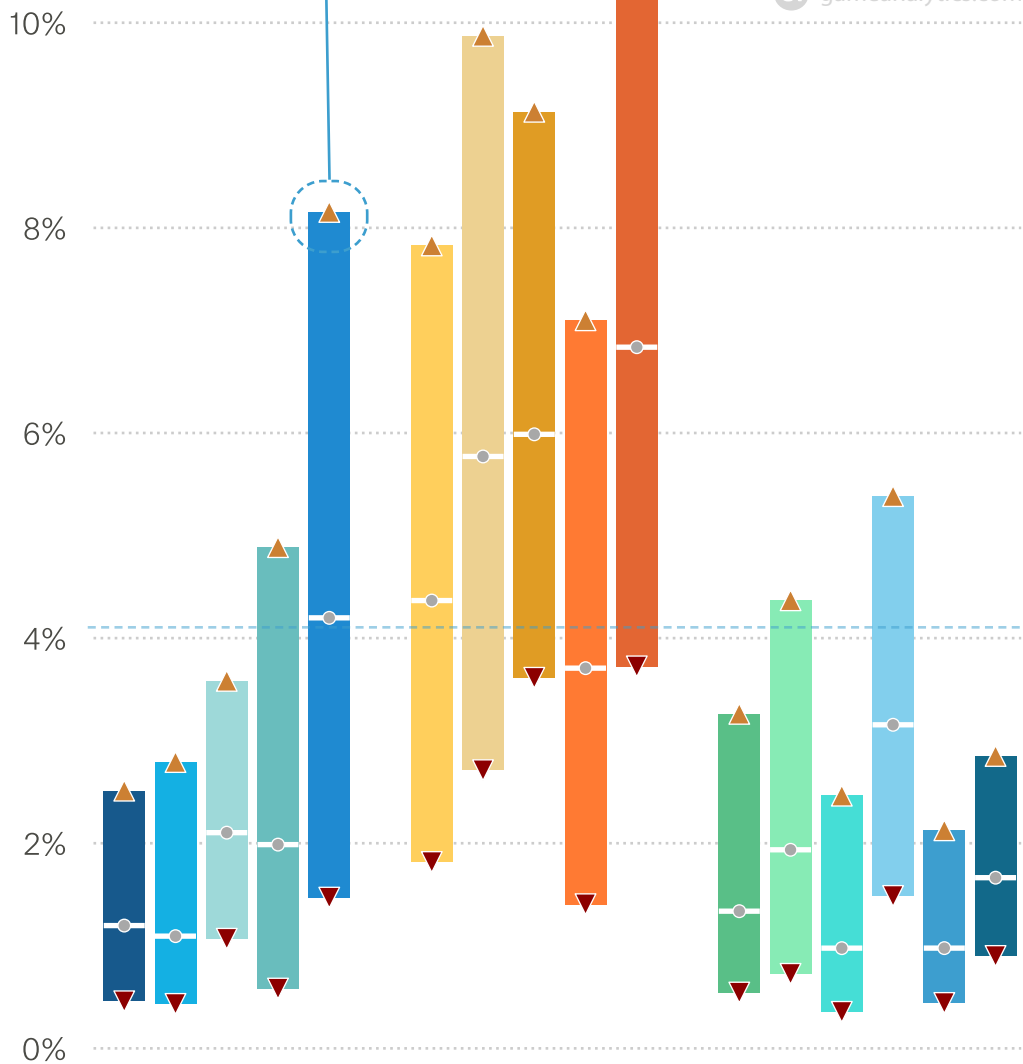
▼ Bottom 25% of games

—●— Genre median

▲ Top 25% of games

Puzzle performs particularly well in the casual category, with the top 25% of games reaching nearly **8% D28 retention**.

GA gameanalytics.com



### Casual

- Action
- Adventure
- Arcade
- Casual
- Puzzle

### Classic

- Board
- Card
- Casino
- Trivia
- Word

### Mid-core

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- Racing
- Sports

## How long do people play on average?

Average session length looks at how long users play a game, from initially opening the app to when the session is closed and sent to the background.

### At a glance...

- ◆ YoY, we've seen **ASL drop by around 1 minute**, with the majority of genres seeing a 30 second decrease in the first half of 2019.
- ◆ For most genres, if your game has an average session length higher **than 7 mins**, then it's doing well.
- ◆ **Casino and Card** still reign kings, having the longest ASL (these genres have a great deal of overlap).

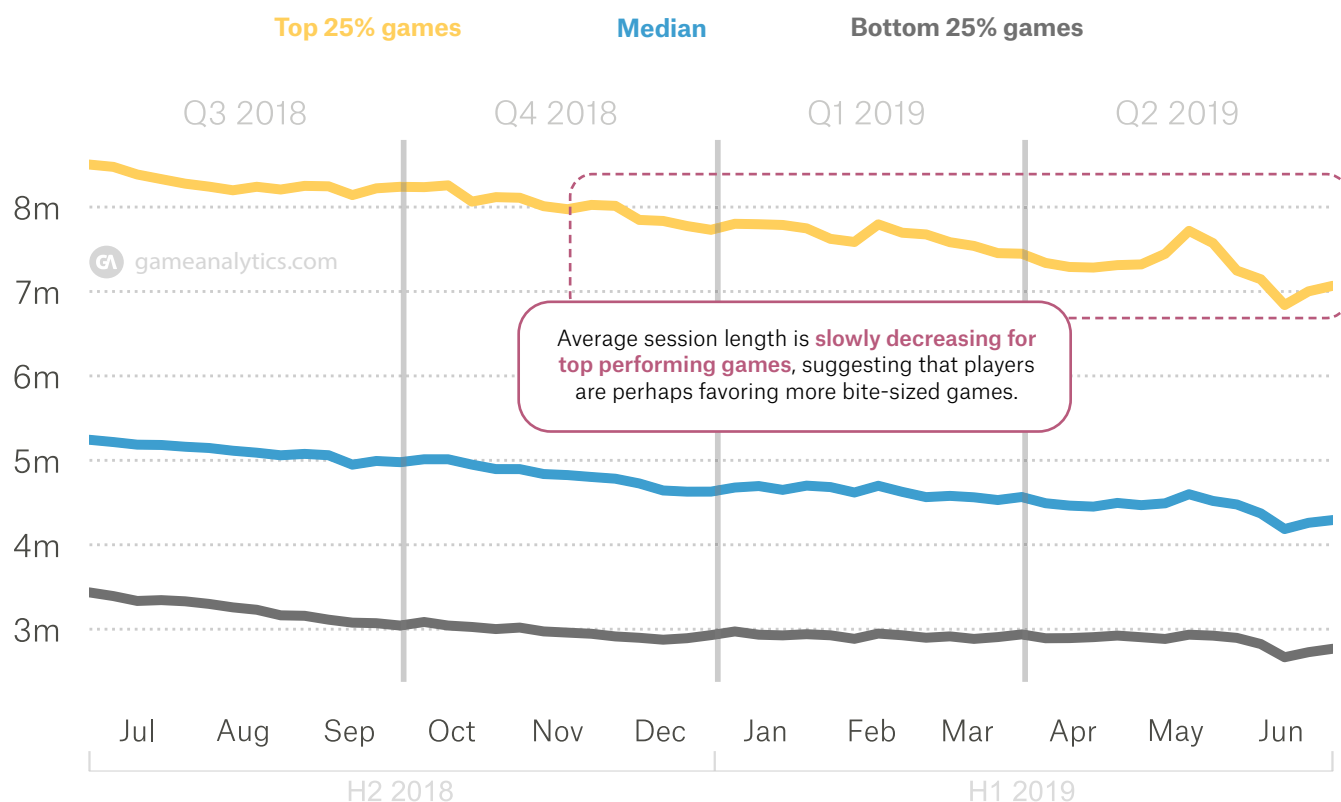
### Reward loyal players

Users ultimately control how long they play for, so it's important to not limit their gameplay. If they complete 10 levels within a game and end up playing for 20 minutes, these players should be rewarded to make sure they have a good experience.

This should apply to any stage of gameplay, whether they are returning after 1 day, 7 or 28.

Makes sense!

## Average Session Length - Yearly Timeline

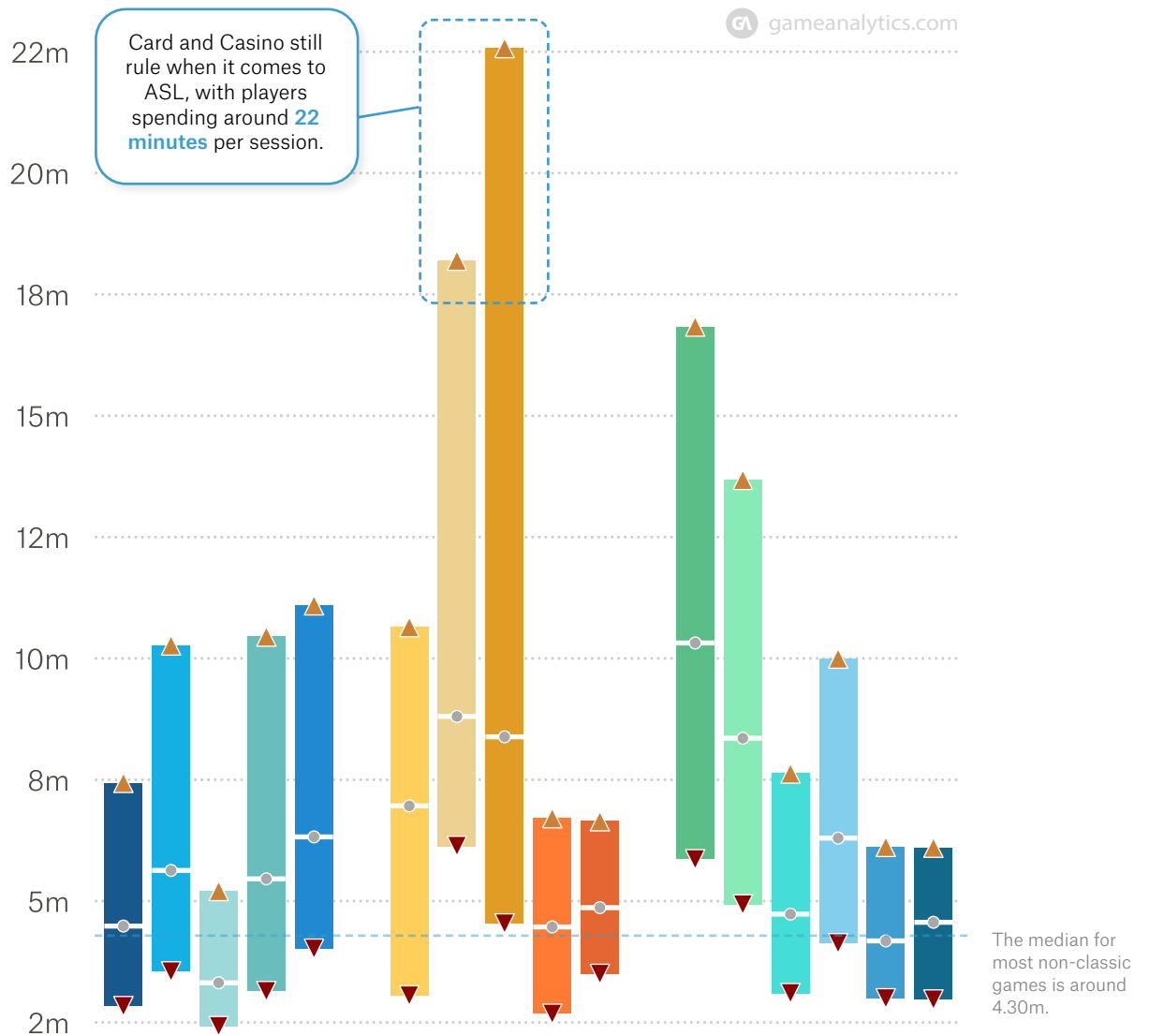


## Average Session Length - Genre Benchmarks

▼ Bottom 25% of games

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- Trivia
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### Mid-core

- Multiplayer
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## How engaged are players in a game?

To break this down, Stickiness is the DAU-to-MAU ratio, which essentially means how many monthly users play each day.

### At a glance...

- Similar to last year, Stickiness tends to drop **around Christmas and New Year**, with a small rise after New Year's Eve.
- The classic category** performs the best for Stickiness, with the top 25% of games reaching as high as 26%.
- The 5 top performing genres for this metric are Board, Card, Casino, Puzzle, and Word, with **more than 20% Stickiness**.

How can I increase engagement and keep my players loyal?

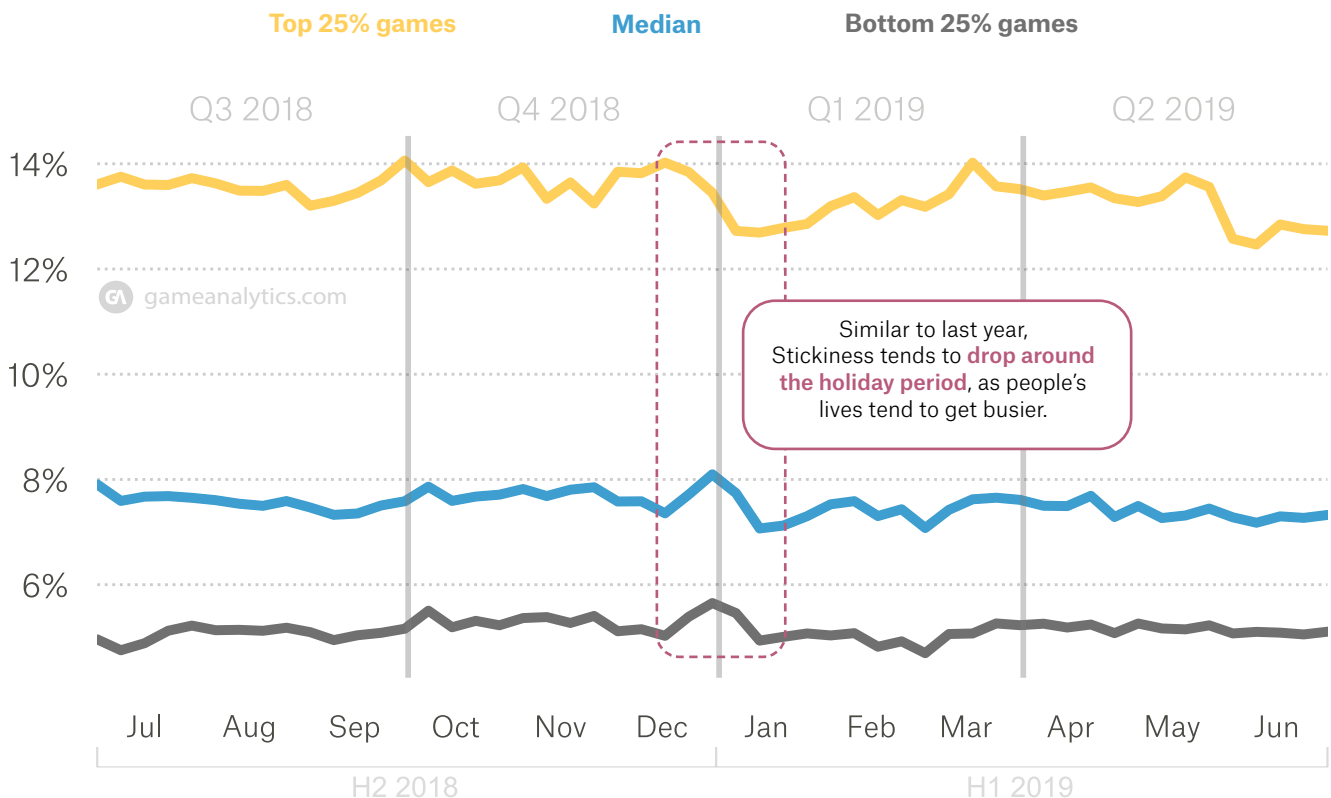
### How to keep them loyal

Promotions, giveaways and freebies are always a nice way to reward regulars.

Ultimately however, it all comes down to content.

If players are denied new challenges or fresh gameplay, then they will lose interest and move on to the next game.

## Stickiness - Yearly Timeline

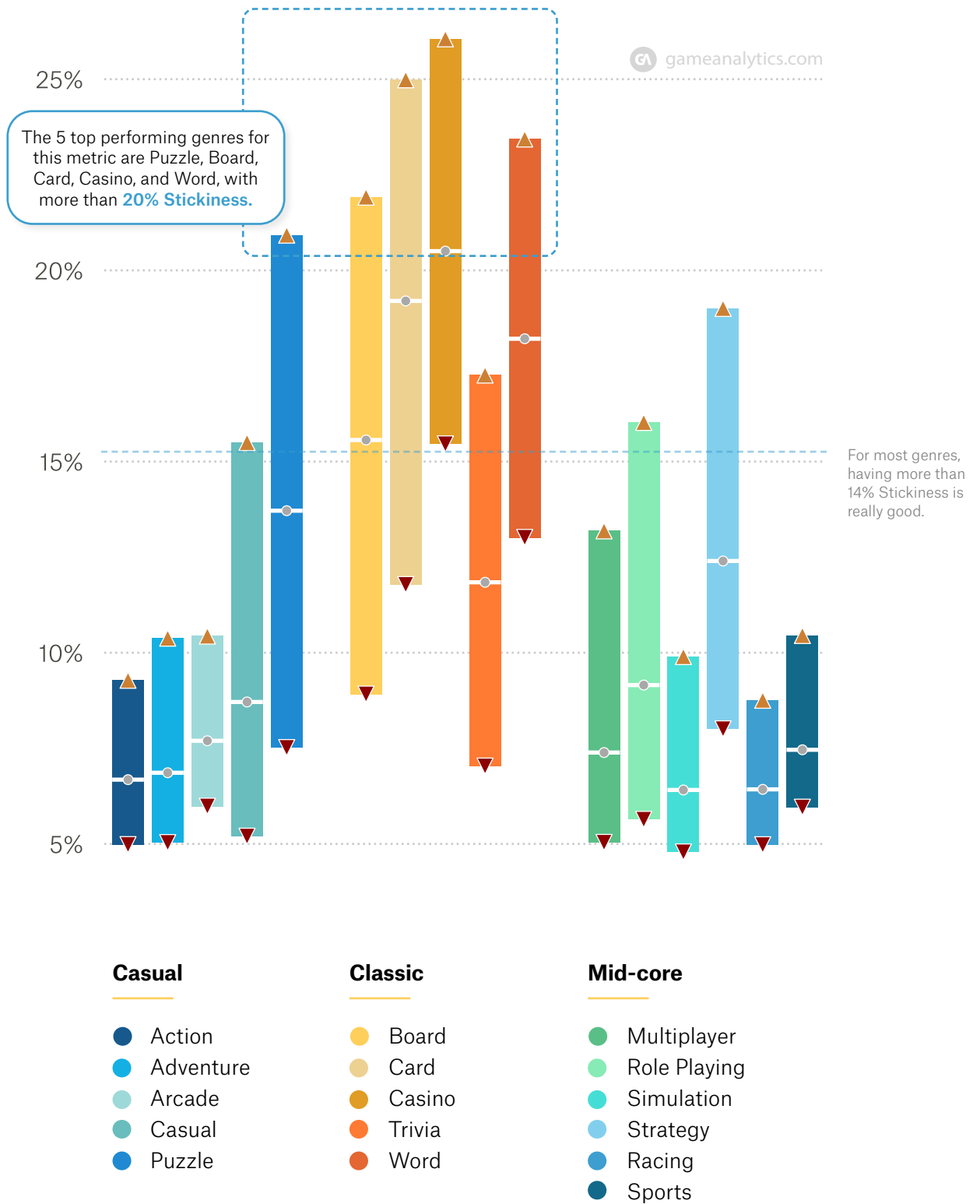


## Stickiness - Genre Benchmarks

▼ Bottom 25% of games

—●— Genre median

▲ Top 25% of games



# Want to get published in China?

Got a solid hyper-casual game and want to take it to the biggest mobile gaming market in the world? **JoyPac can help make that happen.**

Players in Asia want games they can pick up and play on the go. No barriers, just good gameplay. Below you can find the JoyPac checklist for what you should consider, if you're interested in launching your game in Asia.

## Intuitive gameplay, a solid core loop and polished art

Make sure your game has an original spin on an established theme with gameplay that's easy to learn, but difficult to master.

## F2P games that monetize well with a mobile ads model

At the moment, over 61% of Chinese gamers\* prefer F2P and games with ads.

\*Source: Mintegral

## Mobile platforms for extended reach

Mobile gaming takes the lead in China, with over 60% of the population playing\*. Make sure your game is optimized for mobile.

\*Source: PocketGamer.com

## Standout KPIs on either retention, sessions or stickiness

Yes, data is king. Generally you'd want to see day 1 retention greater than 40%, and day 7 retention over 10%.





## JoyPac's story

Back in 2018, APAC games publishing specialist, JoyPac, entered the market with a clear mission: to make it easy for game developers to reach more players than ever before.

Since forming with this goal, they've worked tirelessly to perfect their strategy and optimize the distribution process for their partners. They're now beginning to see some amazing results.



# 20

Games launched  
since 2018

# 10

Games in  
top 50 in Asia

# 23M

Total downloads  
of our games

# 1B+

Impressions in  
our games

Within less than a year of forming, JoyPac released more than 18 games - and in early 2019 one of their very first titles reached the top 3 most downloaded games on iOS in China.

They claim that their "success is the result of an uncompromising focus on high-quality hyper-casual titles, combined with a data-driven evaluation process using GameAnalytics."

This helps them identify the best new releases primed for success in the East.

They've now released a string of hit titles in China, including Skip School, Radish Girl, Master of War, and one of their most successful releases, Fluffy Fall, published by the Paris-based What(Games) and created by the talented developers at Kilosaurus.

Submit your hyper-casual game to JoyPac for a free review.

[Get your game reviewed >](#)

## How much do users spend?

In this section, we look at the average revenue per paying user across games on our platform.

To keep the data clean and accurate, we've only considered games with actual revenue.

### At a glance...

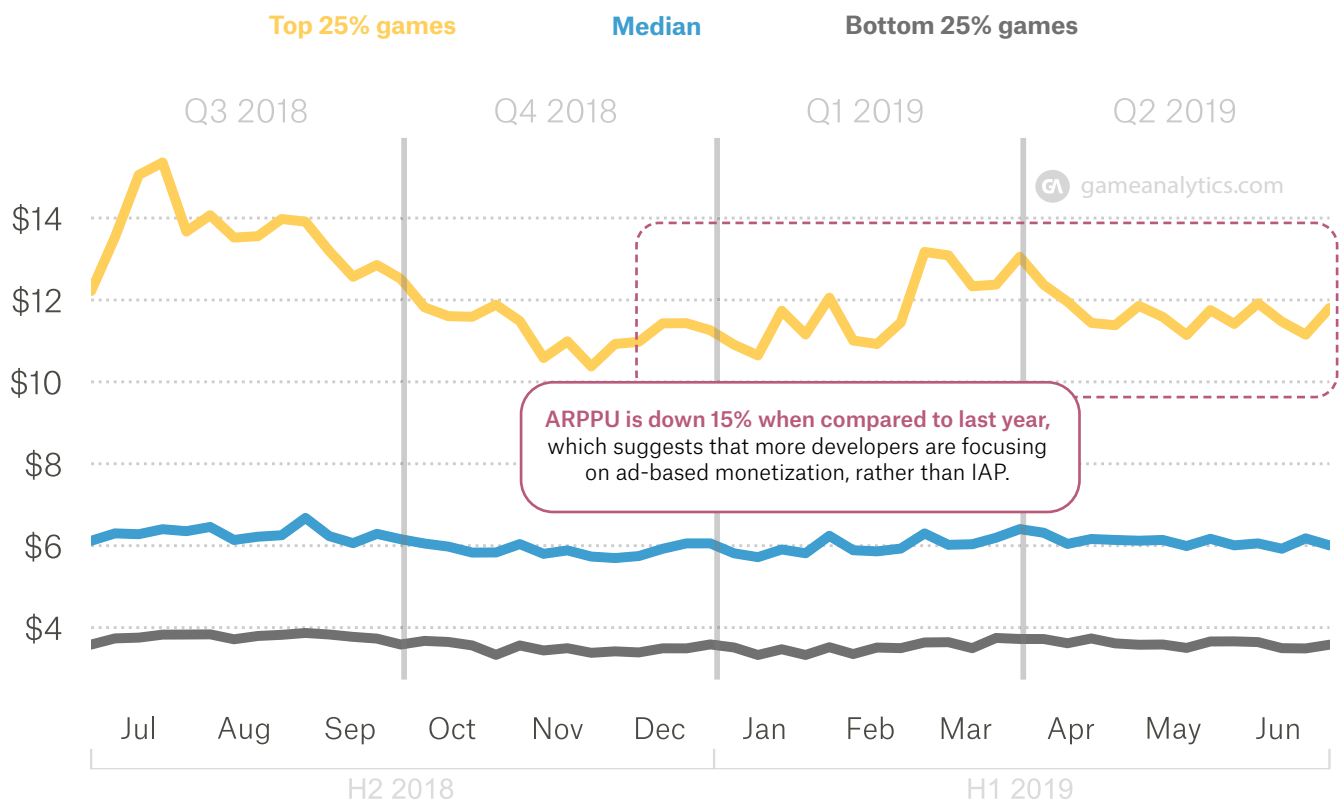
- ♦ **ARPPU is a couple of dollars lower than last year**, which suggests that more developers are focusing on ad-based monetization, rather than IAP.
- ♦ There is a small difference between the average and the bottom 25% of games, but there is a **2x gap** between them and the top performing titles.
- ♦ For top performing genres, Role Playing, Multiplayer, and Strategy take the lead, with **ARPPU up to \$25**.

### How to increase player spend

There are loads of ways to encourage players to spend more in a game, including push notifications, timely promotions and dynamic pricing to cater for different player demographics.

Before optimising IAP, developers should focus on overall gameplay. After all, people can't spend money if they aren't playing that game.

## ARPPU - Yearly Timeline

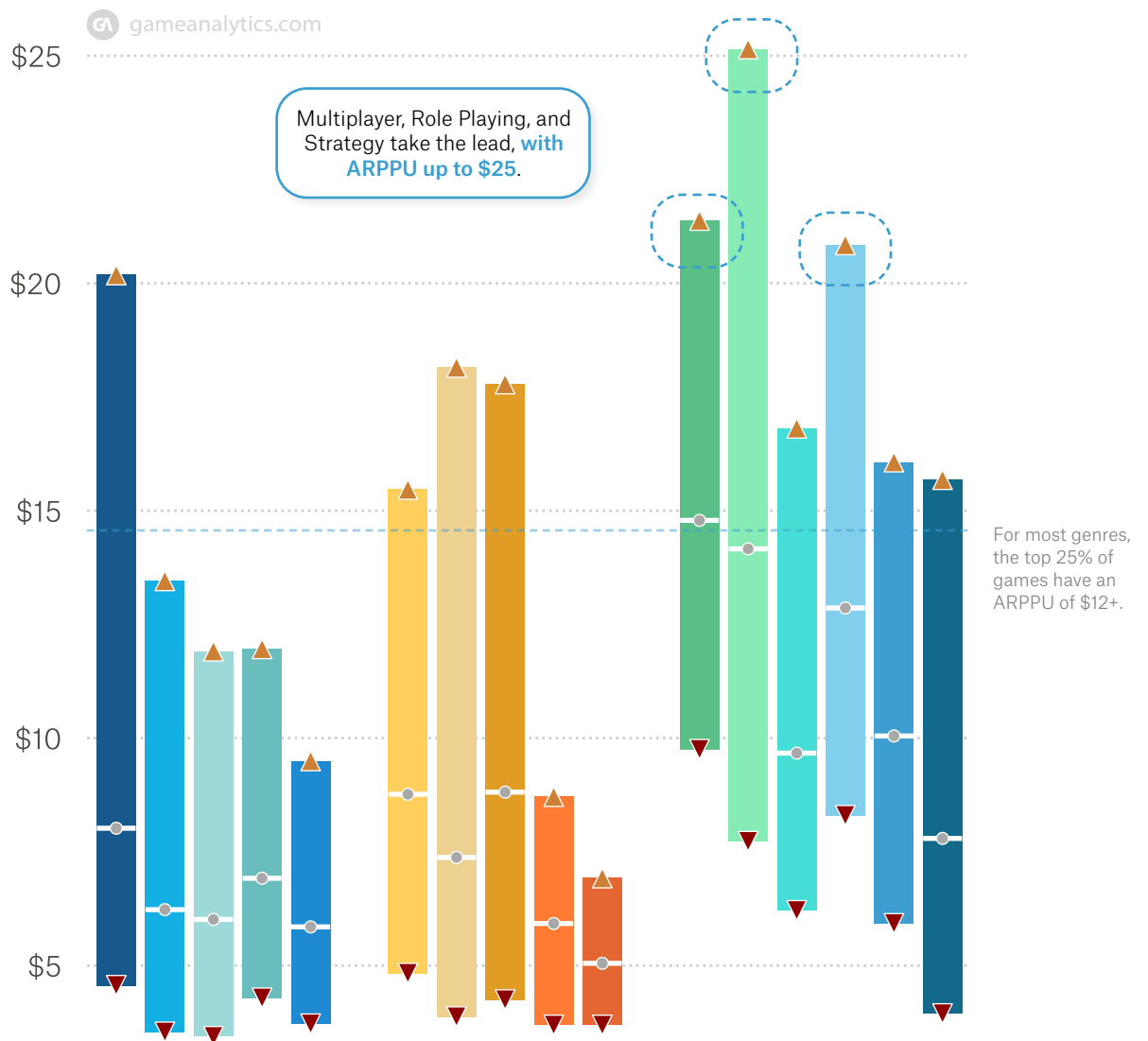


## ARPPU - Genre Benchmarks

▼ Bottom 25% of games

—●— Genre median

▲ Top 25% of games



### Casual

- Action
- Adventure
- Arcade
- Casual
- Puzzle

### Classic

- Board
- Card
- Casino
- Trivia
- Word

### Mid-core

- Multiplayer
- Role Playing
- Simulation
- Strategy
- Racing
- Sports

## What's the average value for each of your players?

We break down average revenue per daily active user to see how much money a developer makes from a user in a single day. Similar to ARPPU, we only consider games with actual revenue.

### At a glance...

- Similar to ARPPU, **ARPDau has dropped YoY**.
- Role Playing and Strategy take the lead, both performing **5-7x better than most other genres**.
- Again, there is little difference between average and underperforming games, but there is a **3-4x gap** between them and the top performing titles.
- Trivia and Word** are the lowest performing genres for both ARPDau and ARPPU.

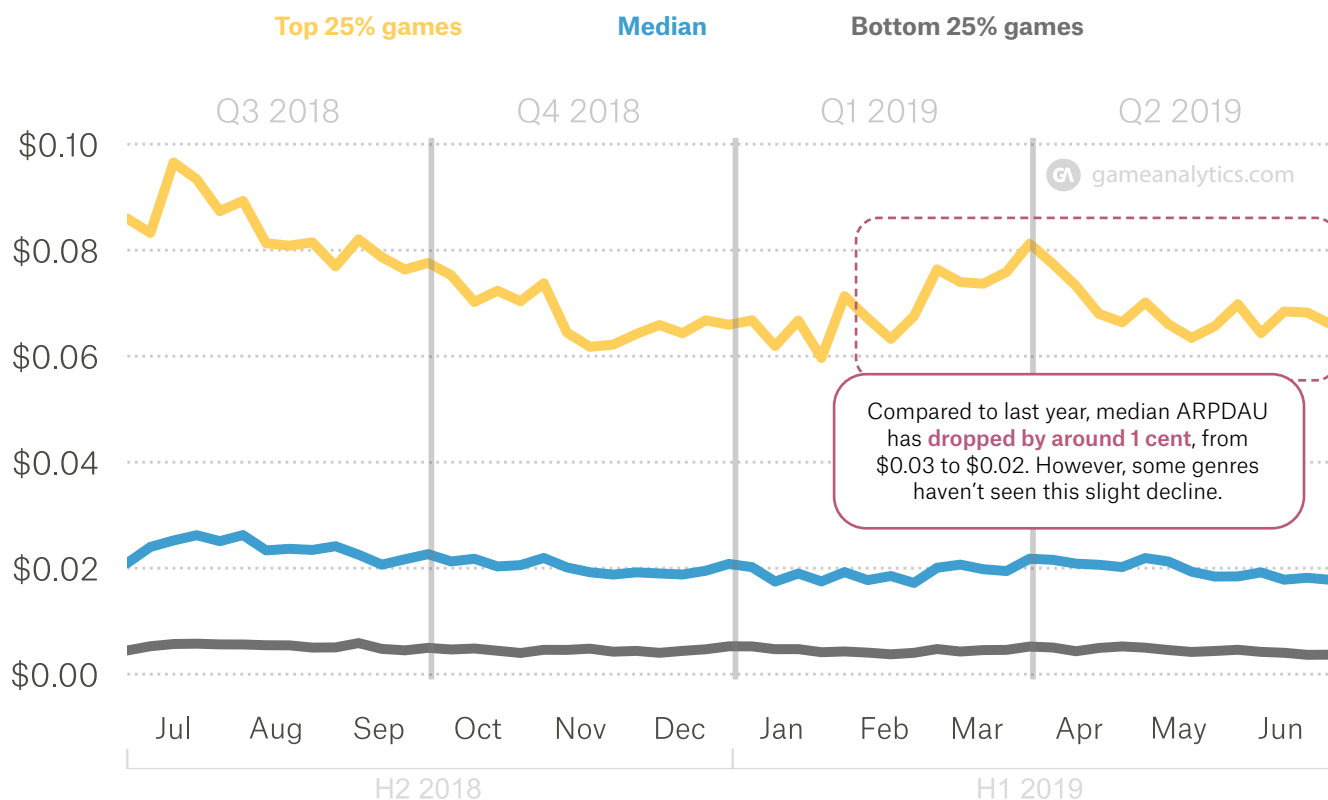
### Offers are key

Providing in-game offers to your players is key to increasing your ARPDau.

Player types should be considered in these offers, as well as how much they can actually afford. A/B testing different price points is a good tactic to see which IAP amounts players prefer, and to get a grasp of what their budget will allow.

Thanks for the tip!

## ARPDau - Yearly Timeline

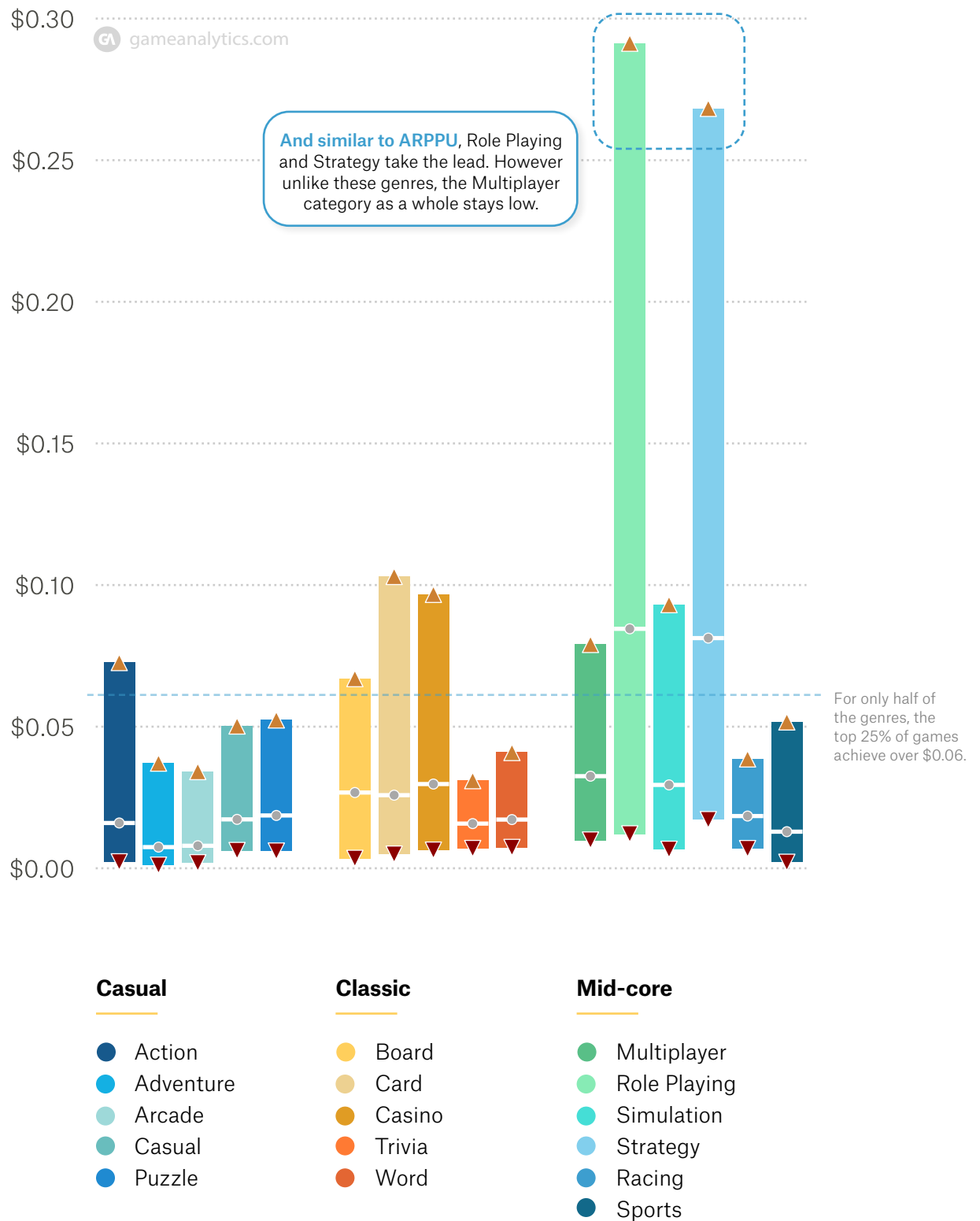


## ARPD AU - Genre Benchmarks

▼ Bottom 25% of games

—●— Genre median

▲ Top 25% of games



## Which genre gets the most players converting?

Conversion data is the percentage of users who made a purchase that day. In the following graphs, the conversion rate is analysed on a daily basis.

### At a glance...

- Similar to ARPDau and ARPPU, conversion rate is also declining for most games. This is likely due to the **rise in ad-based monetization**.
- Average games convert just under 0.3% of players (compared to 0.4% in 2018), however the top performing titles are converting **2-3x more in comparison**.
- Role playing games have up to a **3-4x better conversion** rate than other top performing genres.

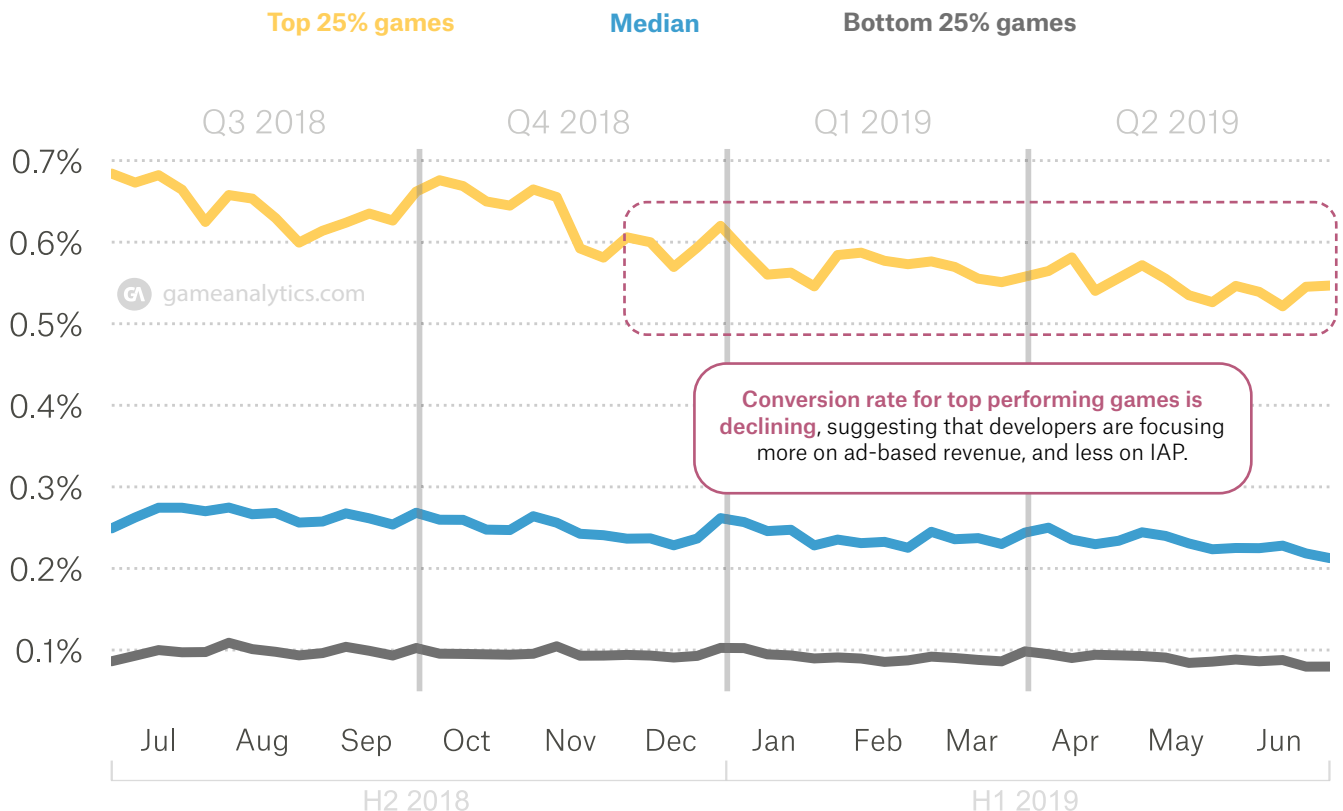
### How to increase conversion

Try and anticipate the needs of your players by offering timely and useful rewards.

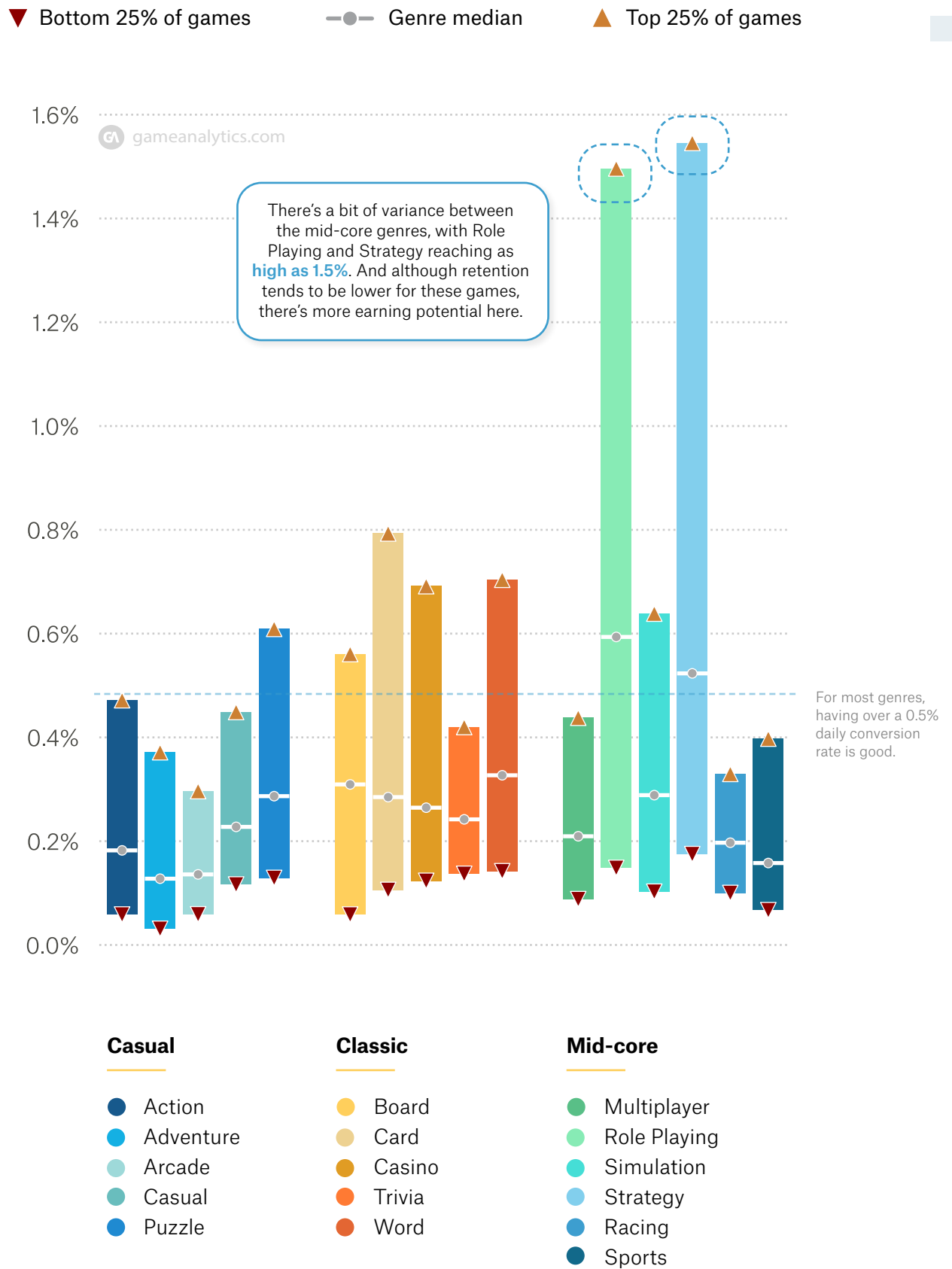
A couple of examples include knowing which level they get stuck on, when they need extra lives or if they have run out of hints.

Reactive in-game offers are a great way to remind players of the items they can purchase, and can make the game more helpful.

## Conversion - Yearly Timeline



## Daily Conversion - Genre Benchmarks





GameAnalytics  
gameanalytics.com/careers

# Want to work on a report like this?

We're on the lookout for some talented data scientists, analysts, and engineers to join our team in London or Copenhagen. If you're a data-lover with experience in the games sector, then get in touch to hear about our open roles and projects.

## Just some of the perks that come with the job:

- Flexible working hours
- Endless training opportunities
- Cutting edge projects
- Monthly social nights
- Expensable phone bill
- Cycle-to-work scheme
- And much more...



## Not a data scientist?

Not a problem. We're also on the lookout for a range of roles, from frontend, backend, through to product management.

[Apply today](#)



Insights from Tenjin

# Focusing on eCPM and CPI

Hyper-casual is a huge superpower in the appstore, with  
**9/10 top games** belonging to this genre in the charts.



MADBOX

SAYGAMES

greenpanda  
GAMES

HOMAGAMES

POPCORE

Ketchapp

Voodoo

tastypill

**7 out of top 10 hyper-casual publishers** are using Tenjin's tools and training. This is why we've decided to partner with them for the remainder of this report, where they'll show you the latest stats and trends for both eCPM and CPI, for 16 countries across the globe.

Feel free to reach out to [marketing@tenjin.com](mailto:marketing@tenjin.com) to learn more how you can become a top hyper-casual publisher.



## Which country has the lowest eCPM?

eCPM (effective cost per mille) is the amount an advertiser (usually a developer or studio) pays another game or publisher per one thousand visitors who see their advert.

### At a glance...

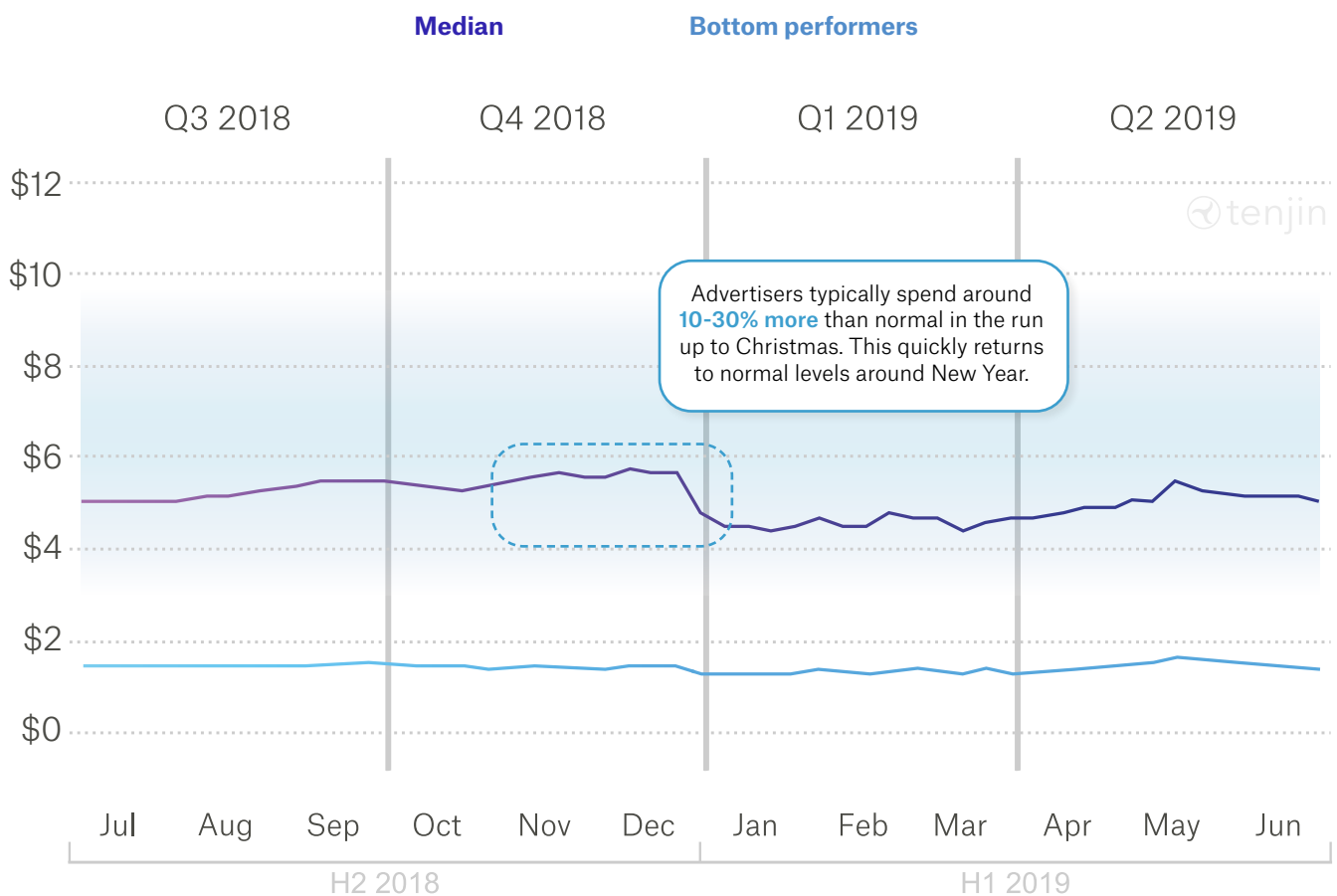
- ♦ The median eCPM for hyper-casual games **is around \$5**.
- ♦ If you receive an eCPM somewhere in the blue gradient range below, then you're doing pretty well.
- ♦ An **eCPM of \$10 or greater** is particularly good for hyper-casual titles.

### How to increase eCPM

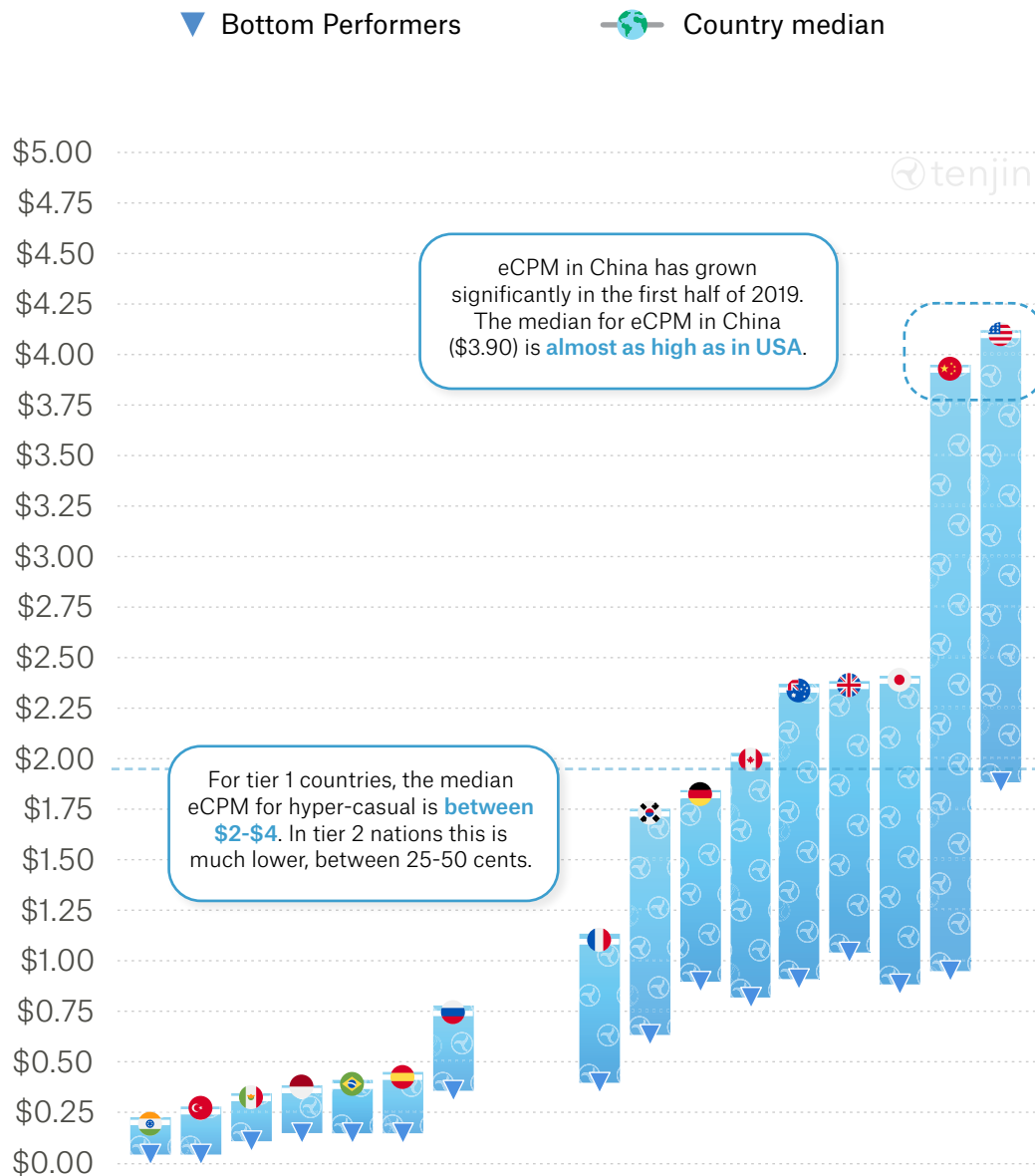
When using a mediation platform, trying out different ad formats and experimenting with placements are all great ways to improve your eCPM.

It may sound counterintuitive, but delivering ads from your competitors can actually have a positive impact. Just make sure to serve these ads to your most loyal players to avoid cannibalizing LTV.

















## eCPM - Yearly Timeline for Hyper-Casual Games (Tenjin)



## eCPM - Country Benchmarks for Hyper-Casual Games (Tenjin)



### Countries

 India	 Spain	 Canada
 Turkey	 Russia	 Australia
 Mexico	 France	 UK
 Indonesia	 Republic of Korea	 Japan
 Brazil	 Germany	 China
		 United States

## How much do developers spend per install?

CPI (cost per install) is the pricing model used in mobile acquisition campaigns, where app advertisers pay every time a user installs their app from their ad.

### At a glance...

- ✦ According to Tenjin, a **CPI under \$0.30** is pretty good for a hyper-casual title.
- ✦ If you're getting CPIs anywhere within the blue gradient, then you're doing really well. Less than **\$0.20 is excellent**.

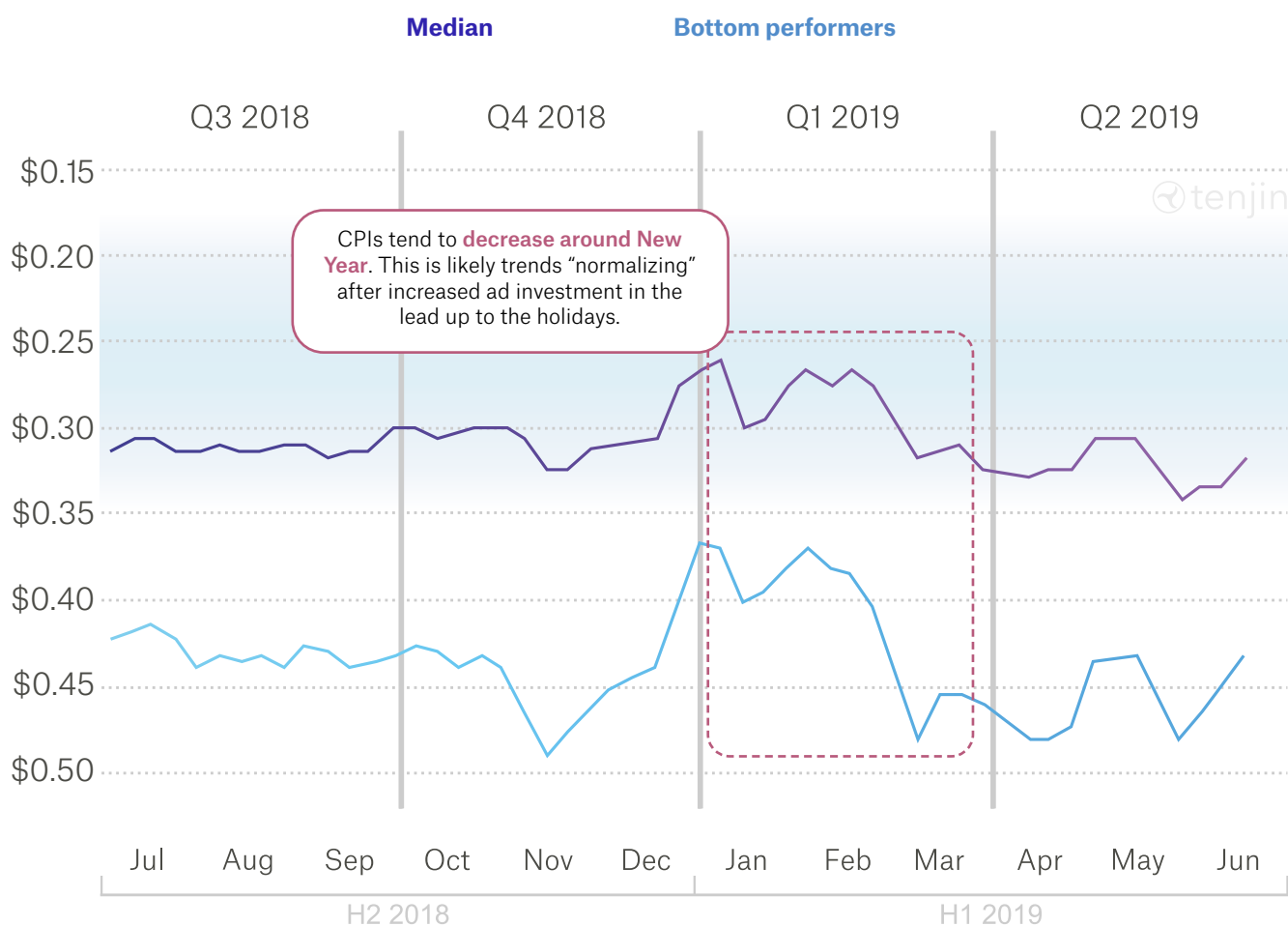
### How to lower your CPI

The best way to lower your CPI is to experiment with your creatives. And a great technique is to show demo gameplay on your app and various different visuals.

Make sure to A/B test these, as one visual may perform 10x better than another.

Nice one, thanks!

## CPI - Yearly Timeline for Hyper-Casual Games (Tenjin)



## CPI - Country Benchmarks for Hyper-Casual Games (Tenjin)



### Countries

	Turkey		Russia		Germany
	India		Spain		UK
	Brazil		France		Canada
	Indonesia		Republic of Korea		Australia
	Mexico		China		Japan
					United States

# How GameAnalytics helps Voodoo identify and release hit mobile games each month

## CHALLENGE

Taking a game from initial conception, through prototype phases and on to a financially successful launch is a difficult task for even the most established of games studios. It's even more challenging for those in the hyper-casual space, especially when you consider the short lifespans of these types of mobile games.

For publishers like Voodoo, using data to identify titles with the best potential, as well as optimize core gameplay loops, is key to their continued success.

## SOLUTION

Voodoo uses GameAnalytics to get predictive insights about early-phase games. They're able to quickly shortlist the most promising new titles from hundreds of different games pitched to them each month by reviewing KPIs like D1 and D7 retention.

What's more, GameAnalytics helps Voodoo gather crucial data feedback so they can consult and help their partners improve the core metrics and gameplay of their games.

### PLAYERS

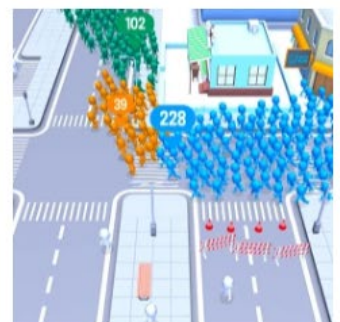
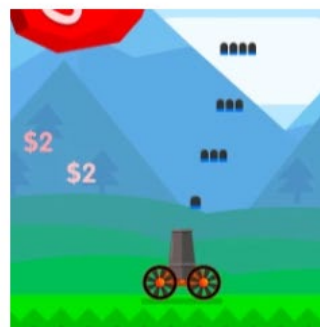
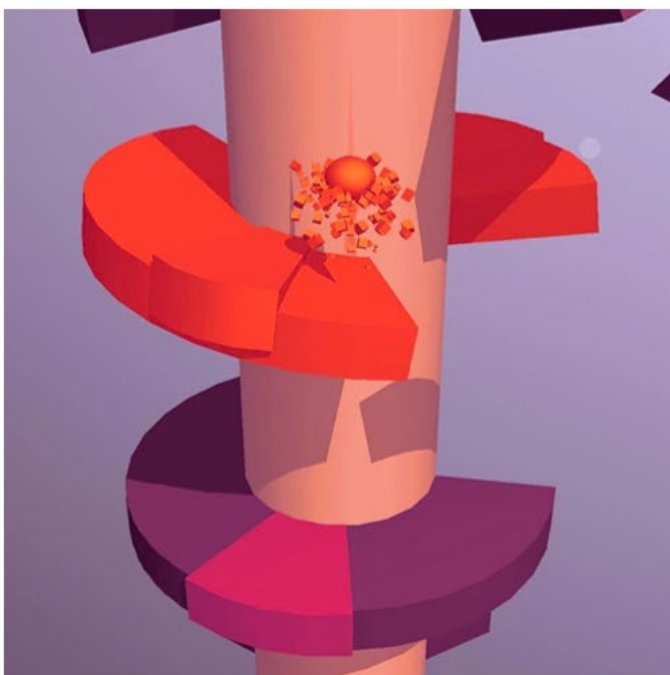
1+ billion

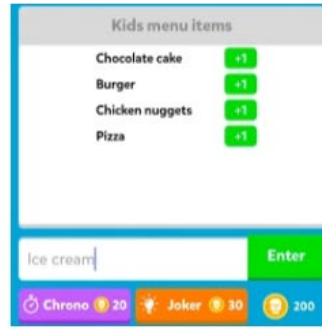
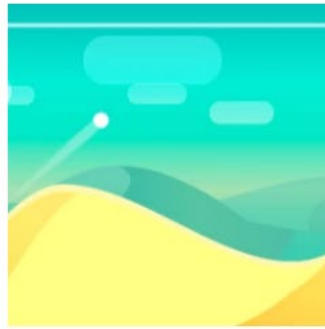
### EMPLOYEES

120

### PLATFORM

iOS & Android





## How they use data to release hit after hit

When it comes to predicting the success of a title, simply playing the game is rarely enough. Data is key for recognizing the games with the greatest potential, and Voodoo reviews this data with user-level access to multiple studios at any given time via GameAnalytics. They typically look for D1 retention of 50% or greater.

Around 19/20 games with low retention get set aside, whilst studios with promising numbers and a great concept are given consultation to help improve core gameplay elements. Voodoo has now become a world leader at finding and refining diamonds in the rough, using GameAnalytics to see critical KPIs (and even game error logs).

Once a game has been released, GameAnalytics still plays a role in progress tracking for the entire Voodoo team, with custom integration via the GameAnalytics Rest API that feeds GameAnalytics data into their own proprietary dashboard.

Within this platform, product managers, game designers, and even partner developers work together, using GameAnalytics as a way to regularly monitor and optimize the lifecycle of each and every game across their entire portfolio.

## A word from Voodoo

"At Voodoo we review hundreds of games each month. Thanks to the data collected with GameAnalytics, we're able to help our partners with upcoming trends, clear creation guidelines, features to increase retention and a unique ideation process."

"One of the great perks of working as a publisher is seeing how the titles of enthusiastic developers can be optimised to make a huge impact on their success. With the many different GameAnalytics SDKs and a custom API integration into our own platform, we can synchronise insights and feedback with our partners and streamline the consultancy process. Using data to make judgements and informed decisions has proved critical to our success."



**Hugo Peyron**  
PRODUCT MANAGER | **Voodoo**

## What makes a smash hit?

Learn about the **top 5%, 10%, and 20%** of games in our upcoming VIP report. [Click here to learn more](#)

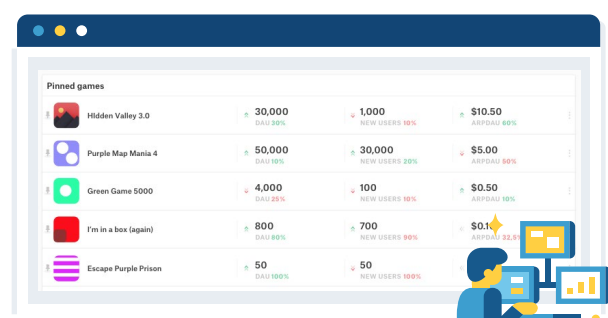


# Features any great analyst should use

We've listed some of the most powerful GameAnalytics features you should use to level up your games and keep your players happy.

## Stay up-to-date with custom dashboards

Build, annotate and share custom dashboards with different stakeholders across your studio, so everyone sees the metrics that matter most to them.



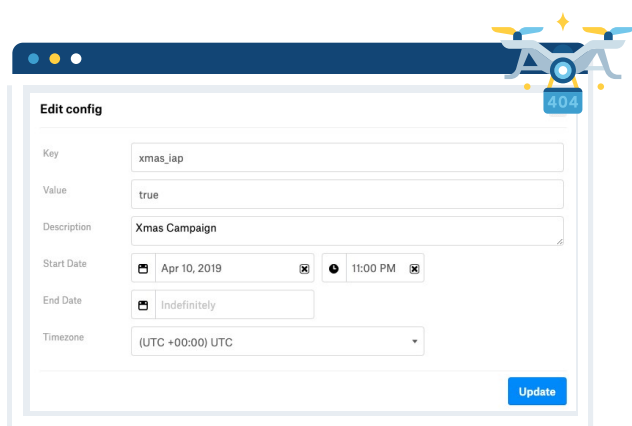
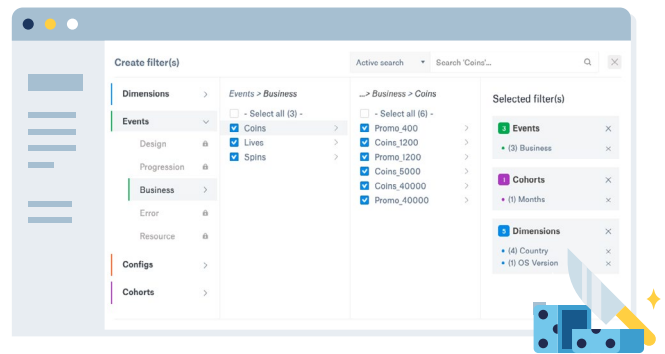
## View your entire portfolio

Easily search, find, pin, and access your most important titles from one convenient view. Get a quick snapshot into the health of your studio, or even the games that you've helped publish.



## Slice and dice data until it's just right

View and report on the exact data slice you need, then identify player segments with advanced combinations of filters - across multiple dimensions!

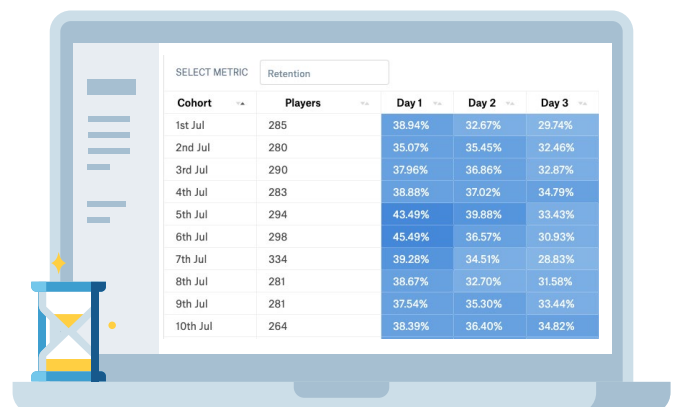


## Change the game experience without updating code

Create variables inside the Command Center which automatically updates your players' devices, allowing you to trigger certain campaigns, or even adjust the price of in-game items on the fly.

## Learn how campaigns influence players

See metrics relating to specific audience groups and track changes over time to find out how well a particular campaign, promotion, or in-game update is doing.



## New features coming soon!

We're currently working on some of our newest features, including A/B testing, global configs, and new support for tracking your ads. We'll be rolling these out later this year. Subscribe to our product updates to stay in the loop: [gameanalytics.com/updates](https://gameanalytics.com/updates)

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Includes access to our upcoming insights dashboard, with features allowing you to:

- Filter performance by countries
- View CPI & eCPM ad network data
- Look back over 4+ years analysis
- Quarterly benchmarks updates
- Weekly timeline data for all genres
- Access to past 6 months of data

**Access the free version of Benchmarks+ to get started today.**

[Get started](#)



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gameanalytics.com

