unity

The 2020 Mobile Game Monetization Report

A look back on the mobile gaming industry in 2019 and what to expect in 2020

Where Cards Fall by The Game Band, Snowman — Made with Unity

Contents

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About this report

About the Data

Unity Technologies helps over 300K apps from over 60K developers make sustainable revenue from ads and in-app purchases. We take developer data privacy very seriously, and have omitted information from this report that would individually identify any single game or developer. The analysis in this report is aggregated from our internal data into the publically determined categories on the Google Play and Apple App Store from Jan 2019 to Dec 2019.

The ad formats that this report encompasses are static display / interstitial and rewarded video. Banner data was primarily excluded due to a large difference in performance and user behavior around that format.

Additionally, we have leveraged great insights from deltaDNA, a Unity company. Every year, deltaDNA conducts an annual survey about in-game advertising. You can read more in their full report here.

About Unity Ads

Unity Ads is a comprehensive monetization platform for Unity, iOS, and Android developers. Unity's Unified Auction delivers the highest revenue to developers, whether the advertiser came from Unity, Google, or one of over 40 other demand partners. Natively integrate any format – like rewarded video, banners, interstitials, rich media, playables or even AR – into player gaming experiences to boost CPM results. Ads can be directly integrated in Unity's development platform. Even games built on other platforms can simply integrate with Unity Monetization 3.0 to generate sustaining revenue through lifetime value optimization and advanced analytics.

Learn about Unity Ads

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Key takeaways

1. Ad revenue is comparable to IAP revenue

Mobile gaming ad revenue has emerged as a comparable, sometimes even competitive, revenue stream to in-app purchase (IAP). In some game categories like Arcade games, ads can be as much as 82% of total revenue

2. Asia leads in ad revenue

Developers in regions like Asia put a lot of emphasis on ad revenue, demonstrating opportunities for developers in the Americas and Europe to more heavily prioritize ad revenue. On average, games in China receive 20% more ad revenue than their American counterparts.

3. Ads have the power to increase engagement and IAP revenue

Thoughtful ad implementation can raise retention, convert more players, and contribute to IAP revenue. Games that weren't running ads before experienced a 2.3% increase in D7 retention and a 1.1% increase in the percentage of users who bought at least one IAP.

4. Puzzle, Casual, and Word games are important ad opportunities

These three app store categories show strong metrics across revenue and engagement for ads. In fact, all three show higher D7 retention with ads, and they all grew in ad revenue by at least 20% in 2019.

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2019 in review

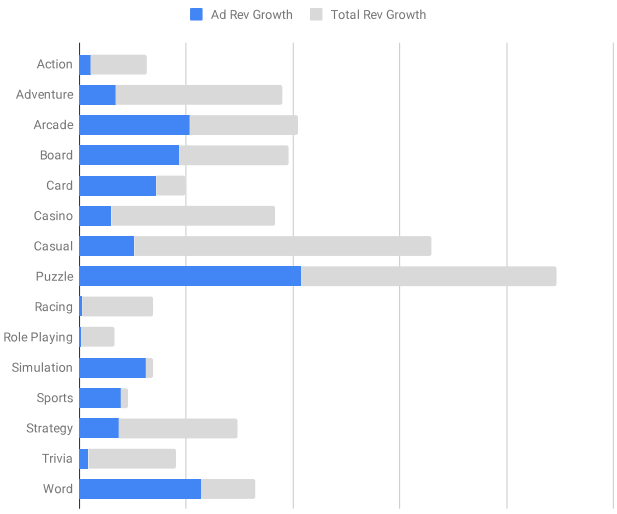
A year of ad revenue growth

Mobile gaming apps have come a long way since the iPhone's launch in 2007, now representing more than half of the global gaming market. With stakes this big, monetization in mobile games has also transformed over the past decade.

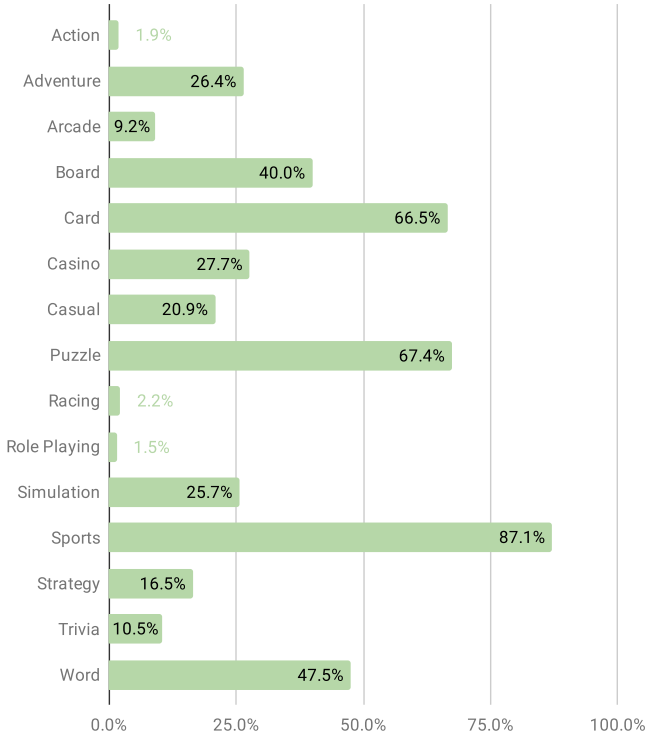
The in-app purchase (IAP) has been driving app monetization since its inception. But app developers are now recognizing advertising as a valuable revenue stream.

A significant portion of the total revenue growth per game app category in 2019 was due to ad revenue (see right).

Ad revenue growth as a proportion of total revenue growth, 2018–2019



% ad revenue growth, 2018–2019



Opportunities in each category

Ad revenue over the past year has grown across all game categories (see left).

For categories that have only recently begun focusing on ad revenue, the growth has been enormous.

For categories like Casino, Word, and Casual, the growth is not quite as high, despite the larger raw overall revenue growth numbers. This is because these categories have been monetizing from ads for quite some time, so open opportunities are fewer and growth is more incremental.

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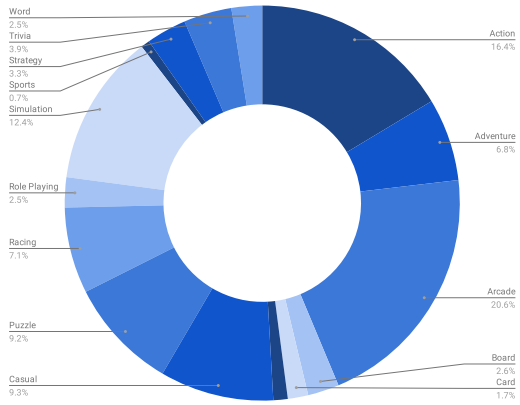
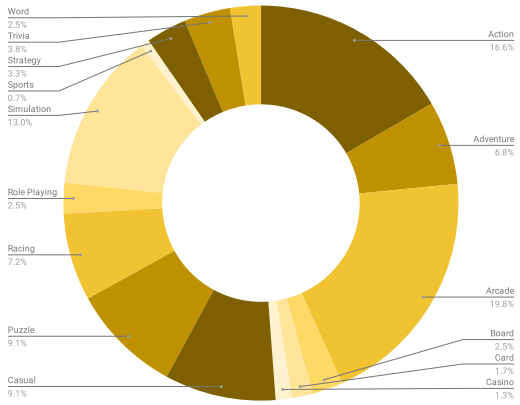
Game genres across regions remain similar

Due to the prevalence of some very successful titles, there's an idea that each region specializes in certain kinds of games. However, the data from 2019 shows that the genre breakdown for each region is actually very similar.

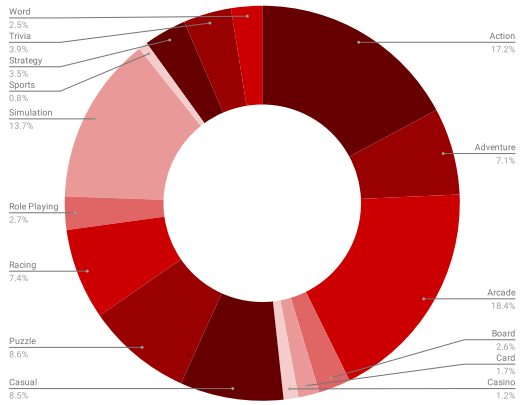
Americas Genre Breakdown



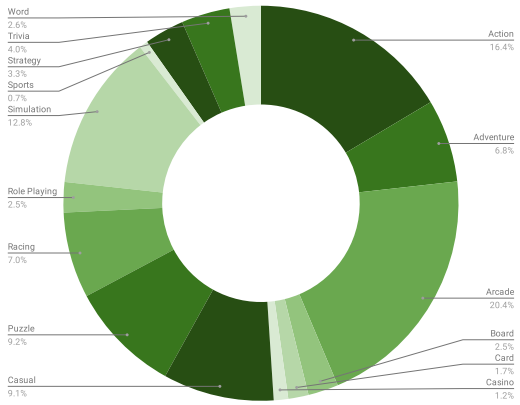
APAC Genre Breakdown



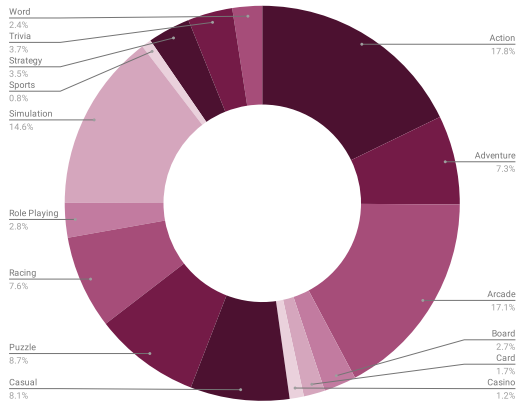
China Genre Breakdown



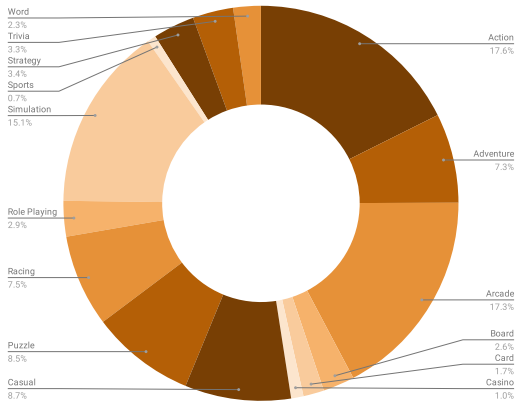
EMEA Genre Breakdown



Japan Genre Breakdown



Korea Genre Breakdown



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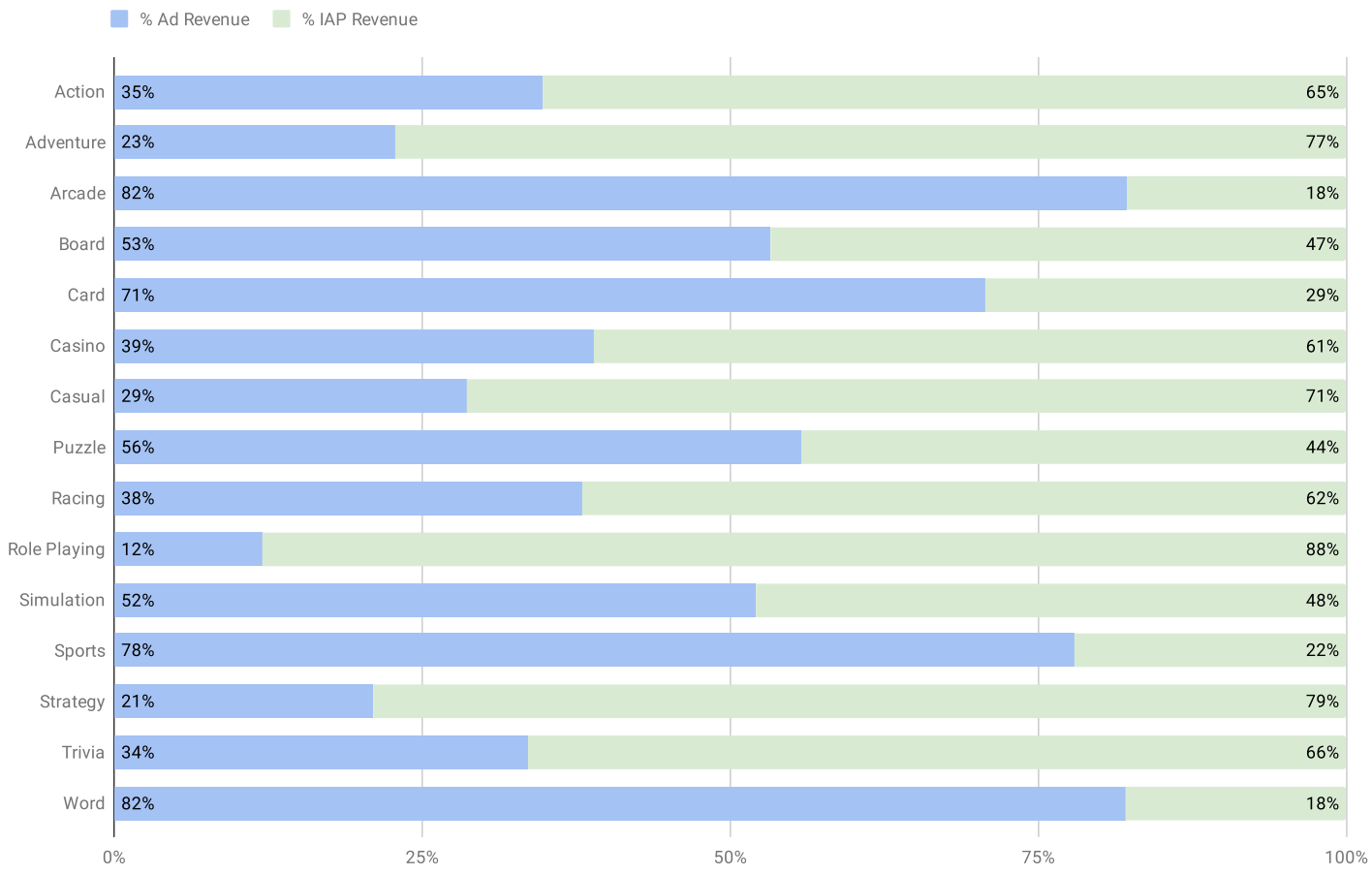
Ads vs IAPs

A competitive revenue stream

Ads have definitively become a core part of many mobile games' revenue streams. The chart below shows the percentage split in ad revenue and IAP revenue by app store genre.

% ad and IAP revenue by category



Let's look at a few of the more interesting categories.

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Arcade

Over the past year, Arcade games have heavily skewed towards ad-driven revenue due to the rise of hyper-casual games. Arcade-style games lend themselves well to hyper-casuals, since they are easy to understand and appeal to a wide range of players, especially non-gamers.

Card

The Card category holds two types of games. The first type is playing-card games like Solitaire, Poker, Spades, etc. These games generally lean towards ad-driven revenue, with the exception of Poker games, which lean to IAPs. The second type is collectible card games (CCGs), where players collect cards through gacha mechanics or booster packs, then use those cards to do battle against another player or against an artificial intelligence (AI). These games are almost entirely IAP-focused, but may feature rewarded video ads.

Casual

Casual is an incredibly wide and vague category. Games range from town-building simulations to familiar match-3 mainstays from top gaming publishers. While the percentage of ad revenue is lower than IAP revenue, due to the massive size of the Casual category the raw value of ad revenue actually outweighs almost all other categories.

Puzzle

Puzzle contains mostly match-3 and color-match games that are also seen in Casual, but a majority of them are mid-core. Interestingly, this category includes a lot of games based on licensed intellectual property (IP), which have more restrictions on the ads that can be shown. This is probably why the percentage of ad revenue is lower than for a comparable category like Word games.

Role Playing

Role-Playing Games (RPGs) are very heavily weighted towards IAP because many of them use gacha or event-based IAP monetization. In these games, typically the only ads available are optional rewarded video ads, and these ad placements have long cooldowns and frequency caps to prevent the player from accumulating too many resources.

Word

Word games mainly monetize via ad revenue due to the demographic of the player base and the gameplay mechanics at work. These games are one of the biggest users of mandatory interstitial ads, usually after a player's move on a Scrabble-like board or word search.

Hyper-casual

Hyper casual games are lightweight games with simple, intuitive gameplay mechanics.

Most of their income is from ads, sometimes even forgoing IAP completely.

They usually have a short lifespan, sometimes as low as a month.

Gacha

Gacha games gained their moniker from Japanese capsule-toy vending machines, known as gachapon.

Much like in loot boxes, gacha game players spend virtual currency to obtain a randomized reward.

This game model was popularized in the early 2010s and fares particularly well in Asian countries.

Mid-core

Mid-core games have simple gameplay mechanics, but more in-depth progression and game economies.

The game design limits ad revenue to mostly banner or rewarded video ads; if you force interstitial ads on your spenders, they may lose interest.

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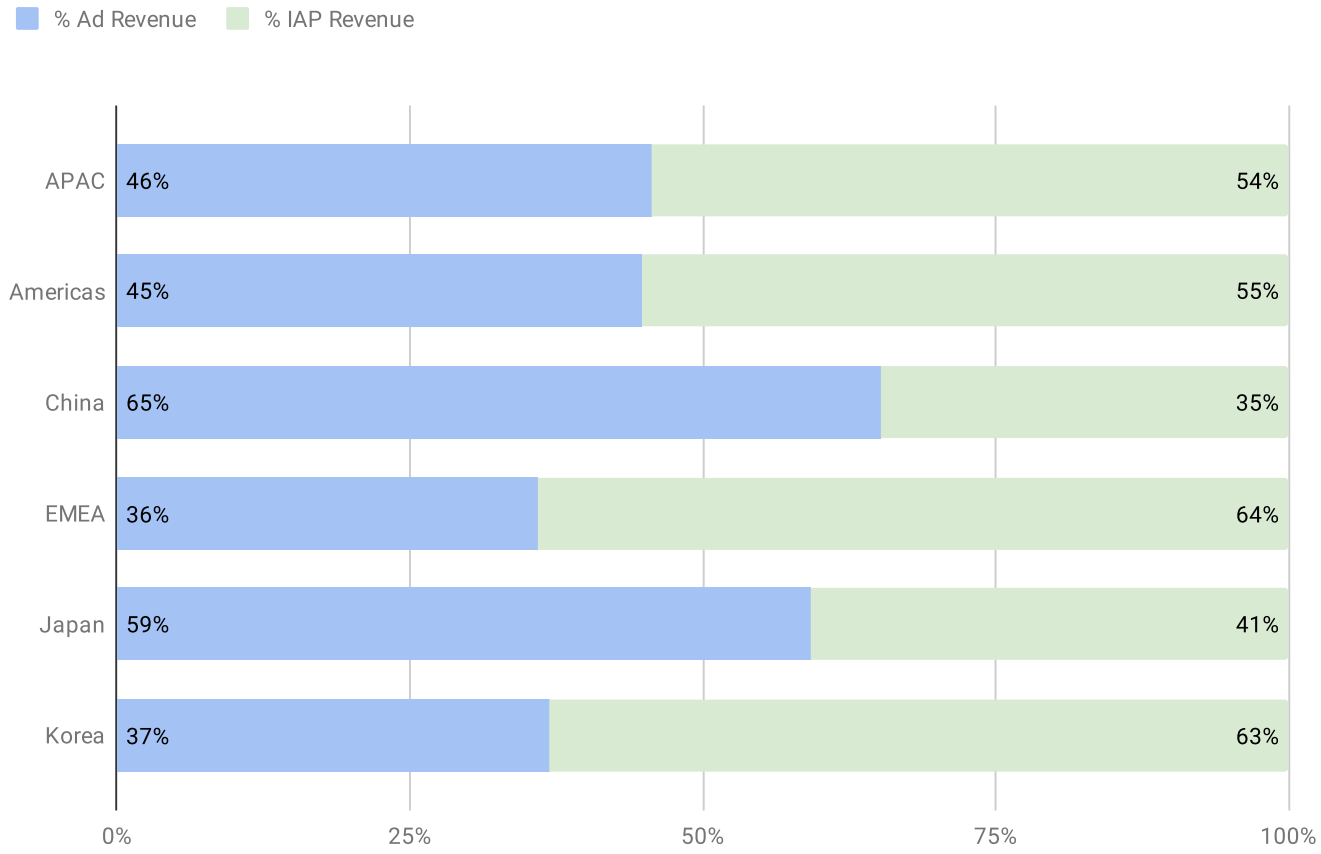
Regional differences

We also observed that developers in different regions split their monetization strategies differently.

There is a shows a heavy emphasis on ad revenue in Asian countries. This may indicate that developers in the Americas and EMEA are underusing this revenue stream and have opportunities to implement similar ad practices.

% ad and IAP revenue by region



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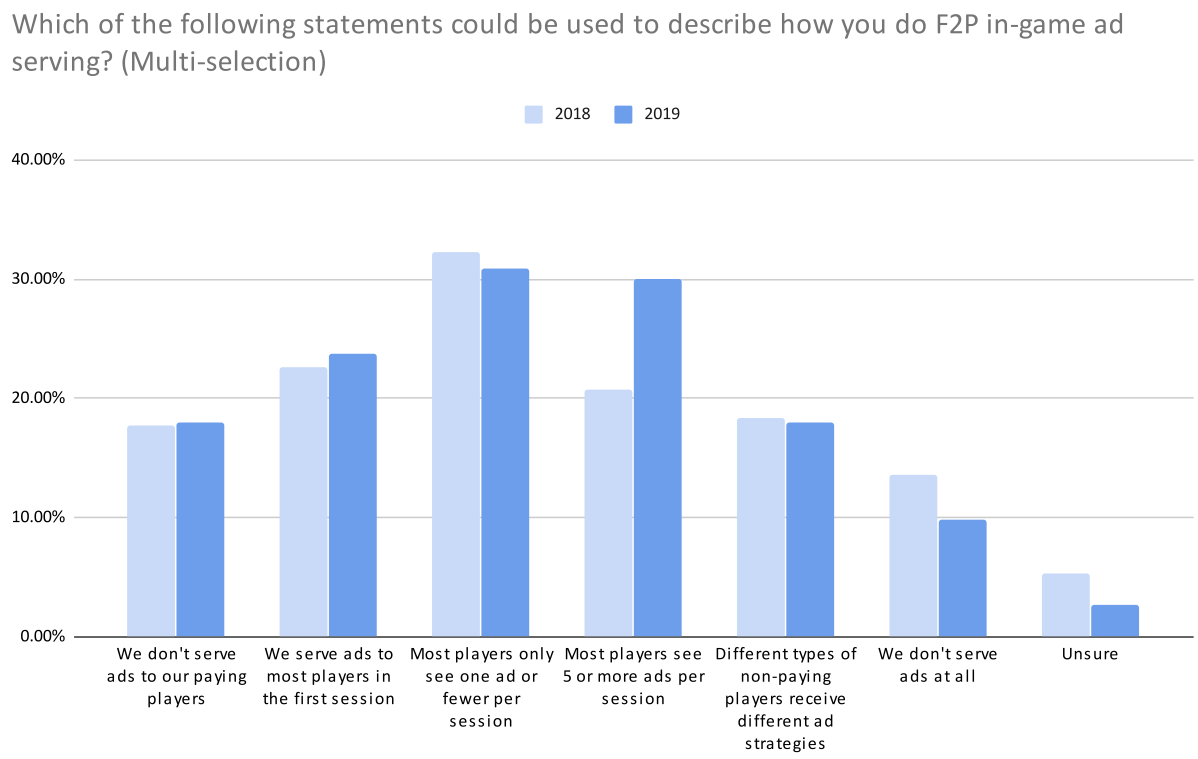
Views on ad monetization

Positive shifts in ad monetization sentiments

In an annual survey, deltaDNA asks its customers a series of questions about their sentiments and the implementation of in-game ad monetization. This year, hyper-casual was added as an option, so many developers recategorized their casual games as hyper-casual.

The overall trend is that ad monetization is taking an increasingly prevalent role in game developers' revenue streams, which aligns with the quantitative data that Unity has analyzed. Let's take a look at some interesting data points.



What the data says

In 2019 there was a 9.4% increase in the number of players who see five or more ads per session.

Meanwhile, games that don't serve ads at all decreased by 3.7%.

What you can do

Increase the number of ads that players can potentially see per game session.

This can be done with additional placements, lowering the cooldown on rewarded ad opportunities, and increasing frequency on interstitials.

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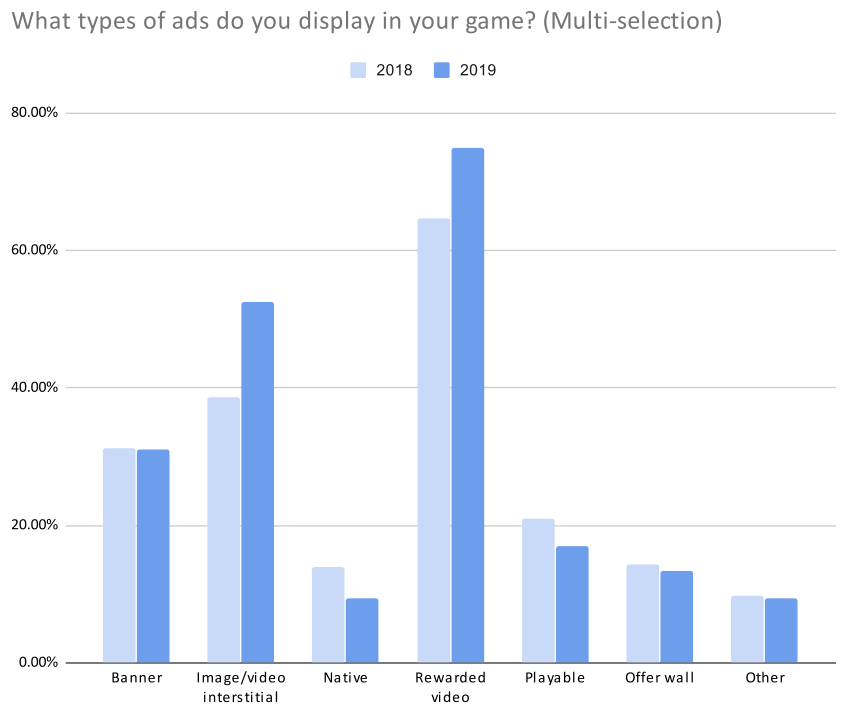


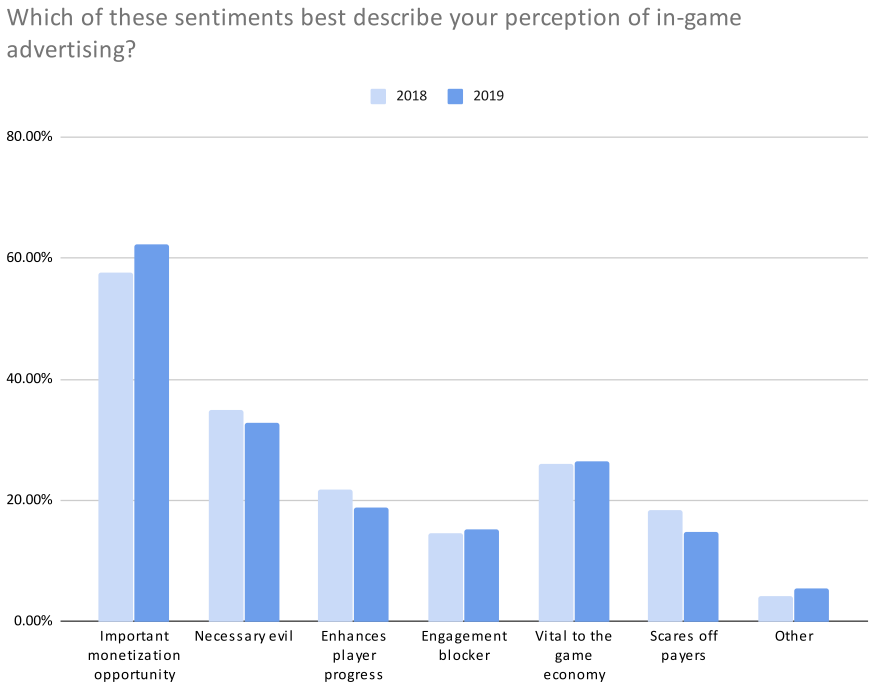
What the data says

Fullscreen interstitial and rewarded video formats continue to be the most used. The offerwall system continues to decline as app stores clamp down on the format.

What you can do

Prioritize interstitial and rewarded video ads in your monetization strategy. In particular, rewarded video has seen a surge of popularity since it offers the best game experience, and this translates to higher eCPM (effective cost per 1,000 impressions).

Developers feel better about ads



What the data says

Positive sentiment about ads and their importance to revenue have increased year over year. Belief in the myth that ads scare off players is decreasing.

What you can do

If you currently aren't using ads for monetization, consider putting them to work as a viable potential revenue stream. Read more articles about ad monetization, or reach out to Unity Ads to learn more about how they can work in your games.

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Ad revenue has become more common

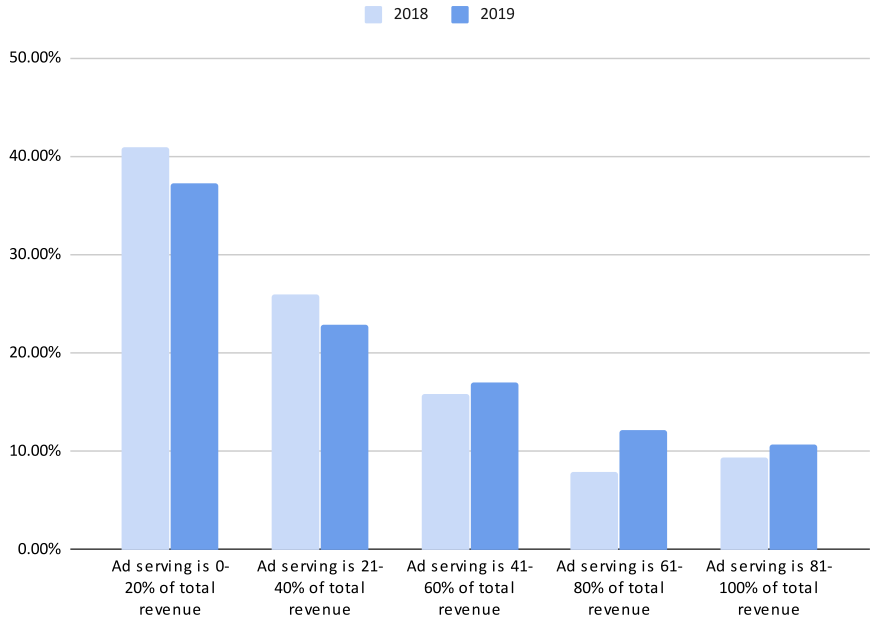
What the data says

As already discussed, ad revenue is claiming a larger share of total revenue. The number of games that had 61–80% of their revenue from ads increased by 4.2%, while the number of games that had 0–20% ad revenue composition decreased by 3.8%.

What you can do

Explore integrating ads into your games and think about how to prioritize them. Product managers and game designers frequently scope and pick features based on their revenue potential. It's always a beneficial exercise to evaluate the potential of ad revenue.

What is your estimate of the approximate revenue split between Ads & IAP in your highest-monetizing F2P mobile game?



IAP cannibalization is still a concern

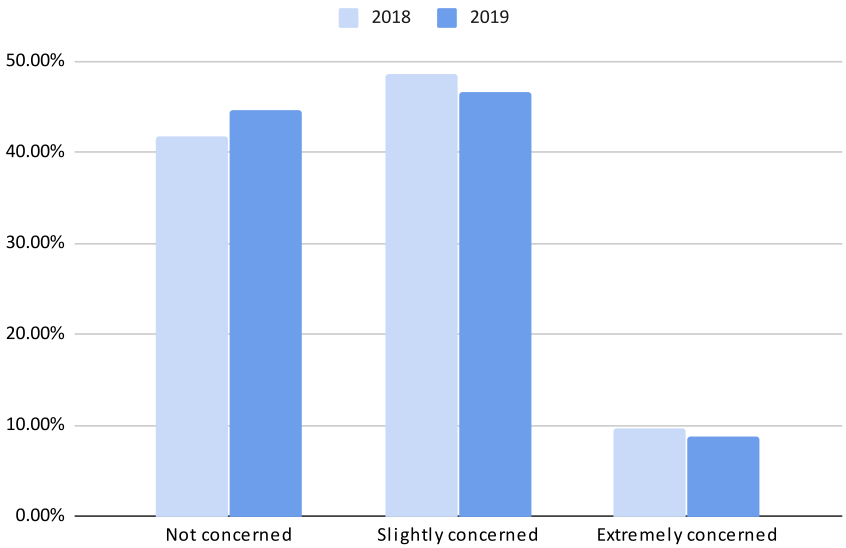
What the data says

Even though developers are less concerned overall about ads cannibalizing IAP revenue, roughly half of developers still think it's an issue.

What you can do

Be thoughtful about how you implement ads for games with IAP. You can avoid cannibalization by thinking about them holistically and integrating them into a game's overall design. Unity has a wealth of knowledge and data to guide ad implementation, so contact us to learn more.

How concerned are you about ads cannibalizing IAP revenues?



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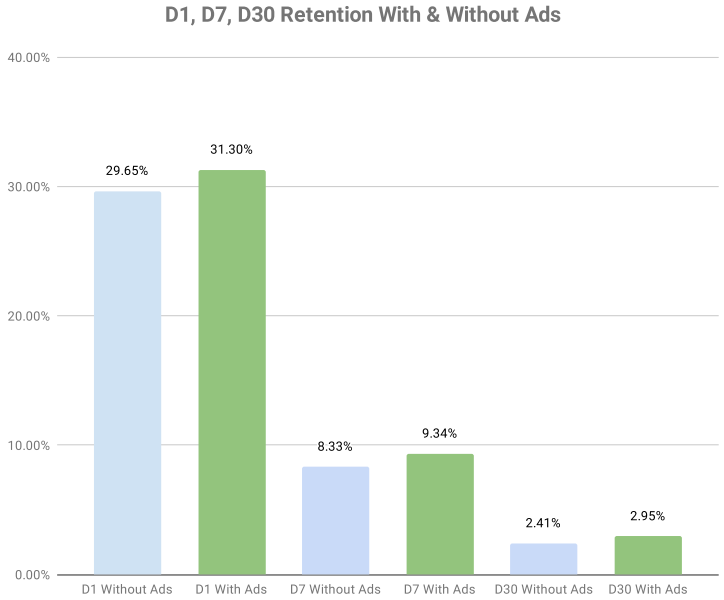
Ads and retention

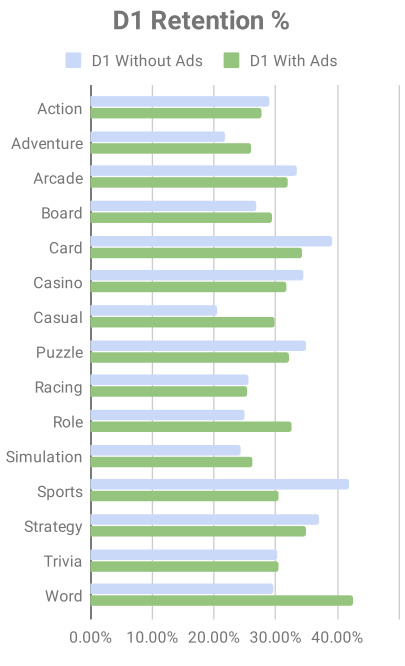
A common fear debunked

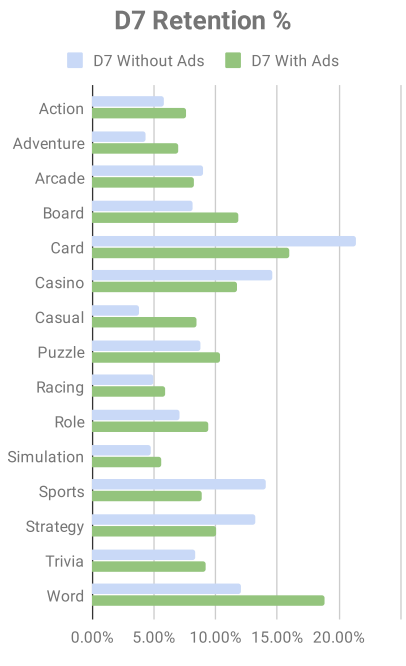
Many developers believe that if they put ads into their games, they'll lose players due to worse player experience or churn from competitors' games showing ads in their games.

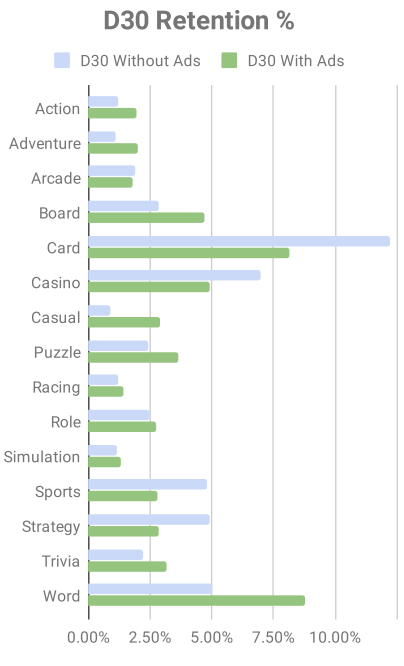
The charts here show D1, D7, and D30 retention data by category across Unity's network of games. What we can conclude is that there isn't a statistically significant difference for retention in games that have ads versus games that don't. In fact, D1 is higher by 1.65%, D7 is higher by 1.01%, and D30 is higher by 0.54%.

If you choose to implement ads, do so thoughtfully. See our case study to learn why this is such an important factor.









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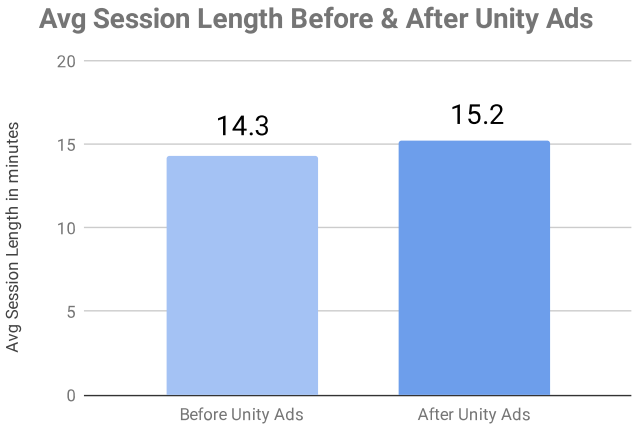
Retention before and after ads

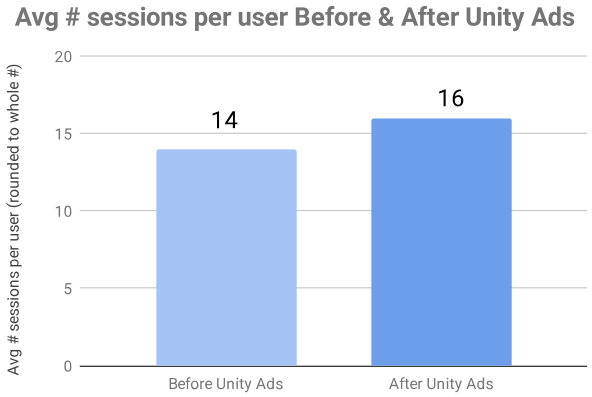
Unity Ads had a positive effect on retention

Using data from the deltaDNA platform, we analyzed retention for games before and after ads were served. These games were previously not running ads at all. We focused on players on Android and iOS in the U.S. over a 2-month period before Unity Ads were enabled for each game and 2 months after.

According to the data for these games, D7 and D30 retention metrics were higher after ads were implemented, with D1 only slightly below. Average session lengths were almost one minute longer, and on average players played an additional two sessions. This extended playtime is in line with the conclusion in the deltaDNA ad survey report that "the popularity of rewarded video ads is testament to the initiative of players who are becoming more and more well-versed in how to get the most out of in-game economies."

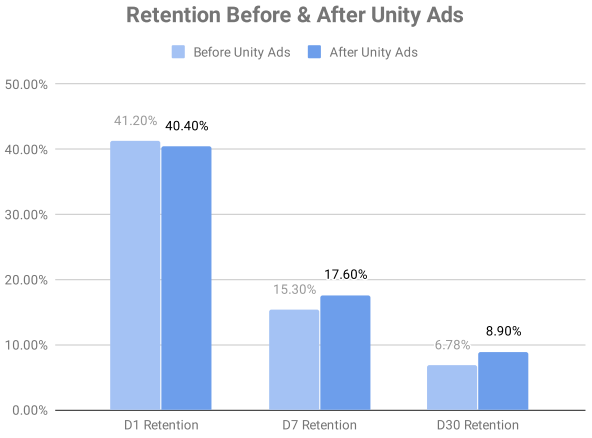
While we are unable to identify whether specific campaigns or other factors influenced the results, it's reasonable to attribute some of the change in retention to Unity Ads.





What you can do

Contact Unity Ads to learn more about best practices on how to implement ads in your game. Together with deltaDNA, Unity can provide benchmarks and recommendations tailored to your game's unique gameplay mechanics and progression model.



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2019 IAP performance

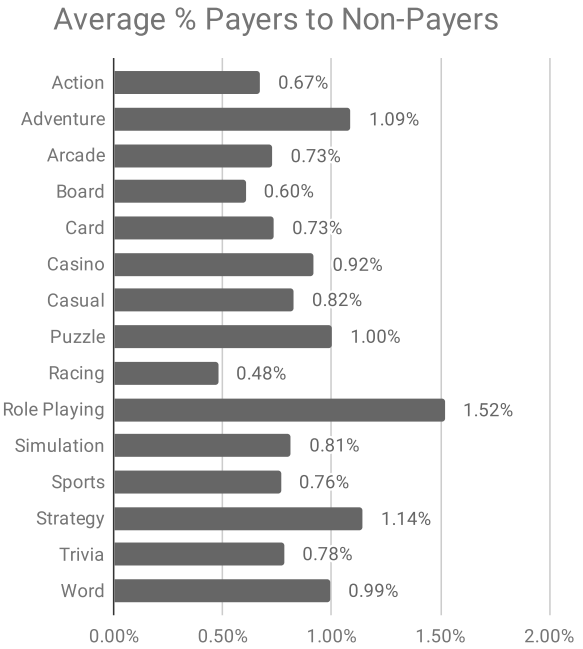
Converting players is tough, but it pays off

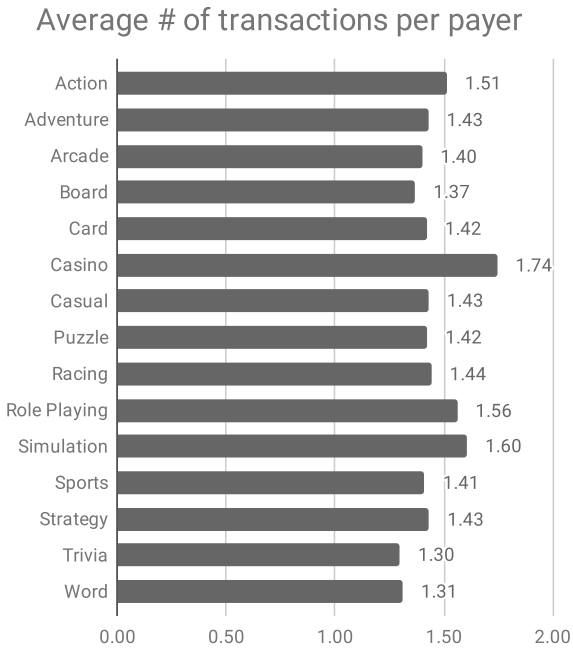
Converting players to paying players has always been the start of the funnel to IAP revenue. Successful games can reasonably expect conversion rates of 2–10%, but over half of the games in the market have 0–1%. The data shows that the average conversion rate per category is much lower than the rate industry leaders can boast.

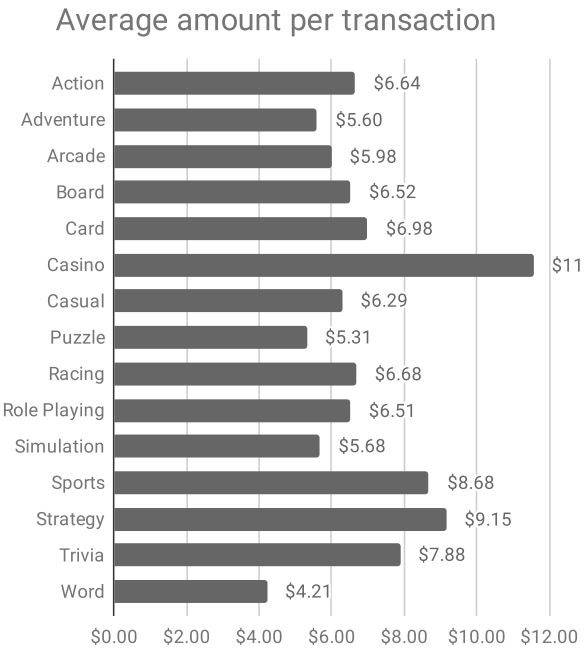
That makes ad revenue an important revenue stream for many developers. It's a method for publishers to monetize non-paying users while they explore building robust feature sets and gameplay mechanics that will encourage players to convert.

Conversion rate

Conversion rate is the percentage of users who buy at least once. Improving this rate allows you to increase user lifetime value (LTV). With this higher worth, you may be willing to spend more to acquire new users.







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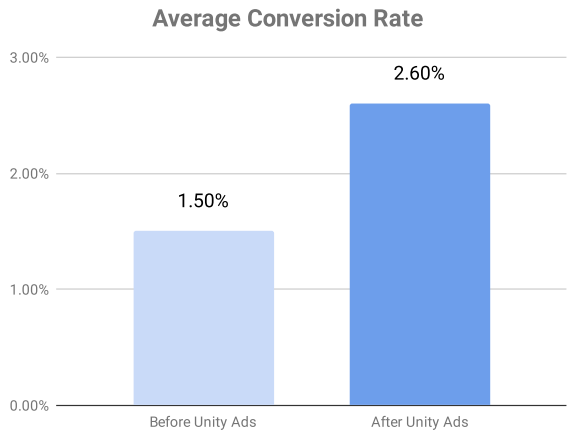
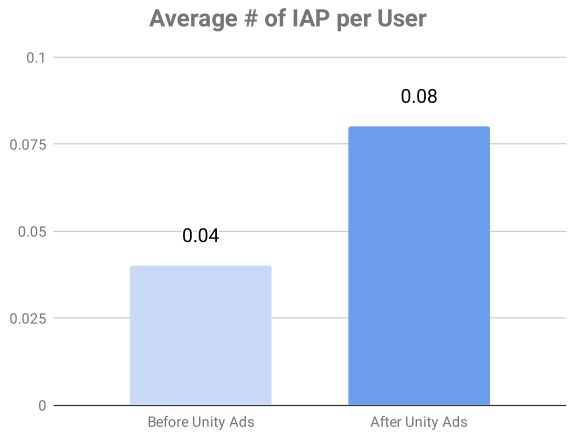
IAP before and after ads

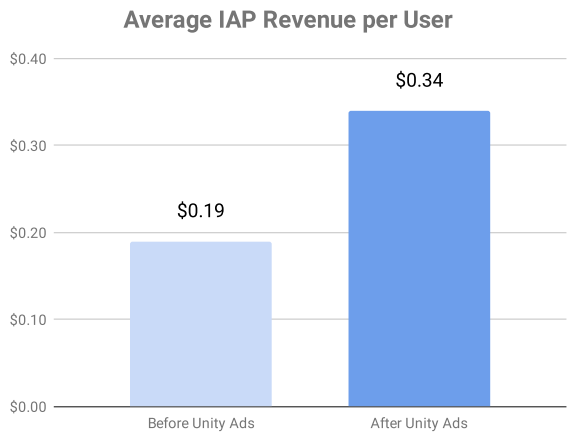
Ads can benefit overall IAP metrics

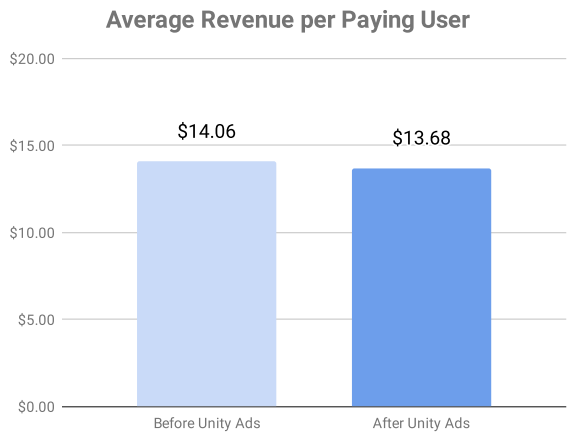
As outlined earlier, we analyzed deltaDNA data to explore changes in metrics before and after Unity Ads were enabled. In a similar sample set of games that were not previously running ads at all, we also uncovered IAP metrics.

On average, we found that IAP revenues in these games had increased by $0.15 per user after ads began. Although average revenues per payer had fallen by $0.38, conversion rates and average number of purchases rose. Broadly, this shows a trend towards a higher volume of marginally lower-value in-app purchases in this sample.









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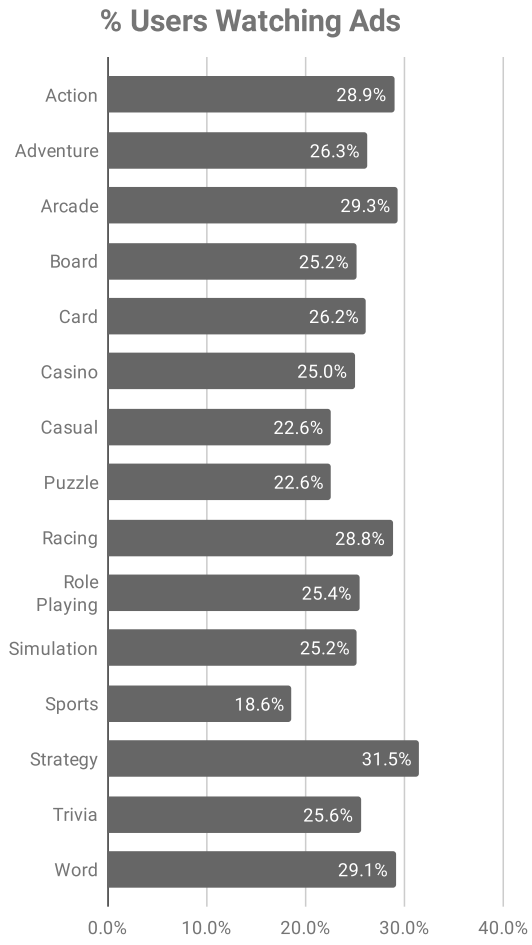
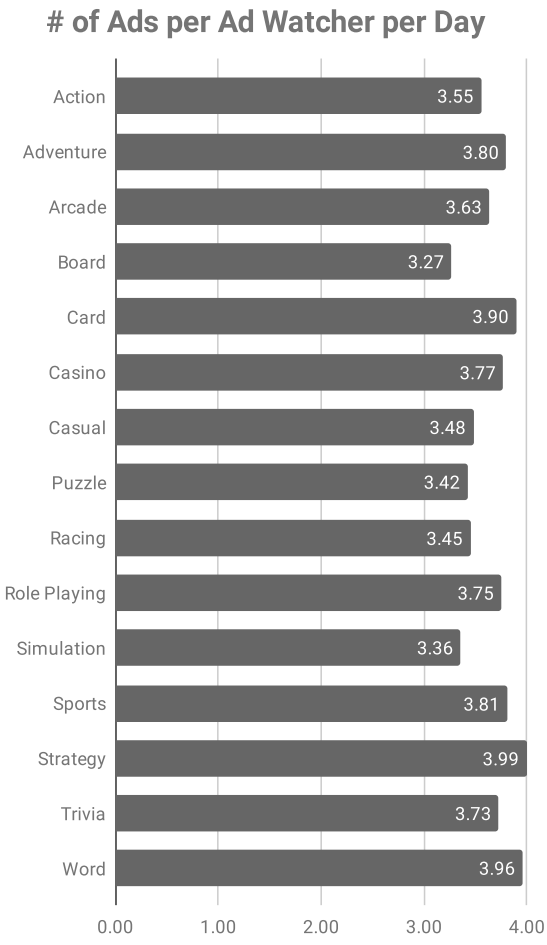
Ad performance in 2019

Users are watching more ads than ever

Overall, 26.4% of mobile game players watch at least one ad a day, which means users are becoming accustomed to them as part of the game loop. On average, an ad-watching user watches around three to four ads per day, agnostic of category.





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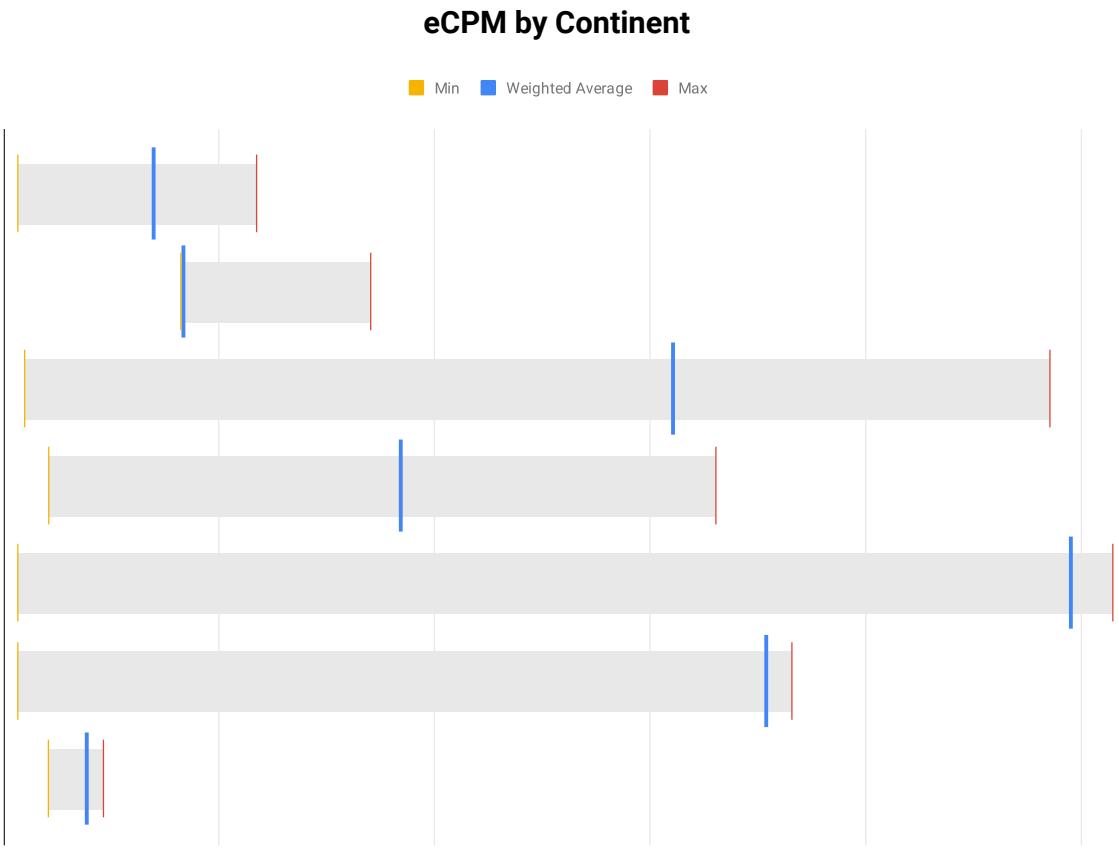
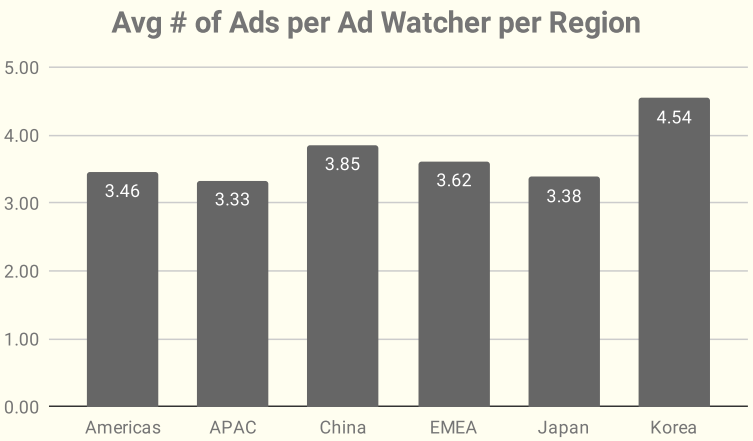
The most valuable users to advertisers

eCPM values are derived from the likelihood that a user will watch an ad and then install the app advertised (that's the "effective" part) weighed against the cost per install that an advertiser is willing to pay for the ad. It's no surprise that advertisers are willing to pay more for users in different regions.





What you can do

Segment your users by region and A/B test ads to see what performs best in terms of revenue.

For example, it might be more optimal to show U.S. users three ads per day, but Korean users could see up to five.

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Case study: Ad implementation

Introduction

For this case study, we've anonymized the developer and app in question to preserve privacy. They already had ads implemented in game, and were running on Unity's network in addition to other ad networks.

We should qualify the results, however; as this is a single game, the results should not be taken as benchmarks. Rather, this case shows the opportunities that can be realized by properly integrating ads with gameplay.

Context

A casual game developer wanted to scale up their game, but in order to scale they needed to achieve return on ad spend (ROAS). They had ads implemented in their game, but the implementation needed some work. The game already had decent D1 and D7 retention, but the developer wanted some extra help to significantly boost their total revenue numbers. They had previously tried spending on Unity Ads with little success.

Result

We worked with the developer to understand their game design and outlined some best practices for where and how to surface ads. We also suggested tightening the gameplay loop and updating parts of the user interface. They then were able to successfully scale up their user acquisition spend, and the results speak for themselves.

Let's review some of these best practices.

The stats before

- DAU: 4000~
- Conversion: 0.2%
- D1 Retention: 46.5%
- D7 Retention: 10.2%
- D30 Retention: 2.3%
- Daily IAP Rev: $45~
- Daily Ad Rev: $240~

The stats after

- DAU: 145,000~
- Conversion: 0.25%
- D1 Retention: 55.5%
- D7 Retention: 16.7%
- D30 Retention: 5.4%
- Daily IAP Rev: $1,000~
- Daily Ad Rev: $3,200~

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Issue

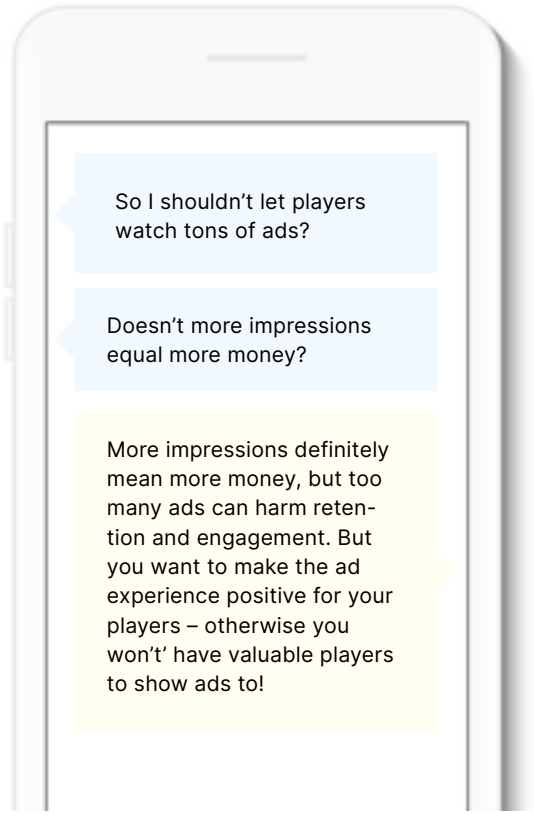
The game let users watch a rewarded video ad to spin a reward wheel that gave both premium currency and other upgrades.

Users could watch as many ads as they wanted to spin the wheel as many times as they pleased. This led to many repeated ad watches in the same session, which caused eCPM decay and sped up game progression too much.

Approach and solution

We reviewed the developer's eCPM and translated that to how much in-game reward the wheel should provide so as to not cannibalize IAP and not accelerate progression beyond a reasonable amount.

We also recommended capping the number of times the user could spin the wheel and consolidating the rewards. The users were allowed to spin the wheel only every few hours, and the rewards didn't aggressively impact game progression.



eCPM decay

The dollar value of eCPM decreases for each successive ad a user watches in short succession. This is because the user is less likely to convert on an individual ad if they're watching a bunch of ads in a row.

Best practice: Frequency capping

Don't let users simply watch ads over and over again to get in-game rewards. Impose a daily cap or implement a cooldown.

eCPM will decay per user in the same session with each successive ad they watch, so it's better for overall revenue to pace your ads.

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Issue

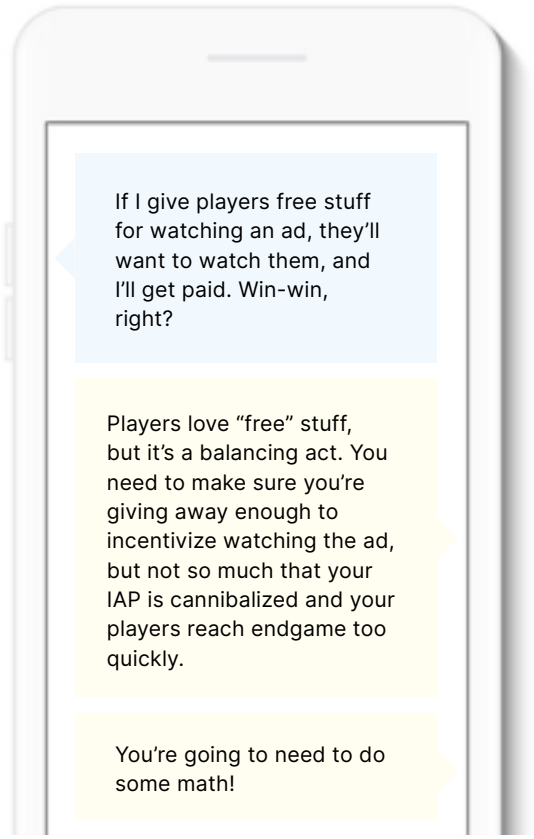
The game let players watch an ad to get a new unit. This unit was always the most valuable unit available in the shop.

Initially this was fine, but as the units grew in value, the eCPM of the ad remained the same. For every ad watched, the developer was giving away a ton of value!

Approach and solution

We broke down the game economy progression and mapped the unit value to the eCPM dollar value of an ad.

We recommended some new reward configurations that scaled as the user progressed through the game and didn't give away too much "expensive" content.



Game economy

Any game with progression will also feature a simple economy. This doesn't necessarily entail an in-game currency. Even things like lives, power-ups, and cosmetics can constitute the game's overall economy. Basically, a game economy includes anything the player assigns value to.

Best practice: Rewards from ads

Rewarded video ads definitely have the highest eCPM and user engagement rates. But make sure that you're not giving away too much or too little for each ad watch.

Figure out the value of your in-game currency or goods and assign a dollar value. Use that value in consideration of your eCPM to calculate a reasonable reward amount.

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Issue

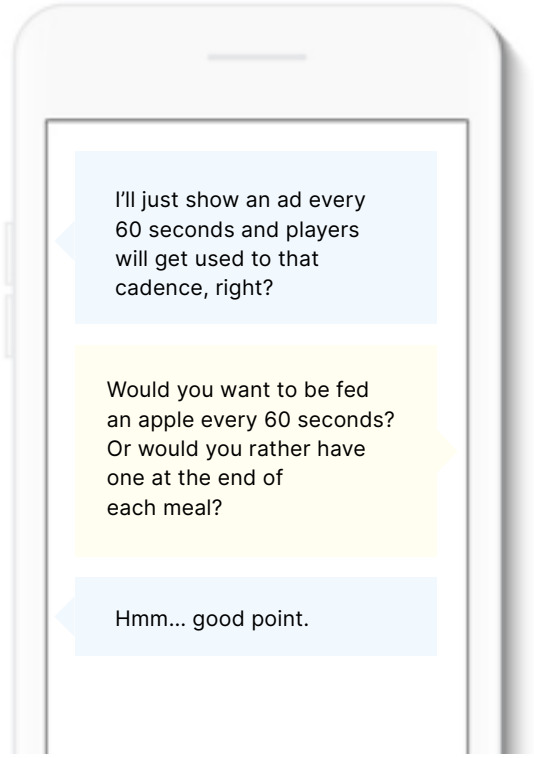
The developer wanted to have more places to serve ads to earn more overall revenue.

After they implemented cooldowns and frequency capping, we had to find other places to put ads that would keep engagement key performance indicators (KPIs) high.

Approach and solution

We did a teardown of the game and looked at opportunities to surface ads in nonintrusive ways.

Interstitial ads were recommended at break points after a core loop was finished, as well as rewarded video ads when the player had accomplished something. Additionally, we recommended surfacing opt-in ads when the player "found" something, so that the ad itself felt like a prize.



Core loop

All games have a core loop, which is the base action a player performs repeatedly to play or progress in your game.

For example, in a match-3 game, the core loop is solving the puzzle board, earning rewards to unlock the next puzzle, repeat.

Best practice: Mind the loop

Look for natural break points in your gameplay where a player won't mind watching an ad.

For example, don't pop up an interstitial ad when the player is in the middle of solving a puzzle board, but consider showing one after they complete it. Maybe even offer the player a boost to their reward if they watch it!

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Predictions for 2020

Our data shows some clear trends in mobile game apps, advertising practices, and how they work together. Here are some predictions on what will happen in 2020.

Hyper-casual games will begin to wane

Over the past few years, hyper-casual games have taken the mobile industry by storm. Publishers who focus exclusively on hyper-casual games have seen great success, but we see this trend starting to slow down.

More IAP games will start adopting ads

When mobile gaming first launched, almost all monetization was done via IAP. But today, only publishers who have strong gameplay progression systems and IPs backing their games can afford to launch with an IAP strategy alone. We're even seeing some older, established games incorporate ads as a revenue stream for their game, primarily through rewarded video.

Opt-in rewarded video is preferred when introducing ads in a previously pure IAP title since engagement metrics can drop when ads aren't optional. Many older games have players who have reached elder game status, which means that they have consumed most of the game's existing content. Making new content for elder game players can be expensive and inefficient, since new players might not ever reach it. Ads are a reliable way to monetize across all player segments.

Non-gaming apps will start to adopt rewarded video

Non-gaming apps such as fitness trackers, dating apps, and educational tools have traditionally run only banner ads and forced interstitial ads. These apps usually have premium versions or paid subscriptions to unlock new features and get rid of ads. However, we've seen some non-gaming apps start to gamify their apps with features like premium currency, user progression, and purchasable cosmetics. This gamification opens up more avenues to IAP monetization and ad monetization.

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Before leading Unity's Publisher Operations team, Emory worked on multiple indie games and AAA franchises like The Sims and Call of Duty as a producer and product manager. Currently, he's playing Clash Royale, Fallout Shelter, Monster Hunter: World, Puzzle & Dragons, and Words With Friends.

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Special Thanks

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