ADJUST

Mobile app trends 2021

A global benchmark of
app performance

Contents

Introduction

The way we use apps evolved in 2020, with more users turning to digital solutions for entertainment and daily tasks than ever before. As lockdowns were introduced across the globe, users downloaded and opened apps at rates that eclipsed previous years and projections. Global spend on mobile apps hit USD $112 billion in 2020 — and iOS represented 65% of that spend. While growth is continuing into 2021, mobile marketing is going through a seismic evolution as iOS 14 is set to be the next industry-defining moment. For app developers and marketers, this year will once again look very different from the one that preceded it.

Our report draws on internal data and industry-wide insights to help marketers and developers better understand their audiences through actionable data.

"The app economy experienced immense growth in 2020 as people all over the world realized the benefits of mobile in many aspects of their lives. For mobile marketers, the potential to reach new users is at an all-time high, but so is competition. As we move through 2021 and begin a new era with iOS 14, the importance of enhancing marketing through automation and understanding how users behave in-app throughout their entire journey is more pivotal than ever,"

Paul H. Müller,
Co-Founder and CEO

ADJUST

## The verticals

In this report, we drill down into fintech, e-commerce and gaming, placing a focus on everything from trends in installs and sessions, to how much time users are spending in apps, how often they're reinstalling and how they're being reattributed.
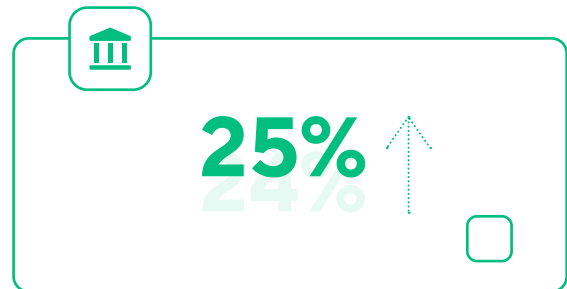
Fintech:

Fintech continued its march into mobile in 2020 as more legacy banks partnered with fintechs and more users adopted neobanks.

$3.6B
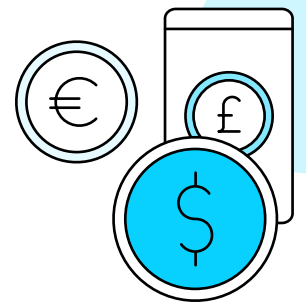
Banking app revenue reached
USD $3.6 billion

25%
24%

By mid-2020, 25% [2] of all banking app
downloads were digital banks, up from
1% in 2017.

2.5

The average user now has 2.5 finance apps installed, and global
payments reached USD $1.390 billion in 2020 and are projected
to reach USD $1.680 billion this year [1].

81.1%

Adoption rates for mobile payments surged globally, with China
reaching as high as 81.1% — followed by India at 37.6%, Japan at 25.3%
and Italy at 21.1%. France and Germany continue to show potential, with
adoption rates growing but still hovering around 20%.

[1] https://www.businessofapps.com/data/fintech-app-market/

[2] https://go.sensortower.com/state-of-fintech-apps-report-2020.html

Gaming:

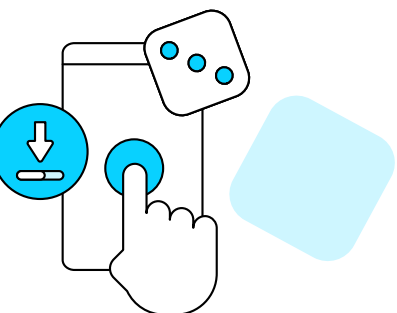**For the purpose of this report, we've split gaming into hyper casual and non-hyper casual, as the two have continued their extremely different trajectories in terms of user behavior.**

Gaming held onto its crown as the biggest mobile vertical, with 33%[3] of all downloaded mobile apps now games.

[3] https://techcrunch.com/2019/06/11/mobile-games-now-account-for-33-of-installs-10-of-time-and-74-of-consumer-spend/

$165B

The mobile gaming industry was valued at USD $165 billion in 2020, and with increased projected growth is predicted to hit USD $180 [4] billion in 2020.
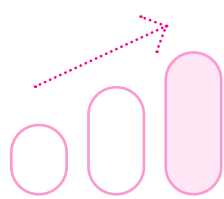
$41B

Asia is still the biggest marketplace, making up USD $41 billion of the total value. The number of mobile gamers grew from 1.2 billion to 1.75 billion, marking an increase of 46% [5].

38%

Of these gamers, 620 million are in China, 213 million are in the U.S., and 38% are willing to pay for the games.

51%

Of the total global gaming industry, mobile games now make up 51% [6] of revenue with hyper casual projected to hit the USD $2.5 billion mark in 2021 [7].

$219.9

The overall vertical has a market forecast of USD $219.9 billion by 2023, with Google Play revenue continuing to increase faster than App Store revenue, at a rate of 19.6% to 13.2% [8].

[4] https://www.blog.udonis.co/mobile-marketing/mobile-games/mobile-gaming-statistics

[5] https://www.is.com/blog/resources/mobile-gaming-trends

[6] https://www.statista.com/topics/1906/mobile-gaming/

[7] https://www.pocketgamer.biz/news/75766/pgc-digital-hypercasual-market-estimated-to-reach-25-billion-from-2021/

[8] https://www.is.com/community/blog/resources/mobile-gaming-trends/

E-commerce:

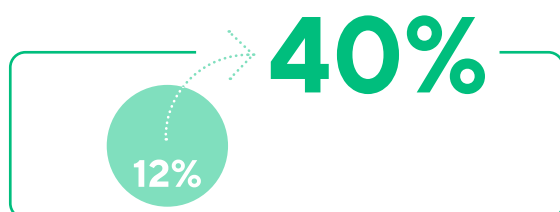With a 58%[9] increase in in-app transactions from 2019 to 2020 and years of growth trumped in Q1 of 2020[10] following the introduction of lockdowns, e-commerce also reported its biggest year ever.

[9] https://www.enterprisetimes.co.uk/2020/11/10/retailers-see-increase-in-mobile-app-downloads-and-growth-in-in-app-purchases/

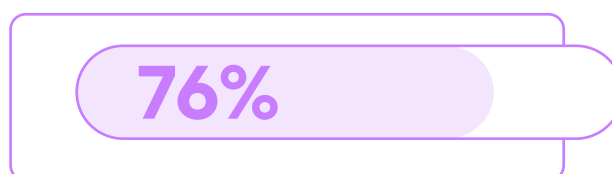[10] https://www.shopify.com/enterprise/the-future-of-ecommerce/omnichannel

40%

12%

Overall e-commerce penetration in the U.S. boomed from around 12% in 2019 to almost 40% in 2020, and is set to reach 50.8% in 2021 and 63.1% by 2025, with the average revenue per user expected to amount to USD $714.11[11].

76%

Convenience and seamless cross-device experiences are the two user priorities, with 76%[12] reporting that ease-of-use is their main focus when choosing an app.

24%

It was also reported that goods bought online in 2020 grew by 24% while store-based purchases declined 7%.

17%
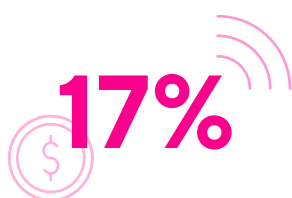
By the end of 2021, 17% of global purchases will take place online. Combine this with Adjust data[13], which shows that engagement rates increased by 40% in shopping apps and the picture of the boom in e-commerce becomes clear.

[11] https://www.statista.com/outlook/dmo/ecommerce/worldwide

[12] https://www.linnworks.com/the-effortless-economy

[13] https://www.adjust.com/blog/mobile-shopping-apps-report-2020-announcement/

Top 3 takeaways

1   Mobile growth has continued strongly into 2021, with installs up 31%.

2   Hyper casual games need to get the maximum revenue per user in the first two days, as retention rates slip heavily after that.

3   E-commerce installs only increased by 6% in 2020, but sessions saw a growth of 44%, showing how engaged users became.

"Across the gaming, fintech and e-commerce verticals, 2020 drove home the importance of balancing user acquisition with reengagement. Swathes of users turned to apps, making it the perfect time to acquire those seeking solutions on mobile for the first time, but encouraging users to return and stay engaged is also vital. Many marketers achieved this by creating engaging ad experiences and optimizing with a data-first approach."

Dennis Mink,
SVP of Marketing

LIFTOFF

Methodology

Verticals:
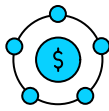
Fintech

Gaming - hyper casual & non-hyper casual

E-commerce

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Dataset:
A mix of Adjust's top 2,000 apps and the total dataset of all apps tracked by Adjust. Our data comes from two sources, one including a list of 45 countries and one with approximately ~250 based on the ISO 3166-1 standard.

Date:
01.01.2019 - 14.03.2021

Installs

Across all verticals, we see a 50% increase in installs comparing 2019 to 2020. In March and April 2020, around the time that the first lockdowns were coming into place globally, installs were particularly impressive, performing at 74% and 76%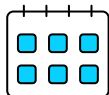 higher than 2019 YoY. While installs trended down following this peak, growth is continuing into 2021, with the first quarter up 31% compared to the same time frame in 2020.

Installs all verticals 2019 vs. 2020

2020

2019

January   February   March   April   May   June   July   August   September   October   November   December
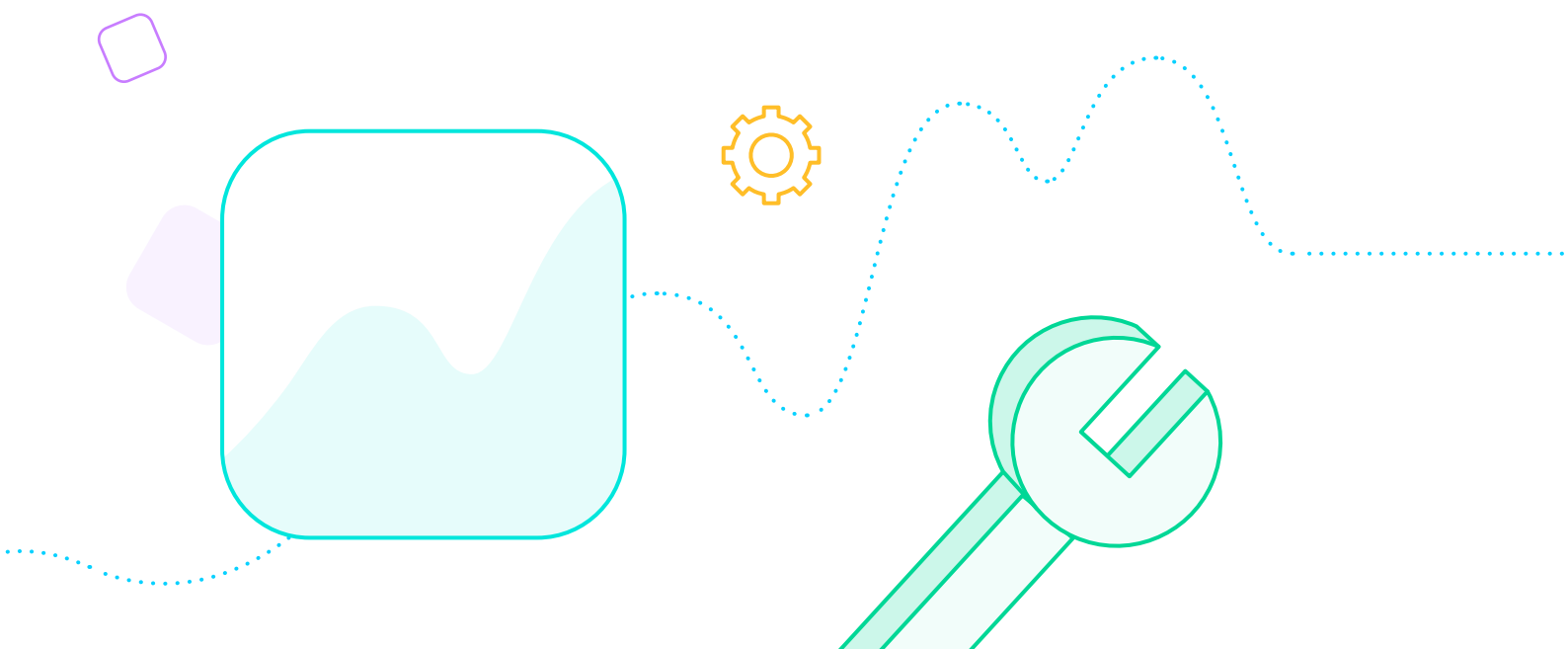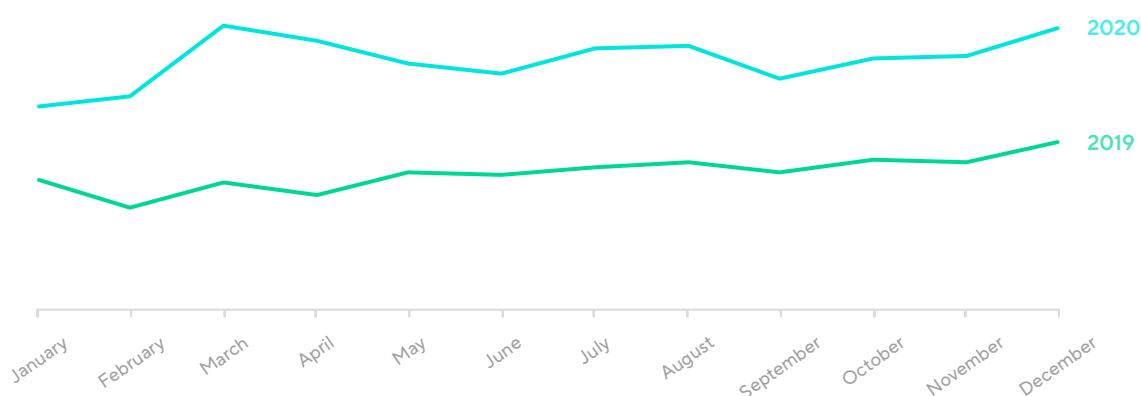
"The pandemic has illuminated the power of visual communication to connect us when apart. From sending pictures to experiencing the world through augmented reality, the Snapchat Generation enjoys new ways of engaging with friends and brands alike. They are a new kind of shopper, one excited for native, social and immersive brand experiences from the palm of their hand."

Skye Featherstone,
Global Product Marketing Manager
Snap Inc.
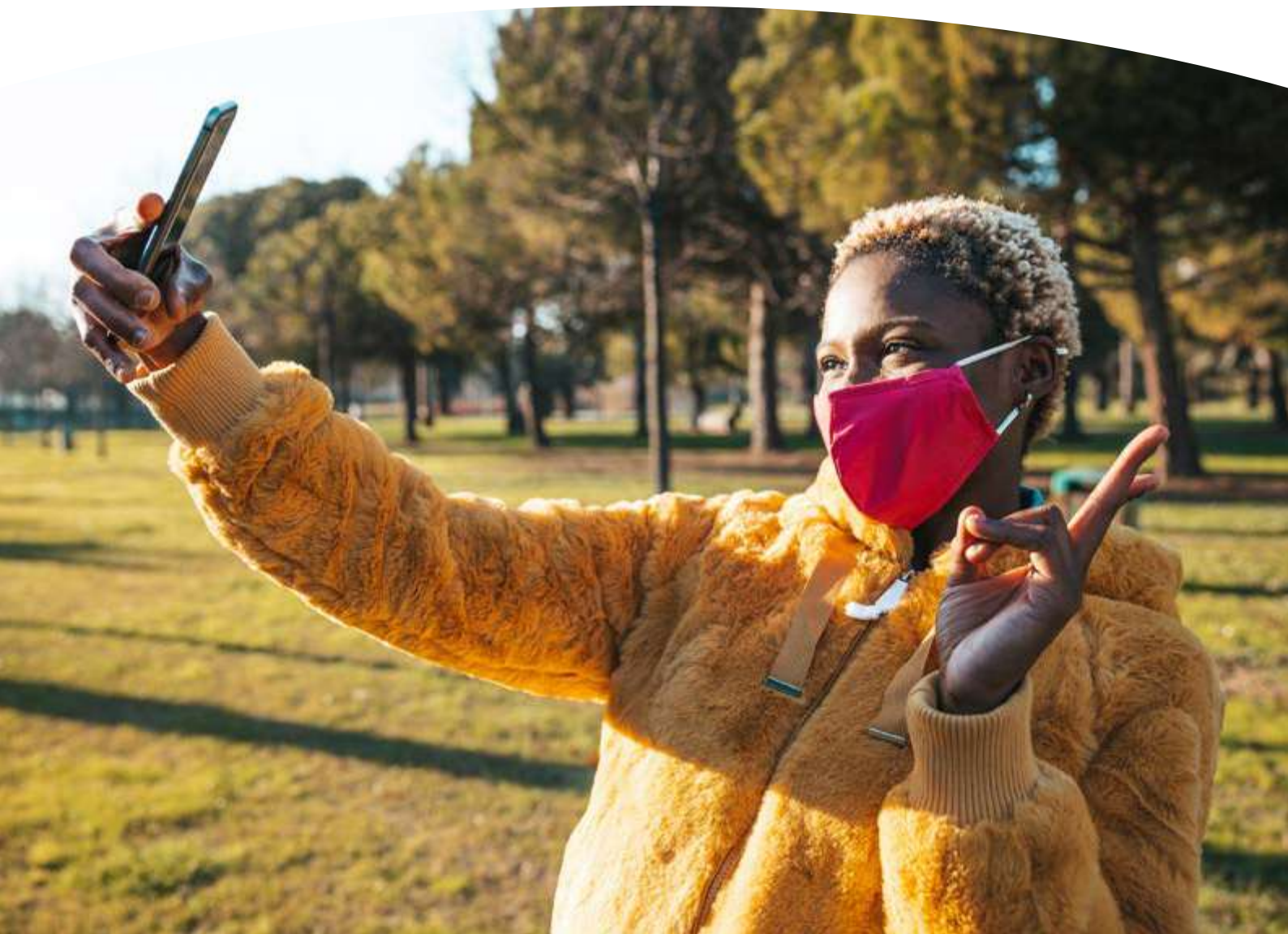
Fintech

Installs for fintech apps increased 51% from 2019 to 2020 and are up again by 12% at the beginning of 2021, compared to the 2020 average. March and April 2020 were the highest performing months, starting in the first week of March at 34% above the yearly average and peaking in the first week of April at 41% up. Another spike took place in the first week of July at 19% above average.

Installs fintech 2020

January February March April May June July August September October November December
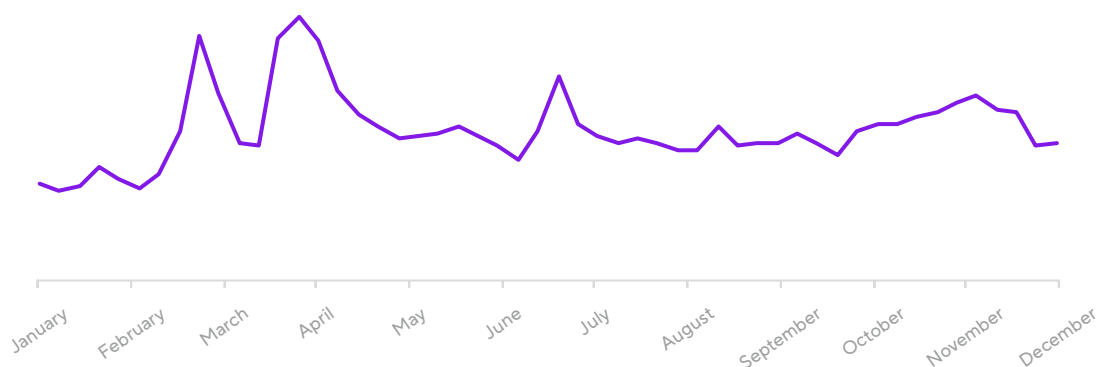
Investing and stock-related app searches have grown 115% YoY[14]. Robinhood set off the trading apps wave, with new challengers setting their commissions and fees lower to compete. Other tops apps are Cash App, Revolut, Gatsby, Coinbase, Binance, Kraken, eToro and Freetrade, all of which enjoyed record growth of new customers in 2020[15]. Cryptocurrencies saw unprecedented trading, with Bitcoin hitting several big milestones in the past 12 months, breaking the $30,000 barrier on January 2 and then $40,000 just 10 days later[16]. This was combined with a surge in crypto app downloads, with 81% growth YoY. With innovations such as non-fungible tokens (NFTs) also driving the market[17], there is a lot of excitement in the crypto-app ecosystem.

[14] https://www.thinkwithgoogle.com/consumer-insights/consumer-trends/search-statistics-for-investing-stock-apps/

[15] https://tradingplatforms.com/blog/2021/02/03/trading-platforms-enjoy-record-growth-of-customers-in-2020/

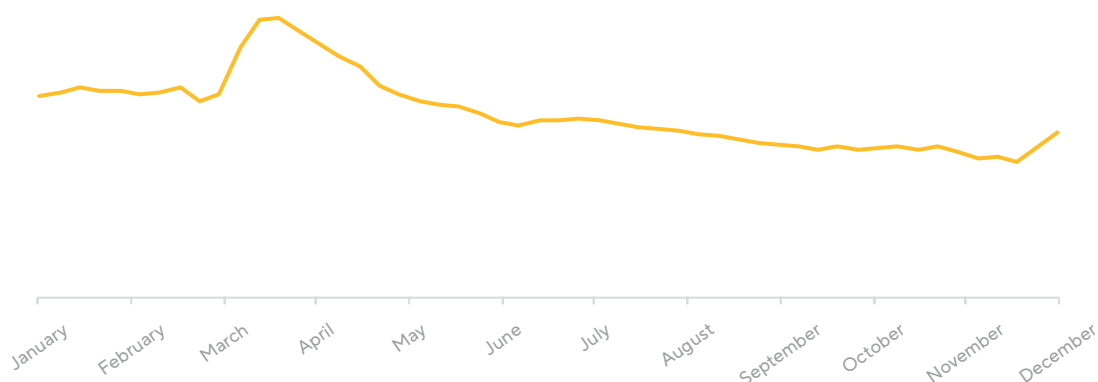[16] https://www.forbes.com/sites/cbovaird/2021/01/14/bitcoin-has-climbed-above-40000-again-whats-next/

[17] https://www.businesswire.com/news/home/20210305005012/en/S%21NG-Launches-Free-NFT-ready-App-for-Creators
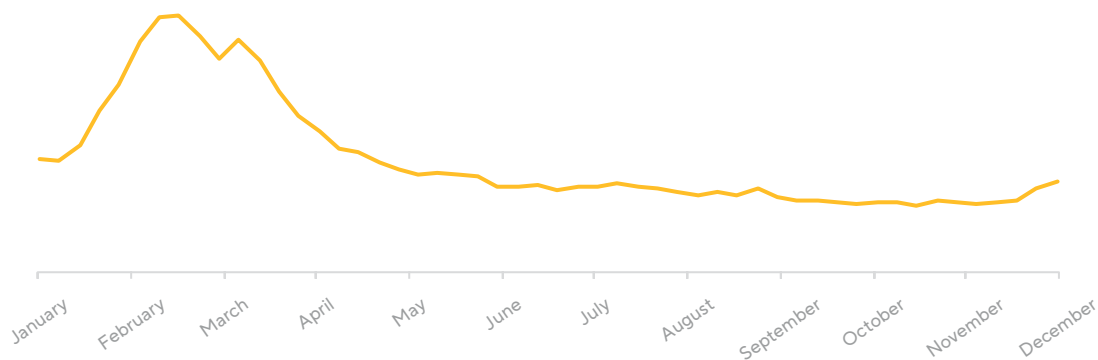
Gaming (non-hyper casual and hyper casual)

Non-hyper casual games increased by 26%, while hyper casual saw a 43% uptick in installs from 2019 to 2020. The best performing period for non-hyper casual in 2020 was the last week of March and first week of April, which was 51% above the yearly average and 90% higher than the 2019 average. The number of installs decreased slowly throughout 2020 but started to pick up again in December.

For hyper casual games, the beginning of 2020 saw exponential growth, peaking at the end of February at 129% above the yearly average. This drops down throughout March and remains steady for the rest of the year. If we remove the massive growth seen in the first quarter of 2020, hyper casual still performs slightly higher than in 2019, and starts trending up again in 2021.

Installs gaming (non-hyper casual) 2020

January　February　March　April　May　June　July　August　September　October　November　December

Installs gaming (hyper casual) 2020

January　February　March　April　May　June　July　August　September　October　November　December
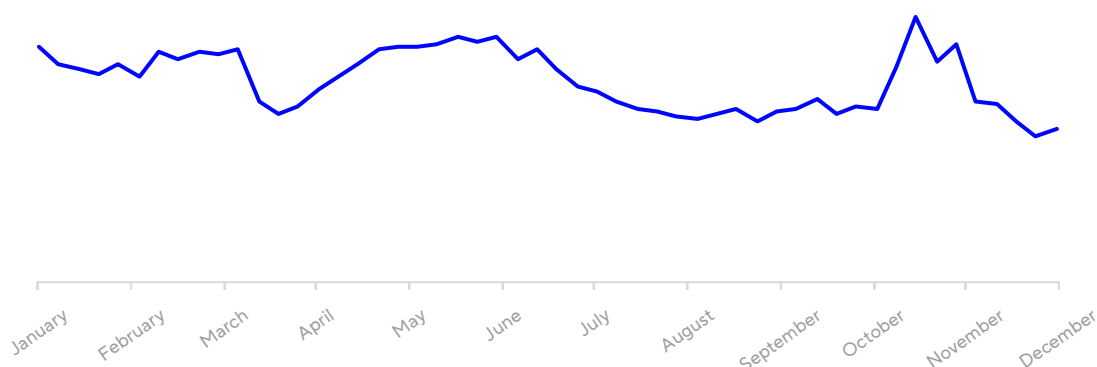
E-commerce

E-commerce performed exceptionally well in 2020, despite installs only increasing by 6% compared to 2019. Sessions and engagement is where we see the huge uptick happen, which we explain in detail below. In contrast to 2019 where installs grew steadily, 2020 showed ups and downs, with a trough in the last week of March at 10% below the yearly average. Things start to pick up throughout May and into the beginning of July, with those months combining to be 10% above average. The biggest growth period starts in the second week of November, at 19% above the yearly average, and decreases over the remainder of the year, suggesting a pre holiday season rush. 2021 is looking strong so far, with the first quarter 11% above the 2020 average.

Installs e-commerce 2020

January   February   March   April   May   June   July   August   September   October   November   December

KEY FINDINGS

• Installs increased across all verticals, with fintech posting the best YoY growth of 51%.

• Gaming reached new heights in 2020, particularly in hyper casual, where installs increased 43% — compared to 26% for non-hyper casual.

• E-commerce's install growth was relatively small at 6%, but performed consistently throughout the year, not showing the huge peaks and falls of many other verticals as shops were closed for most of the year, and people consistently made online purchases.

"2020 was a game-changing year for the mobile app economy, which highlighted the importance of multi-channel campaigns more than ever. More users were turning to mobile but the competition was strong. It continues that the better tailored and adapted campaigns are for users, based on specific channels, the better performance marketers and developers see when it comes to installs, sessions and gaining high LTV users."

Momchil Kyurkchiev, Co-Founder
and Chief Product Officer

LEANPLUM

Paid vs. organic

The highest overall share of paid installs took place in Q1 and Q3 of 2020, where there were 0.45 paid installs for every organic. It remains relatively consistent throughout the year, however, with the 0.39 in Q2 the lowest point. Hyper casual has the highest ratio of paid installs to organic installs, reaching 3.17 by Q4, a massive difference to the 0.69 that the overall gaming vertical posted in the same quarter.

There are also large differences to note within the e-commerce vertical. Shopping had its largest share of paid installs in Q1 at 0.85. In the same quarter, marketplace and classifieds came in significantly lower at 0.32. Fintech has a comparably low share of paid installs, with payment slightly higher than banking, hovering from 0.1 to 0.13 and 0.8 to 0.2, respectively.

Paid / organic ratio 2020

Number of paid installs for every organic install
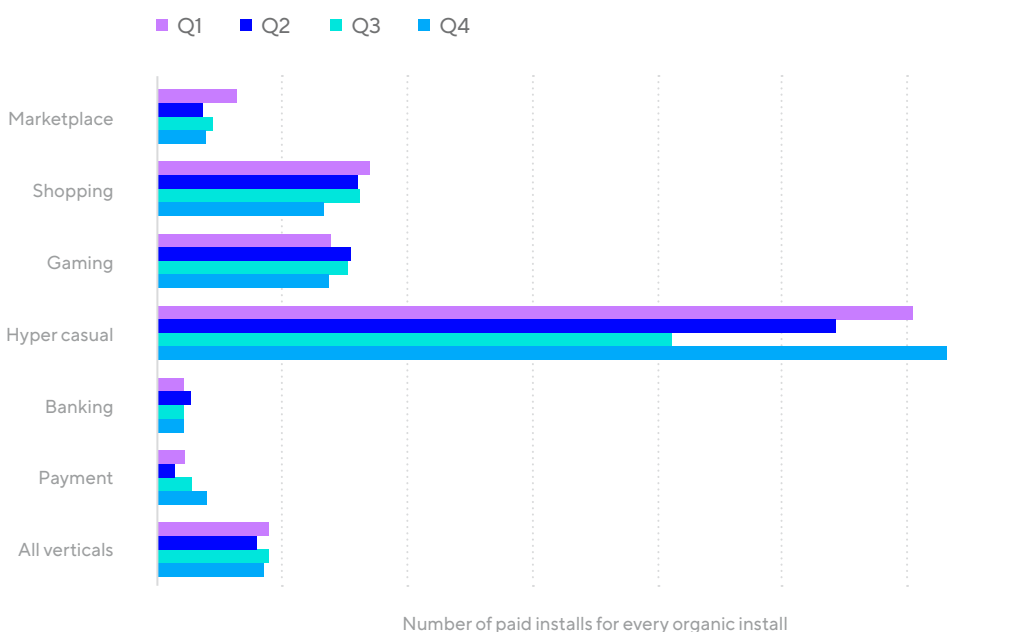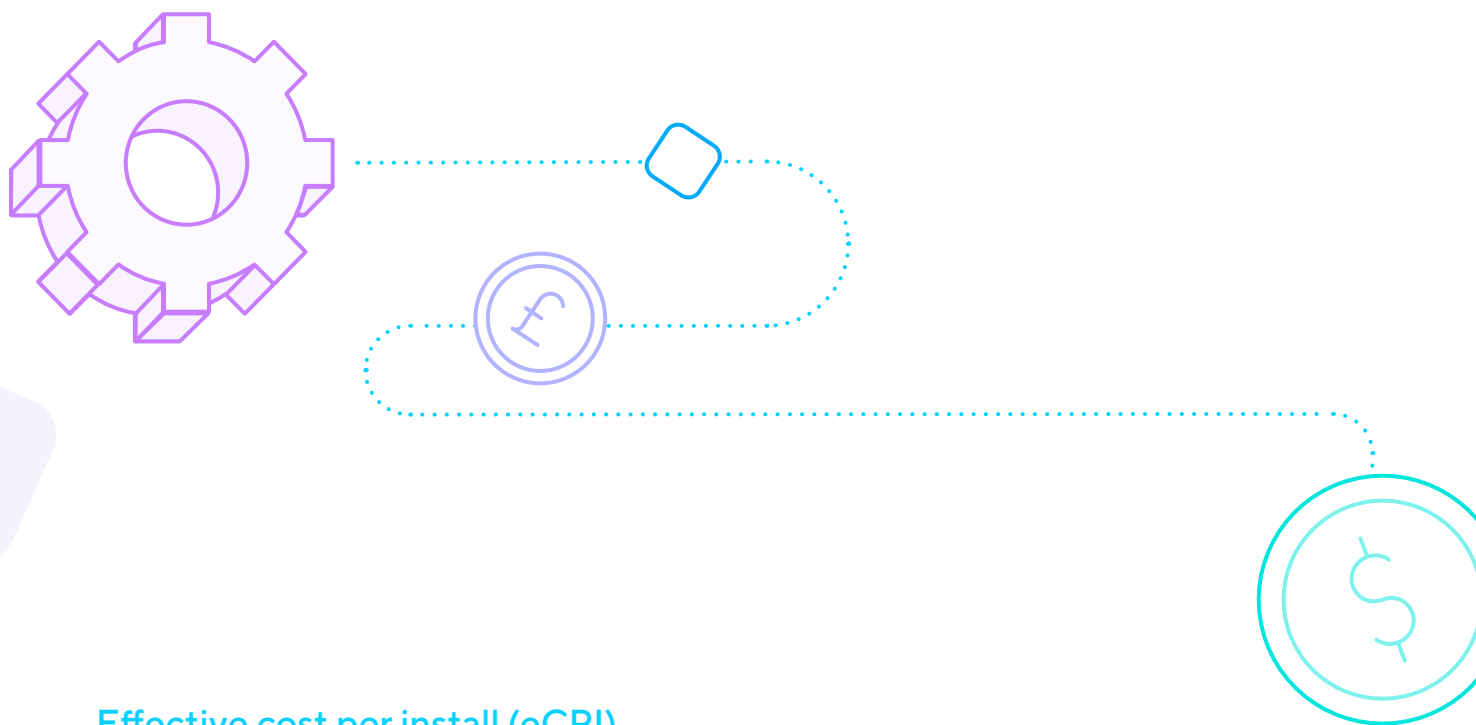
Effective cost per install (eCPI)

Q4 was the most expensive quarter to acquire users overall at a median of $1.88 per install. E-commerce came in at $1.56 — up from $1.06 in Q1. Fintech on the other hand, had its most expensive period in Q1 at $1.57, and dropped as low as $0.53 in Q2. Hyper casual is very low while gaming overall is comparatively high. Q4 was hyper casual's cheapest at $0.27 per install while gaming came in at $2.52, its most expensive quarter by contrast.

Effective cost per install by quarter in USD
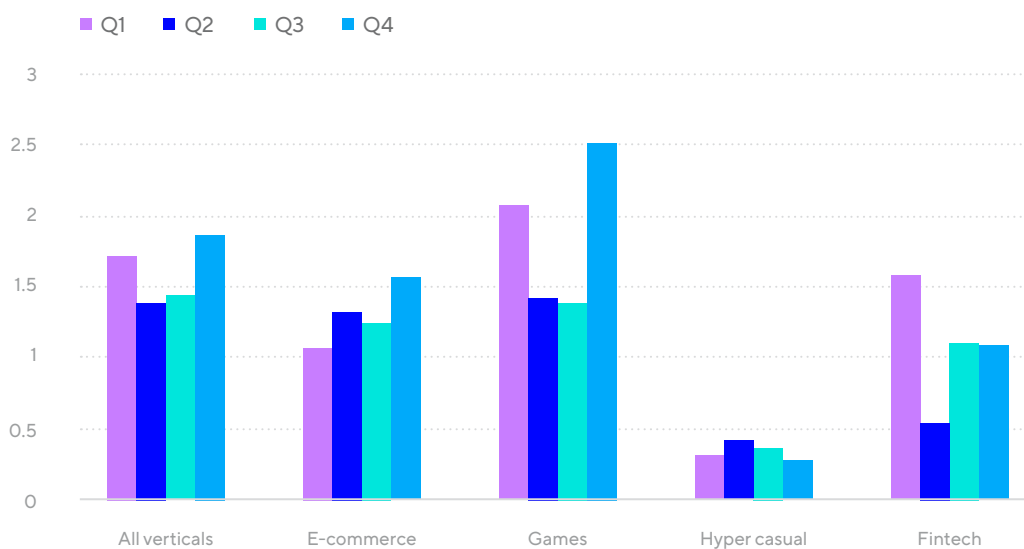
Number of partners per app

The median number of partners per app hovers at around five for all verticals combined, increasing to six in Q4 of 2020. Games is above the median of the other verticals at seven overall, with hyper casual even higher, at nine. The median e-commerce app works with four while fintech comes in lowest, with three. This shows a huge opportunity for the e-commerce and fintech verticals to diversify the number of partners they work with to potentially find their next pocket of new users.

Number of partners per app 2020
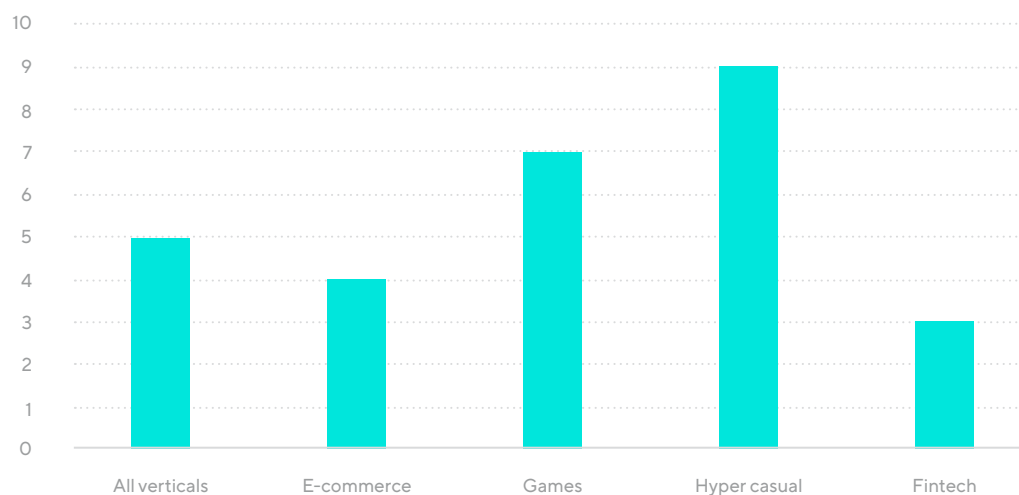
Sessions and in-app patterns

"All verticals are surging as consumers shift their focus and time to digital touchpoints. The marketing teams that can make sense of this explosion in behavioral data, and rapidly turn insights into improved, personalized experiences, will win. Sometimes taking action will involve building, but more often than not action will involve using machine learning to automatically adapt experiences. It is a game of increasing customer loyalty and increasing customer LTV. The funnel has flipped."

John Cutler,
Head of Product Education

Amplitude

Sessions

Sessions increased by 30% overall from 2019 to 2020, and are continuing to grow in 2021, up by another 4.5% so far. April 2020 was the highest performing month, enjoying a 45% YoY increase, with May almost as impressive, at 40%. May was the best-performing month of 2020 overall, however, posting 9% more sessions than the yearly average.

Sessions all verticals 2019 vs. 2020

2020

2019

January　February　March　April　May　June　July　August　September　October　November　December
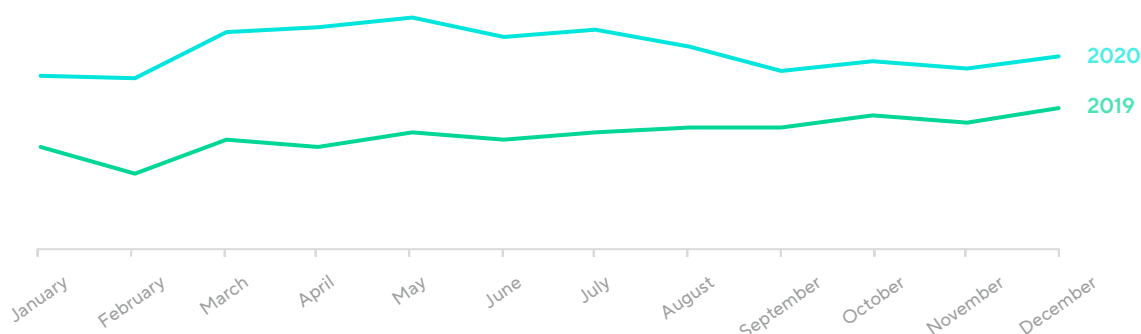
Fintech

Fintech sessions boomed in 2020, increasing 85% compared to 2019, and is already up 35% in 2021. Sessions grew steadily throughout 2020, with the biggest weeks at the beginning of October (22% above average) and the end of November (24% above average). Another peak took place in the first week of July, which was up 15%.

Sessions fintech 2020

January February March April May June July August September October November December
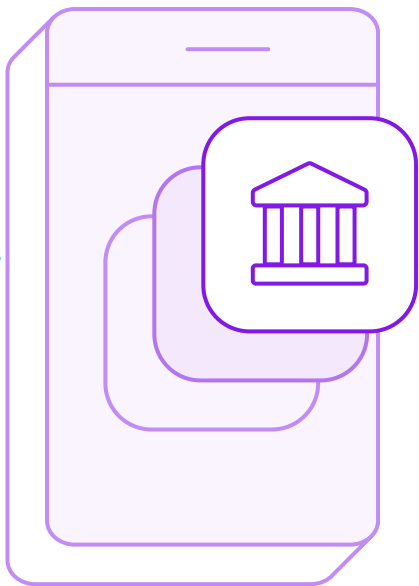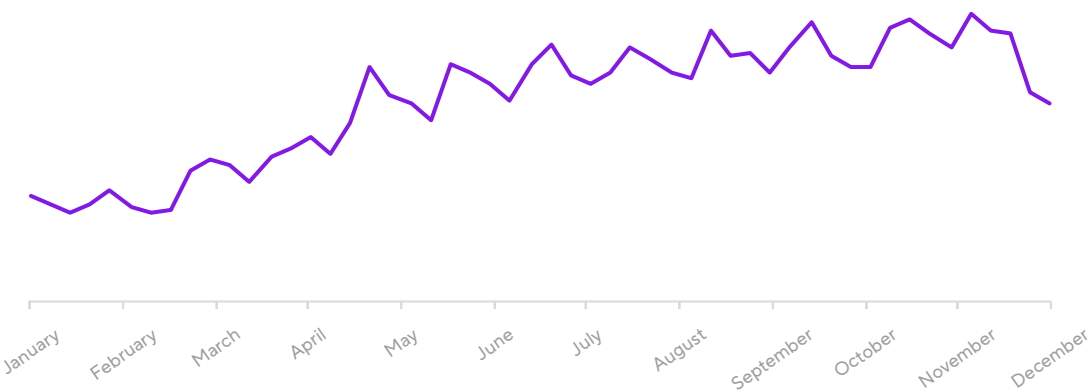
Gaming

Sessions for non-hyper casual games increased by 27% from 2019 to 2020, picking up in the second week of March. It peaked in the last week of April at 22% 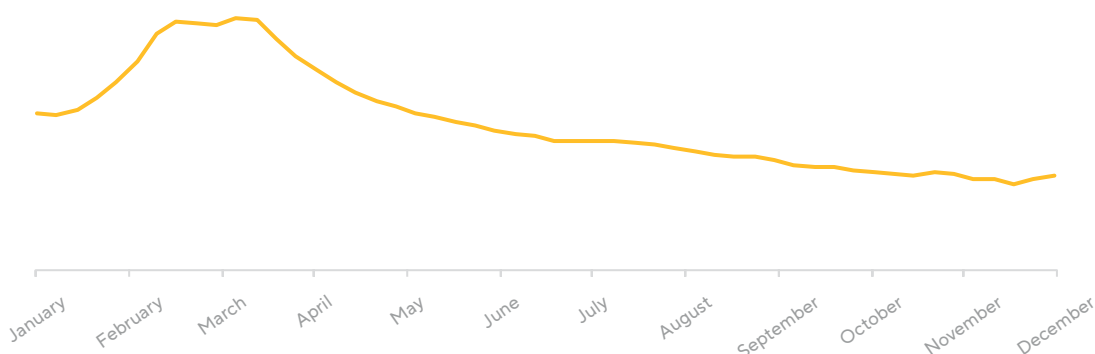above the yearly average and stayed high until mid-June. Sessions for 2021 are currently 9% below 2020 but up 4% if we only compare with the last quarter of 2020. If we look at the end of February and beginning of March, the vertical is starting to perform similarly to 2020 — even 1.5% higher.

Hyper casual sessions increased 36% when comparing 2019 to 2020. The 2020 sessions-boom started at the end of January, peaking in mid-March at 72% above the yearly average. The entire end of January to May combined is 49% up. Sessions for 2021 are down 21% so far, but if we remove the huge "first-lockdown" spike, the performance is roughly the same. But sessions within 2021 are growing steadily, with February outperforming January by 47%.

Sessions gaming (non-hyper casual) 2020
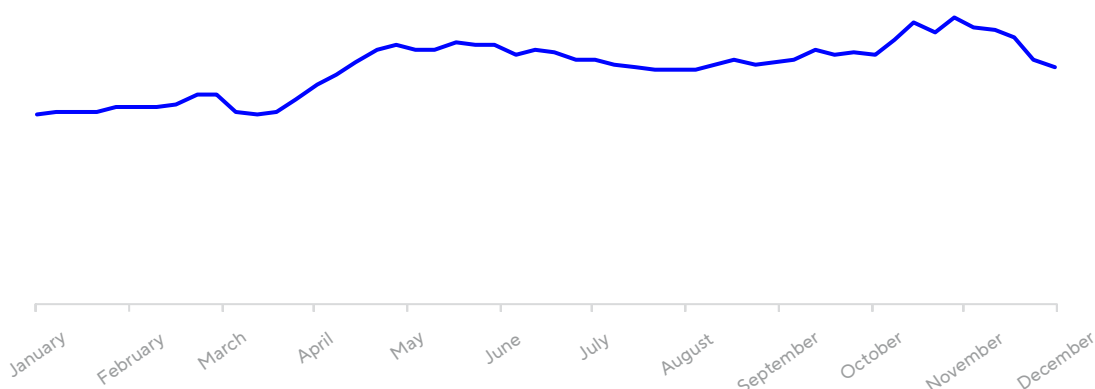

January February March April May June July August September October November December
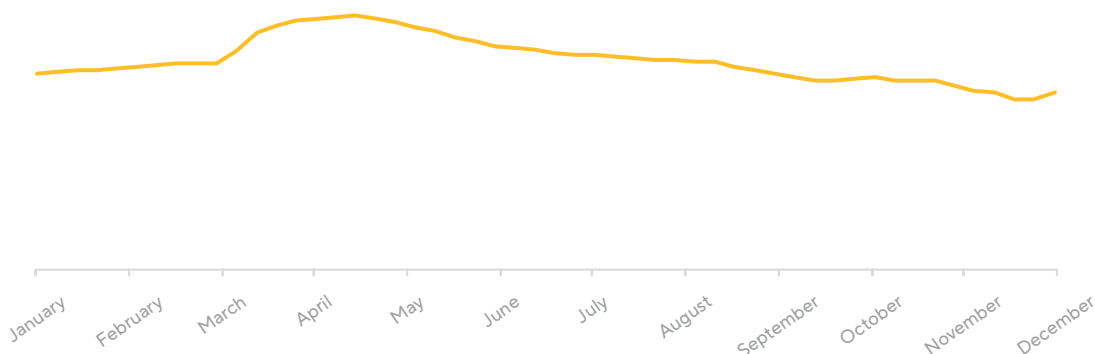
Sessions gaming (hyper casual) 2020

January February March April May June July August September October November December

E-commerce

Considering that e-commerce installs only increased 6% between 2019 and 2020, the 44% surge in sessions is remarkable. They increased gradually throughout the year, except for a dip in March at 17% below the yearly average. Q4 was the strongest performing time frame, up 18% at the end of November. 2021 is off to a very strong start — 14% above the 2020 average so far — and the vertical's highest weeks ever took place at the end of February and beginning of March — up 23% compared to 2020 and 76% compared to 2019.

Sessions e-commerce 2020

January   February   March   April   May   June   July   August   September   October   November   December

"Many app marketers and developers have realized the need for program-matic advertising as a pivotal part of their strategy - which has helped drive the industry-wide increase of installs and sessions we've seen over the last 18 months. Mobile is growing, which is exciting, and that growth is being driven by empowering those in the industry to unlock incremental growth through UA and retargeting."
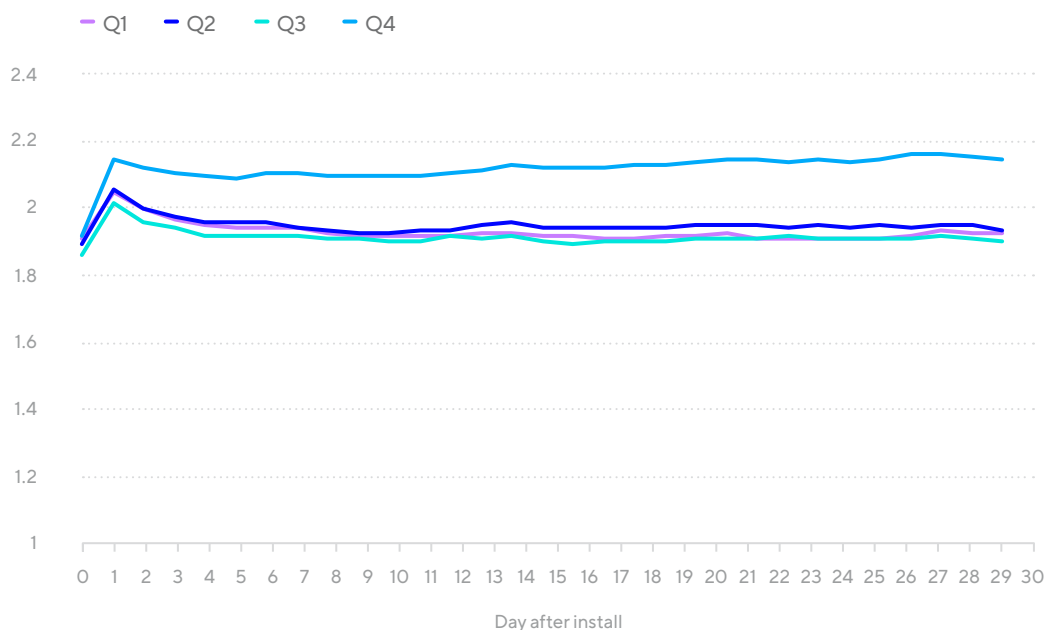
Tomas Yacachury,
Head of Partnerships

jampp

Sessions per user per day

Combined with the huge increase of sessions and installs in 2020, users were also highly active in-app. We saw an impressive number of sessions per user per day, which hovered around two a day for users in a 30 day cohort.
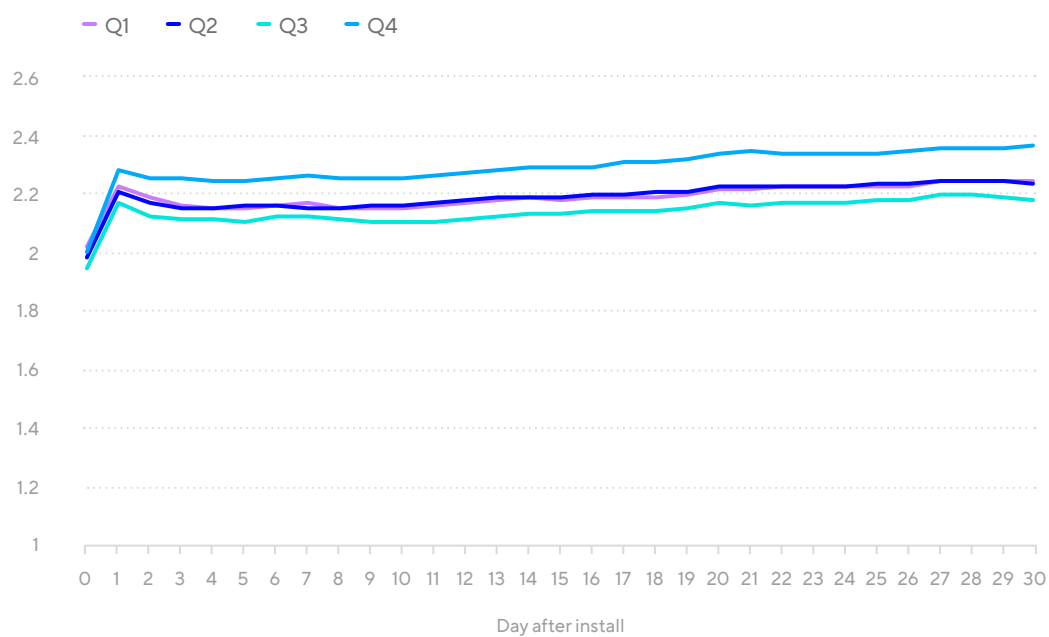
### Sessions per active user per day 2020

Q1 and Q4 were the strongest for day 0 (or the day the app is installed) across all verticals, with the median user logging 1.9 sessions per day. The median session per user on day 3 and day 7 sessions grew throughout the year, also reaching their highest point in Q4, at 2.1 sessions per day. Median sessions per user on day 30 also trended upward in Q4, reaching 2.14 sessions per user per day.

The most significant thing to pay attention to is the stark difference between hyper casual and gaming as a whole. Hyper casual starts out strong, with the median user logging 1.9 sessions per day, not far below other verticals. However, this dips to 1.3 by day 30 — a much sharper decline than seen elsewhere. The other gaming verticals start with the median user logging around 2 sessions per day and landing on 2.2 by day 30.

Sessions per active user per day (gaming)

- Q1
- Q2
- Q3
- Q4

Day after install

Sessions per active user per day (hyper casual gaming)

- Q1
- Q2
- Q3
- Q4

Day after install
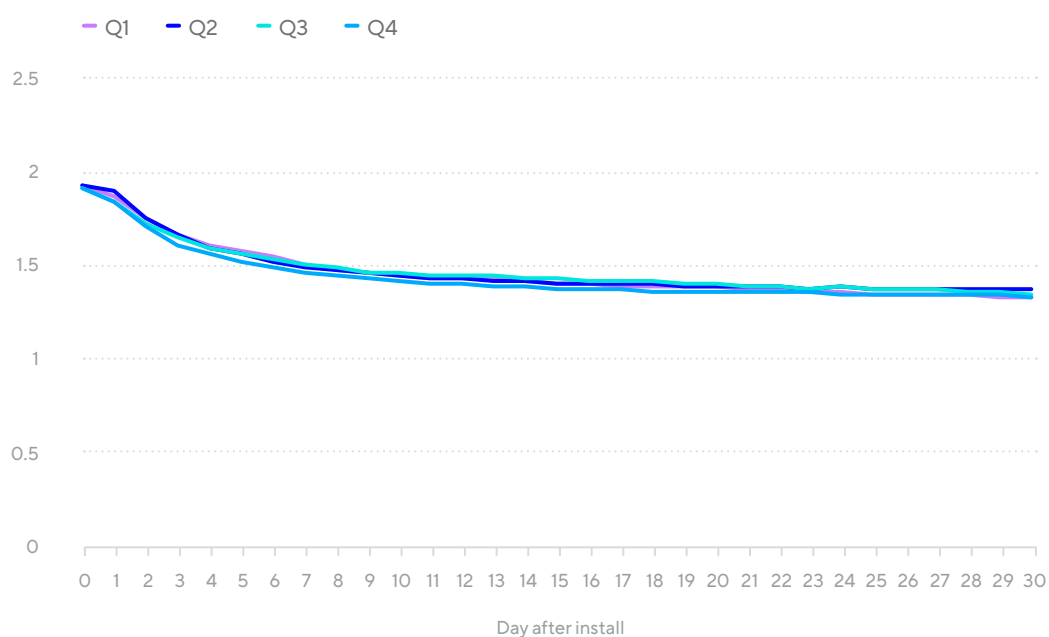
Average session length

Likely the result of spending more time at home, users in 2020 had longer sessions than in 2019, and spent more time in-app overall, though how we measure the success of the latter varies greatly depending on the vertical. Gaming posts longer session lengths because it's based on entertainment, whereas banking and payment apps may only be needed for a few seconds to fulfil a requirement.

Session lengths overall grew from 19.09 minutes in 2019 to 20.04 in 2020, and is up to 20.31 in 2021 so far. All verticals grew from 2019 to 2020, with only payment dropping slightly. Casual gaming and sports gaming post the highest session lengths at 21.19 and 22.77 minutes each. Hyper casual sits at 18.78 in 2020, below average but up considerably when compared to its own 2019 performance of 14.95 minutes per session. Overall, users spend 42% more time on casual games than on hyper casual.

Average session length


Minutes spent in app per session
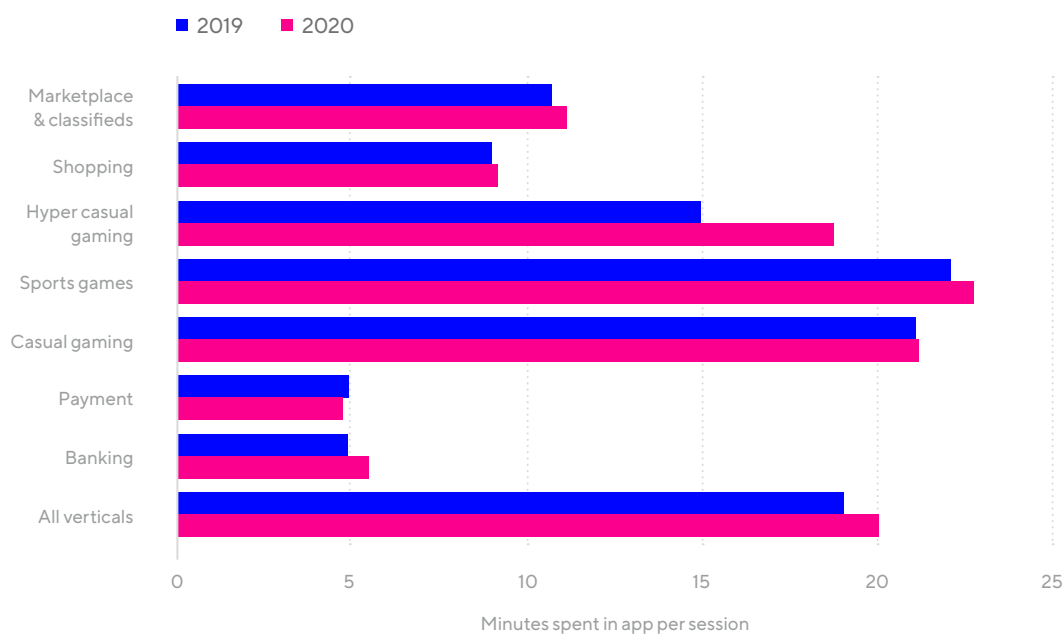
Time spent in-app

Between day 0 and day 1, the time spent in-app overall roughly doubles when looking at all verticals, increasing from around 10 to 20 minutes for every 24 hour period. By day 3 it creeps back down to 17, hits 16 on day 7 and settles at 14 by day 30. In 2020, the median user spent the most time in-app in Q4. Following the same pattern, we see that day 0 - 1 climbs from 13 to 27 minutes, day 3 is 25 minutes, day 7 is 23 and day 30 is 22.

The median numbers for the gaming vertical are much higher than in the comparison verticals, with the day 0, 1, 3, 7, 30 pattern performing at 24, 53, 48, 47 and 45 minutes in Q4.

Time spent in-app (all verticals)
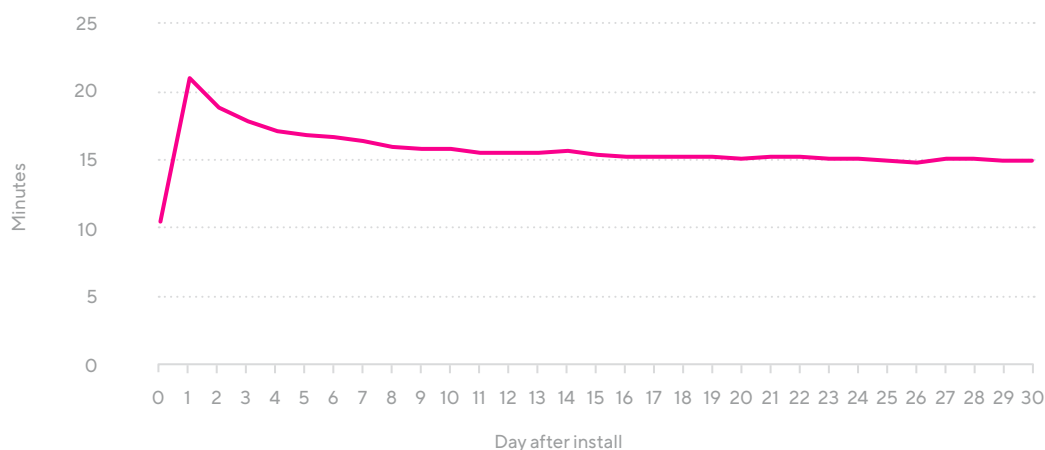
Hyper casual is a completely different story, dipping down significantly faster. Q4 day 0 is 8, day 1 is 15, day 7 is 9 and day 30 is 7. E-commerce also differs from the norm and is below the comparison verticals, with Q2 the best performing period of the year, following a 6, 13, 10, 10, 30 pattern. Fintech performs roughly the same throughout the year, with day 0 and 30 very similar. In Q4, the pattern gives us 3, 5, 4, 3.5, 3, making it the only vertical to finish exactly where it starts.

Median time spent in app by vertical Q4

Vertical	Day 0	Day 1	Day 3	Day 7	Day 30
All Verticals	10	20	17	16	14
Gaming	24	53	48	47	45
Hyper casual	8	15	11	9	7
E-commerce	6	13	10	10	30
Fintech	3	5	4	3.5	3

KEY FINDINGS

- The average session length remained consistent in terms of verticals from 2019 to 2020, but all verticals grew.

- The difference in the way hyper casual games, and gaming as a whole, perform shows how important it is to approach these as separate verticals.

- Fintech sessions increased 85%, representing a significant move towards digital banking and payments in 2020.

- E-commerce sessions are up 44% compared to installs at only 6%, indicating that users familiar with the vertical are more active than ever.

"During lockdown, people's way of living, working, and playing moved from the real world to the digital world, particularly to mobile in-app. Today, app developers are challenged with finding new ways to reach, acquire, and monetize these valuable users. Unique ad creative that melds with the user experience becomes even more important to grab user attention."

Kevin Albano, Sr. Manager,
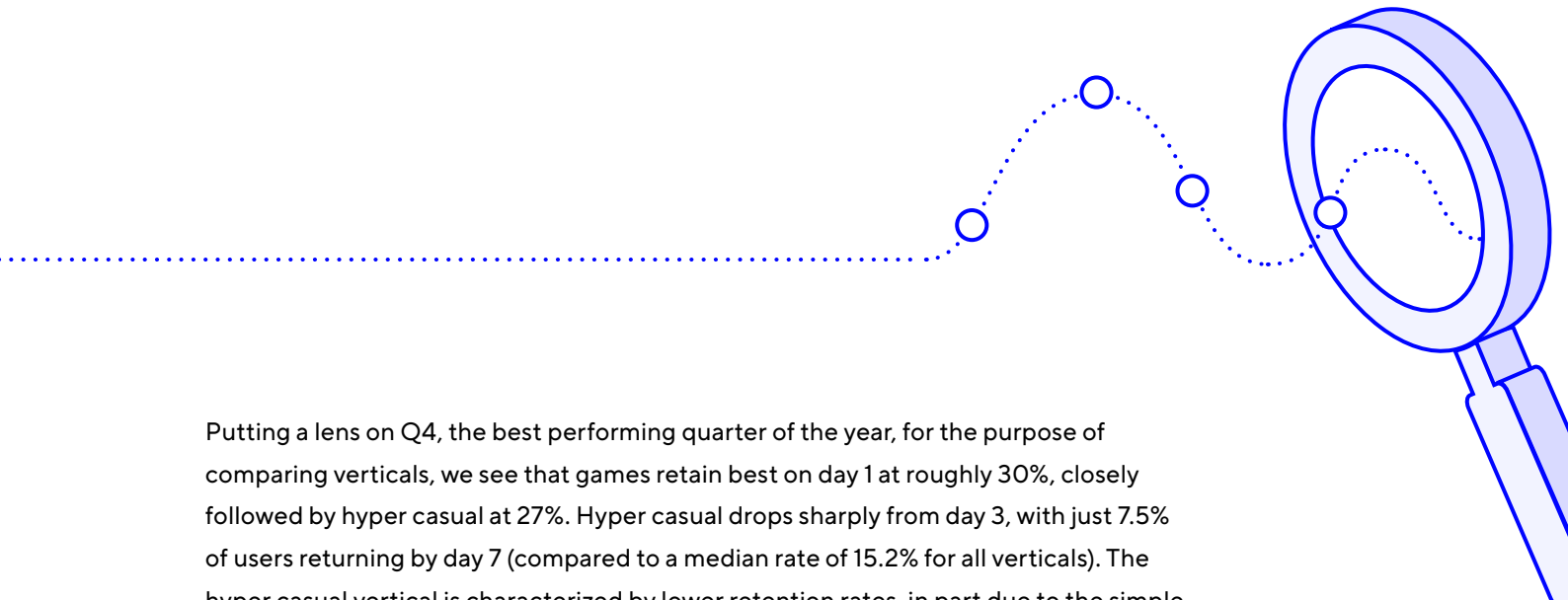Partnership Development

Vungle

Retention, reattribution and returning users

Retention rates

Retention rates were very stable throughout the year, with Q4 performing slightly better than the previous three quarters. This shows how robust the industry remained, succeeding in hanging onto the huge new swathes of users that came as a result of lockdowns. Day 1 hit its peak at 28% while day 7 reached 15%. Day 30 retention rates for Q4 were just over 8% — up from a low of just under 6% in Q3.

Retention rates all verticals 2020
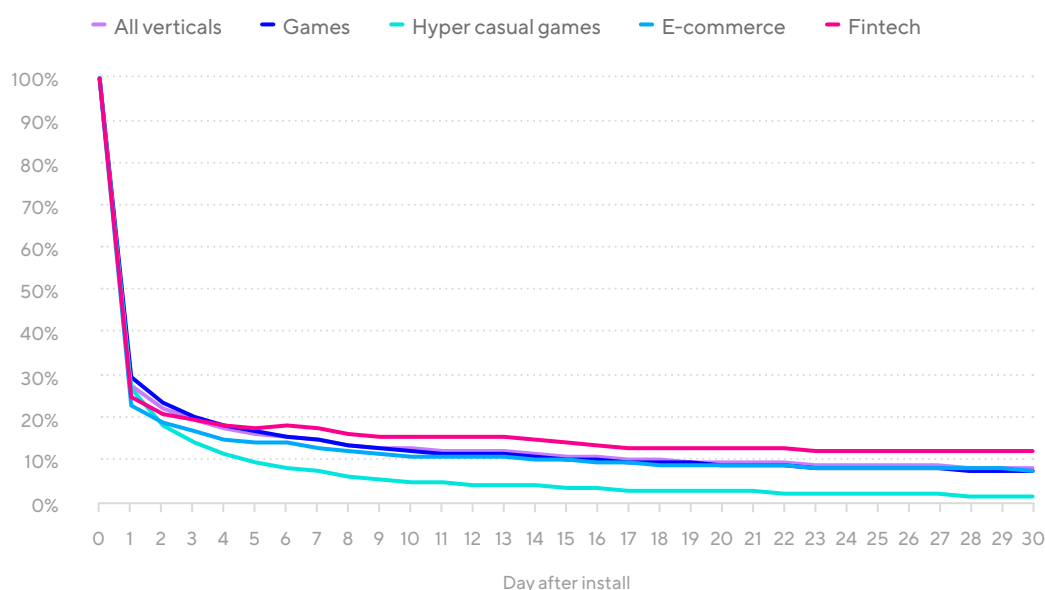

Day after install
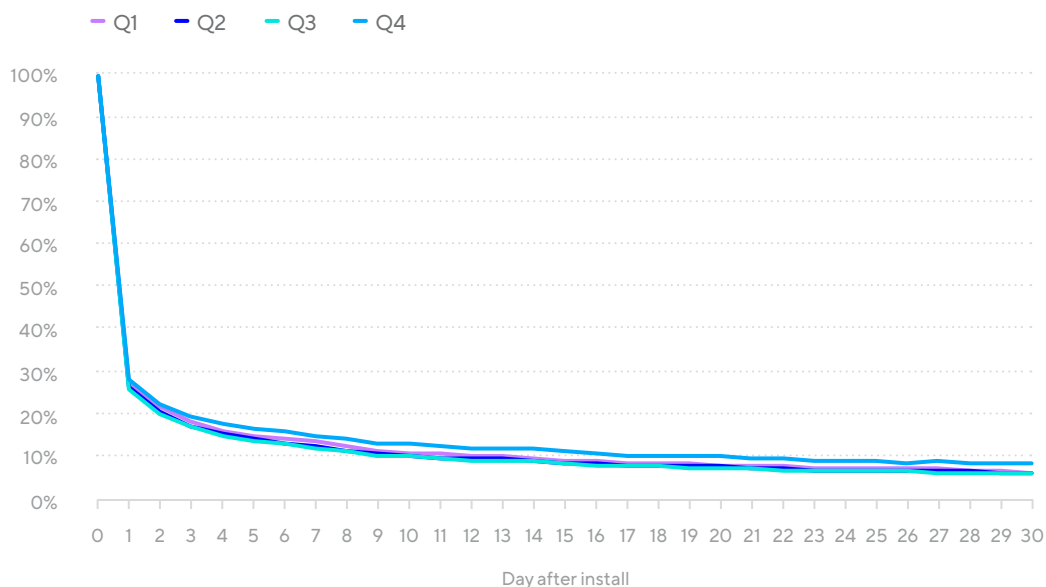
Putting a lens on Q4, the best performing quarter of the year, for the purpose of comparing verticals, we see that games retain best on day 1 at roughly 30%, closely followed by hyper casual at 27%. Hyper casual drops sharply from day 3, with just 7.5% of users returning by day 7 (compared to a median rate of 15.2% for all verticals). The hyper casual vertical is characterized by lower retention rates, in part due to the simple game mechanics, and the "snowball effect"[18] hyper casual developers employ to funnel users into the next game in their portfolio. By day 30, retention rates hover at just 1.75%.

Fintech apps on the other hand, come out on top with the highest amount of returning users: 18% on day 7 and 12% on day 30. E-commerce apps also retain well, with 13% on day 7 and 8% on day 30, so even though installs only increased by 6%, the users that came in were high quality.

Retention rates by vertical Q4 2020

Day after install

[18] https://indvstrvs.com/adjust-shares-hyper-casual-gaming-tips-for-app-developers/

Reattributions share

Overall, the reattributions share, or number of reattributions for every install, increased throughout 2020, starting at 0.06 in Q1, reaching 0.077 in Q3 and settling at 0.072 in Q4.

Reattributions share averages 2020

Number of reattributions for every install
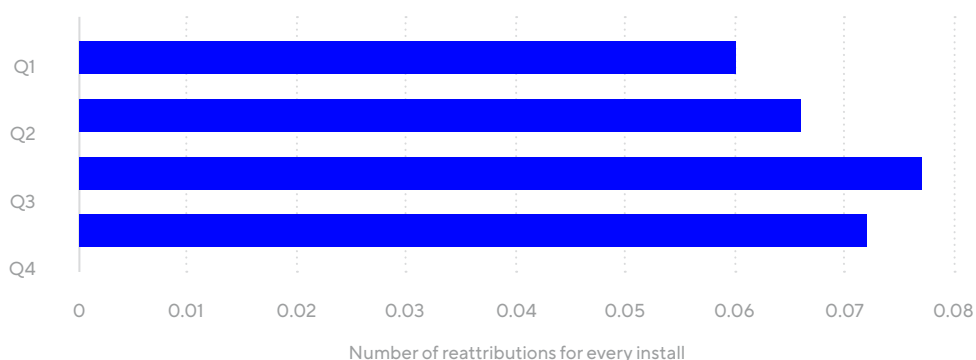
Banking and e-commerce had very high reattributions shares comparatively. Banking peaked at 0.83 in Q1 and decreased slowly throughout the year. E-commerce hit its highest point in Q3 at 1.22, while payments stuck at around 0.03 throughout the entire year, until increasing to 0.055 in Q4. Gaming's lowest period was Q2, at 0.02, with Q4 the highest at 0.074. Hyper casual posted the lowest share of all verticals, but did climb to 0.04 in Q3.

Reattributions share by vertical 2020

Number of reattributions for every install
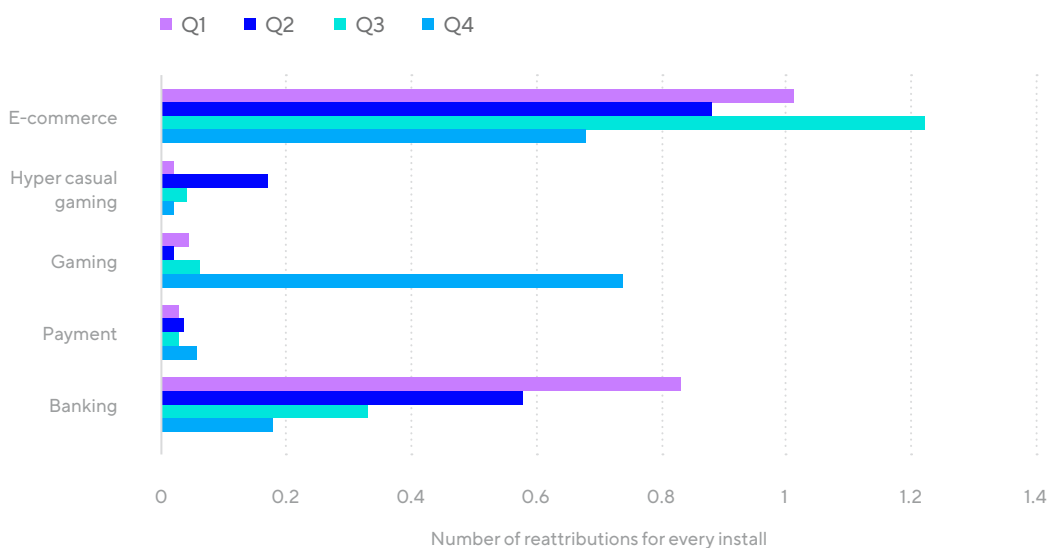
Conclusion

Understanding the nuances of a vertical is the key to successfully marketing an app within it. Looking at the stark differences between gaming and hyper casual gaming is one way to frame this, but the subtle differences within a vertical can also be capitalized on to yield impressive results. It's not just installs and sessions that marketers and developers should focus on, it's how users are behaving in-app, when they're returning and why.

By drilling down into your retention rates, you can troubleshoot onboarding issues, work out if you're providing enough content to keep users engaged and test the success of introductory offers or specials.

Your break even point can also differ. Depending on your risk profile, you can float different amounts while you wait for the LTV of your acquired users to start returning on your investment. By tracking eCPIs, you can project how long it will take for a user to turn profitable, and figure out where you want to invest — and how much you want to risk.

More consumers than ever are using apps as their source of entertainment and to complete daily tasks. To be competitive, you have to be smart, data-driven and UX-focused, and as the entire mobile ecosystem grows, so does competition.

With iOS 14 set to further emphasize the importance of A/B testing and deep user understanding, having a well-rounded strategy incorporating highly personalized campaigns and communication, automation and real-time measurement is more critical than ever before.

ADJUST

ABOUT ADJUST

[Adjust](#) is a global app marketing analytics platform committed to ensuring the highest privacy and performance standards. Adjust's solutions include attribution and measurement, fraud prevention, cybersecurity, as well as automation tools. The company's mission is to make mobile marketing simpler, smarter and more secure for the more than 50,000 apps working with Adjust.

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