A Global Analysis of

Mobile Gaming Benchmarks

Performance insights from more than 60K mobile games
and over 3 billion players from around the world.

GA GameAnalytics

What's inside...

How we define our benchmarks

GameAnalytics is a free tool that helps game developers and publishers around the world to better understand their players, refine gameplay and compare the performance of their titles to the general trends in the market (benchmarks).

With more than 60K+ titles and 3 billion players analyzed, this report provides an insightful snapshot into the state of the mobile gaming industry. Throughout this report, we present our benchmarks to show insights into how the industry is performing for each genre and metric.

How is this data presented?

To avoid any bias from pre-launch titles skewing our analysis, we set a minimum threshold of 1,000 daily active users for each game.

For titles that meet this minimum criteria, we've collected our findings and presented the data for each metric in two separate ways:

1. Overall Yearly View

This is all of the genre data aggregated to show industry trends over the last year. It has been broken down into top, median and under-performing titles (green, yellow and red lines).

2. Genre Specific Breakdown

This graph looks specifically at how each genre is performing and highlights the top, median and underperforming KPIs for each genre category (star, grey line and red arrow).

How to read our graphs

Any game with a metric near the green line or star is performing in the top 15% of games. Good job!

Games with a metric near this yellow line or symbol are performing OK, but there's still some room for improvement.

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

60K+ games studied

We crunched data from a selection of our 60K+ games which are currently active on the app stores.

From 3 billion devices

Our analysis presents findings from 850 million monthly active players.

Over a full calendar year

Data for a full calendar year, running from July 1st 2017 to June 30th 2018.

Key Takeaways

After 1 day, top performing games show retention between 35-50%- *Page 6*

At day 7, the most promising games show retention between 15-25% - *Page 8*

By day 28, retention drops dramatically, with the best performing between 4-6% - *Page 10*

People play longer in winter (by around 3 minutes), especially around Christmas - *Page 11*

As people's lives start to get busy around the New Year, stickiness tends to see a drop - *Page 13*

When it comes to ARPPU, top performing games generate 3-4x more revenue than other titles - *Page 15*

The role playing genre dominates with ARPDAU, whereas arcade and racing games average much less - *Page 18*

Top performing games convert players up to 3x more than the average - *Page 19*

Retention (Day 1)

How much potential do games have?

Day 1 retention looks at how many players return after 1 day of playing a game. This is a vital KPI to get a quick impression of a game's potential.

Key takeaways:

- If a game has more than **40%** day 1 retention, then it is doing really well.

- Anything below **30%** retention isn't considered good and may not be financially viable in the long term.

- Kids games have extremely low retention - **15%** is above average for this genre.

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.

Thanks! 👍

Games with **35% or greater** day 1 retention are performing well compared to the average.

Yearly Overview for Day 1 Retention

Top 15%

Any game with KPIs near the green line means it's in the top performing 15% of games and doing well.

Median

Games that are around the yellow line are average when compared to the industry.

Bottom 15%

Any games that are near the red line are underperforming against the industry.
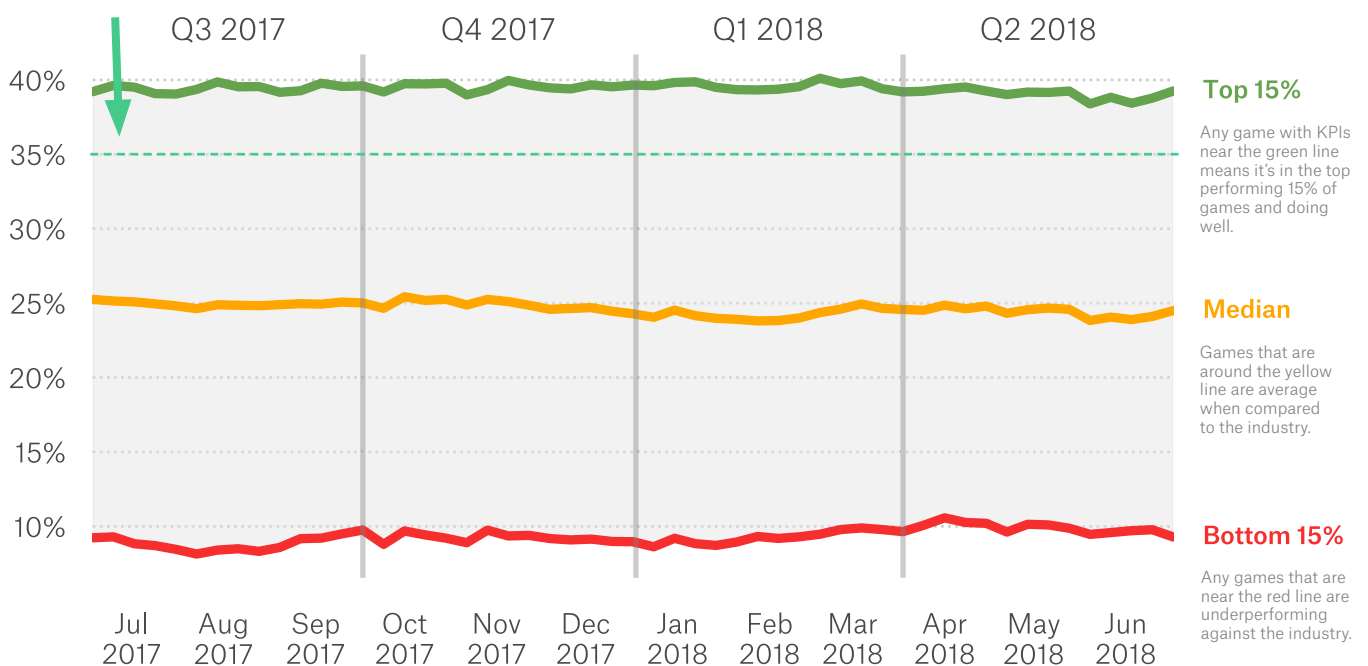
Breakdown of Genre for Day 1 Retention

⭐ Top performing games   —●— Genre median   🔻 Underperforming games
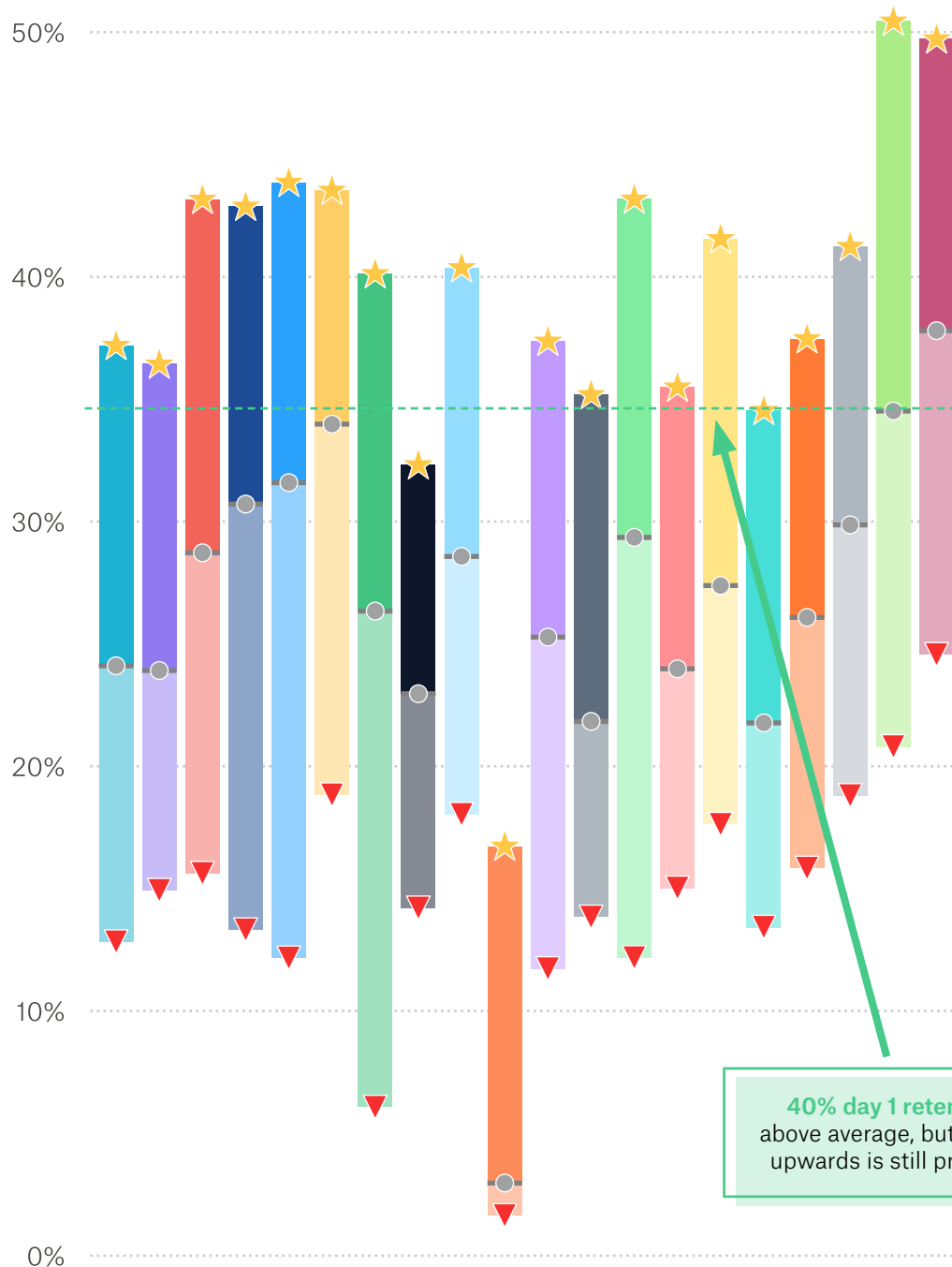
40% day 1 retention is above average, but 35% and upwards is still promising.

● Action   ● Casino   ● Multiplayer   ● Simulation
● Adventure   ● Casual   ● Music   ● Sports
● Arcade   ● Education   ● Puzzle   ● Strategy
● Board   ● Family   ● Racing   ● Trivia
● Card   ● Kids   ● Role Playing   ● Word

*All genres are listed in alphabetical order and based on the App Store categories.

Retention (Day 7)

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.

Key takeaways:

- Retention to day 7 shows seasonality for the top 15% games.

- Retention tends to **decrease around Christmas** and in Summer holidays.

- A typical Word game has **16% day 7 retention**, compared to just 1% for Kids games.

Perfect your in-game core 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

As expected, there's a **decrease in retention** around Christmas and Summer holidays.

Yearly Overview for Day 7 Retention

Top 15%

Median

Bottom 15%

| | Jul 2017 | Aug 2017 | Sep 2017 | Oct 2017 | Nov 2017 | Dec 2017 | Jan 2018 | Feb 2018 | Mar 2018 | Apr 2018 | May 2018 | Jun 2018 |

Q3 2017 Q4 2017 Q1 2018 Q2 2018
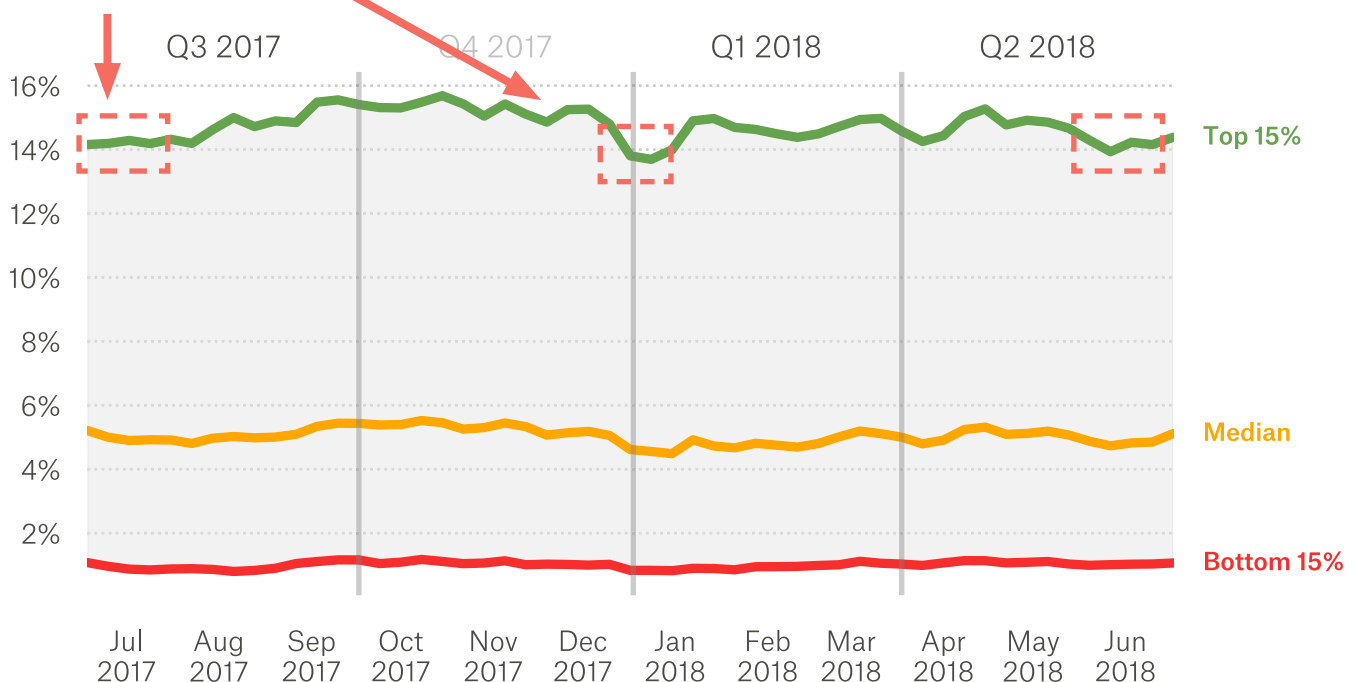
Breakdown of Genre for Day 7 Retention

⭐ Top performing games   ─●─ Genre median   🔻 Underperforming games
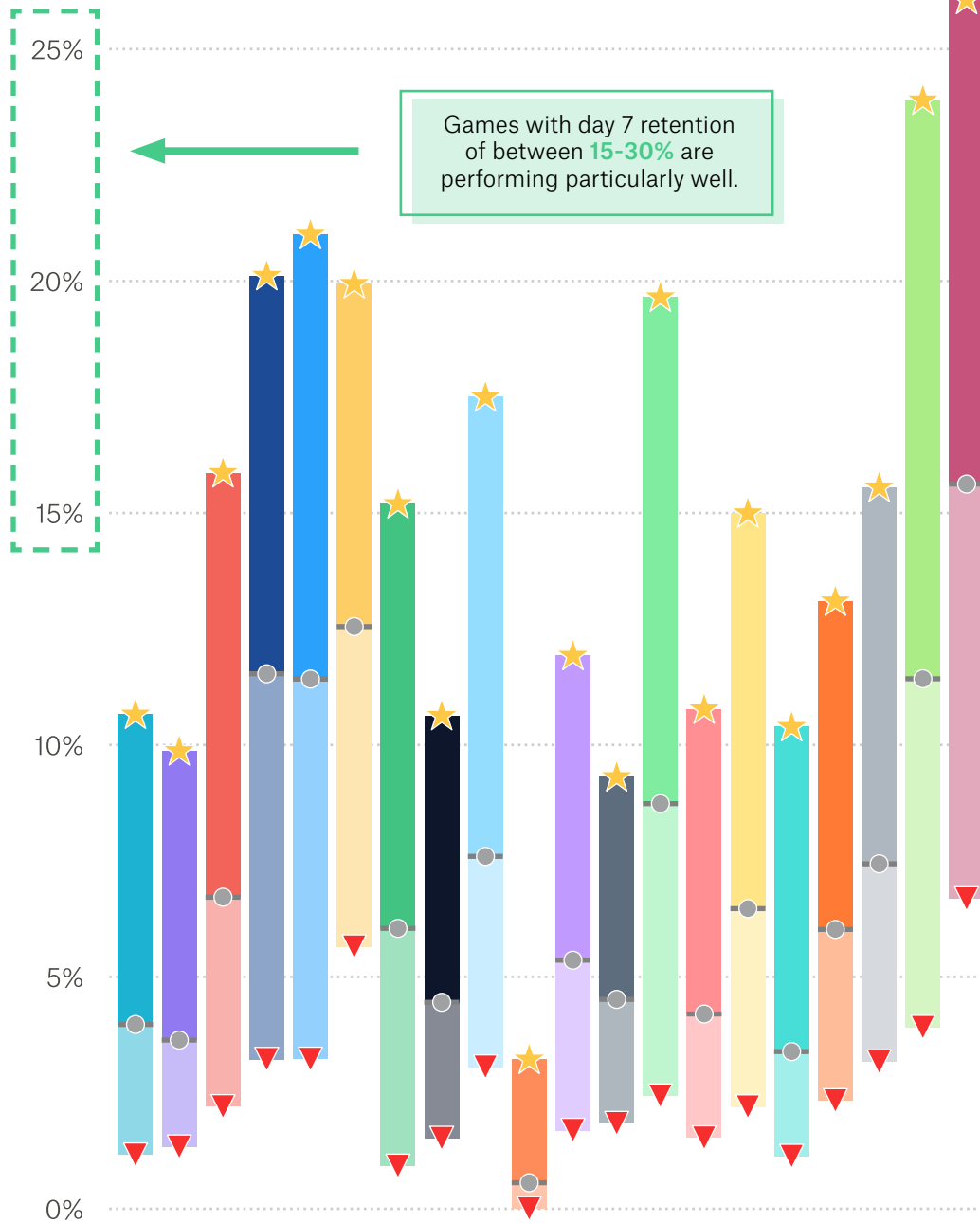
Games with day 7 retention of between **15-30%** are performing particularly well.

25%

20%

15%

10%

5%

0%

🔵 Action   🟡 Casino   🟣 Multiplayer   🔵 Simulation

🟣 Adventure   🟢 Casual   ⚫ Music   🟠 Sports

🔴 Arcade   ⚫ Education   🟢 Puzzle   ⚪ Strategy

🔵 Board   🔵 Family   🔴 Racing   🟢 Trivia

🔵 Card   🟠 Kids   🟡 Role Playing   🟣 Word

Retention (Day 28)

Players that come back after 28 days are truly engaged.

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

Key takeaways:

- The highest values are low. The best performing games show **6% retention D28.**

- The bottom 15% have a D28 retention of 0%, showing how difficult it is to retain players for a full month.

- The highest retention is in the **cold and boring quarter**, just before Christmas.

> 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.

Highest day 28 retention is in the **cold and boring quarter**, before Christmas.

Yearly Overview for Day 28 Retention

Top 15%

Median

Bottom 15%

Q3 2017 · Q4 2017 · Q1 2018 · Q2 2018

Jul 2017 · Aug 2017 · Sep 2017 · Oct 2017 · Nov 2017 · Dec 2017 · Jan 2018 · Feb 2018 · Mar 2018 · Apr 2018 · May 2018 · Jun 2018
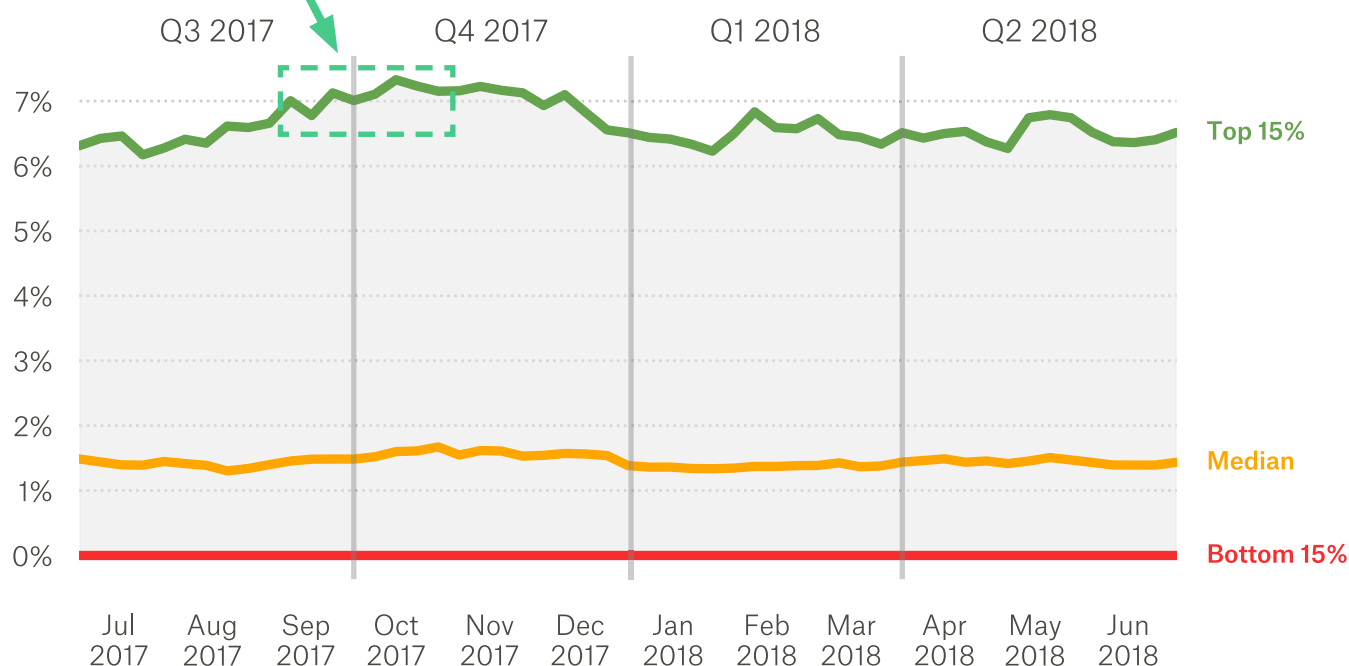
Breakdown of Genre for Day 28 Retention

⭐ Top performing games   —●— Genre median   🔻 Underperforming games

Games with more than
6% day 28 retention are
performing particularly well.

Action   Casino   Multiplayer   Simulation

Adventure   Casual   Music   Sports

Arcade   Education   Puzzle   Strategy

Board   Family   Racing   Trivia

Card   Kids   Role Playing   Word

Average session length

How long do people play for on average?

The 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.

Key takeaways:

- People play longer in winter (by around 3 minutes), **especially around Christmas.**

- ASL is slightly **decreasing for underperforming titles**, indicating that the top 15% actively engage players with marketing campaigns.

- **Casino and Card** are the genres with 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!

People play longer in winter (by around 3 minutes), **especially around Christmas.**

Yearly Overview for Average Session Length

Q3 2017   Q4 2017   Q1 2018   Q2 2018

Top 15%

Median

Bottom 15%

| Jul 2017 | Aug 2017 | Sep 2017 | Oct 2017 | Nov 2017 | Dec 2017 | Jan 2018 | Feb 2018 | Mar 2018 | Apr 2018 | May 2018 | Jun 2018 |
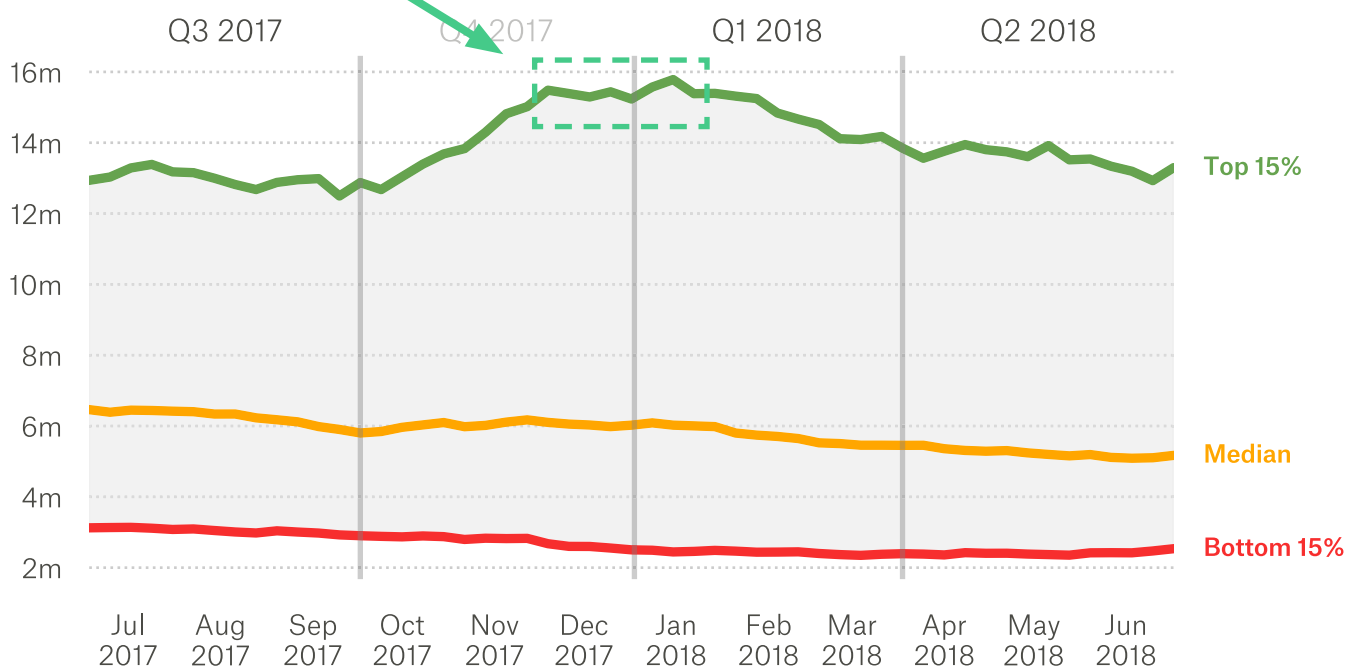
Breakdown of Genre for Average Session Length

⭐ Top performing games   –●– Genre median   🔻 Underperforming games
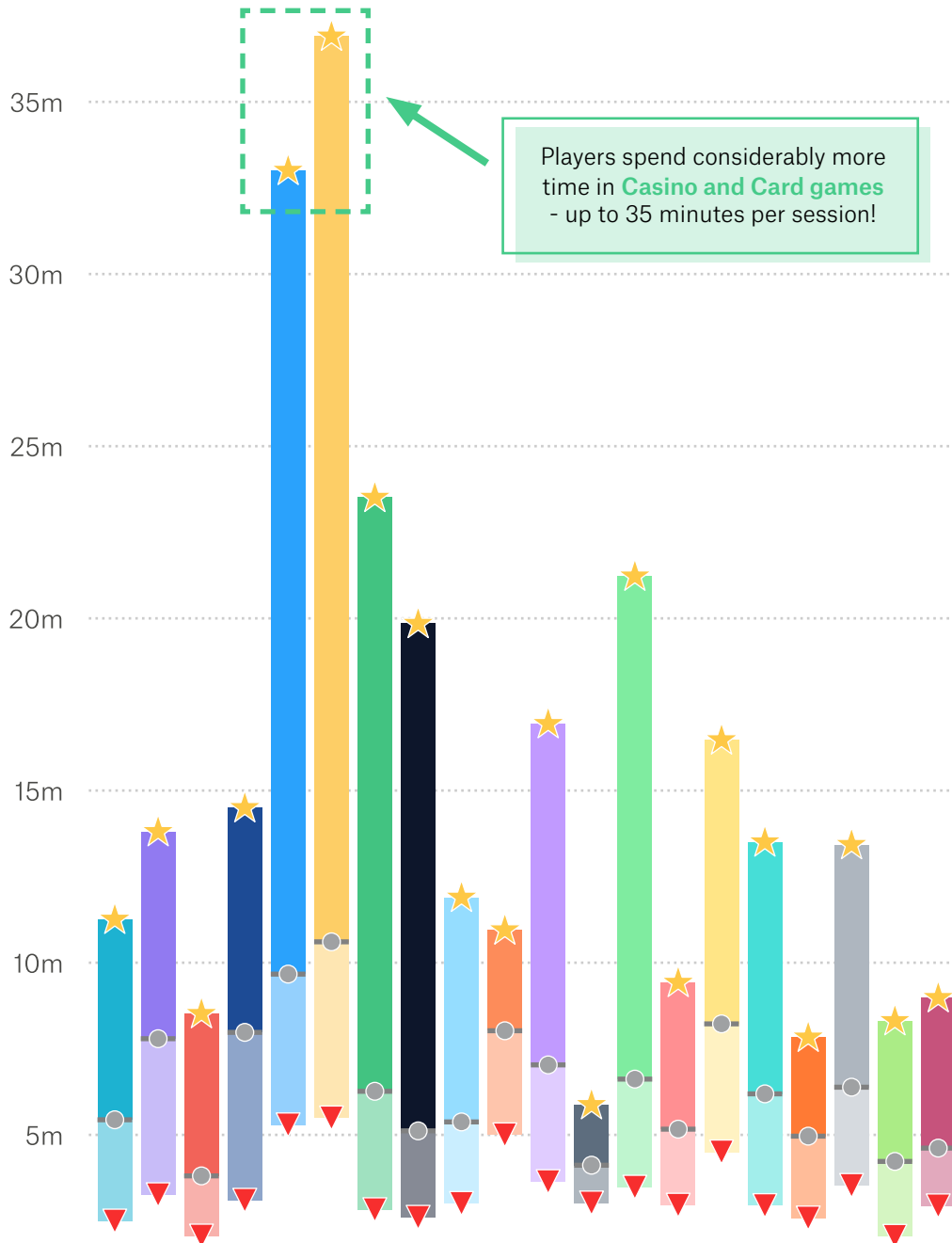
Players spend considerably more time in **Casino and Card games** - up to 35 minutes per session!

35m

30m

25m

20m

15m

10m

5m

● Action
● Adventure
● Arcade
● Board
● Card
● Casino
● Casual
● Education
● Family
● Kids
● Multiplayer
● Music
● Puzzle
● Racing
● Role Playing
● Simulation
● Sports
● Strategy
● Trivia
● Word

Stickiness

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.

Key takeaways:

- Most games **decrease slightly** around Christmas and New Year, with a small rise after New Year's Eve.

- The peak is around October, with another **peak before Chinese New Year**.

- The 5 top performing genres for this metric are Board, Card, Casino, Puzzle and Word, with **more than 25% 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.

As people's lives start to get busy towards the holidays, stickiness tends to **drop just before Christmas and the New Year**.

Yearly Overview for Stickiness

Q3 2017   Q4 2017   Q1 2018   Q2 2018

Top 15%

Median

Bottom 15%

Jul 2017 — Aug 2017 — Sep 2017 — Oct 2017 — Nov 2017 — Dec 2017 — Jan 2018 — Feb 2018 — Mar 2018 — Apr 2018 — May 2018 — Jun 2018
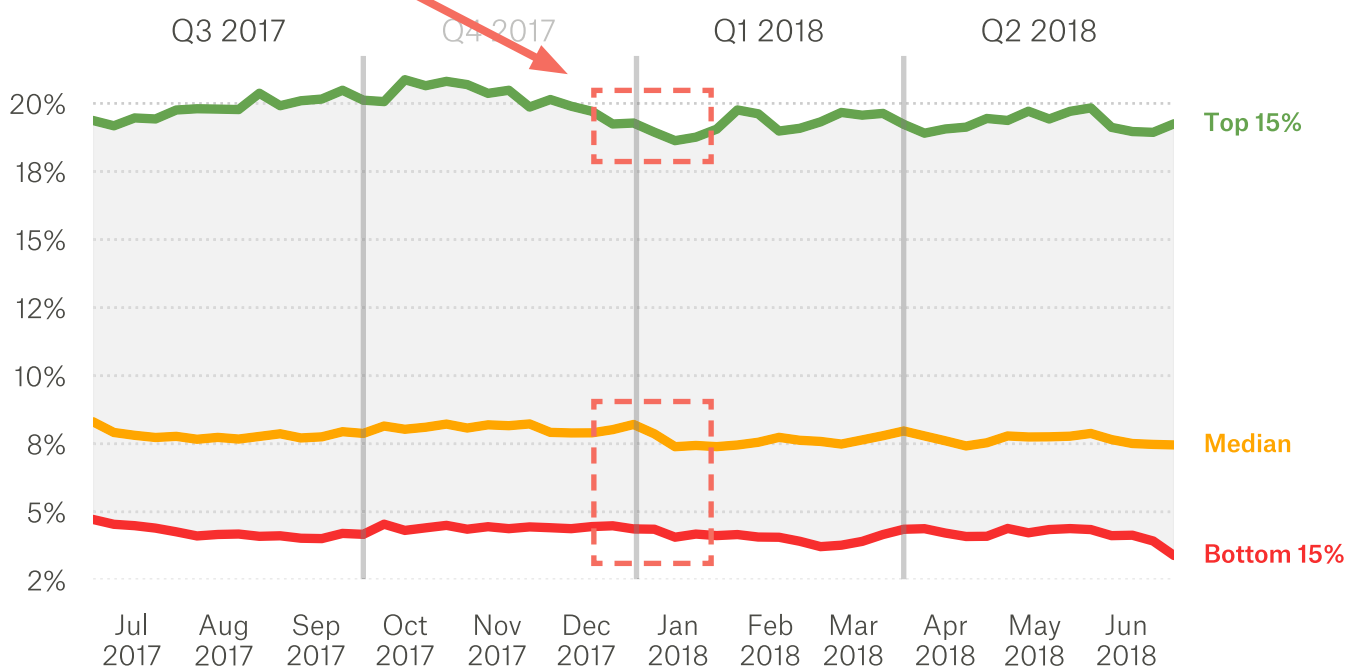
Breakdown of Genre for Stickiness

⭐ Top performing games   ─●─ Genre median   🔻 Underperforming games
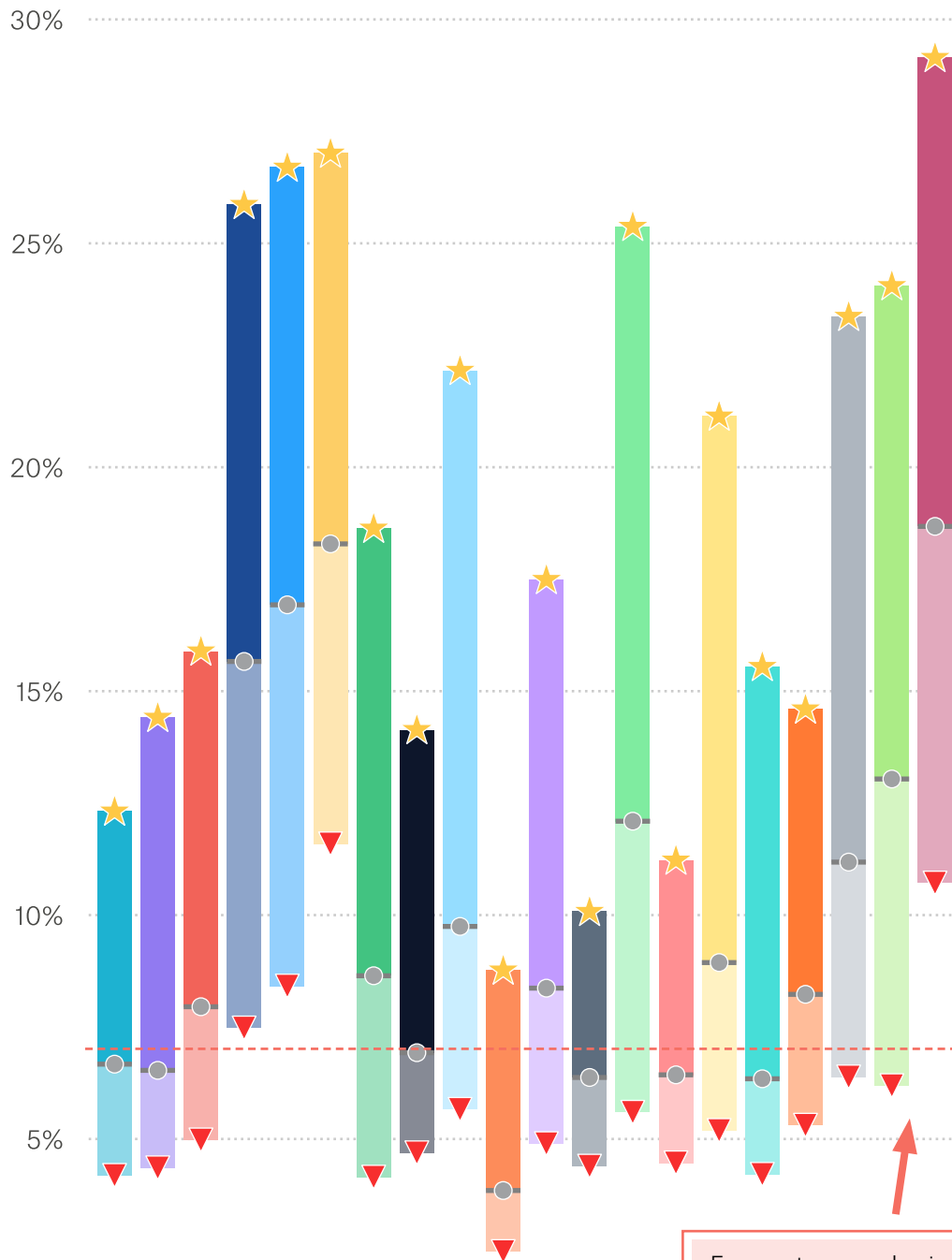
For most genres, having less than **7% stickiness** is considered bad.

Action • Casino • Multiplayer • Simulation

Adventure • Casual • Music • Sports

Arcade • Education • Puzzle • Strategy

Board • Family • Racing • Trivia

Card • Kids • Role Playing • Word

ARPPU

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.

Key takeaways:

- Spending habits are highest in the lead up to the holidays, suggesting the top performing games ramp up their marketing efforts around here.

- There is little difference between the average and underperforming games, but there is a **3-4x gap** between them and the top performing titles.

- For top performing genres, Casino, Role Playing and Strategy stand out as the highest performers - **with ARPPU up to $40.**

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.

For ARPPU, the top performing titles are seeing an **average of $25**, the median $7, whereas the bottom performing are seeing just $2.

Yearly Overview for ARPPU
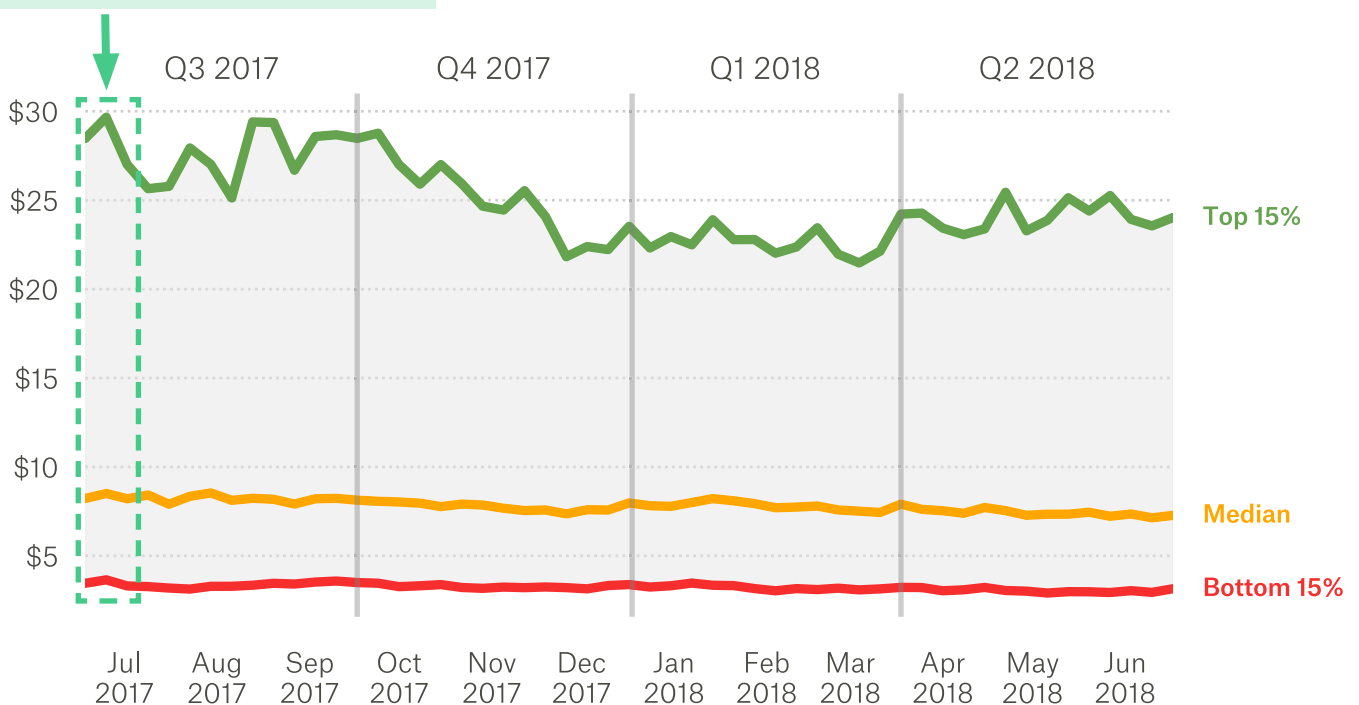
Breakdown of Genre for ARPPU

⭐ Top performing games   —●— Genre median   🔻 Underperforming games

For top performing games, Casino, Role Playing and Strategy stand out as the highest performers - **with ARPPU up to $40.**

$40

$35

$30

$25

$20

$15

$10

$5

● Action   ● Casual   ● Racing   ● Sports
● Adventure   ● Education   ● Role Playing   ● Strategy
● Arcade   ● Puzzle   ● Simulation   ● Word
● Casino

*Please note, ARPPU data has been calculated on a daily basis.

ARPDAU

How much are players spending in a game in one day?

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.

Key takeaways:

- The role playing genre dominates, whereas arcade games perform the worst, on average.

- Again, there is little difference between average and underperforming games, but a **6-7x gap** between them and the top performing titles.

- Strategy and role playing games as a whole are performing up to **2x better** than more other genres.

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!

For ARPDAU, top performing games are doing **6x better** than the median and bottom, suggesting they're running more successful campaigns to convert players.

Yearly Overview for ARPDAU

Top 15%

Median

Bottom 15%

Q3 2017 Q4 2017 Q1 2018 Q2 2018

Jul 2017 · Aug 2017 · Sep 2017 · Oct 2017 · Nov 2017 · Dec 2017 · Jan 2018 · Feb 2018 · Mar 2018 · Apr 2018 · May 2018 · Jun 2018
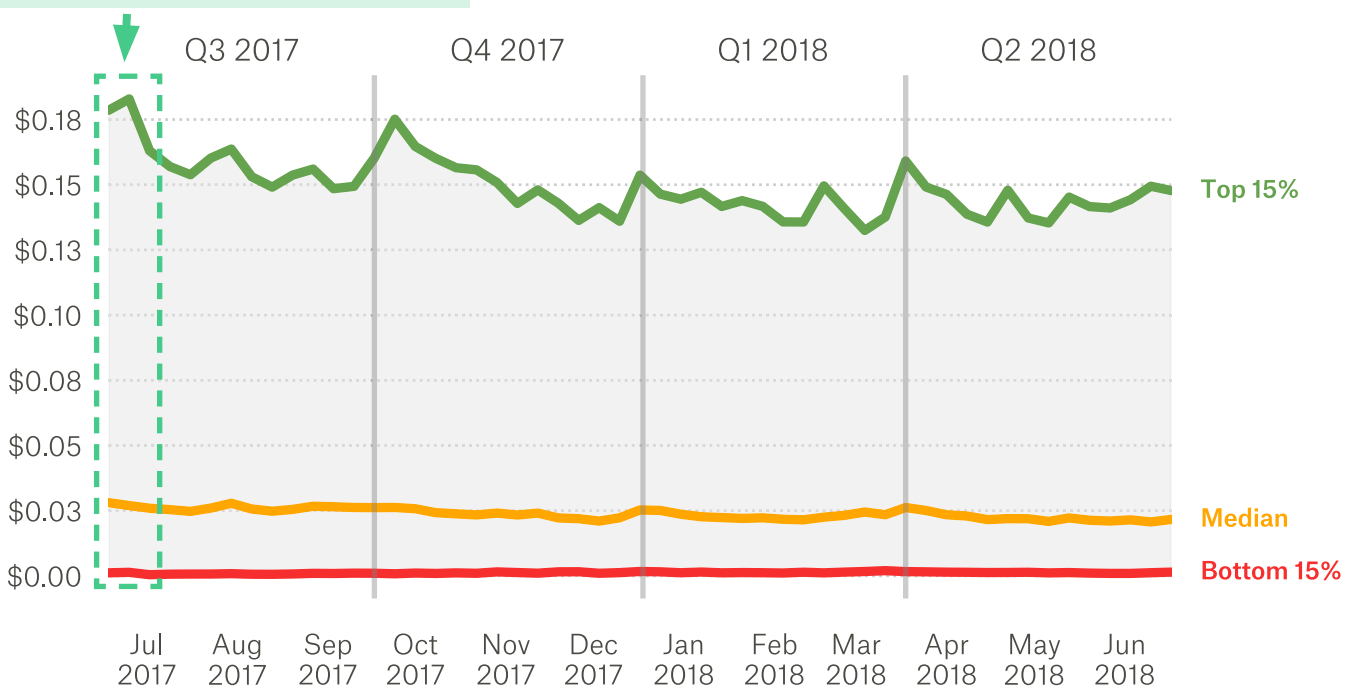
Breakdown of Genre for ARPDAU

⭐ Top performing games   —●— Genre median   🔻 Underperforming games

The role playing genre dominates, however Strategy games perform up to **2x better** than most other genres.

$0.4

$0.3

$0.2

$0.1

$0.0

- ● Action
- ● Adventure
- ● Arcade
- ● Casino
- ● Casual
- ● Education
- ● Puzzle
- ● Racing
- ● Role Playing
- ● Simulation
- ● Sports
- ● Strategy
- ● Word

Conversion

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.

Key takeaways:

- There was a **peak around New Year's Eve** for top 15% games.

- Average games are converting, however the top performing titles are getting **3x more** in comparison.

- Role playing games have up to **2x better** conversion rates than other top performing genres.

How to increase conversion

Developers should know what will help players with their gameplay and push offers and promotions relating to these.

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.

Values are **very low in general**: a game with 1.2% is performing particularly well.

Yearly Overview for Daily Conversion

| | Q3 2017 | Q4 2017 | Q1 2018 | Q2 2018 |

1.2%
1.0%
0.8%
0.6%
0.4%
0.2%

Top 15%
Median
Bottom 15%

Jul 2017 · Aug 2017 · Sep 2017 · Oct 2017 · Nov 2017 · Dec 2017 · Jan 2018 · Feb 2018 · Mar 2018 · Apr 2018 · May 2018 · Jun 2018

Breakdown of Genre for Daily Conversion

★ Top performing games —●— Genre median ▼ Underperforming games

Role playing games have up to **2x better** conversion rates than other top performing genres.

2.5%

2.0%

1.5%

1.0%

0.5%

0.0%

● Action ● Casual ● Racing ● Sports
● Adventure ● Education ● Role Playing ● Strategy
● Arcade ● Puzzle ● Simulation ● Word
● Casino

20

Hear what the best have to say

52,000+ game developers use GameAnalytics in more than 60K titles.

SOFTGAMES
World's Largest HTML5 Games Platform

Alexander Krug | CEO

"The tools from GameAnalytics have helped us increase our monetization performance by up to 30% for several of our Messenger titles."

Ryan McLeod | Creator of Blackbox

"From deep-dives to health-checks and benchmarking, GameAnalytics is my source of truth."

Voodoo

Gabriel Rivaud | VP of Games

"I use GameAnalytics daily to track core KPIs for our range of our games. It's an essential tool for all data driven gaming studios. Highly recommended."
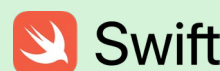
FRVR

Chris Benjaminsen | Founder

"We use GameAnalytics to get all the insight we need about our players on all platforms, from iOS to FB Instant."

Player 6

Trusted by the world's leading developers

tastypill

ROUND.ZERO

JAMCITY

Swift

FINGERSOFT

yodo1

HUUUGE

FLUFFY FAIRY GAMES

Nate Barker | Director of BD

"Our continued success is dependent on GameAnalytics providing critical gaming KPIs at our fingertips."

Illusion Labs

Marcus Dawson | CEO

"I really like the GameAnalytics platform. It's an excellent free tool that helps to shape many of our daily decisions."

Andy Sum | Co-Founder

"GameAnalytics is an essential tool to help us understand how people are playing Crossy Road - love it!"

SOFTGAMES
World's Largest HTML5 Games Platform

Alexander Krug | CEO

"I really like the GameAnalytics platform. It's an excellent free tool that helps to shape many of our daily decisions."

GAMEHIVE

Mark C. Wang | Co-Founder

"Game Analytics help us to understand at the player behaviour in both macro and micro level. We rely on it."

two men and a dog

Matti Kallonen | CEO

"We absolutely love GameAnalytics. The real-time metrics are a lifesaver for tracking our campaigns."

Player 17

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 feedback based on data, so that they can consult with their partners and give actionable advice to improve the core metrics and gameplay in each title that they work on.
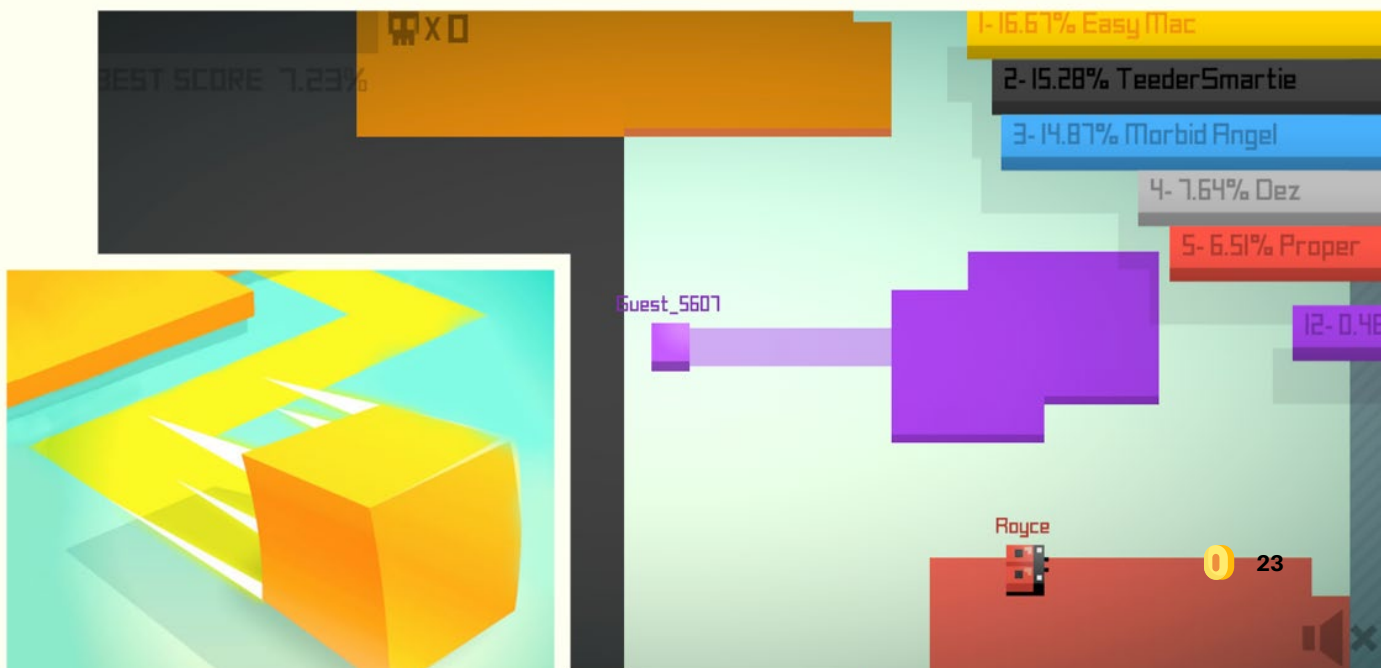
PLAYERS	EMPLOYEES	PLATFORM
1+ billion	120	iOS & Android

Where it all began

Voodoo actually started off as a small team developing and releasing their own games. What originally began as a failed attempt to bring their titles Bool and Quiz Run to market set in motion a journey to hone the process of mobile games publishing. Using what they had learnt – tirelessly optimizing UA and monetization strategies – Voodoo adapted their approach and published Paper.io, which became their first major hit back in 2016.

These first few releases taught Voodoo two things. Firstly, that the most successful publishers need practical experience in many areas of game marketing. Secondly, if they really wanted to make the most of their knowledge of user acquisition and monetization, they would have to apply this to more titles than just their own.

JUST A FEW OF VOODOO'S NOTABLE HITS

Paper.io
20+ million downloads
Released: Dec 2016

One of Voodoo's first major successes. An instantly playable title that's still popular for its charming UI and intuitive gameplay.

Snake VS Block
87+ million downloads
Released: May 2017

Blending two iconic games to create a new and unique mechanic. Snake VS Block is a great example of outside the box thinking.

Dune!
56+ million downloads
Released: Oct 2017

A visual reworking of a classic format. Dune! demands expert timing, but offers sleek graphics and energetic gameplay.

Rolly Vortex
44+ million downloads
Released: Aug 2017

Maneuver a ball through obstacles within a vortex. This game cleverly brings into play progression mechanics like levelling up.

Helix Jump
310+ million downloads
Released: Feb 2018

One of the biggest hyper-casual hits of all time. Bouncing a ball sounds simple enough, but it's a tricky game to master.

Hole.io
40+ million downloads
Released: May 2018

Swallow everything in your path, grow your hole, and kill opponents - there's something deeply satisfying about this game.

* Information based on App Annie statistics from November 2017 - November 2018

A shift to publishing

Voodoo made the decision to shift their efforts and apply what they'd learnt to the wider market, leveraging their skill set to launch several games at any given time. In order to scale quickly, they wrote a script to scrape the Google Play store, allowing them to quickly compile the details of thousands of studios for outreach campaigns.

This efficient approach, combined with data collection and analysis using GameAnalytics, helped Voodoo to identify a new game called Fight List (based largely on its promising D1 and D7 KPIs). It quickly became a hit on the App Stores, reaching #1 position in more than 40 countries. The key takeaway here: Voodoo's game adoption strategy streamlines the development and review process, whilst minimizing the commercial risk of launching several titles.

Identifying core potential

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).
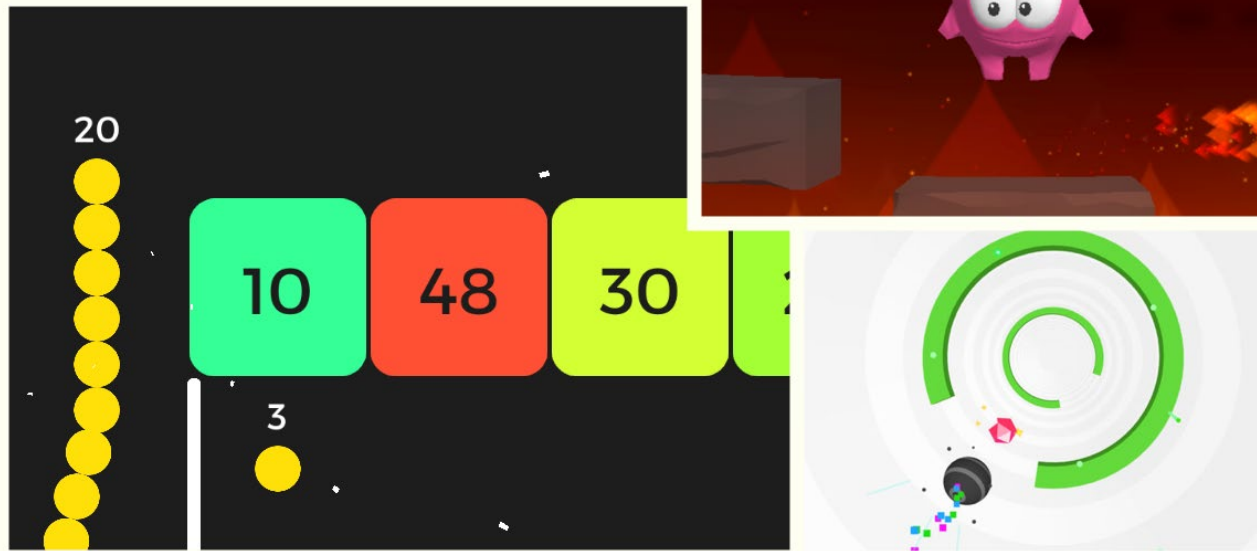
Tracking an entire portfolio

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
PUBLISHING EXPERT | *Voodoo*

Other cool stats you should know

App Annie

More than 50% of spend on the iOS app store comes from Asia

Research from App Annie shows that over 50% of Global iOS App Store spend in 2017 was in the APAC Region, and over 70% of spend in each region went to games.

apptopia

Average lifespan of a top 50 grossing game is 27.75 days

Apptopia identified that the average lifespan for a game to stay within the top 50 grossing ranks is 27.75 days. They also found that the top 50 grossing iOS mobile games in the US accounted for 76% of the total revenue.

GameRefinery

Rewarding multiple daily sessions is growing

News from GameRefinery shows that rewarding multiple daily sessions has become more common within the top 100 grossing games, rising from 25% to 34% year-on-year.

newzoo

Mobile games will account for 76% of global app revenue in 2019

Statistics from Newzoo show that mobile apps will take an estimated revenue of $107.9 Billion in 2019, with mobile games accounting for 76% of this figure.

GAME of WHALES
Real-time monetization optimizer

Top companies are willing to spend $500 CPI on super whales

According to Game of Whales, the top grossing companies are willing to spend more than $500 CPI for their super whales (especially when they can earn up to $10K in their game).

SOOMLA

## 1st impression pays between 27% to 43% more than the average eCPM

Research from Soomla shows that in mobile apps, the 1st impression typically pays between 27% to 43% more than the average eCPM. Soomla also found that some advertisers churn 3x more users than others when placed as ads in an app.

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.
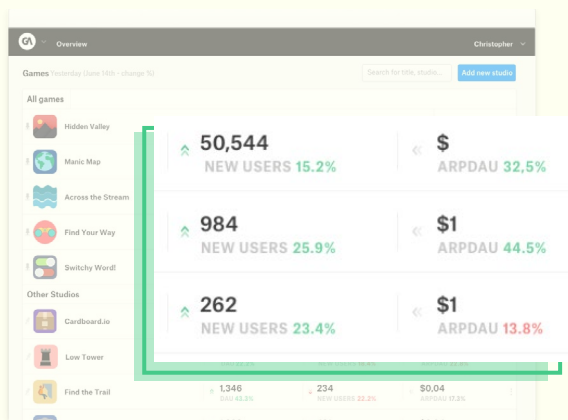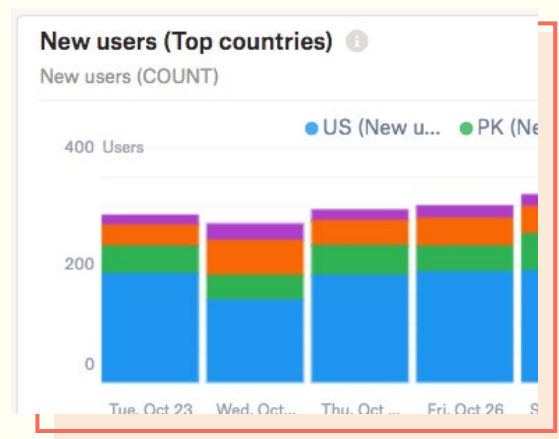

View your entire portfolio

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!
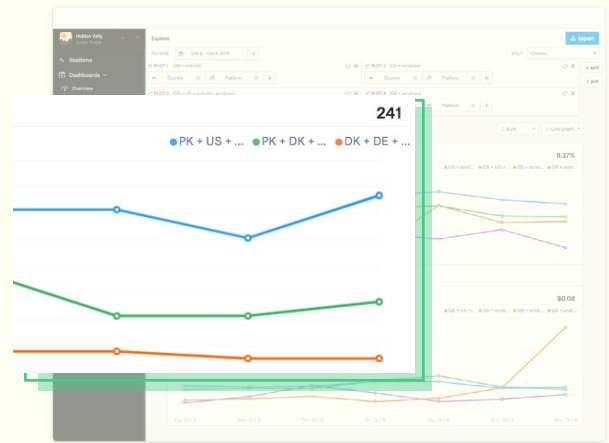
Change the game experience without updating code

Create variables inside the Command Center which automatically update to 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.

Cohort	Players	Day 1	Day 2
29th Sep	329	41.14%	33.07%
30th Sep	292	37.29%	32.97%
1st Oct	281	36.05%	34.18%
2nd Oct	265	38.62%	35.46%
3rd Oct	306	39.06%	36.29%
4th Oct	303	42.86%	41.11%
5th Oct	323	43.21%	36.95%
6th Oct	348	37.99%	33.71%

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Got questions?
Email: **insights@gameanalytics.com**