

MOBILE GROWTH AND MONETIZATION REPORT / 2023

Increase efficiency in your monetization and user acquisition strategies
with data-backed insights to help you achieve more with less.

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GET TO FIRST IAP CONVERSIONS FASTER

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ADVERTISE EFFICIENTLY

ACHIEVING MORE WITH LESS →

In this year's *Unity Gaming Report*, we shared that while player growth continues for mobile gaming, there's been a softness for in-app purchase (IAP), and the in-app ads (IAA) market faced challenges in the second half of 2022.

When revenue slows, it can put pressure on resources throughout the business. Monetization and user acquisition are no exceptions. In a tougher year, it's critical for studios to find ways

to be more efficient with monetization and user acquisition investments.

This report provides data-backed insights on how to get more out of your resources for a better return on investment from money, time, or other costs.

ACHIEVING MORE WITH LESS →

Our experts have analyzed Unity data for unique insight on:

- IAP payer and conversion trends
- Recommendations for ad placement and reward design
- Diversifying monetization with new revenue sources
- The best genres to run user acquisition campaigns in
- Leveraging custom landing pages

By increasing efficiency in your monetization and user acquisition activities, you can achieve more with less.

KEY FINDINGS

01

GET TO FIRST IAP CONVERSIONS FASTER

The majority of players who will ever convert to IAP will do so within the first two weeks, so make sure your item and pricing strategy is set up for success.

02

IMPROVE IAA SUCCESS WITH BETTER PLACEMENTS AND REWARDS

More than half of rewarded ad placements are found between levels, with top-engaging reward types being currencies, gacha mechanics, and additional rewards.

03

OFFERWALL CAN HELP DIVERSIFY REVENUE SOURCES AND IMPROVE RETENTION

Offerwalls are complementary to both in-app purchases and in-app advertising. Implementing this ad unit doesn't just increase revenue, but can also lead to a significant lift in retention for players who engage with it.

04

TARGETING TACTICS AND NEW SOLUTIONS CAN IMPROVE USER ACQUISITION CAMPAIGNS

Targeting tier-2 markets or specific genres that have stronger performance can give advertisers a competitive advantage. While custom store page solutions give new opportunities to improve conversion for early adopters.

01

GET TO FIRST IAP CONVERSIONS FASTER

Creating and managing a game with IAP is often resource-intensive. Knowing how best to convert players and understanding when IAP is most effective is critical to building a sustainable strategy that isn't over-resourced.

KEY TAKEAWAYS

01

56% of IAP revenue for iOS and 58% for Android comes from currencies, limited sales events, and bundles, so consider these when planning your IAP strategy.

02

\$1.01–5.00 USD is the sweet spot for IAP pricing to convert first-time buyers.

03

77% of players who have ever converted to IAP have done so within the first two weeks.

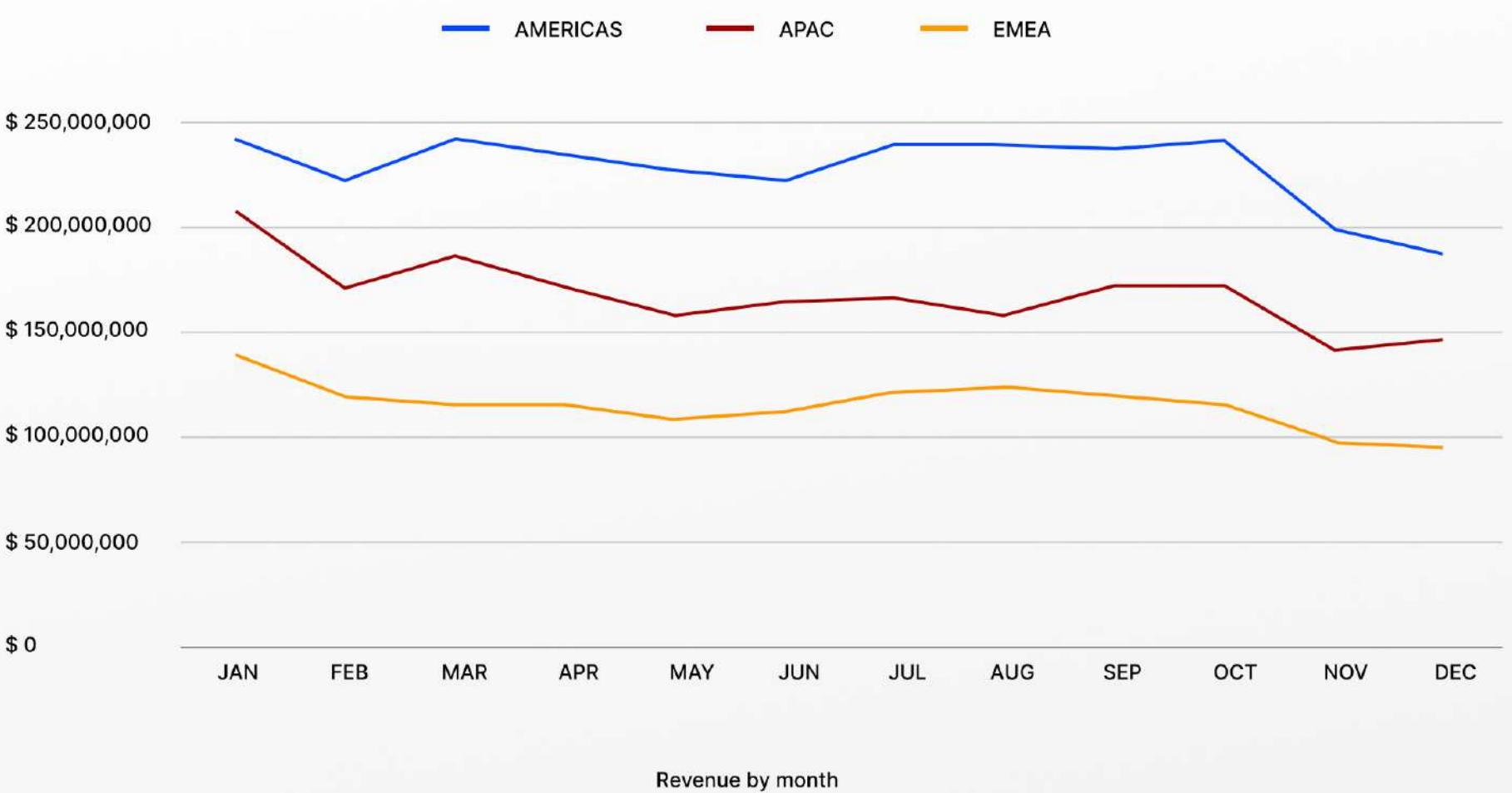
Unity does not see 100% of the market's IAP. The data shown is drawn from the Unity game engine and Unity's portfolio of products.

TURNING HEADWINDS INTO TAILWINDS

With payer percentage declining but player growth remaining strong, having an efficient IAP strategy can help maximize opportunities in a competitive environment.

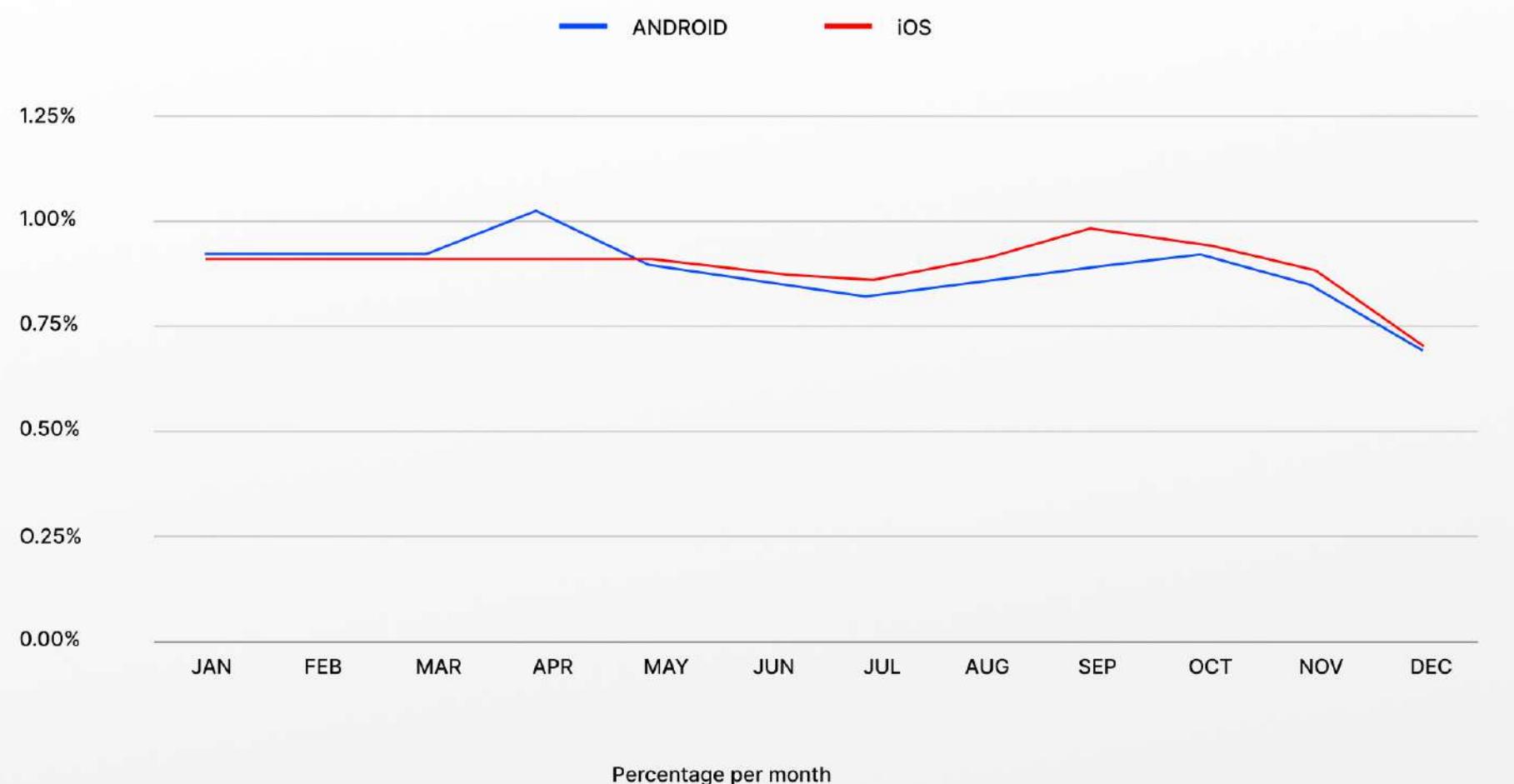
1.1

Observed IAP revenue by region



1.2

Average daily IAP payer percent (U.S. only)



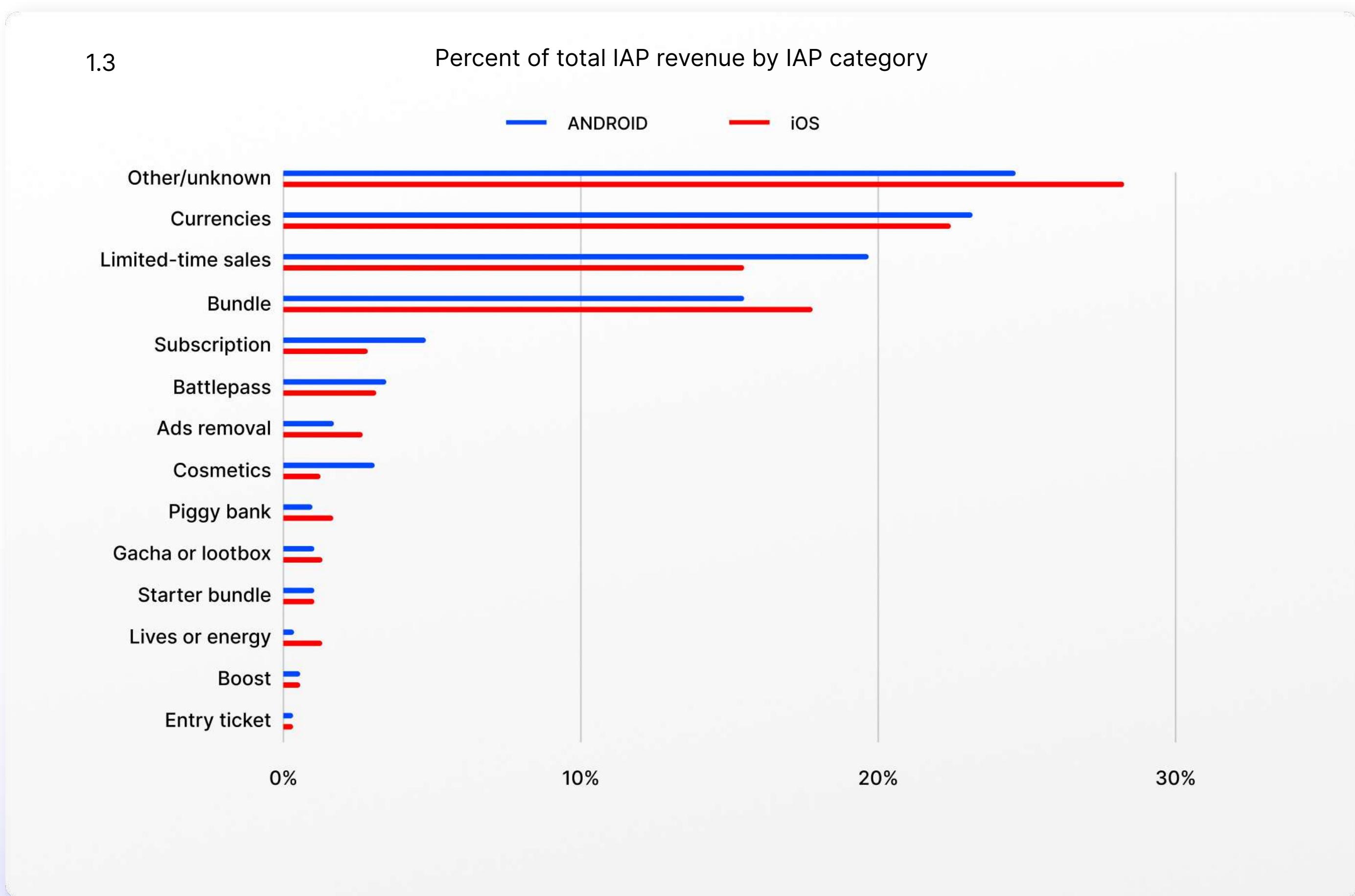
IAP STRATEGIES THAT FIT YOUR GAME

IAP can generate significant revenue for some genres. The right item types and offers for your genre can help generate more revenue than others and alleviate wasted development cycles.

Currencies lead the majority of known IAP category revenue at 22% for iOS and 23% for Android. Limited-time sales follow closely (15%, 20%), and bundles round out the top three (18%, 15%).

IAP item type variety is important. Different offerings give your players some choice on how they want to interact with premium content.

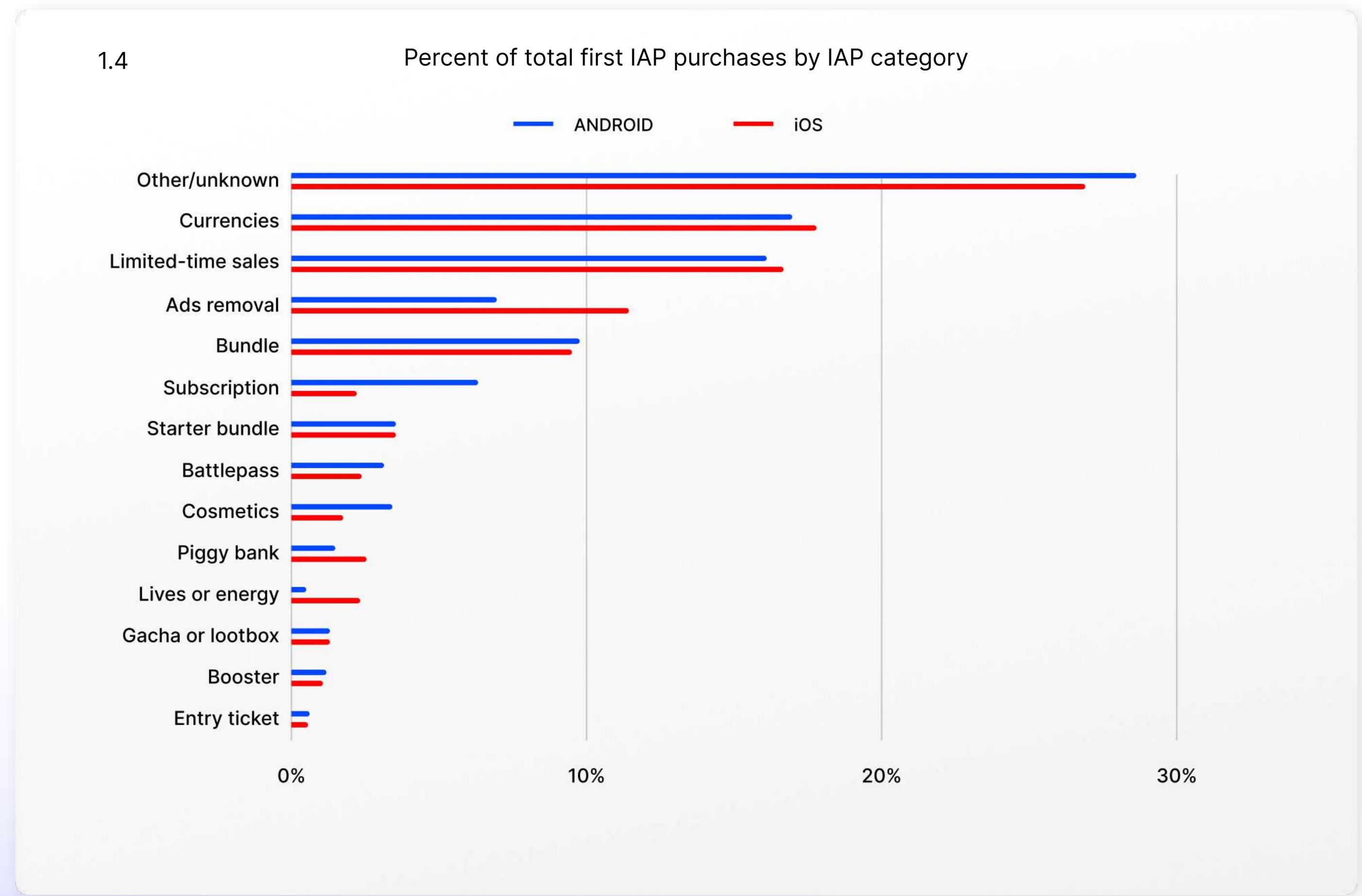
Depending on your game genre, some types might be more successful than others. It's always best practice to measure and learn from your players' purchase behavior.



IMPROVING FIRST IAP CONVERSIONS

The first IAP conversion is critical for creating purchase stickiness with players. Currencies (18% on iOS, 17% on Android), limited-time sales (17%, 16%), and ad removal (11%, 7%) appear especially effective in driving players to convert to payers for the first time. Bundle and subscriptions are also amongst the top categories, and should be considered an important tool for first time conversions since they are both longer term purchases.

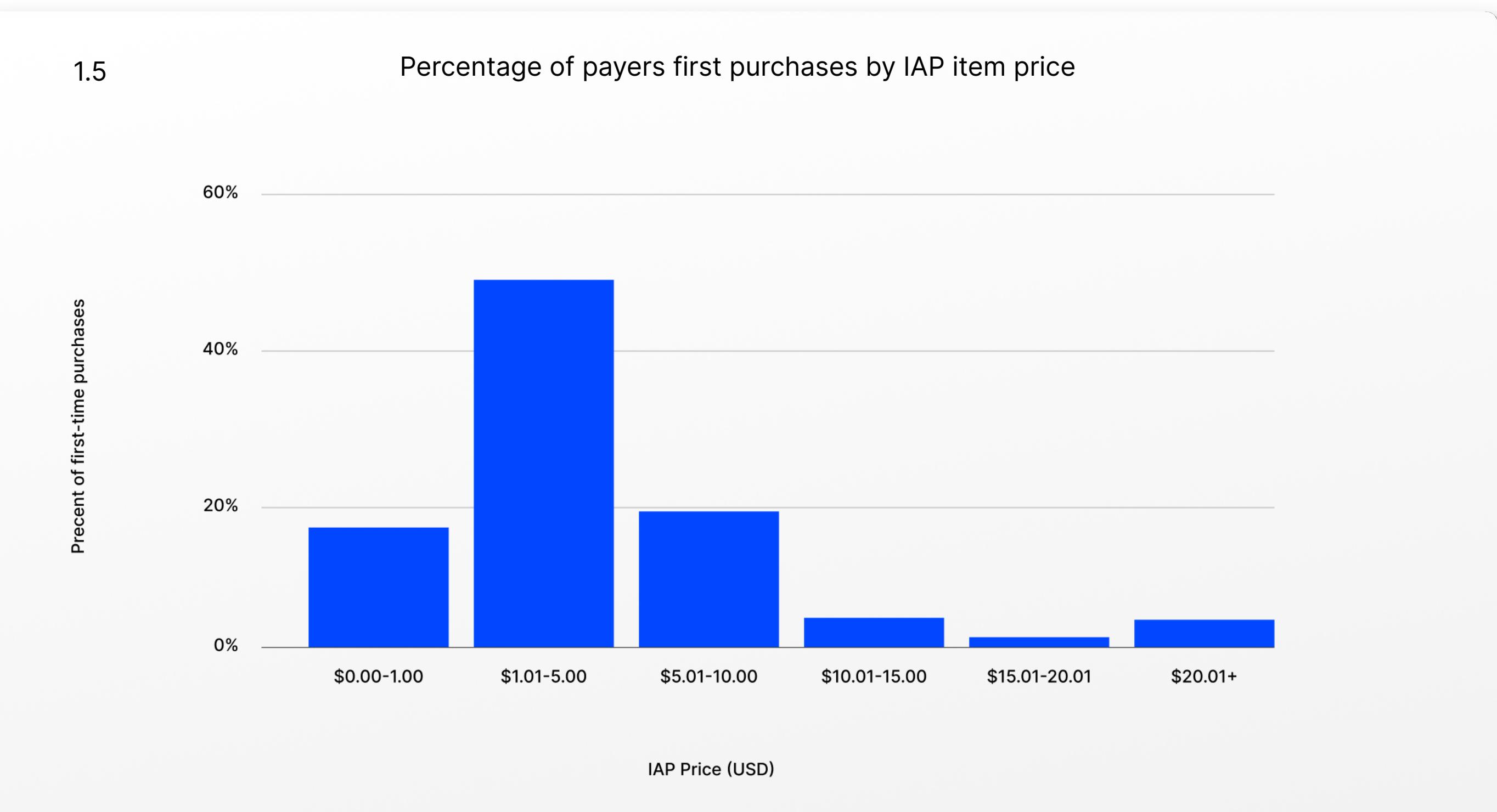
Always keep in mind the many factors that can help drive effectiveness. These factors include visibility, price, enhancement of player experience, and boosts to game progression, among others.



LAND THE RIGHT PRICING STRATEGY FOR IAP

Setting an attainable price point is important for IAP conversion. First purchases are typically in the \$1.01–5.00 USD range, so consider pricing more popular items for first-time buyers, such as bundles (for example beginner packs), below or equal to \$5. It can also be beneficial to have a few choices for purchases between \$1 and \$5 dollars. While some players might prefer currencies, others may prefer to buy cosmetics or boosters.

First purchases are typically in the \$1.01–5.00 USD range, so consider pricing more popular items for first-time buyers in that range.

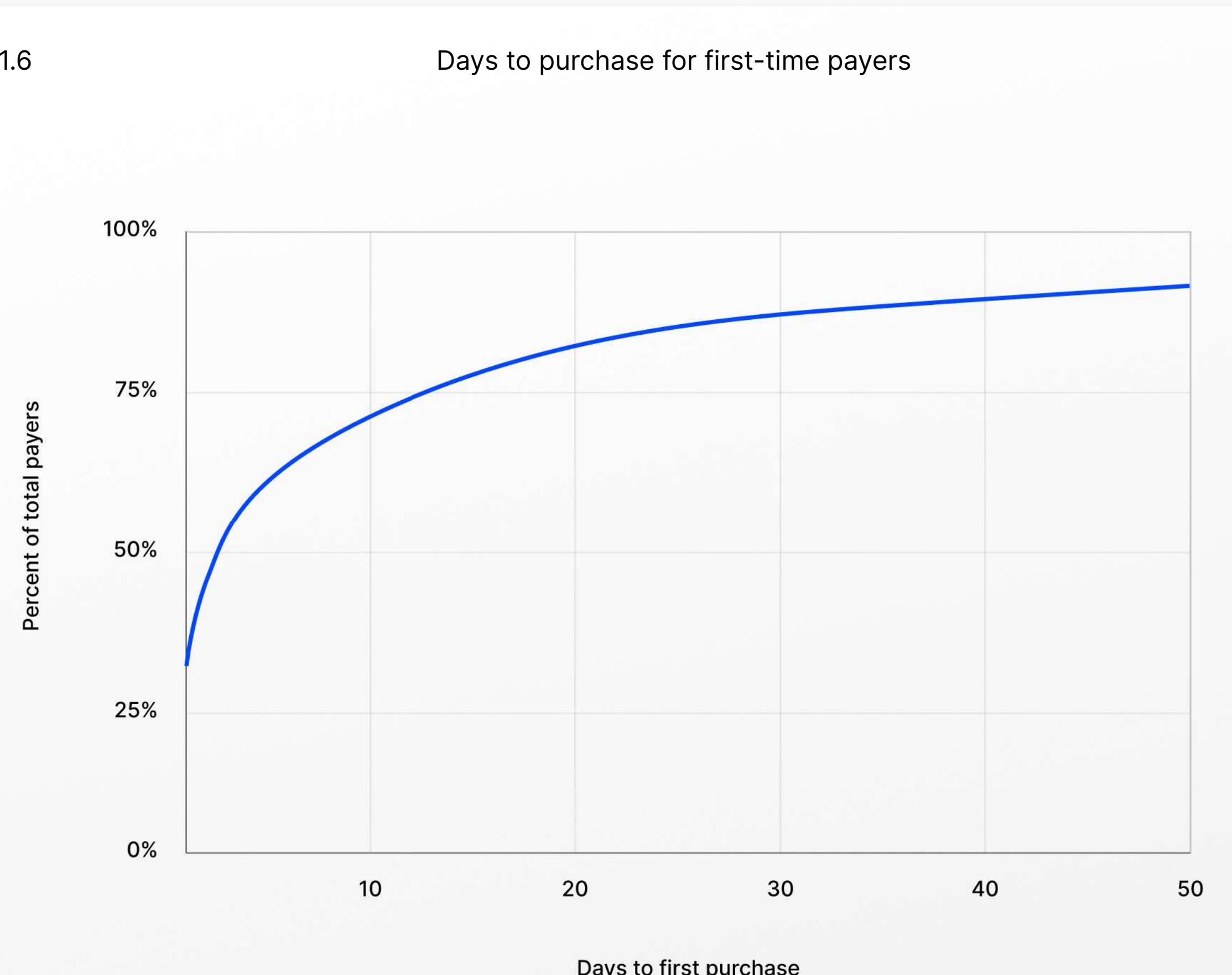


TIMELINES FOR IAP CONVERSION

Timing is everything. 77% of players who have ever converted to IAP have done so within the first two weeks. Knowing this, players who haven't made an in-game purchase in their first 14 days should be considered prime candidates for alternative methods of monetization, and can be segmented to view ads or offerwall.

By day 21, over 80% of all IAP payers had converted. So, starting non-user-initiated ads like interstitials is a safe bet, while rewarded ads can be implemented even earlier, at day 14, without a high risk of cannibalization.

Timing is everything. 77% of players who have ever converted to IAP have done so within the first two weeks.



“When we first launched *Pictoword*, we relied on IAPs instead of ads. To take it to the next level with revenue, we really needed to implement ads. More people got used to ads, especially if they didn’t impair the player experience.”

– CK Wang, CEO, Kooapps



Snake.io by Kooapps

02

MONETIZE EXISTING PLAYER BASES

IAA can be a great way to drive player engagement and retention. It gives players who may not want to spend money in the game a way to still progress, as well as providing a preview of premium features they may convert to paying for down the line.

KEY TAKEAWAYS

01

Rewarded ads located between levels were the placement players engaged with most in 55% of games.

02

Additional rewards, currencies, and gacha mechanics are 47% of the top ad rewards by level of engagement.

03

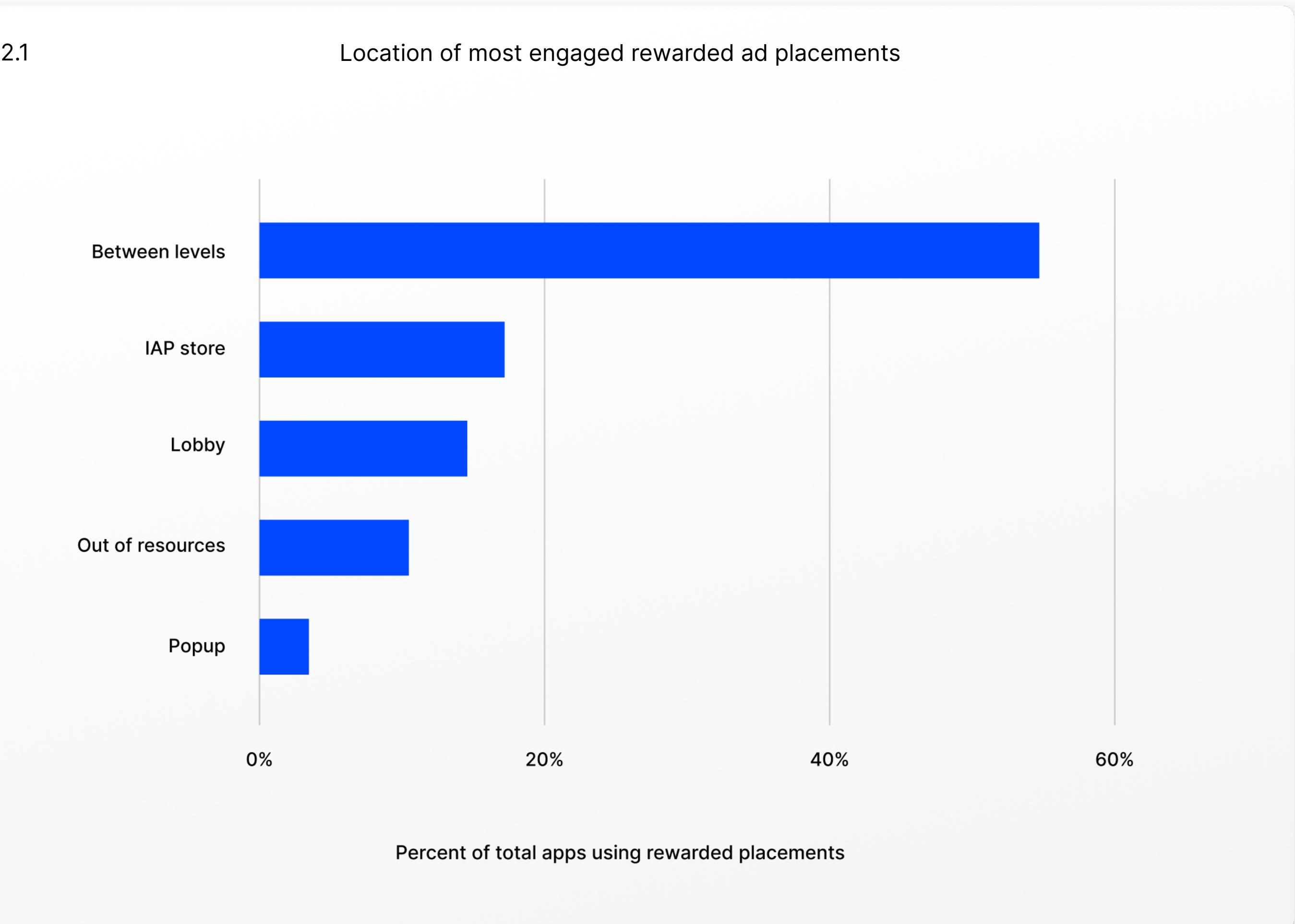
To help IAA effectiveness, ensure that your ads are placed in highly visible areas of gameplay to capture as many viewers as possible.

SURFACING POINTS THAT WORK

Figure 2.1 looks at the game surfacing points that have the highest engagement and effectiveness. Players are most likely to engage with rewarded ad placements that are found:

- Between game levels
- In the IAP store
- In the lobby/pre-level (a placement with particularly high visibility – players may watch even when they don't complete a single game level)

Successful ad placement design means thoughtfully including ads in high-visibility moments of the player's journey. Although 18% of games use rewarded video ads in their IAP store, the audience that visits your IAP store are likely players who are already considering making a purchase. This means that in-store placement strategies could be limiting which players encounter these ads.

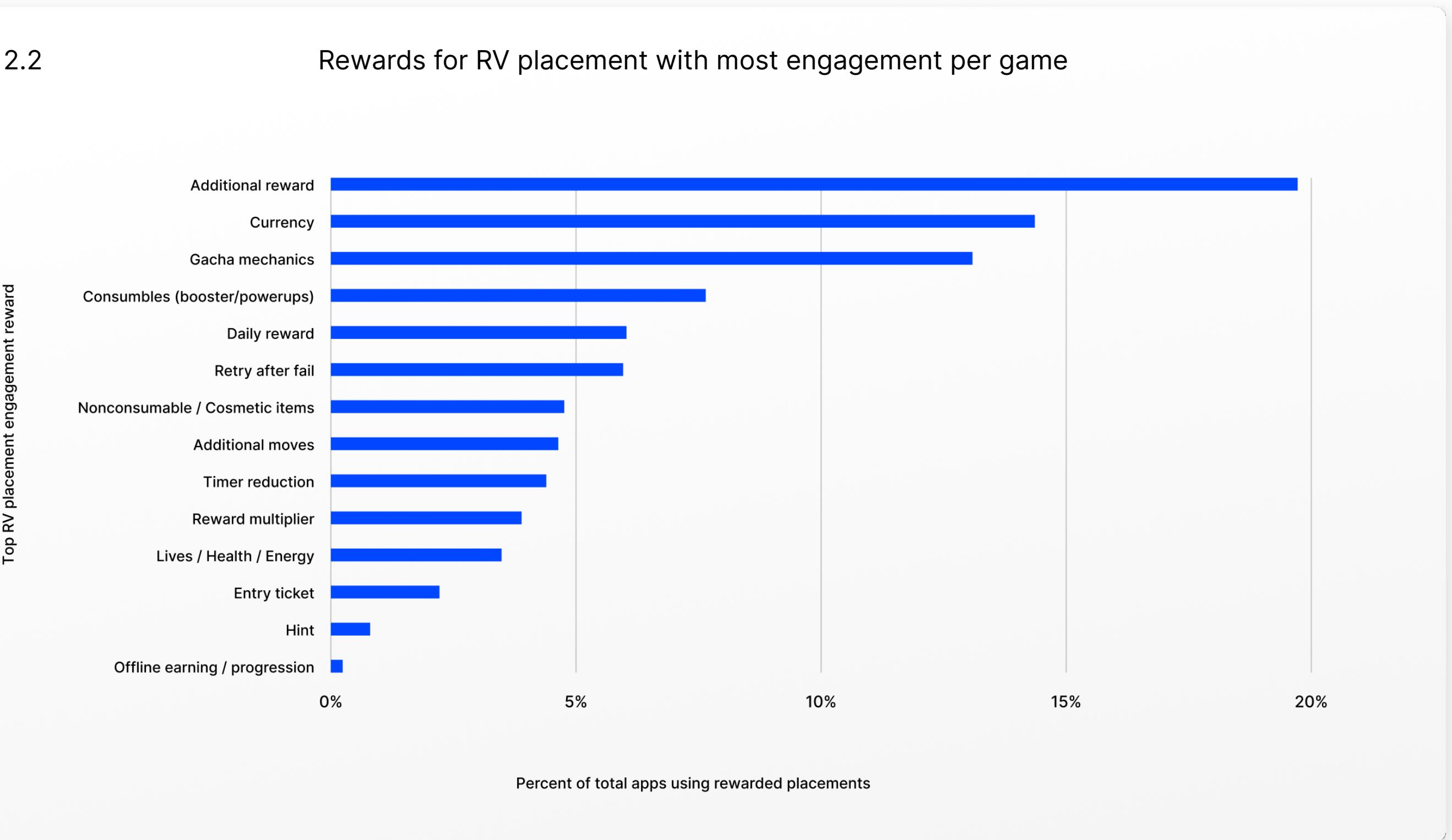


REWARDS WITH HIGH ENGAGEMENT

Figure 2.2 looks at rewarded video ad rewards with the highest engagement, to see which ad rewards are the most appealing to players.

Ads for extra rewards (20%), currency (14%), and gacha mechanics (13%), appear to be the most effective in driving ad engagement.

Make sure you diversify your ad rewards and use them strategically to improve your games' retention and engagement. Examples of this could be rewarding extra lives, unlocking certain powers, or any method that helps player progression.



03

COMPLEMENT IAP AND IAA WITH OFFERWALL

Introducing varied ad monetization approaches such as offerwalls can help to complement your core IAP strategy and actually increase retention. Instead of relying purely on IAA or IAP, adding a variety of ways for players to progress in the game can be a great way to diversify revenue, while still providing player value.

KEY TAKEAWAYS

01

33% of total ad revenue comes from offerwalls for games that use these ads alongside another monetization strategy.

02

Offerwall payouts can be as high as \$68 USD for users who convert on multi-reward offers.

03

Day 90 retention for offerwall converters is 14% compared to less than 3% for other players.

WHAT IS AN OFFERWALL?

Offerwall ads actually function more like a marketplace within a game, listing multiple "offers" that players can complete in exchange for receiving an in-game reward, most often game currency.

For example, players can receive extra in-game coins if they get to a specific level in another game, sign up for a subscription, make a purchase, complete a survey, and more – all through the offerwall's marketplace.

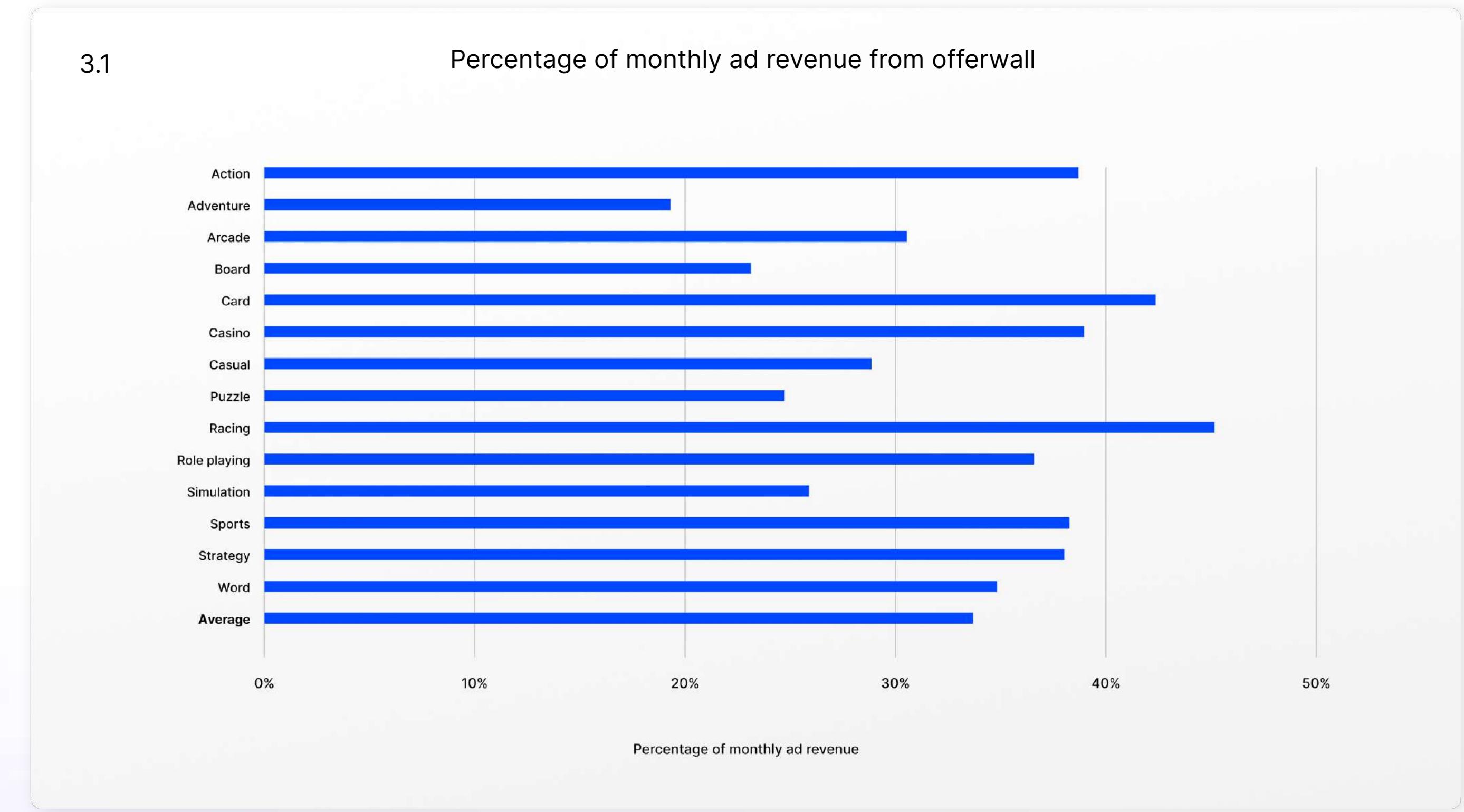
As player behavior changes in a tougher macro-economic environment, having an additional way to monetize them can be a lifeline – especially when resources are tight and hitting revenue targets becomes more challenging.

Offerwall can be a great option to monetize players who don't want to watch ads or pay directly for premium content. It complements IAP and IAA strategies while requiring fewer resources than either to implement and maintain.



REWARD AND CONVERT NON-PAYERS WITH OFFERWALL

Offerwalls are being rediscovered as a valuable way to build resilient and efficient game economies. When looked at within the context of ad revenue, offerwalls can represent an average of 33% of revenue for games using more than one monetization type.



“Some players don’t want to pay, and think ‘without money, there is nothing to do in this game.’ We wanted to promote the offerwall so they would be aware of all their options.”

– Artyom Shumsky, CEO, Gear Games



War Legends by Gear Games

OFFERWALLS HELP BUILD A MORE RESILIENT IN-GAME ECONOMY

Implementing an offerwall can help make your in-game economy more resilient in a number of ways.

First, it creates more options for players with different engagement levels to proceed in the game. Second, the payouts can be higher because advertisers are willing to pay more to get high-quality users. By setting an engagement target (such as getting to a certain level or starting a subscription) in the advertised game or app, advertisers are more sure they are getting users who will stick around. Lastly, mobile game studios can expand the pool of advertisers willing to buy their inventory, tapping into lucrative brands who want to

promote products or ecommerce apps to gamers. While cannibalizing IAP is a concern many developers have, this can be offset by leveraging segmentation tools to deliver more tailored experiences to player groups based on past behaviors.

Importantly, the average monthly revenue per offerwall converter (Figure 3.2) is often approximately 25% of the monthly IAP revenue per payer (Figure 3.3). Since the payer value is around 25% of IAP but requires fewer resources to implement, offerwall could be a valuable addition to many games.

“Promoting the offerwall paid off for us. The majority of our offerwall users are nonpayers, so even if some IAP revenue is lost, the net result is undoubtedly positive.”

– Artyom Shumsky, CEO, Gear Games

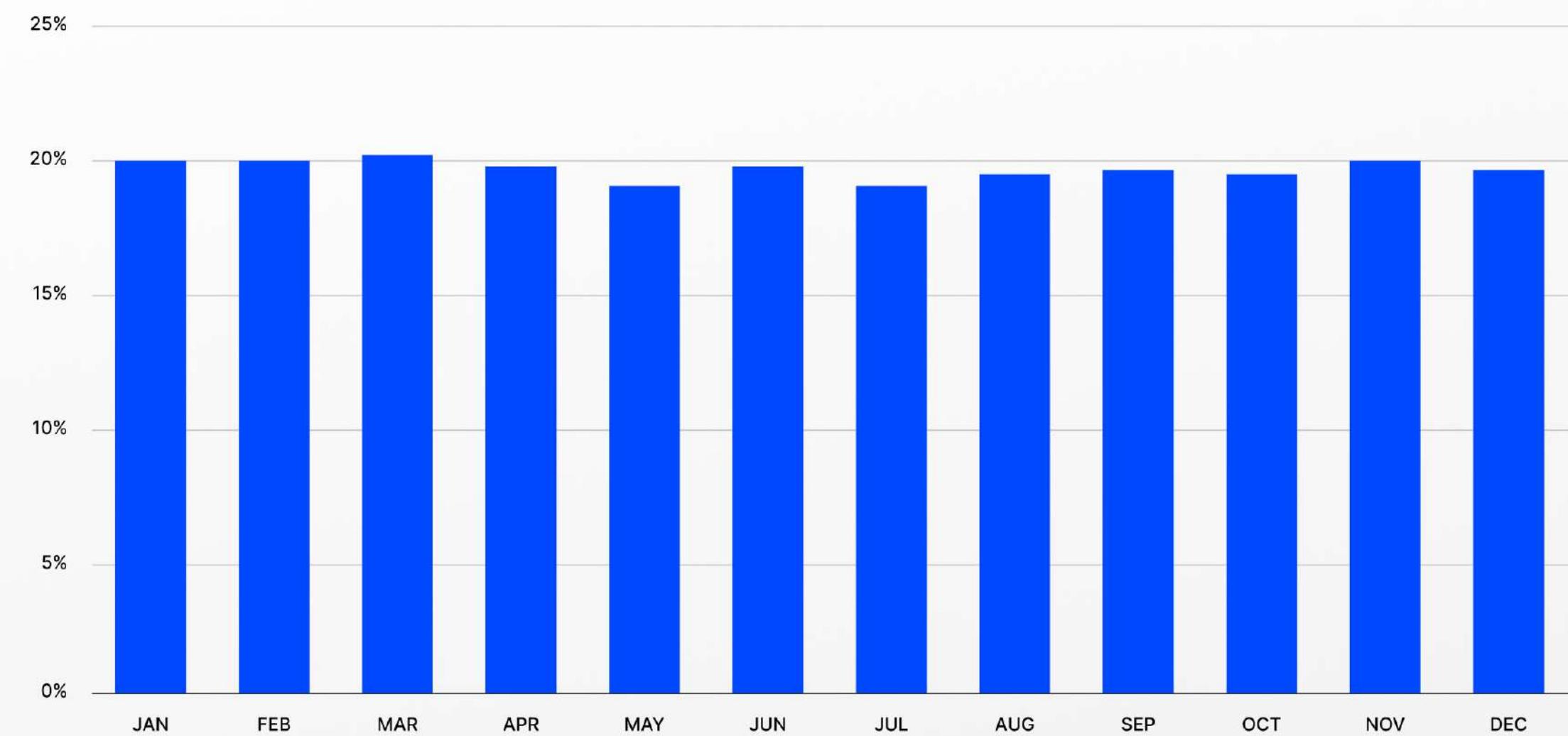
Although a small percentage of users complete offers, these are a highly engaged set of players who complete multiple offers monthly. These players appear willing to do more than just in-game quests to receive currency and represent an average \$4.68 in revenue per converted monthly offerwall user. Additionally, offerwalls allow users to access premium content on their terms, meaning that players who don't want to (or can't) pay for that premium content, can continue playing the game.

Designing offerwalls to be more easily discoverable and bringing in a wider funnel is a worthwhile consideration since once discovered 34% of users are opening it each month.

3.2 Average monthly offerwall benchmarks 2022

Platform	% MAU open offerwall	% Monthly openers that clicked on offer	% Monthly openers that completed offer	Average publisher revenue per conversion	Monthly conversion per converter	Monthly publisher revenue per converter	Monthly publisher revenue per opener	Offerwall APRMAU
Android	9.7%	35.4%	5.1%	\$1.37	3.9	\$5.39	\$0.27	\$0.0266
iOS	11.4%	30.6%	7.5%	\$0.22	15.5	\$3.43	\$0.26	\$0.0292
Average	10.1%	34%	5.8%	\$0.57	8.1	\$4.68	\$0.27	\$0.0272

3.3 Average IAP revenue per monthly paying user



OFFERWALL TIPS

01

Make the entry point highly visible to most users.

02

Keep your offerwall offers fresh.

03

Ensure that the offerwall has the same branding as your app for a seamless experience.

04

Keep in mind that only Android allows for multi-reward offers.

MULTI-REWARD OFFERS CONVERT BEST

Understanding some of the early benchmarks for offerwall implementation can help you generate revenue more efficiently. The design of the offer is one area where benchmarks to set goals and expectations are particularly useful.

Looking at monthly offerwall converters by offer type for Android, it's clear that the majority of conversions and thus revenue come from multi-reward offers. Across all genres, 60% to 82% of all offerwall conversions are happening on multi-reward offers.

3.4 Percentage of monthly offerwall converters per offer type (Android)

Genre	Generic offer	Single reward action offer	Multi reward action offer
Action	16%	26%	71%
Adventure	11%	24%	78%
Arcade	23%	12%	78%
Board	29%	18%	69%
Card	20%	23%	73%
Casino	31%	25%	60%
Casual	27%	14%	75%
Music	28%	16%	72%
Puzzle	11%	34%	67%
Racing	20%	14%	76%
Role playing	19%	15%	78%
Simulation	28%	20%	69%
Sports	17%	21%	74%
Strategy	12%	17%	82%
Average	21%	21%	72%

MULTI-REWARD OFFERS ADD MORE PLAYER AND PUBLISHER VALUE

When users complete multi-reward offers, they receive more in-game currency because these types of offers require more effort and time. This also means there are higher payouts to publishers – as high as \$68 per offer completion when looking at the most successful games that achieve higher average revenue per offerwall user.

3.5 Offerwall cost per offer completion percentile

Offer Type	Country Group	Average	10th	25th	50th	75th	90th
Generic offer	U.S., Canada	\$0.21	\$0.02	\$0.07	\$0.34	%18.15	\$38.55
	Rest of world	\$0.24	\$0.04	%0.11	\$0.69	\$2.34	\$4.59
	Global	\$0.24	\$0.03	%0.08	\$0.46	\$13.21	\$27.59
Single-reward action offer	U.S., Canada	\$1.09	\$0.48	\$1.20	\$3.32	\$11.96	\$23.67
	Rest of world	\$2.85	\$0.18	\$0.42	\$1.22	\$3.92	\$11.48
	Global	\$1.78	\$0.27	\$0.67	\$1.82	\$6.22	\$14.69
Multi-reward action offer	U.S., Canada	\$11.62	\$1.59	\$4.01	\$10.49	\$27.18	\$68.57
	Rest of world	\$15.80	\$0.34	\$1.20	\$4.20	\$16.13	\$46.68
	Global	\$13.15	\$0.66	\$1.90	\$5.78	\$18.89	\$52.44

“Offerwall has consistently added comfortable padding to our monthly ARPU.”

– Mike Laub, Senior Product Manager, Big Huge Games



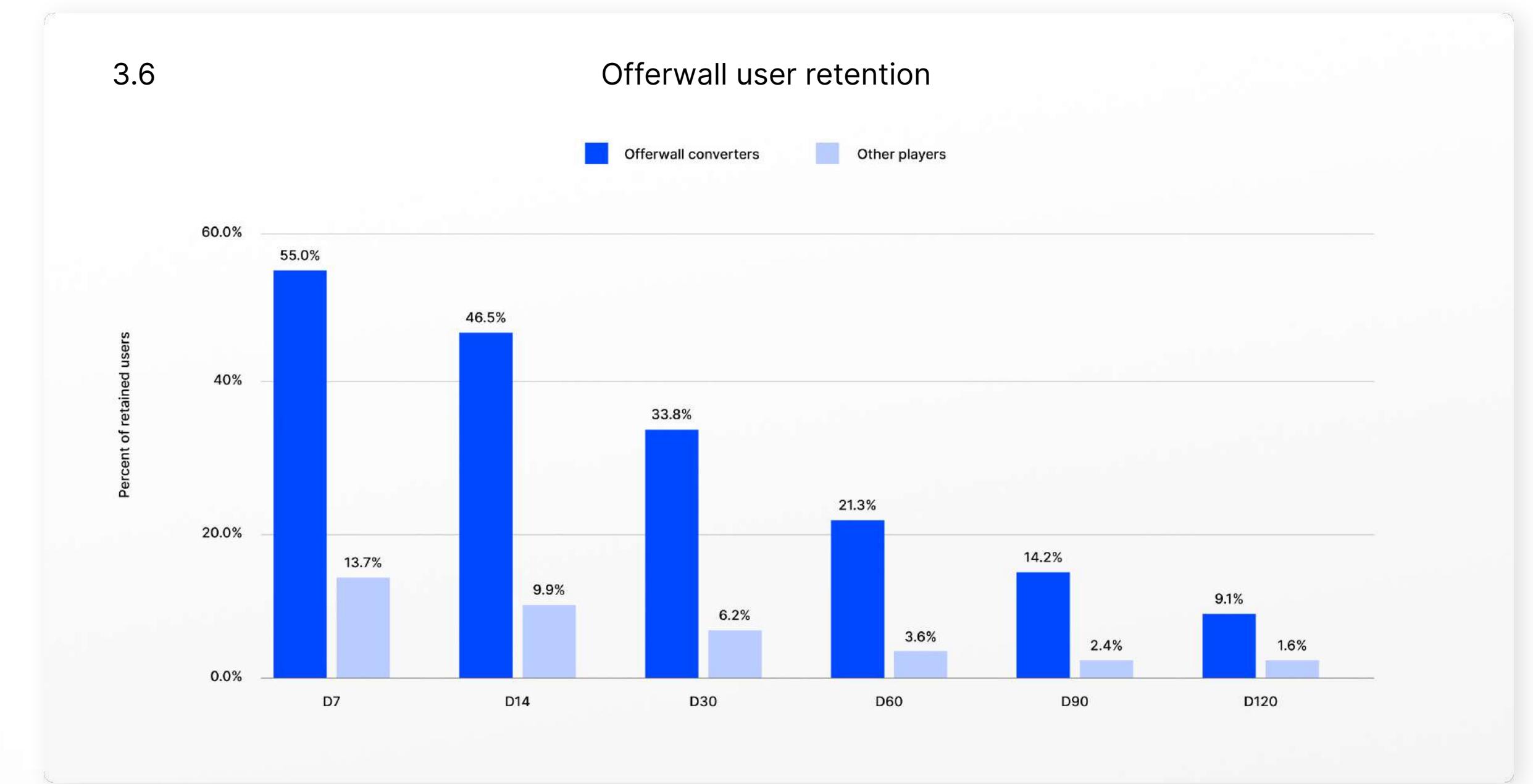
DomiNATIONS by Big Huge Games

OFFERWALL CAN IMPROVE RETENTION

Some worry that implementing an offerwall will drive users away from their game. But giving players resources to help them progress further in a game is a simple way to help improve retention. Offerwall is a great way to facilitate that experience while giving publishers an additional revenue source for converted offers.

When players convert on offerwalls, the likelihood that they will continue to play goes up by as much as 5x when looking across day 7 (D7) to day 120 (D120). This is most notable at later stages like at day 90 (D90), where retention for offerwall converters is 14% while other players are below 3%.

Offerwall converters may be just a small proportion of a user base, but they are a highly engaged segment. What's more, they tend to be high-retention players who cost less to monetize than acquiring new users.



04

ADVERTISE EFFICIENTLY

Making small adjustments like favourable genres where KPIs naturally perform better or investing in localization for tier-2 countries that have an outsized interest in a genre can help you get more out of every marketing dollar.

KEY TAKEAWAYS

01

11 out of 15 genres achieved the best conversion rate (CVR) by advertising in hypercasual games.

02

For sports games advertised in Japan, the CTR performs 13% above the average of all tier-2 countries

03

Puzzle, casino, and lifestyle games are early adopters of Custom Store Pages, making up 73% of current users.

FIND THE BEST ROI FOR YOUR GENRE

One thing advertisers can control when marketing their game is the genres of games they're advertising in. Depending on the metric an advertiser wants to optimize, the performance differences from advertising in one genre to the next can be significant.

For greater efficiency on a limited budget, it can be advantageous to focus on genres where performance is best, such as hypercasual, for better CVR.

“The market is not static at all, so testing while considering the need for statistical significance is crucial.”

– Ekaterina Zueva, Senior User Acquisition Manager, MY.GAMES

4.1

Action	CVR	Casual	CVR	Simulation	CVR
Source game genre		Source game genre		Source game genre	
Hypercasual	3.87%	Hypercasual	1.88%	Hypercasual	3.12%
Action	2.58%	Racing	1.32%	Racing	2.15%
Adventure	2.58%	Action	1.14%	Simulation	2.02%
Best = Hypercasual 3.87%		Best = Hypercasual 1.88%		Best = Hypercasual 3.12%	
Adventure	CVR	Board	CVR	Card	CVR
Source game genre		Source game genre		Source game genre	
Racing	2.01%	Hypercasual	1.11%	Card	0.63%
Hypercasual	1.92%	Board	0.78%	Casual	0.47%
Action	1.79%	Puzzle	0.73%	Hypercasual	0.45%
Best = Racing 2.01%		Best = Hypercasual 1.11%		Best = Card 0.63%	
Hypercasual	CVR	Trivia	CVR	Puzzle	CVR
Source game genre		Source game genre		Source game genre	
Hypercasual	4.68%	Hypercasual	0.87%	Hypercasual	1.60%
Racing	2.69%	Trivia	0.64%	Racing	1.00%
Strategy	2.55%	Sports	0.56%	Sports	0.93%
Best = Hypercasual 4.68%		Best = Hypercasual 2.41%		Best = Hypercasual 1.60%	
Sports	CVR	Strategy	CVR	Word	CVR
Source game genre		Source game genre		Source game genre	
Hypercasual	1.71%	Hypercasual	0.87%	Trivia	1.24%
Sports	1.70%	Strategy	0.64%	Hypercasual	1.23%
Racing	1.17%	Action	0.56%	Word	1.06%
Best = Hypercasual 1.71%		Best = Hypercasual 0.87%		Best = Trivia 1.24%	
Racing	CVR	Casino	CVR	Racing	CVR
Source game genre		Source game genre		Source game genre	
Hypercasual	0.89%	Casino	1.14%	Hypercasual	4.13%
Trivia	0.57%	Casual	0.83%	Racing	3.34%
Casual	0.52%	Hypercasual	0.69%	Strategy	3.26%
Best = Hypercasual 0.89%		Best = Casino 1.14%		Best = Hypercasual 4.13%	

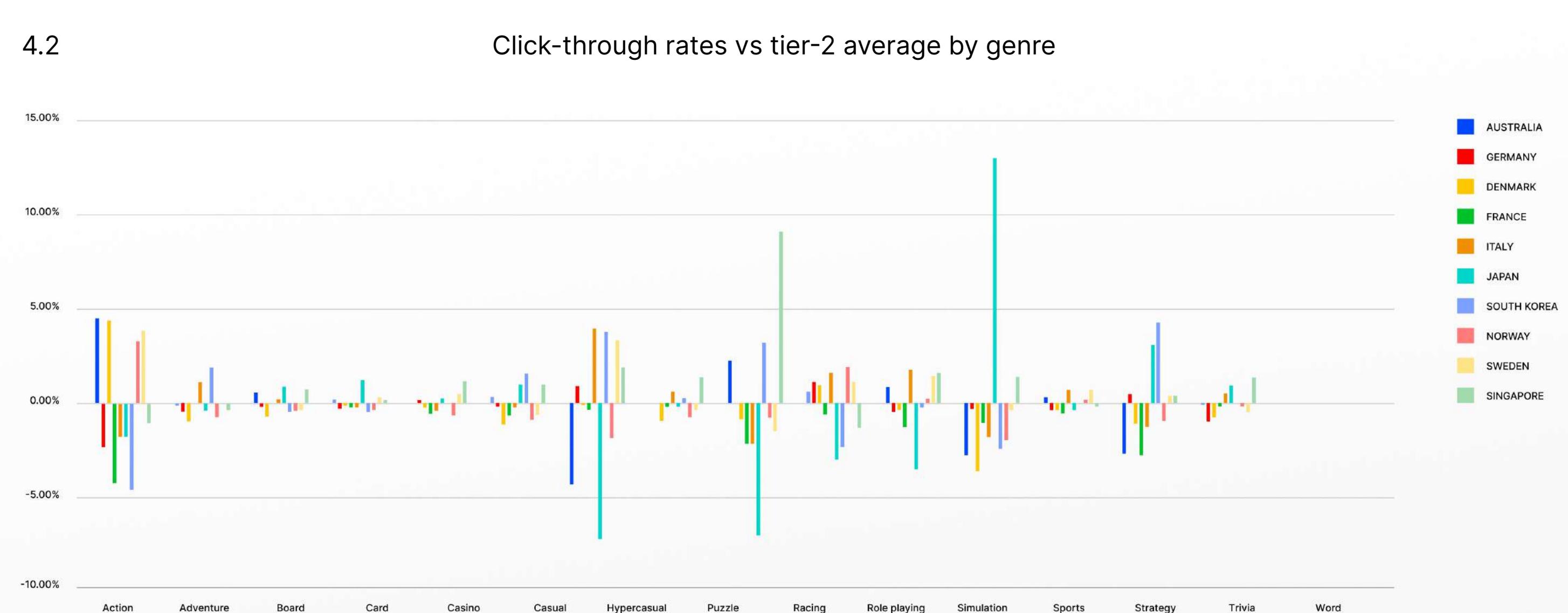
TARGET ALTERNATIVE COUNTRIES

Another area that presents opportunities to be more efficient with campaign spend and resources is to target tier-2 countries that have more interest in a genre while avoiding those with less. When looking at click-through rates (CTR) some genres in specific markets outperformed the total tier-2 average while others have underperformed.

For example, Japan is a great place to advertise a sports game – CTR performs 13% above the average of all tier-2 countries, while a racing or hypercasual game performs 7% below average. In South Korea, CTR for trivia and hypercasual games is 4% above these genres' average of all tier-2 countries, but action games are 4% below average.

Here's how we've classified markets →

Click-through rates vs tier-2 average by genre

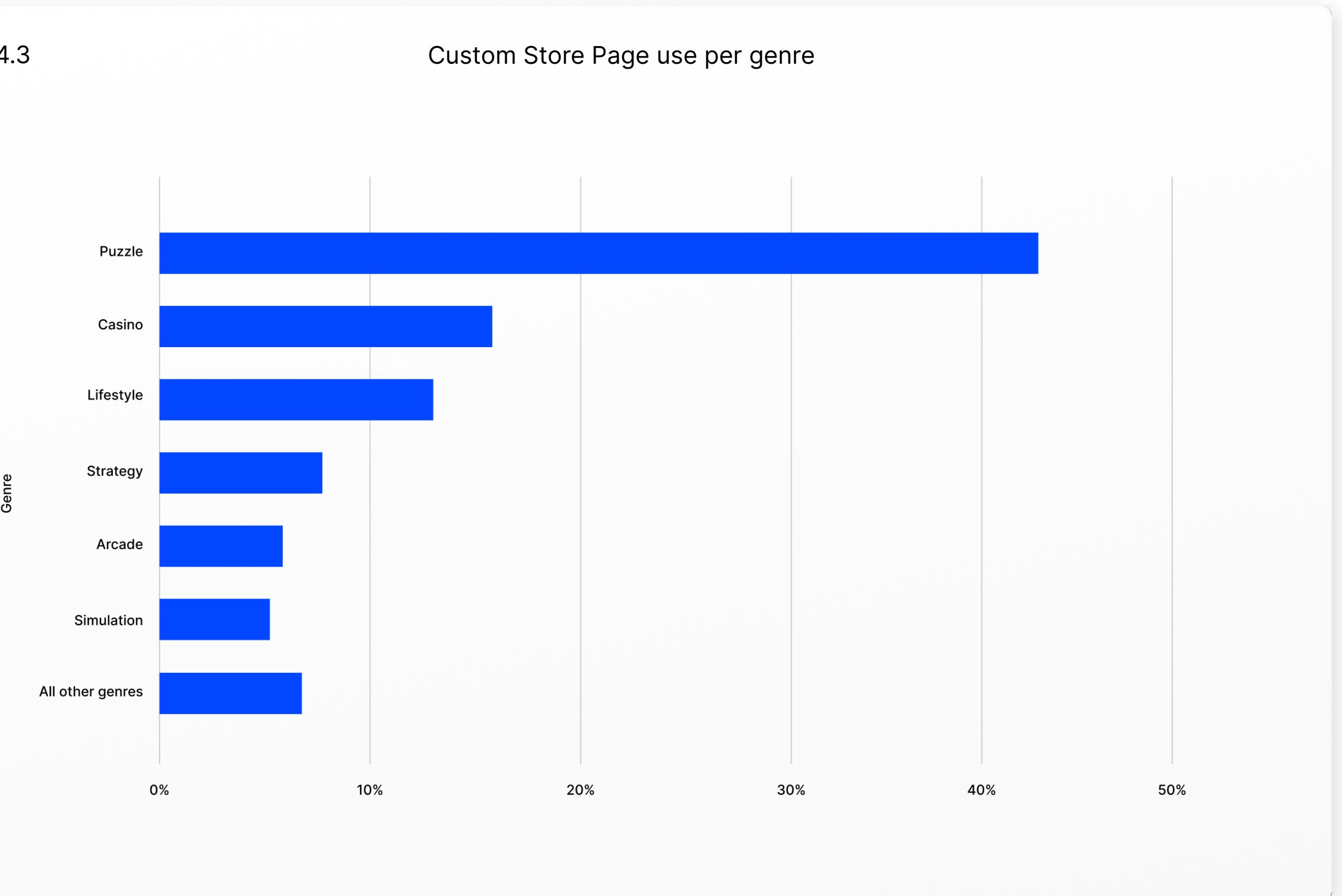


- Tier 1 (T1): Includes the U.S., Canada, and Great Britain
- Tier 2 (T2): Includes Australia, Denmark, Germany, France, Italy, Japan, South Korea, Norway, Sweden, and Singapore
- Rest of world: Includes countries not listed as T1 or T2

IMPROVE CONVERSIONS WITH CUSTOM STORE PAGES

Custom Store Pages help developers build bespoke sales points that map to specific creatives and messaging, shaping a consistent user experience to improve campaigns' overall performance. This allows advertisers to be efficient with both resources and campaign budgets since creating a new Custom Store Page requires fewer resources because advertisers can leverage existing assets.

As adoption grows, advertisers are starting to realize the potential of Custom Store Pages. So far, genres like puzzle, casino and lifestyle are early pioneers, while developers in hypercasual and other genres are beginning to see great potential there.



CUSTOM STORE PAGE TIPS

01

Optimize your best-performing creative sets.

02

Using up to 35 custom pages for iOS and 50 for Android is ideal to test variations.

03

Use the same creatives for both your ads and Custom Store Page to create a seamless user experience.

04

Feature events, in-game play, or seasonal material from your game.

DATA-BACKED INSIGHTS

Access to real-world performance data can give you the building blocks for strong monetization and user acquisition strategies, especially in the face of economic headwinds.

Build out your strategy with insights from industry benchmarks and diversification data. The information in this report can help you do more with less by zeroing in on the activities most likely to move the needle and help you grow your game.

AUTHORS

Data analysis and expert point of view for this report were provided by the **Unity Strategic Partnerships team**. Together, they have decades of experience in gaming working for studios of all sizes, from indie to AAA. At Unity, the team is relied on by customers for game design, monetization, user acquisition, and other game development guidance based on their data analysis and expertise.



Emory Irpan, Director, Strategic Partnerships
Emory has over a decade of experience in games, and has been honored in publications like *Forbes* 30 under 30 for his work in the gaming industry. Before leading Unity's Strategic Partnerships team, Emory worked on multiple indie games and AAA franchises like *The Sims* and *Call of Duty*.



Nathan TenBoer, Lead Analyst & Consultant
Nathan has nine years of experience in data analytics, focusing mainly on live mobile game management and optimizations. At Unity, he has driven several market-facing insights releases while also providing support to Unity customers.



Arjun Gohil, Senior Analyst & Consultant
Arjun comes from a rich data background in the gaming industry. He previously worked for Electronic Arts and Ubisoft in various BI and Analytics roles.



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Levent comes from industrial engineering and business analytics background and has over three years of live game data experience. He joined Unity from Ubisoft's Analytics & Reporting team in 2021.



Wing Yan (Kristen) Sze, Analyst & Consultant
Kristen has over four years of quantitative research experience across mobile ad monetization, user experience and psychology domains. She previously worked as a senior analyst at Scopely.

GROW AND MONETIZE YOUR GAME

Unity gives you tools to help drive your revenue and growth goals. Whether you're a publisher, advertiser, or both, tap into the expertise and insight you need to support your monetization and user acquisition strategy.

[Learn more](#)

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ABOUT UNITY

Unity empowers creators of all sizes to successfully realize their vision by building real-time 3D (and 2D) experiences. Our comprehensive set of software solutions supports them through the entire development lifecycle as they build, run, and grow immersive, real-time content for mobile phones, tablets, PCs, consoles, and augmented and virtual reality devices.

Unity uses its website (investors.unity.com), filings with the SEC, press releases, public conference calls, and public webcasts as means of disclosing material nonpublic information and for complying with its disclosure obligations under Regulation FD.

Forward-Looking Statements

This report contains “forward-looking statements,” as that term is defined under federal securities laws, including, in particular, statements about Unity’s plans, strategies and objectives. The words “believe,” “may,” “will,” “estimate,” “continue,” “intend,” “expect,” “plan,” “project,” and similar expressions are intended to identify forward-looking statements. These forward-looking statements are subject to risks, uncertainties, and assumptions. If the risks materialize or assumptions prove incorrect, actual results could differ materially from the results implied by these forward-looking statements. Further information on these and additional risks that could affect Unity’s results is included in our filings with the Securities and Exchange Commission (SEC) which are available on the Unity Investor Relations website. Statements herein speak only as of the date of this report, and Unity assumes no obligation to, and does not currently intend to, update any such forward-looking statements after the date of this report except as required by law.

ABOUT THE DATA

The data in this report is drawn from the Unity portfolio of products, and specifically games that use monetization and user acquisition services.

It leverages original data from over 31 billion ads served each month, 250 million average users reached each day, and 158 million average monthly installs. It also looks at 47 million average monthly in-app purchases (IAPs) enabled by Unity.

We take data privacy seriously and have omitted and anonymized information from this report that would individually identify any single game, developer, or publisher. Games are broken out into publicly available categories as defined on the iOS and Google Play stores where available. The data shown in the charts and graphics is original to Unity.

