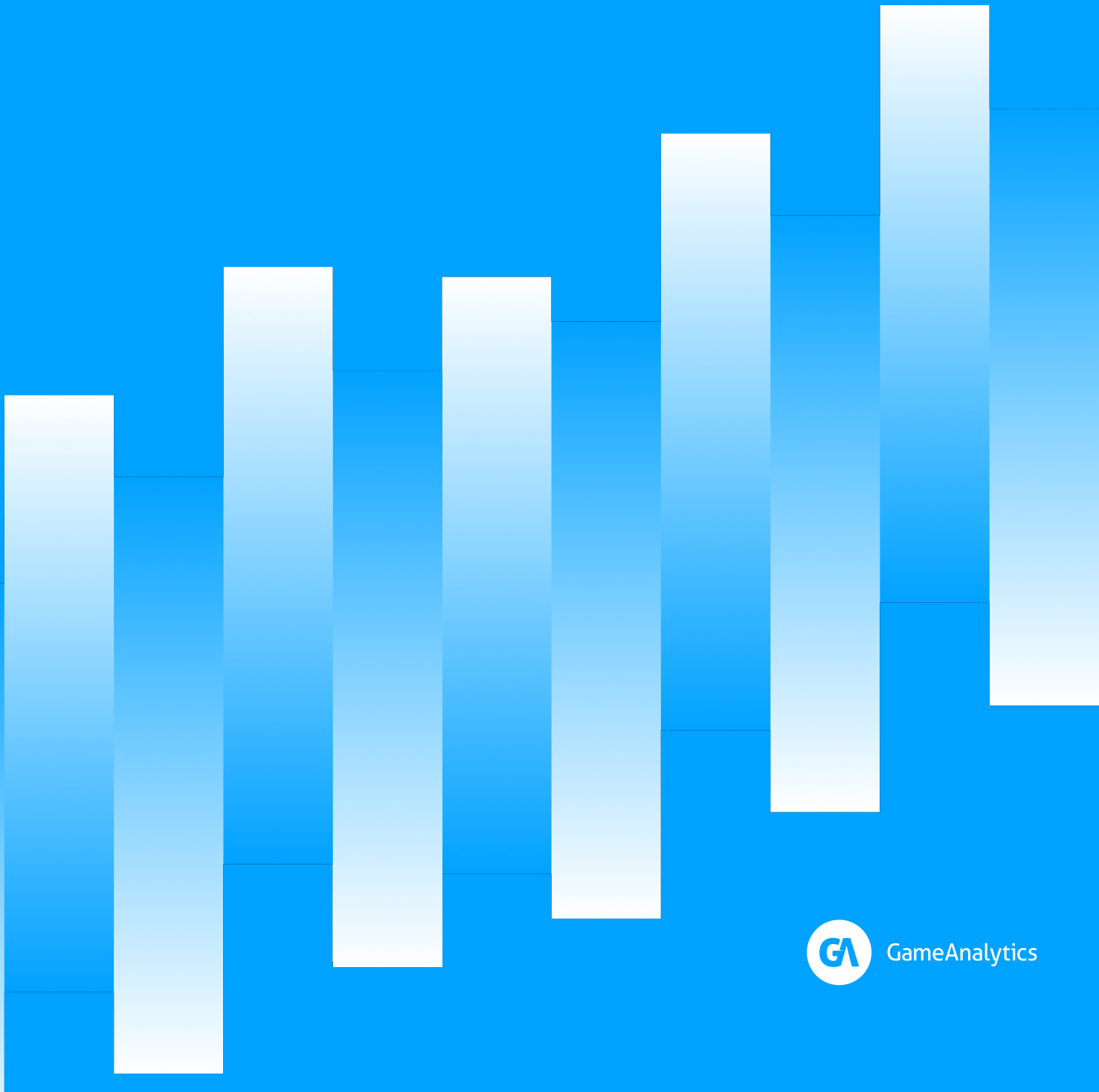2016-2017

Mobile Gaming Benchmarks

A global analysis of annual performance
benchmarks for the mobile gaming industry

GameAnalytics

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What are benchmarks?

At GameAnalytics, we provide a powerful analysis tool to understand players, refine gameplay and compare game performance to the general trends in the market (what we call benchmarks). Over the past 4 years we've accumulated data for 40K+ titles and we currently track more than 2 billion devices, making our market insight an extremely reliable snapshot of the gaming industry.

In the context explored within this report, market trends are the systematic growth or decrease of gaming KPIs (such as retention, ARPPU, ARPDAU and session length), measured using aggregate data from all of the games on our platform. In this report we present our data, we explain the metrics analyzed and the methodology implemented, and—finally—we present our results regarding general market behaviour, as well as genre-specific trends.

How we sampled our benchmarks data

In the GameAnalytics database, there are more than 40K active games with metrics values. From this initial set, we filtered out and only considered games which have had a DAU value greater than 100, for at least one day. The reason for filtering out titles with low DAU was to avoid bias introduced by games in the soft launch or in the production phase; information from less mature titles would skew the analysis. The data sampled is from Jan 2016 to Sep 2017.

Key stats

40,000+ games included

We looked at all games tracked between Jan 2016 to Sep 2017 & then selected the most popular genres for metrics analysis.

20 genres compared

Note that ~80% of games were in the top 5 genres: action, arcade, simulation, puzzle & adventure.

4 key metrics analyzed

Retention D7, average session length, ARPPU, and stickiness (or DAU/MAU ratio).
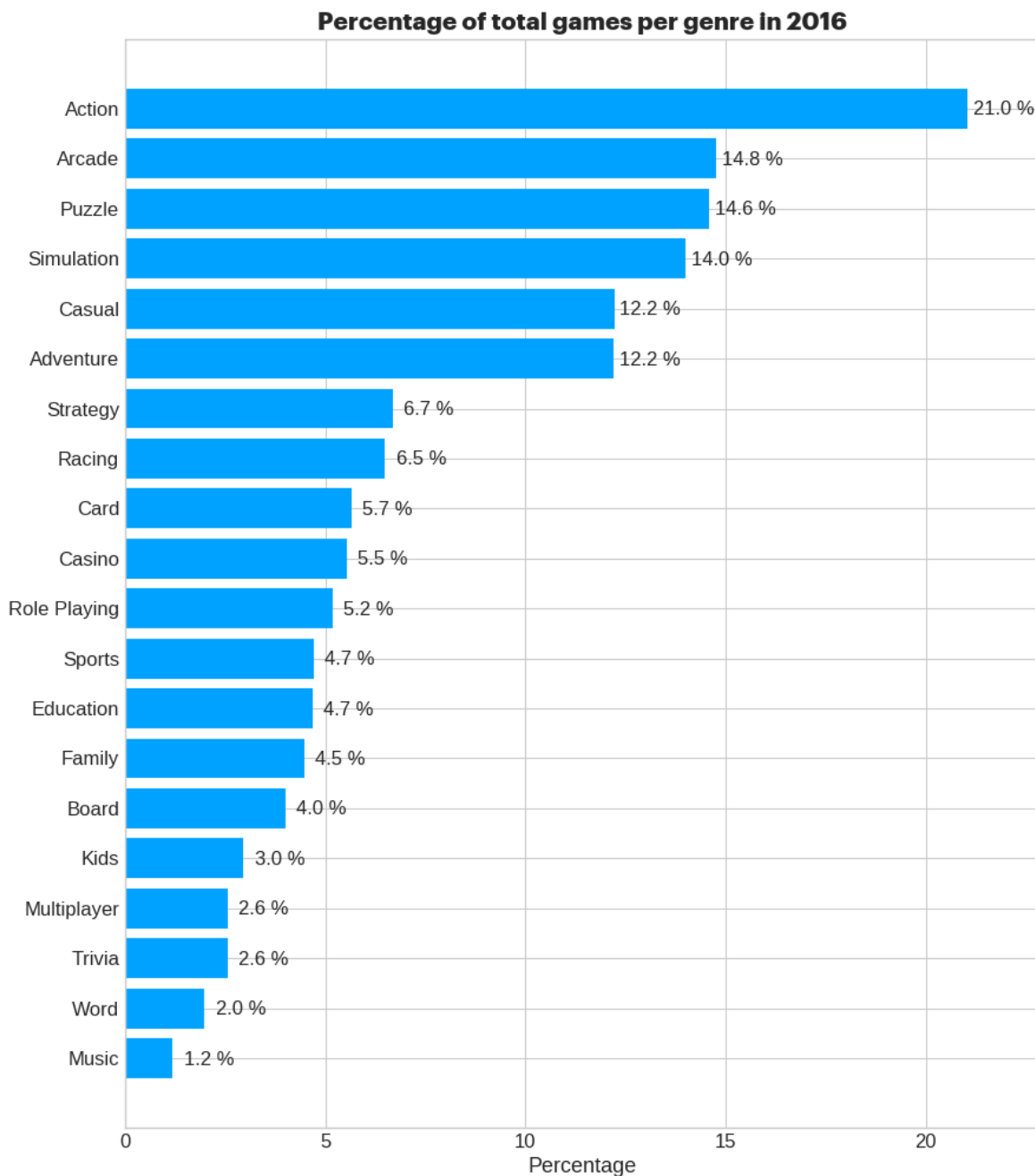
Genres

We looked at the top 20 genres present in our dataset of 12,000+ active games to learn how popularity is changing over time, and which genres have stronger KPIs.

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Genre rankings (2016)

When adding a game to our platform the user is asked to specify which genre the game belongs to. We looked at the genres present in our dataset and counted the frequency of each. Back in 2016, the top 20 gaming genres in the GameAnalytics database were split by popularity in the following order.

Percentage of total games per genre in 2016

Genre	Percentage
Action	21.0 %
Arcade	14.8 %
Puzzle	14.6 %
Simulation	14.0 %
Casual	12.2 %
Adventure	12.2 %
Strategy	6.7 %
Racing	6.5 %
Card	5.7 %
Casino	5.5 %
Role Playing	5.2 %
Sports	4.7 %
Education	4.7 %
Family	4.5 %
Board	4.0 %
Kids	3.0 %
Multiplayer	2.6 %
Trivia	2.6 %
Word	2.0 %
Music	1.2 %

Genre rankings (2017)

In comparison, the top 20 genres in our database for 2017 are listed below. What are the main differences? Kids games have seen the biggest growth, followed by simulation genres - whereas Casino games have seen a medium drop of 3 places. We break down genre on the following page.

Percentage of total games per genre in 2017

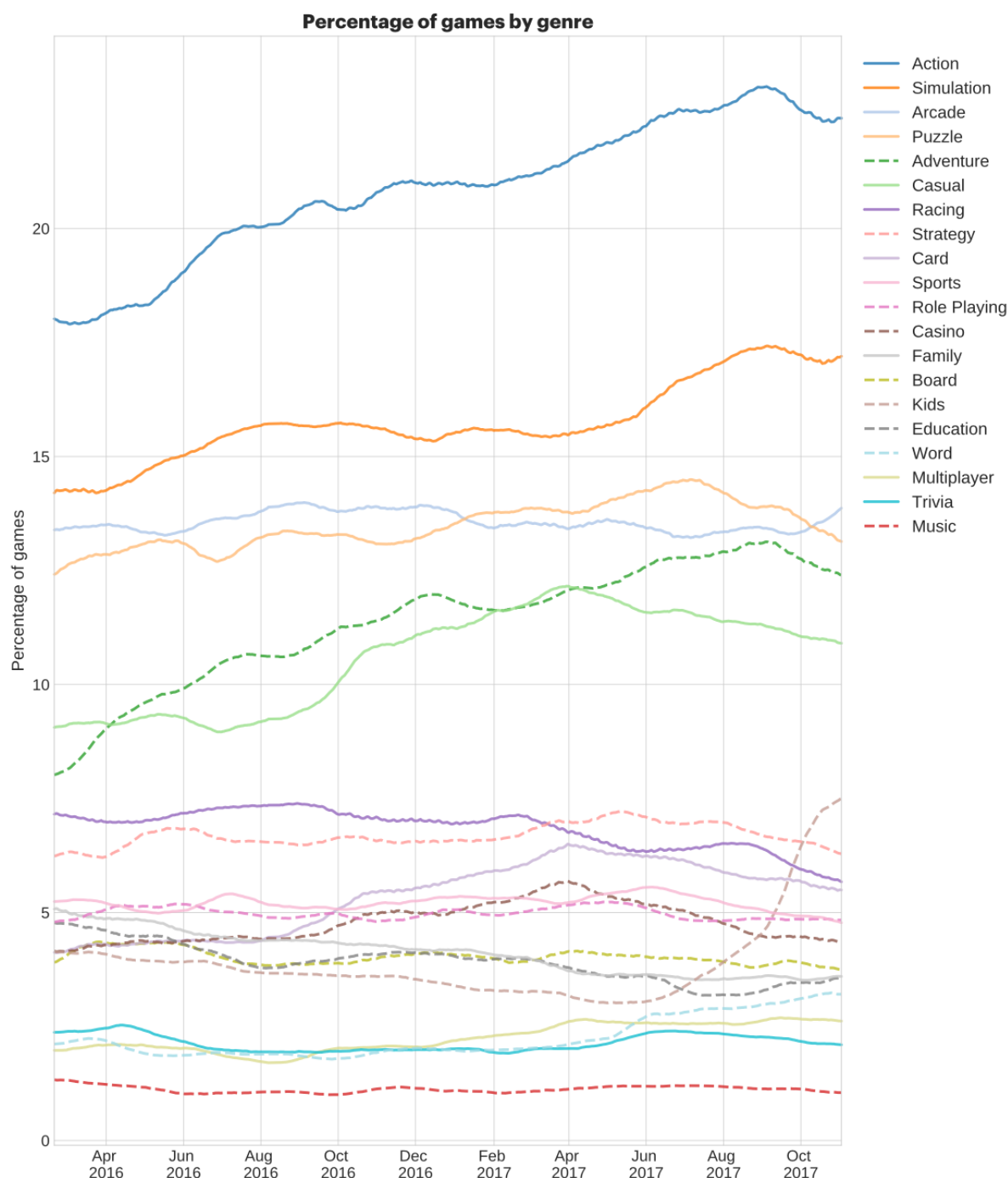| Genre	Percentage
Action	23.5 %
Simulation	15.8 %
Arcade	14.8 %
Puzzle	14.1 %
Adventure	12.7 %
Casual	11.2 %
Strategy	6.2 %
Racing	6.0 %
Kids	5.6 %
Card	5.2 %
Sports	4.8 %
Role Playing	4.5 %
Casino	4.4 %
Education	3.7 %
Family	3.6 %
Board	3.6 %
Multiplayer	2.9 %
Word	2.8 %
Trivia	2.2 %
Music	1.1 %
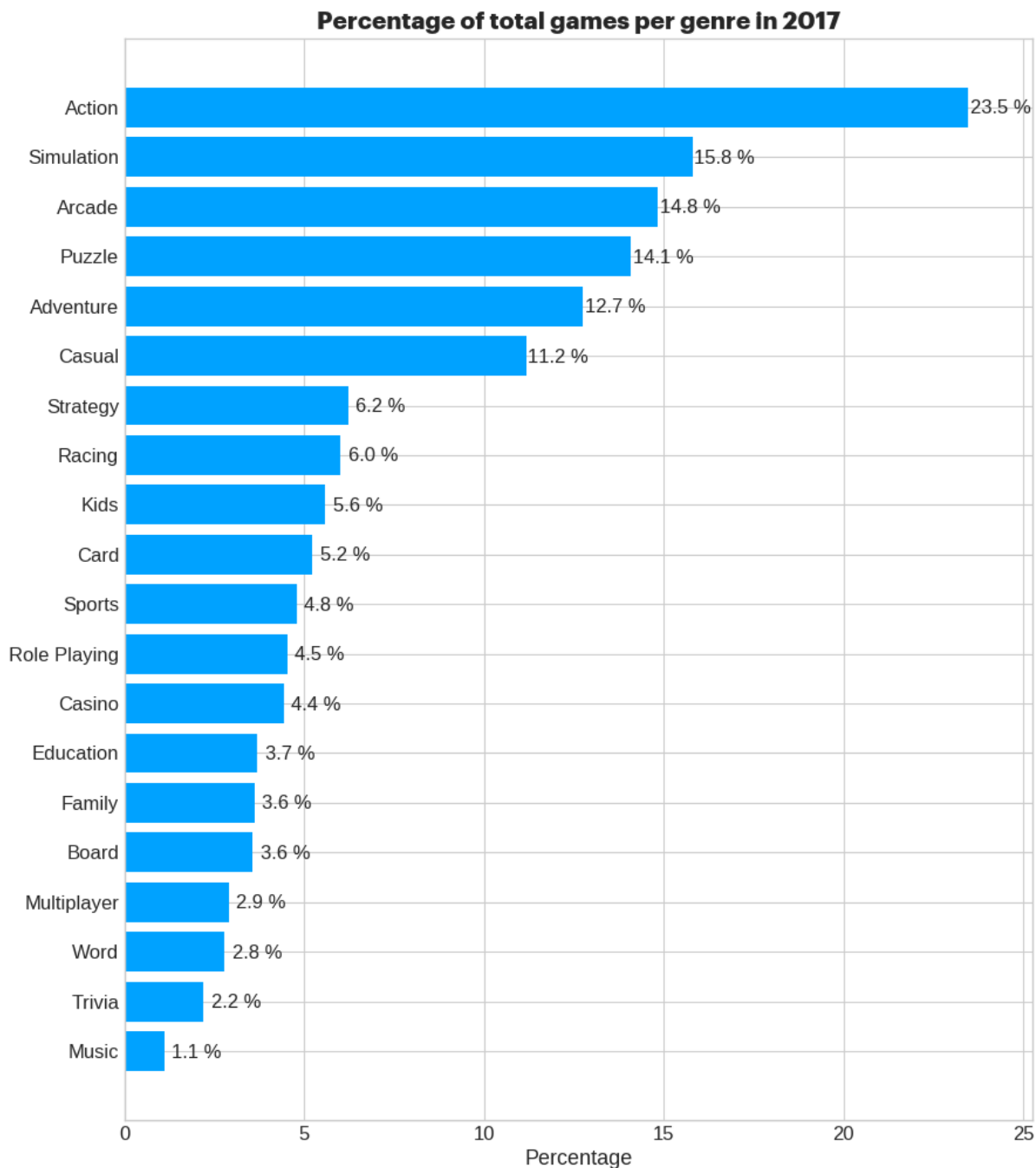
Top genre movement

So, compared to 2016, which genres have seen the biggest changes? We've summarised our findings in the table below. Interestingly, Kids games have seen a major jump. We've seen a dramatic increase in these kinds of games since May 2017. Simulation has overtaken Arcade, which we believe indicates that the mobile game market is maturing with more complex games available.

Most of the other changes are minor displacements caused by the major movements, with the exception of Casino. However, even though the overall ranking has dropped, Casino games demonstrate very positive KPIs in most other areas (as we go on to explore). This likely indicates that a few major players are consolidating and owning the genre.

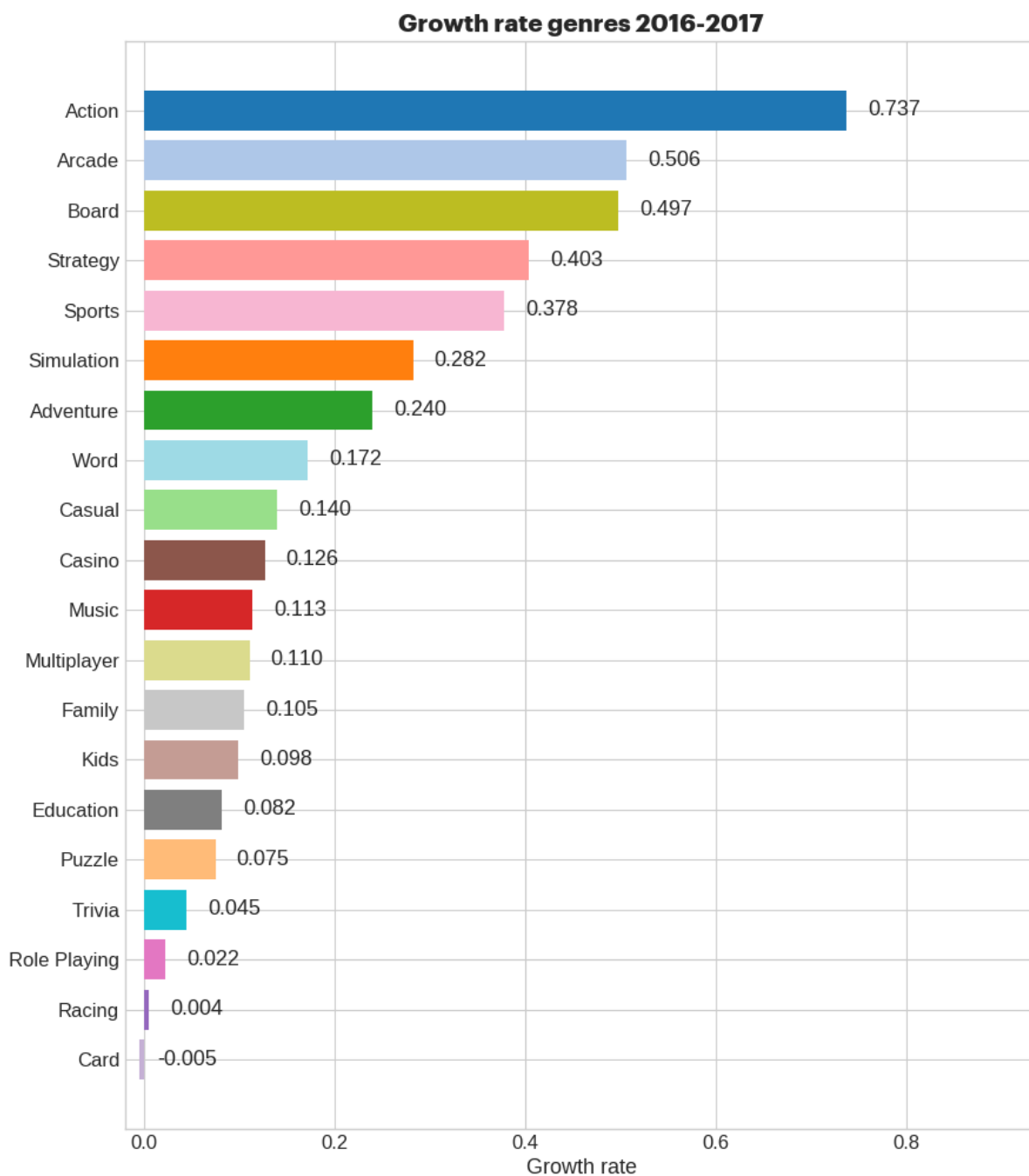| Rank	Genres (2016)	Genres (2017)	Difference
1	Action	Action	-
2	Arcade	Simulation	+2
3	Puzzle	Arcade	-1
4	Simulation	Puzzle	-1
5	Casual	Adventure	+1
6	Adventure	Casual	-1
7	Strategy	Strategy	-
8	Racing	Racing	-
9	Card	Kids	+7
10	Casino	Card	-1
11	Role Playing	Sports	+1
12	Sports	Role Playing	-1
13	Education	Casino	-3
14	Family	Education	-1
15	Board	Family	-1
16	Kids	Board	-1
17	Multiplayer	Multiplayer	-
18	Trivia	Word	+1
19	Word	Trivia	-1
20	Music	Music	-

Genre trends (2016-2017)

The graph below shows the percentage of games on our platform in a specific genre category over the past 2 years. Action, Simulation and Adventure dominate and continue to show a steady increase, whereas most other genres are neutral, or displaying a minor negative trend.

Percentage of games by genre

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

Genre growth rate

If, however, we look at the growth rate of specific game genres we can see a slightly different trend. The game set is dominated by Action, Adventure, Board and Strategy genres.

Growth rate genres 2016-2017

Genre	Growth rate
Action	0.737
Arcade	0.506
Board	0.497
Strategy	0.403
Sports	0.378
Simulation	0.282
Adventure	0.240
Word	0.172
Casual	0.140
Casino	0.126
Music	0.113
Multiplayer	0.110
Family	0.105
Kids	0.098
Education	0.082
Puzzle	0.075
Trivia	0.045
Role Playing	0.022
Racing	0.004
Card	-0.005

Retention

Which games keep players coming back again and again? We looked at retention to day 7 and computed it according to its classical definition: the fraction of users that installed the game on day D that play that game again on day D+7.

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Average D7 retention

According to Gamasutra, strong retention benchmarks are as follows:

Day 1: 35-40%   Day 7:   15%

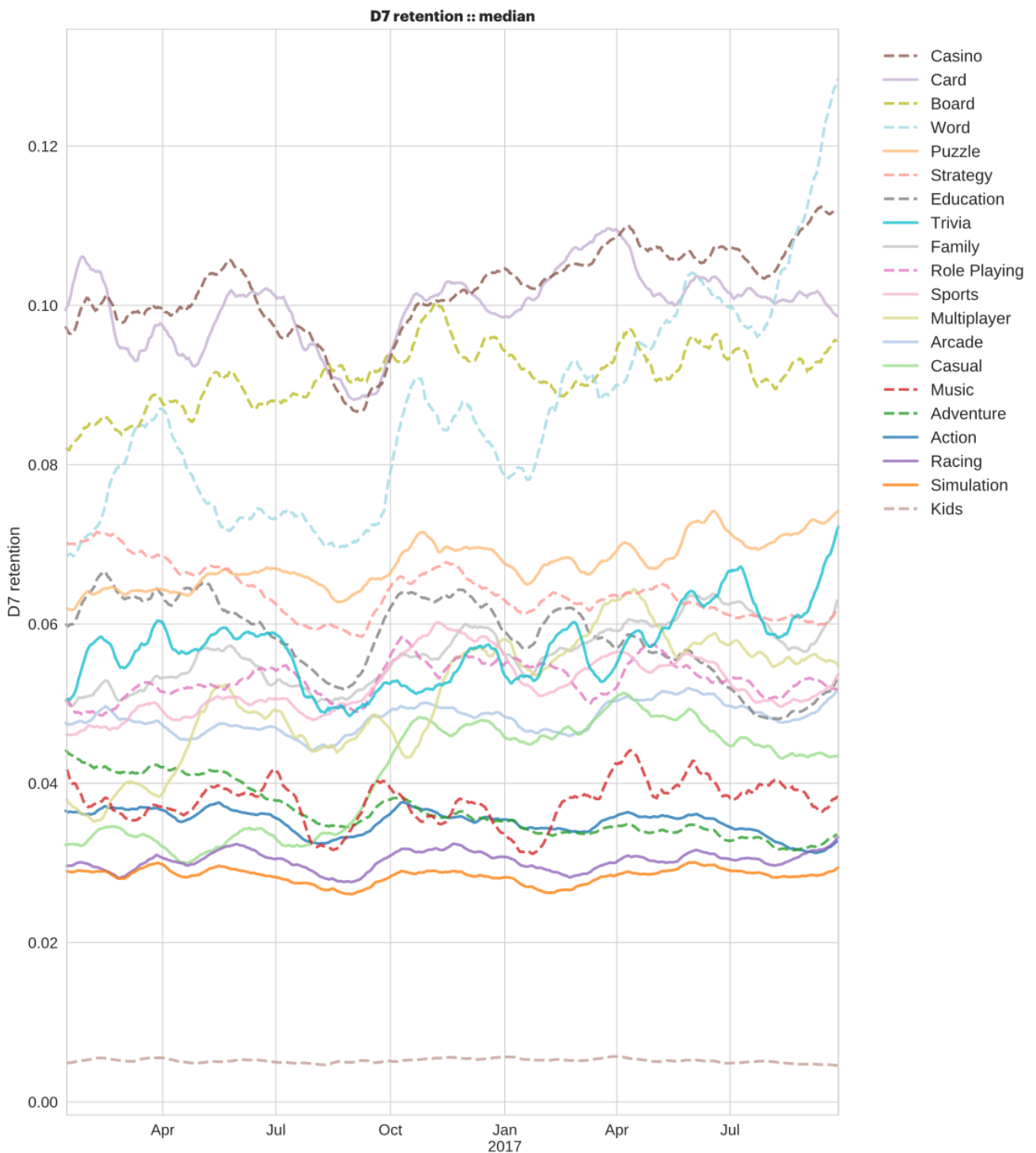Day 3: 20-25%   Day 30: 5%

What's the reality?

In real life, the top 16% of games perform above 10% and this is slightly growing. Our findings do confirm Gamasutra's, to a degree. However, they also highlight that the average D7 for the majority of games is around 4%.

We can see that an average game is actually closer to the poorest performing games than it is to the upper 16%. It's now more essential than ever to aim for D7 retention greater than 10% and consider significant reworking to the game if it's lower than this. In order to be a financial success, you'll need to do your best to get above the 10% for your D7 retention.

D7 retention :: median

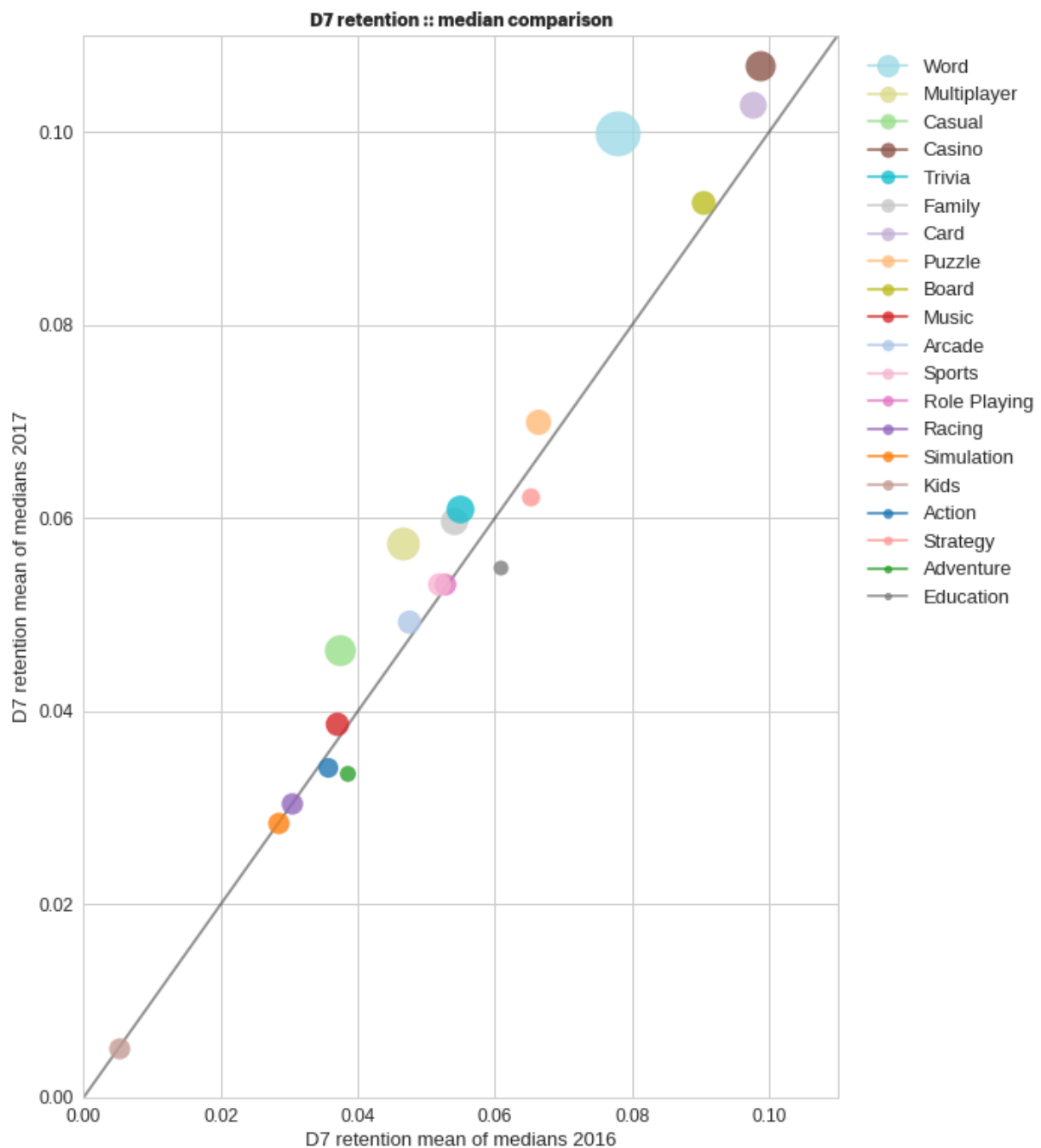all games
16.0% quantile
84.0% quantile
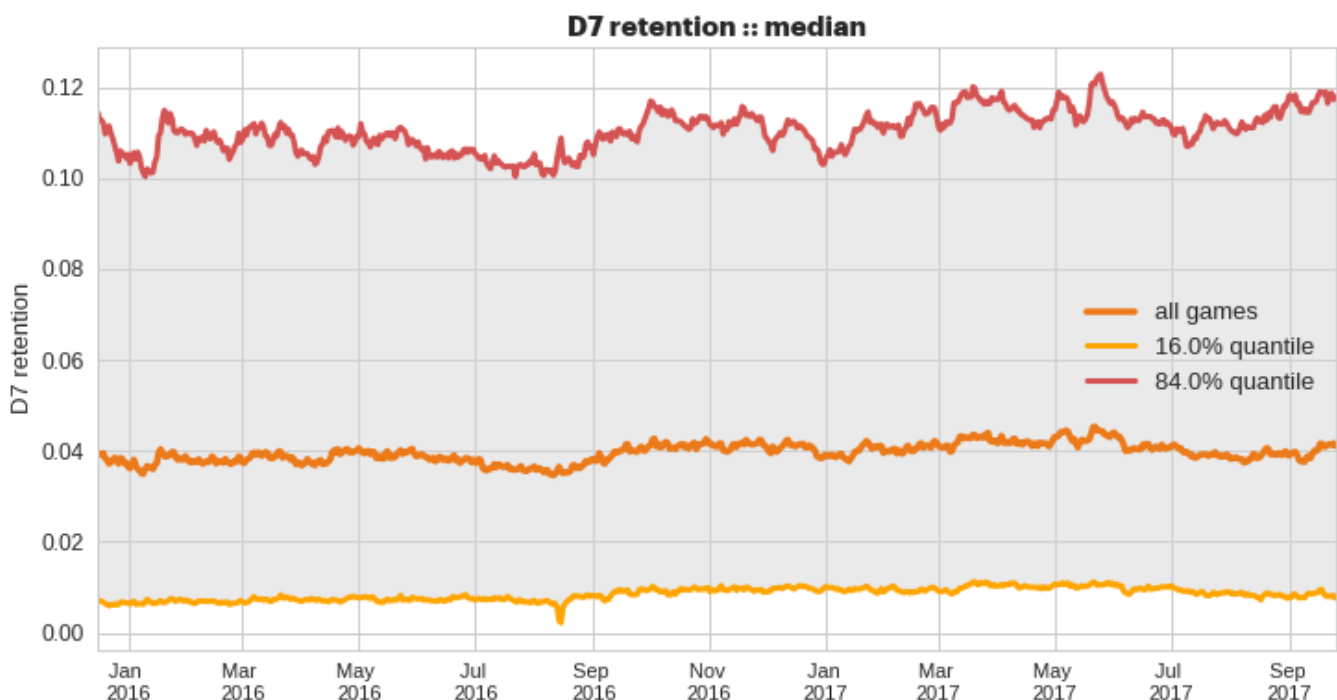
Retention by genre

Our data shows that certain genres definitely lend themselves to higher rates of retention. If you're looking for a high D7 then your probably better off creating a Casino, Word, Board or Card game.

D7 retention :: median

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

Retention trends

The graph below maps the changes for retention over the last 2 years. The bigger the point, the better the genre is doing this year compared to last.

D7 retention :: median comparison

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

y-axis: D7 retention mean of medians 2017
x-axis: D7 retention mean of medians 2016

Session Length

Do certain genres get players to return more often? We found that while average session length is approximately 6 mins, the top performing games have 2x that.

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Average session length

The graph below shows the average session length across all genres and games on our platform. A clear seasonal trend around the winter months is also apparent.

Average session length :: median
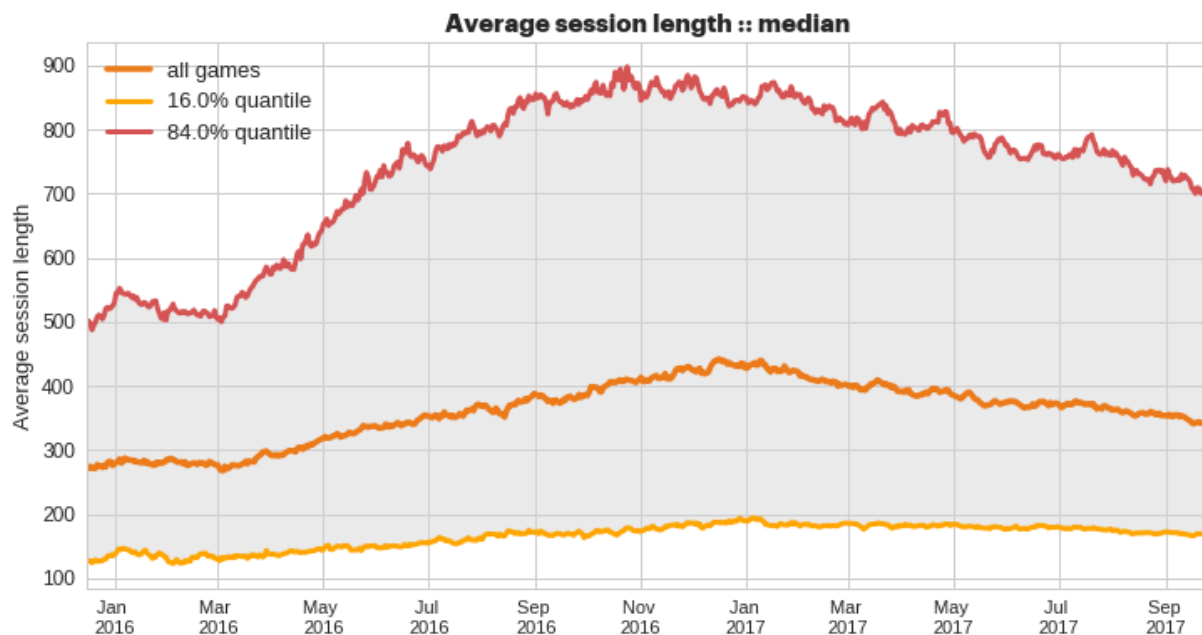
Insights

We discovered that the most popular genres have up to 3x lower session length than unpopular ones - e.g. action compared to casino.

Simulation games are both popular and have high session length.
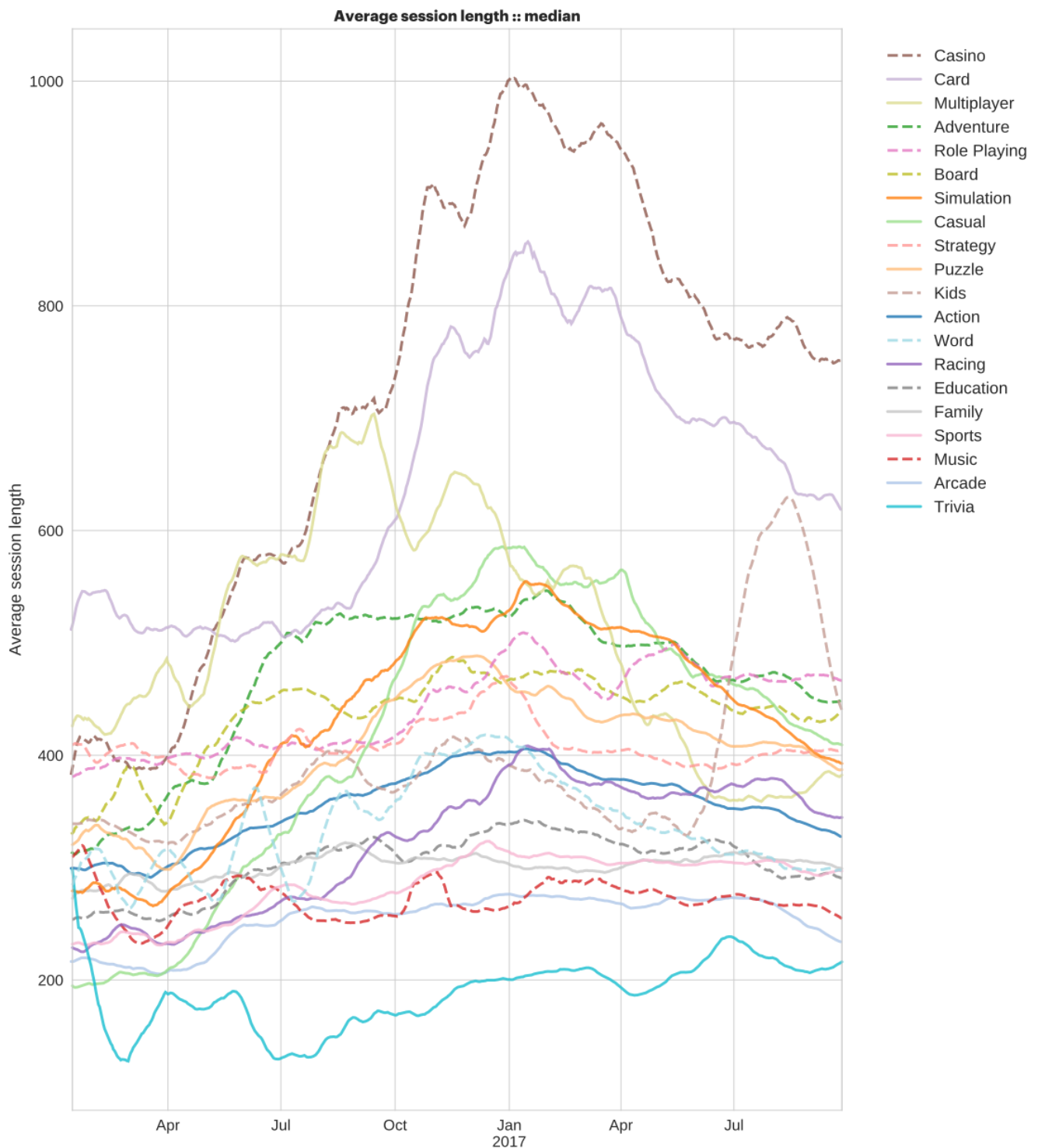
What's above average?

We found that the top 16% of games are played for 11.5 minutes per session, on average.

What's below average?

The bottom 16% of games are played almost 4x less with only approx. 3 minutes per session.
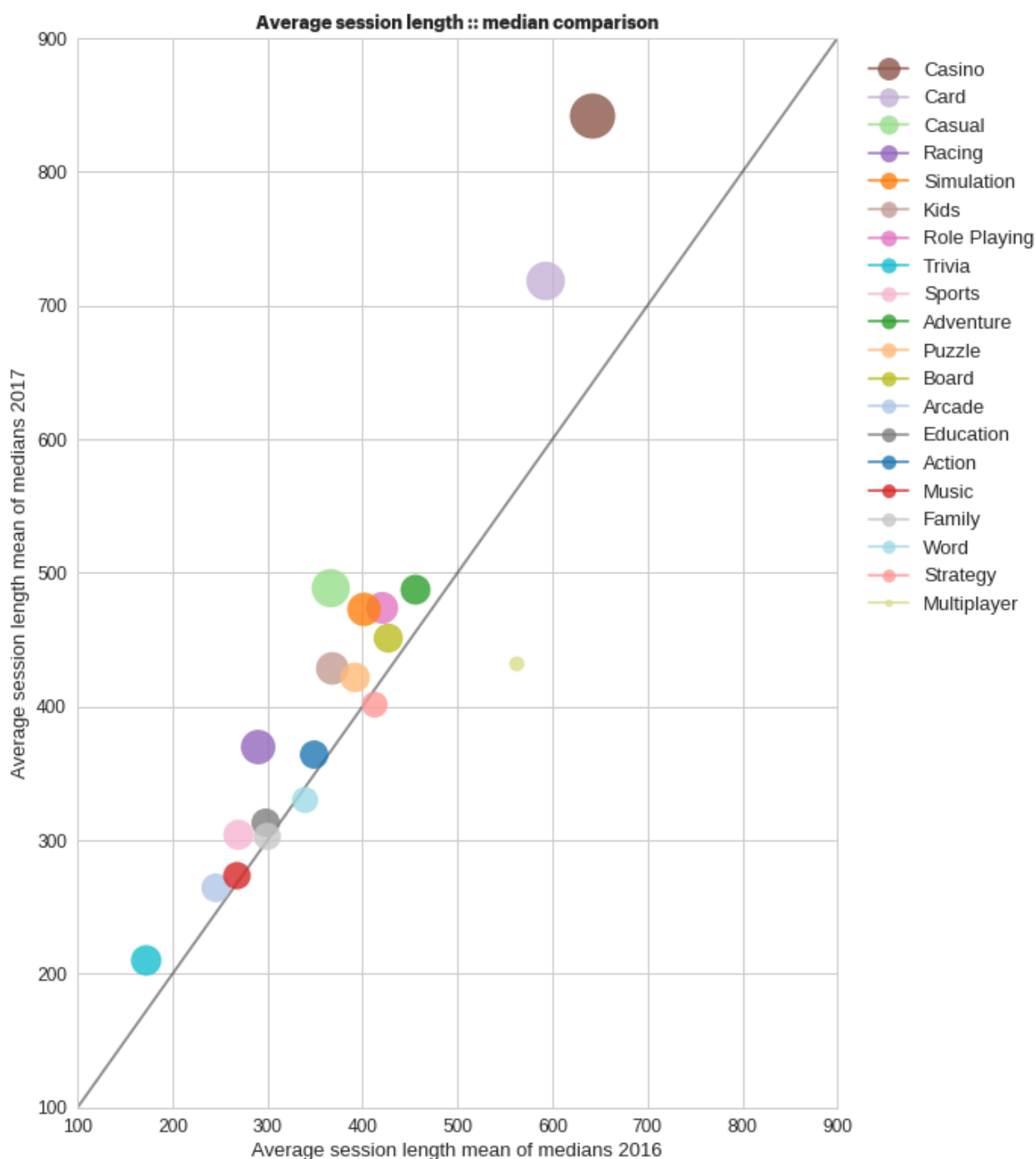
Av. session length by genre

The seasonal trend is also clear when looking at specific genres, but much more emphasised for Casino and Card games, which are almost 2x higher than any of the other genres examined in this report.

Average session length :: median

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

Av. session length trends

The graph below maps the changes for session length over the last 2 years.
The bigger the point, the better the genre is doing this year compared to last.

Average session length :: median comparison

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

X-axis: Average session length mean of medians 2016
Y-axis: Average session length mean of medians 2017

ARPPU

We noticed that the median ARPPU for the top performing games has grown by more than 60% since the beginning of 2016.

Median ARPPU

The top 16% of games are showing a strong positive trend, whereas the average and bottom 16% are growing slightly, but at nowhere near the same rate. This indicates the best developers are earning more and more of the total market compared to others, so the gap between high and low earning games may be at an all time high.

ARPPU :: median

Legend: all games / 16.0% quantile / 84.0% quantile
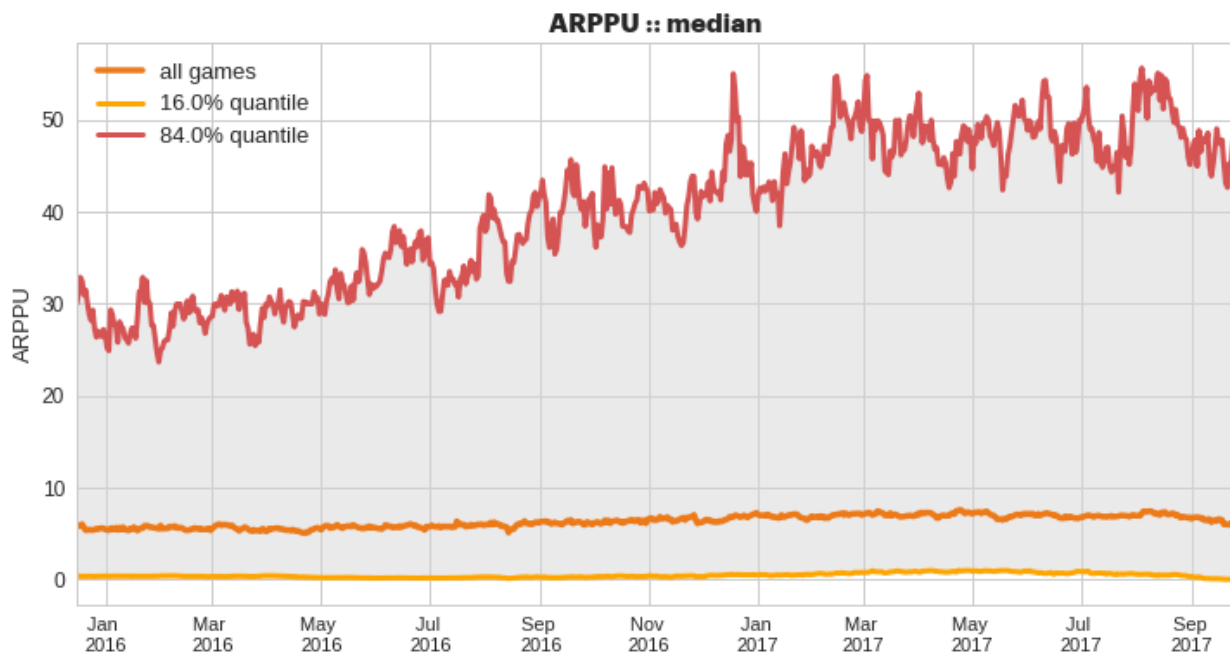
Insights

ARPPU is growing, but the lion's share is going to top performing games. It's now more important than ever to fine-tune gameplay for monetization, in order to get a significant share of the pie.
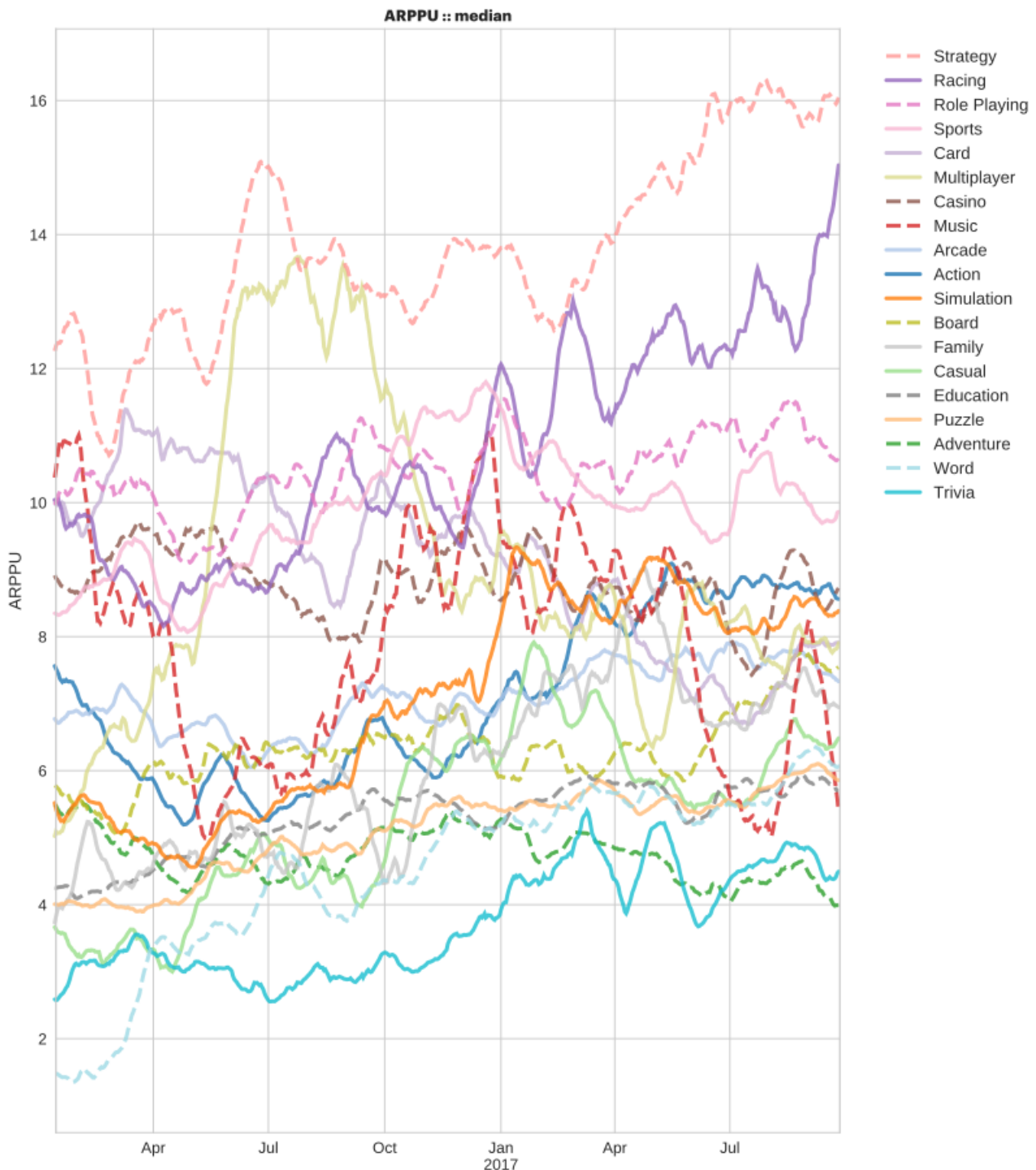
The gap is increasing

ARPPU shows the highest gap between high and low performers, with the top games at approx. $50 and bottom at just $1.

Room for improvement

Average ARPPU remains fairly steady at around $7, which is still 7x smaller than that of top games.
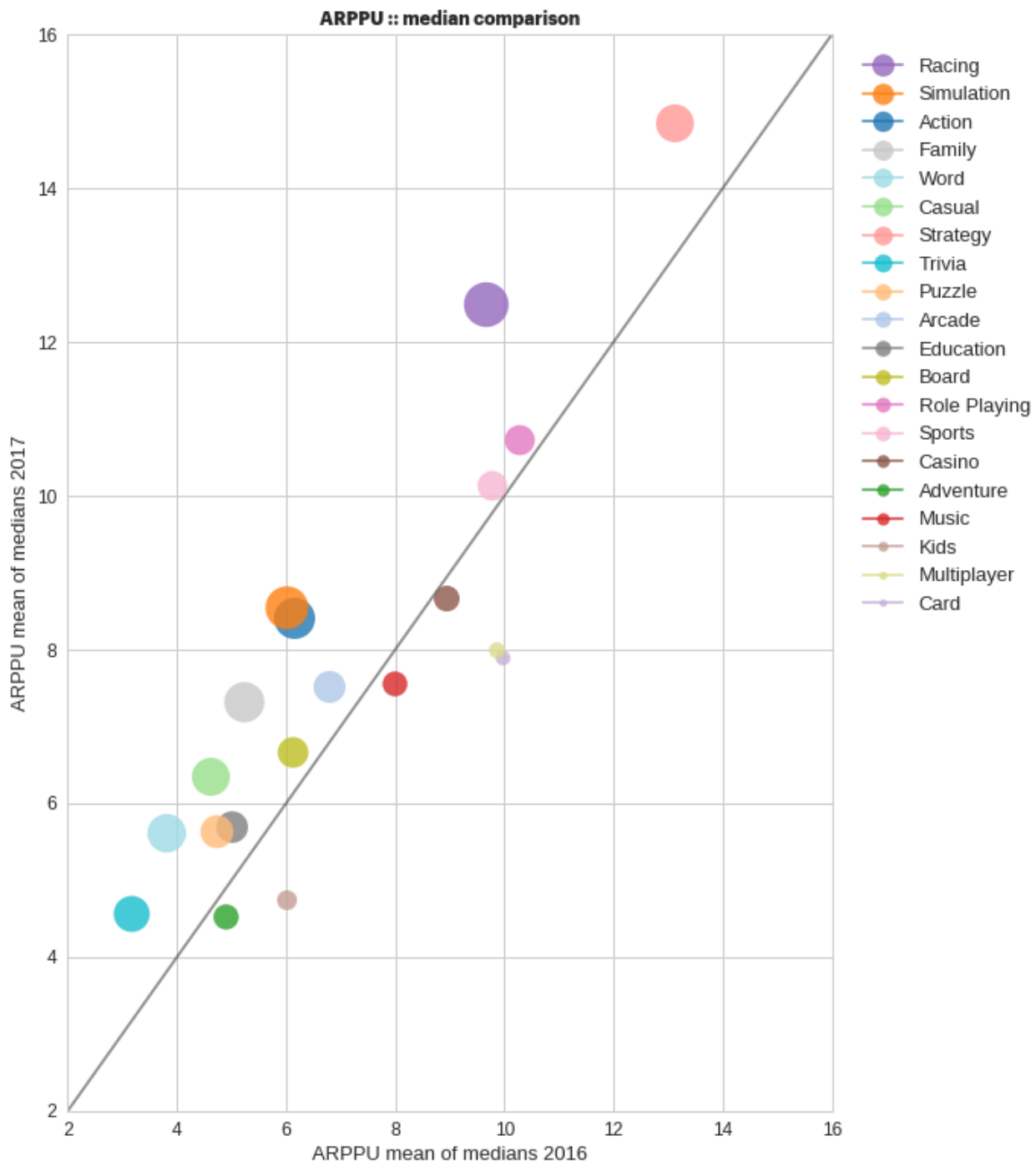
ARPPU by genre

This benchmark may be the noisiest in our analysis, but here's why that may be a good thing. While ARPPU varies highly between the top and bottom performers, this same distinction is not found per genre as well. Your gameplay and monetization strategy matter much more for ARPPU than genre

ARPPU :: median

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

ARPPU trends

The graph below maps the changes for ARPPU over the last 2 years. The bigger the point, the better the genre is doing this year compared to last.

ARPPU :: median comparison

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

Y-axis: ARPPU mean of medians 2017
X-axis: ARPPU mean of medians 2016

Stickiness

Or DAU-to-MAU ratio: is a general measure of how engaged your players are. We found that the best games perform about 2.5x higher than the average, which closely matches expected retention for high performance games.

Average DAU/MAU ratio

Similar to ARRPU, the findings for all game genres indicate that average games follow the pattern of low performers very closely and have stable stickiness, whereas the stickiness of top games is growing at a pace that appears to be accelerating.

Stickiness :: median

Legend:
- all games
- 16.0% quantile
- 84.0% quantile
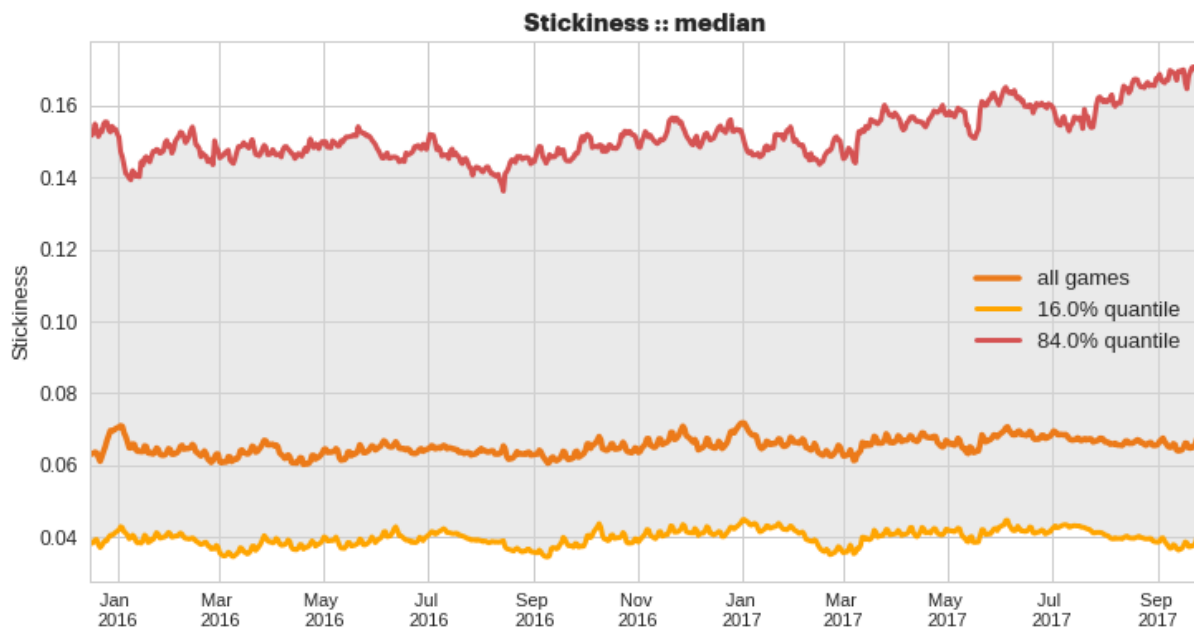
Insights

Similar to other KPIs examined in this report, the difference between the best and the worst performing games is quite large. Not only that, he gap between the two appears to be accelerating, particularly in the latter half of 2017.
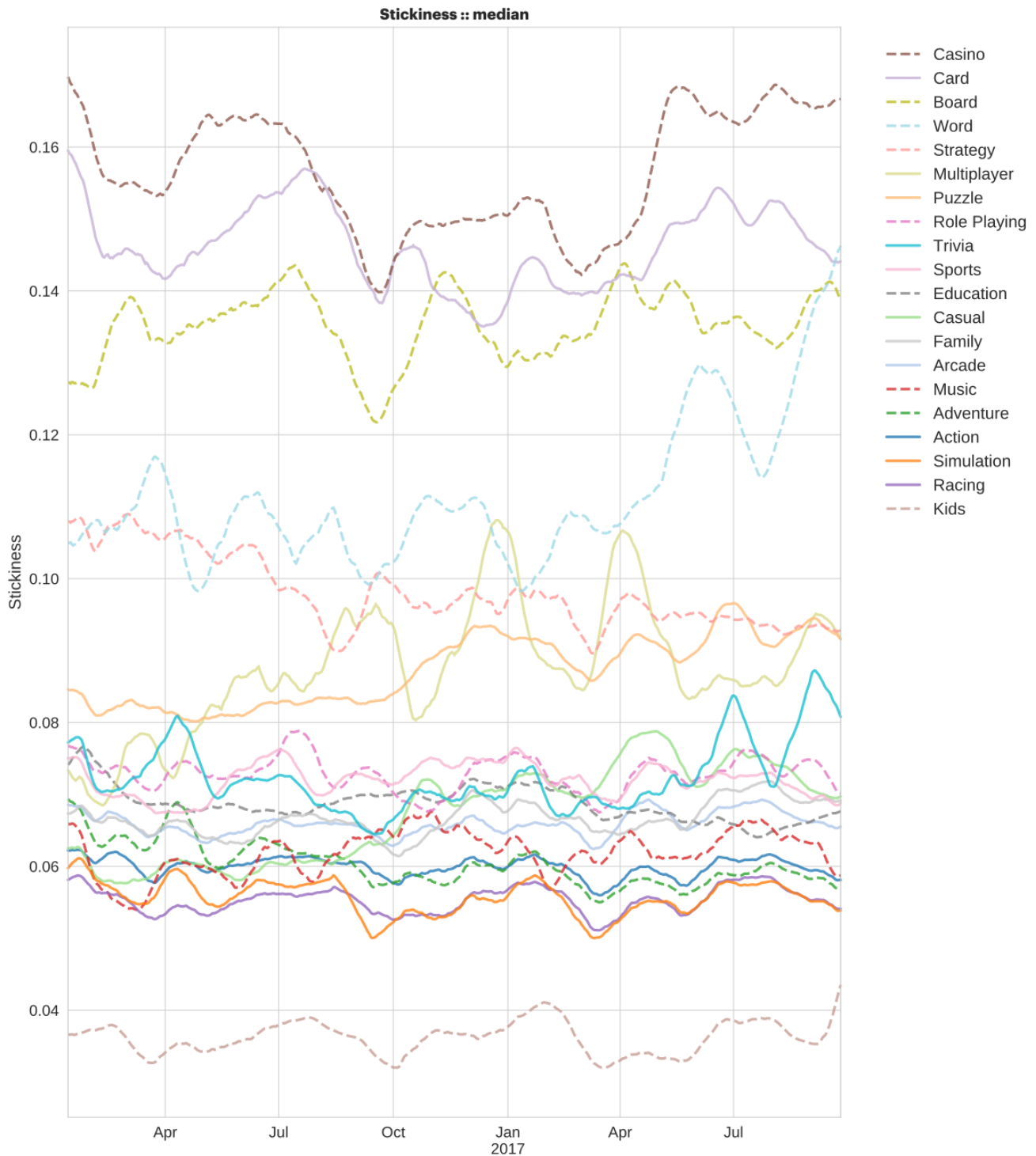
Top performer growth

The top performing games have 2x the stickiness of average games and 4.25x that of the bottom.

Average isn't good enough

Average games are only 3 percentage points removed from the bottom performers, but 10 percentage points from the top.
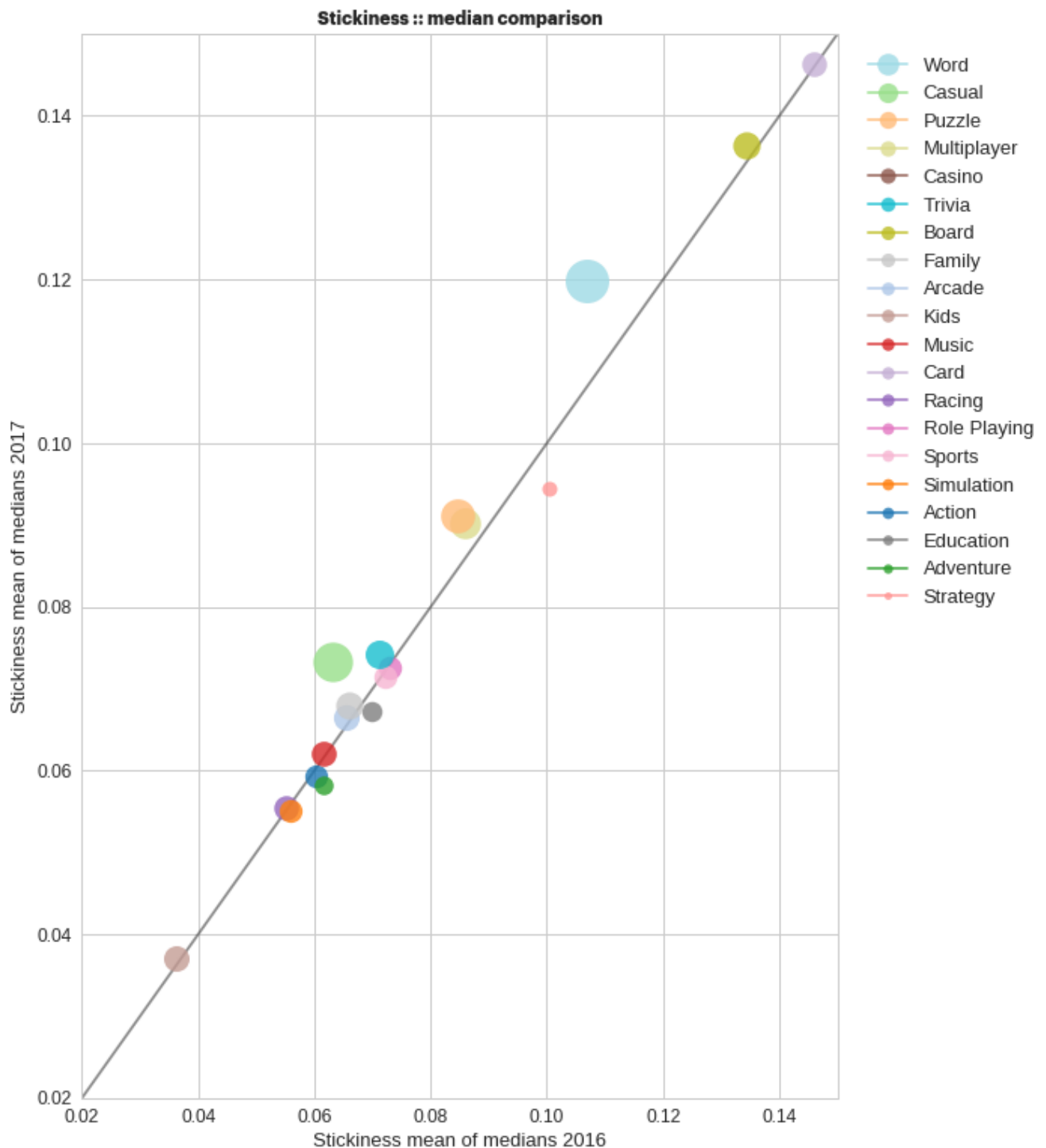
Stickiness by genre

Looking at a genre level, Casino, Card, Board and Word games appear to be the stickiest types of games. We do see a pattern that is similar to retention - the top performing are in the 15% mark. Most other popular genres perform in the average to low area.

Stickiness :: median

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

Stickiness trends

The graph below maps the changes for stickiness over the last 2 years. The bigger the point, the better the genre is doing this year compared to last.

Stickiness :: median comparison

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

X-axis: Stickiness mean of medians 2016
Y-axis: Stickiness mean of medians 2017

Takeaways

What are the key findings of note for 2017?

Don't say "let's just build a casual game"

We did not find any KPIs that confirm whether casual games outperform others. Firstly, consider if your game will excel in a specific genre and leverage your core audience.

Genre matters for ad-based monetization

Games with high session length and retention, like puzzle, card, and casino may be more suited to ad-based monetization. Strategy and simulation can drive better ARPPU.

Genre matters to IAP, but not how you'd expect

The category of your game has less influence on your IAP conversion rate than it does on certain KPIs such as retention and session length. All fine-tuned monetization is equal.

Casino games look like a safe bet

Even though less Casino games appear to have been developed this year, they consistently demonstrated very positive trends for most of the metrics examined in this report.

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