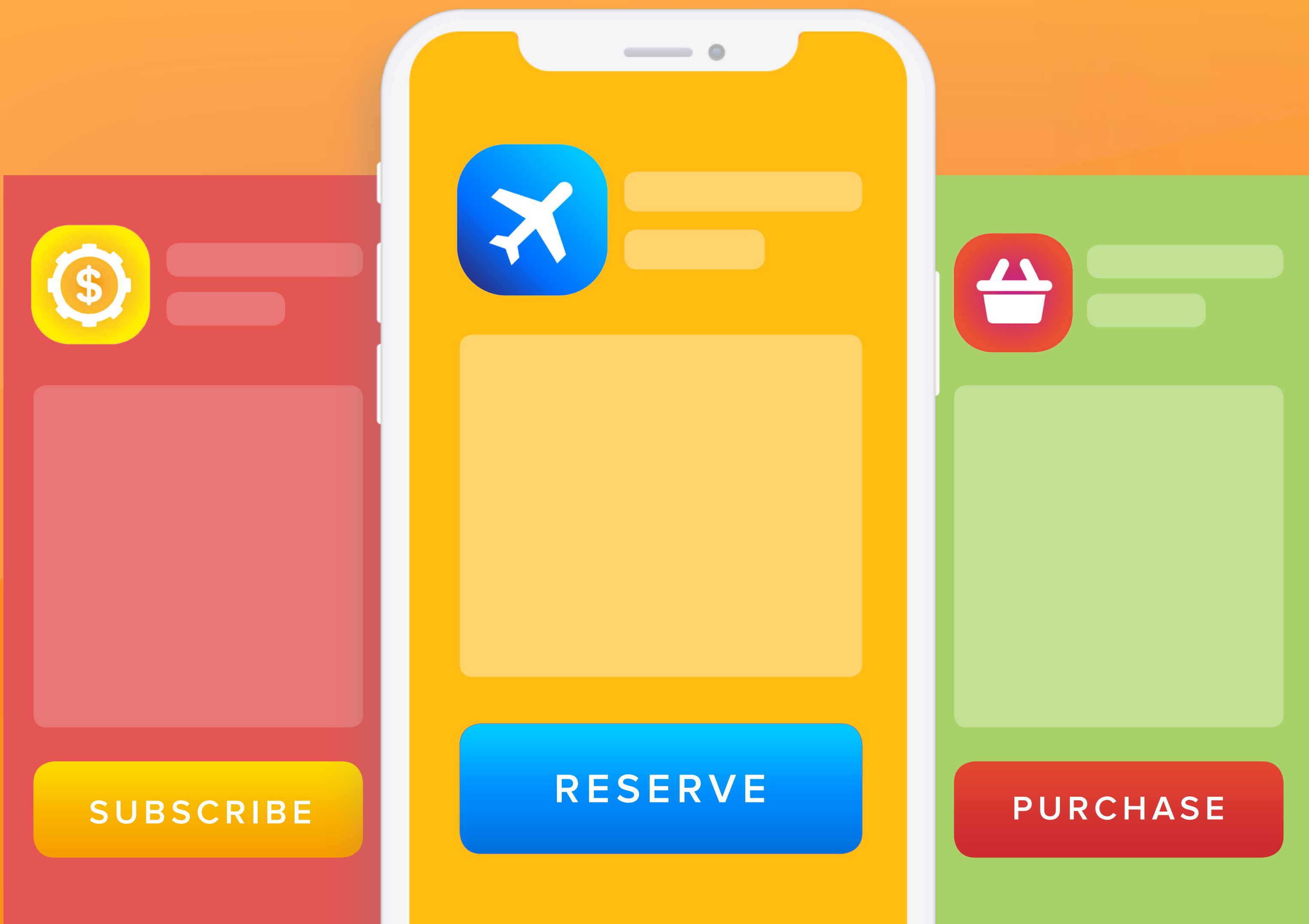
LIFTOFF LEANPLUM

2018 MOBILE APP ENGAGEMENT INDEX

User Acquisition Trends and Benchmarks



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Introduction

Fueled by billions of smartphones and powered by millions of apps, the global App Economy is entering a new and critical phase of growth.

The output is massive and the sheer volume of apps coming online every month can make any mobile app marketer anxious. Based on figures from Pocketgamer.biz, 9,438 apps were submitted in September 2018 to the Apple App Store alone—a momentum that shows no signs of slowing.

Fortunately, app supply isn't the only number breaking records. Sensor Tower Store Intelligence pegs combined app revenues for the Apple App Store and Google Play at $34.4 billion for the first half of this year, representing a year-over-year increase of 27.8%. While the growth of Google Play app downloads was "more pronounced," linked to the higher rate of Android adoption worldwide, Apple's platform earned more than double the revenues.

However, massive growth confronts marketers with massive challenges. App marketers determined to acquire and retain users in this crowded and competitive marketplace are vying for consumer attention, which, unlike apps, is in frighteningly short supply. The pressure is on app marketers to drive deep-funnel interactions with

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their apps—and that requires them to double down on efforts to address their audience, encourage engagement and inspire frequent use of their apps.

This Liftoff and Leanplum 2018 Mobile App Engagement Index report equips app marketers to make data-informed decisions, ensuring their app remains at the center of the customer experience. The Index draws from Liftoff internal data from September 1, 2017 through August 31, 2018—which spans over 257 billion impressions (257,492,955,717 to be exact) across 58.4 million installs and 19.2 million first-time events.

Specifically, the Index tracks costs and conversions across 47.4 million post-install events throughout the funnel (App Installs, Registrations, Reservations, In-App Purchases, Purchases and Subscriptions) across leading app categories (Dating, Finance, Gaming, Shopping, Travel and Utilities). The Index also offers a breakdown of data by platform (iOS and Android), user demographics (gender) and region (North America, LATAM, EMEA and APAC) to help app marketers architect strategies to address their audience, increase engagement and make their apps indispensable.

The report also breaks new ground through a partnership with mobile engagement platform Leanplum, providing an analysis of retention data (average session length, amount of time since the last app activation and percentage of active users) and showing the impact of communication channels (push notifications and email) on retention metrics.

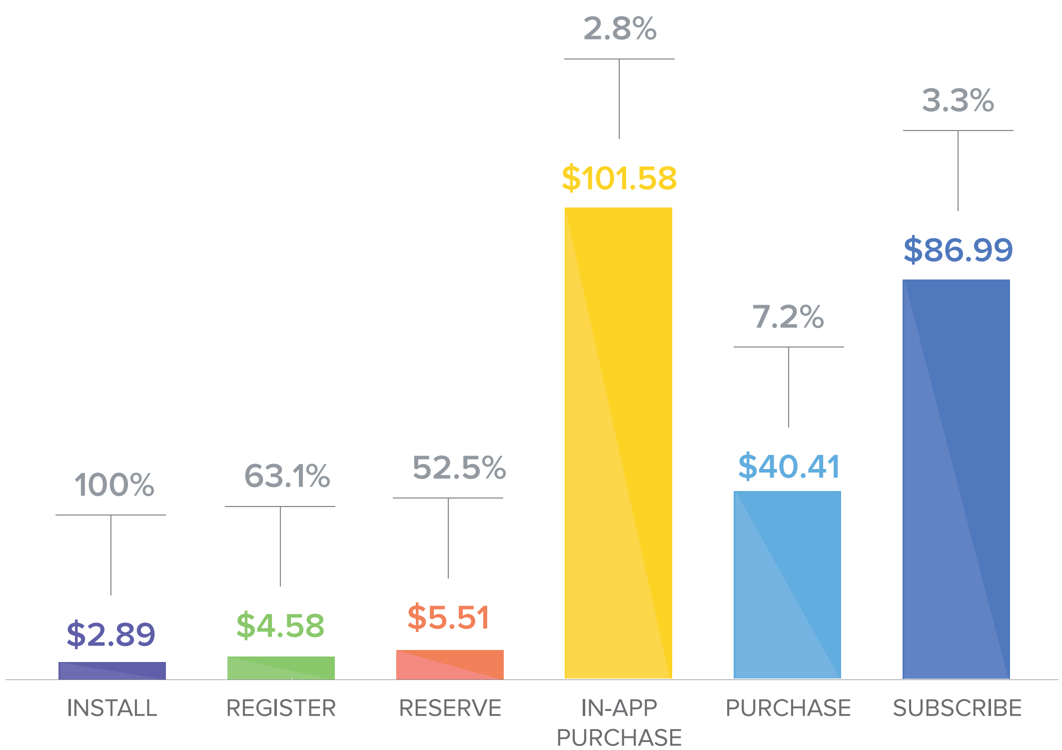
The burgeoning global App Economy has produced more opportunities than ever to interact with users and influence their actions. Use the data and insights contained in this report to turn every session into an opportunity to pinpoint the approaches and contexts that will allow you to drive usage, boost loyalty and ultimately increase revenues.

Mobile Engagement Benchmarks

The Mobile App Engagement Index benchmarks the average cost to acquire a new user from a paid app install campaign who engages in a post-install event for the first time.

We examine key engagement events across the funnel (App Installs, Registrations, Reservations, In-App Purchases, Purchases and Subscriptions), providing insights that will allow you to plan and prioritize tactics in a broader strategy to drive consumer connection and conversion.

The double-digit decline in CPAs compared to last year at the top of the funnel tells two stories. It could be that app users are eager and receptive to efforts that encourage app interaction. Or it could be read as a welcome confirmation that marketers have become more effective in architecting campaigns and strategies to convince consumers to take the plunge. Either way, it's good news for app marketers.



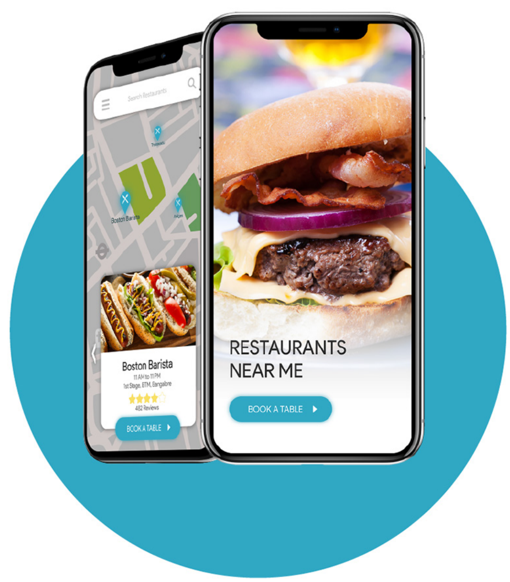
COST & ENGAGEMENT RATE PER ACTION

Map the costs and conversions to the marketing funnel (Awareness, Consideration and Purchase), and the picture is even more positive. At the top of the funnel (Awareness) the cost to acquire a user who installs an app ($2.89) has declined by one-third (29.9%) compared to 2017, showing it is cheaper and easier than ever to get users in the door. Significantly, double-digit declines in costs and similar increases in conversions suggest the elusive goal of all app marketers to drive deep-funnel engagement and lasting loyalty is within reach—and budget.

An example is the cost to acquire a user who completes a registration, thus gaining the valuable data marketers can harness to inspire and influence users at intent-rich moments in the journey. At just $4.58 the cost has decreased by 44.2% compared with 2017 data, while conversion rates have more than doubled, hitting a massive 63.1%.

Deeper in the funnel marketers have gone the distance to communicate their app value proposition clearly and convincingly—and the effort is paying dividends. For example, the cost to acquire a user who completes a purchase ($40.41) shows a significant decrease of 37.8%, compared with the previous year, while conversion rates show an impressive increase of 12.5%.

The cost to acquire a user who commits to an app subscription may be expensive at $86.99, but even that price tag has a bright side. At one level, the cost has declined by almost half (46.4%) compared to the previous year. At the other end of the spectrum, conversion rates have increased by 32% from 2.5% to 3.3%. Connect the dots, and overall app costs and conversion for this deep-funnel activity are not a steal, but the long-term benefits, in the form of loyal users and stable cash flow, are worth the investment.



Overall, the data bodes well for campaigns aimed at motivating and activating audiences deeper in the funnel. But there is one significant and unsettling exception: the cost to acquire a user that opens their wallet to make an in-app purchase. At $101.58 this cost comes in at a whopping 56.4% more than the previous year ($64.96). What's worse, conversion rates have dropped by nearly half (48.1%) to hit 2.8%.

But don't be too quick to point the finger at marketers. A review of the 2018 Gaming Apps Report suggests that this dynamic—higher costs and lower conversion rates—is the result of market conditions far beyond their control. On the supply side, an avalanche of gaming apps (nearly 900,000 games live across the app stores globally) fuels fierce competition for users and puts huge pressure on marketers to turn players into purchasers. On the demand side, users, no doubt inundated with advertising prompting them to make in-app purchases, may be showing signs of ad fatigue.

> “Rewarded video ad format helps publishers reduce their dependency on in-app purchases to monetize their audiences.”

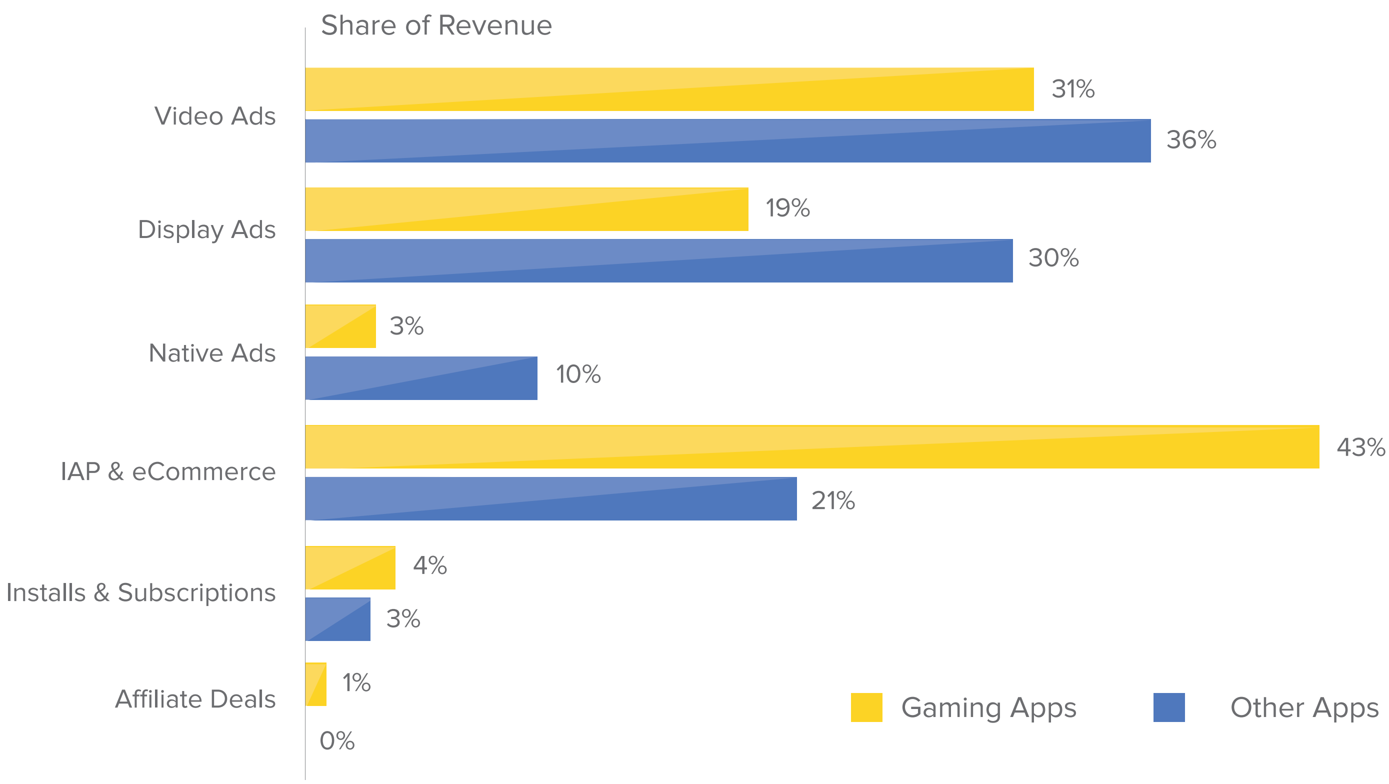
This, incidentally, also explains the rise of rewarded video, an ad format that Liftoff data shows wins on two counts. The ad format, which gives players the opportunity to watch an ad in exchange for a reward within the game, helps publishers reduce their dependency on in-app purchases to monetize their audiences. In addition, players gain additional benefits in the game without having to wait or pay.

Little wonder that Liftoff observes rewarded video is on the move, accounting for a significant share of ad spend. Connect the dots, and it makes sense to explore the merits of monetization models beyond the traditional F2P model that the vast majority of gaming apps rely on for their livelihood. But don't wait too long. Tough competition for users who will

> Efforts should focus on growing the momentum (and revenue) through campaigns and creatives that drive usage, build trust and deepen loyalty.

complete an in-app purchase—and the hefty price tag attached—will no doubt increase interest in rewarded video as a top performing (and engaging) ad format.

Overall, a review of costs and conversions shows marketers have come a long way in a short time. In most cases, marketers are on track to reach and engage their audience, triggering deep-funnel activities that pay dividends. Now efforts should focus on growing the momentum (and revenue) through campaigns and creatives that drive usage, build trust and deepen loyalty.



DISTRIBUTION OF WORLDWIDE MOBILE APPLICATION REVENUES IN 2017, BY CHANNEL
Source: Statista

Mobile Indexes

Average Monthly Cost per Install

In a world where the smartphone is regarded by some user segments as an appendage and apps are increasingly *the* way people manage their lives, access content, conduct commerce and even pray, it's clear that campaigns can reach and engage audiences all the time.

The outcome: Apps are always-on and always accessible, and users are reaching for them according to their own timetable. However, "always-on" is not a basis for a successful and sustainable marketing strategy. The Index overlays acquisition costs with conversion rates to help marketers find exciting periods of opportunity throughout the year when marketers can get value for money.

CPIs throughout the year show 32% difference from the lowest ($2.38 in August) and highest ($3.14 in April). This is a benchmark, and the message is clear: If you are paying more, then optimize your campaign to identify–and rectify–what's not working. If you are paying less, then congratulate yourself on your high performance and feel inspired to aim higher in the year ahead.

AVERAGE MONTHLY COST PER INSTALL

> The peak in April could also be tied to the strong interest in finance apps to assist with preparation for doing income tax returns.

It's difficult to pinpoint precise reasons for the peaks and troughs in CPIs throughout the year, and it's a task outside the scope of the Index. However, map the data to defined patterns in consumer behavior, and a clear and compelling picture emerges. Low CPIs correlate with user activities during rather uneventful periods of the year. An example is October. It follows the September rush to get back up to speed after summer trips and vacations—a month when users are buying into apps to help them ramp up their routine. Predictably, CPIs rise in the run-up to the holidays—a period that sees a flurry of acquisition activity and a flood of new apps. Heated competition for users—many of whom received new devices as holiday gifts—cools slightly in January.

From February, interest in apps is on the rise again and CPIs follow suit. As the Index tracks several categories of apps, each with their own timetable, it's difficult to offer one single explanation for the growth trajectory. It could be the urge to research and purchase gifts for Valentine's Day, a holiday that isn't just observed in the West. It's also become staggeringly popular in countries across APAC, including South Korea where boyfriends spend tons of money and, more recently, in Thailand, where people celebrate the "wan valentine" like there is no tomorrow. The peak in April could also be tied to the strong interest in finance apps to assist with preparation for doing income tax returns.

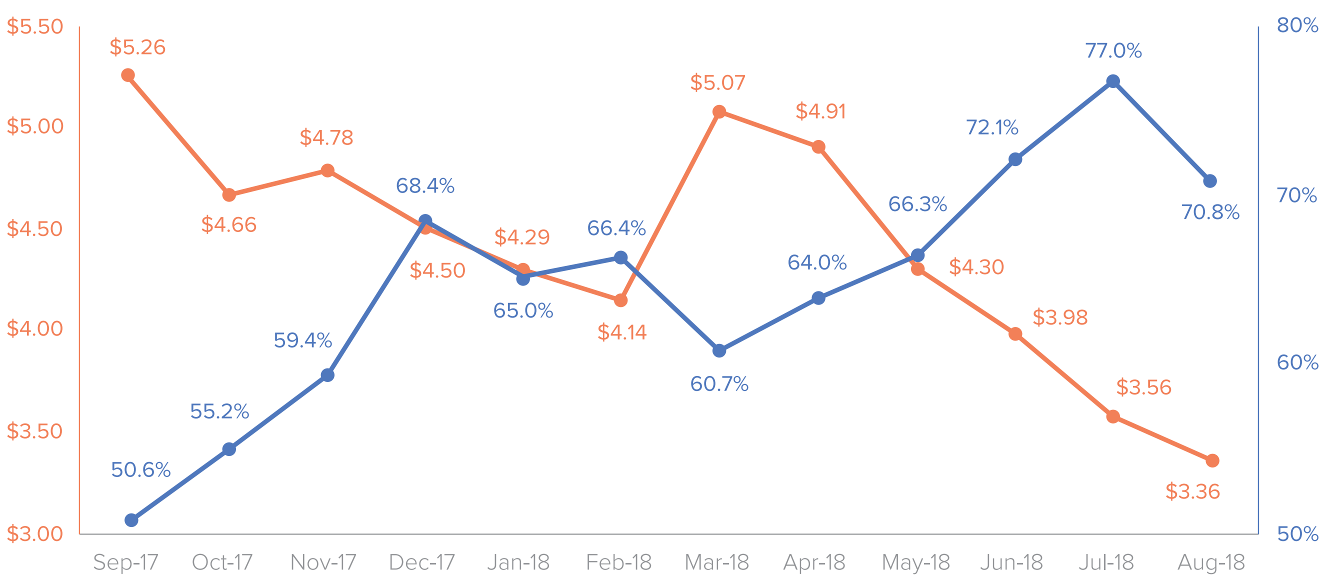
The dip in CPIs in the summer months that follow is opposite to the trend observed in the previous year. It could be linked to the mix of apps in the Index, or it could be that marketers assume (however falsely) that downtime during the hazy, lazy days of summer means users aren't considering apps or purchases. Lack of competition for users means low CPIs—but it also means a missed opportunity as campaigns are sure to reach users less stressed and more willing to spend time or money—or both—in your app.

Register: Monthly Costs & Engagement Rates

The Registration Index shows the relationship between the cost to acquire a user who creates an account in the app and the conversion rate (the percentage of users who install, then register).

Costs and conversions highlighted in the Index indicate hurdles that blocked Registration, an important mid-funnel engagement event when users volunteer the data marketers can harness to deepen the relationship through engagement and re-engagement campaigns, are history. Install-to-registration rates don't dip below 50%. Last year they didn't even reach 50%. What a difference a year makes.

Fortunately, it's a similar story on the cost side of the equation as well. At $5.26 the highest cost to acquire a user who completes a registration is almost half what it was the previous year ($9.75). The lowest cost of $3.36 in August is an opportunity ripe for the taking—particularly as audiences are listening. At 70.8% the install-to-registration rate in August is the third highest of the year. In fact, low CPIs and impressive conversion rates from May

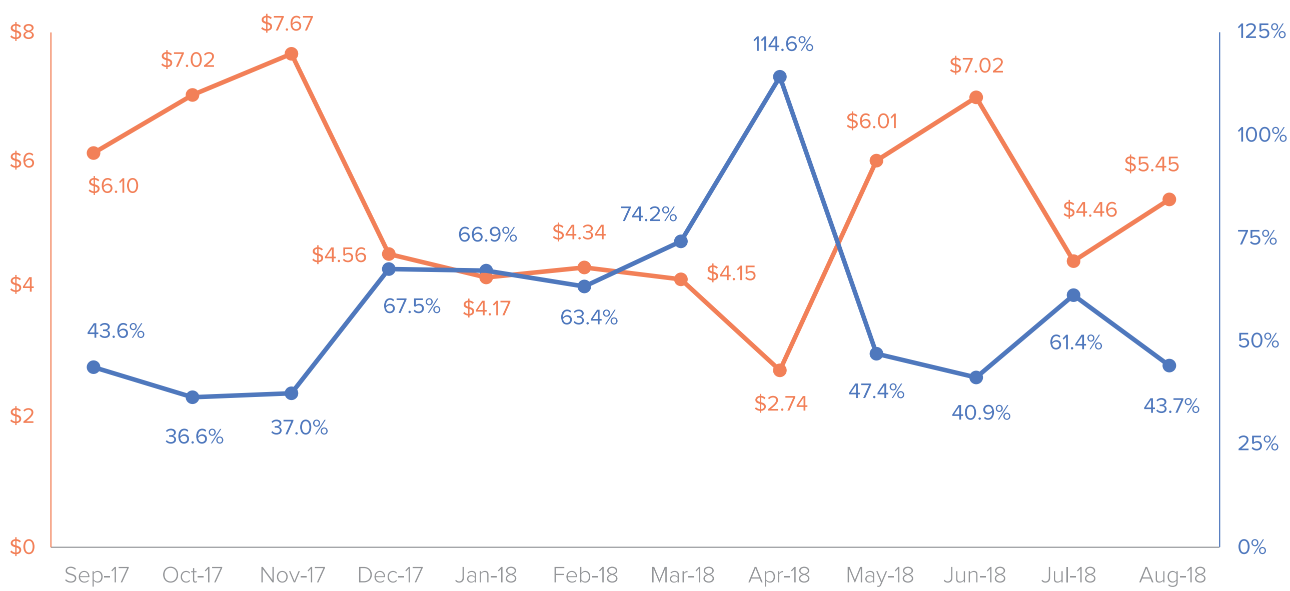


REGISTER: MONTHLY COSTS & ENGAGEMENT RATES through August signal a period when marketers should wake up and take notice.

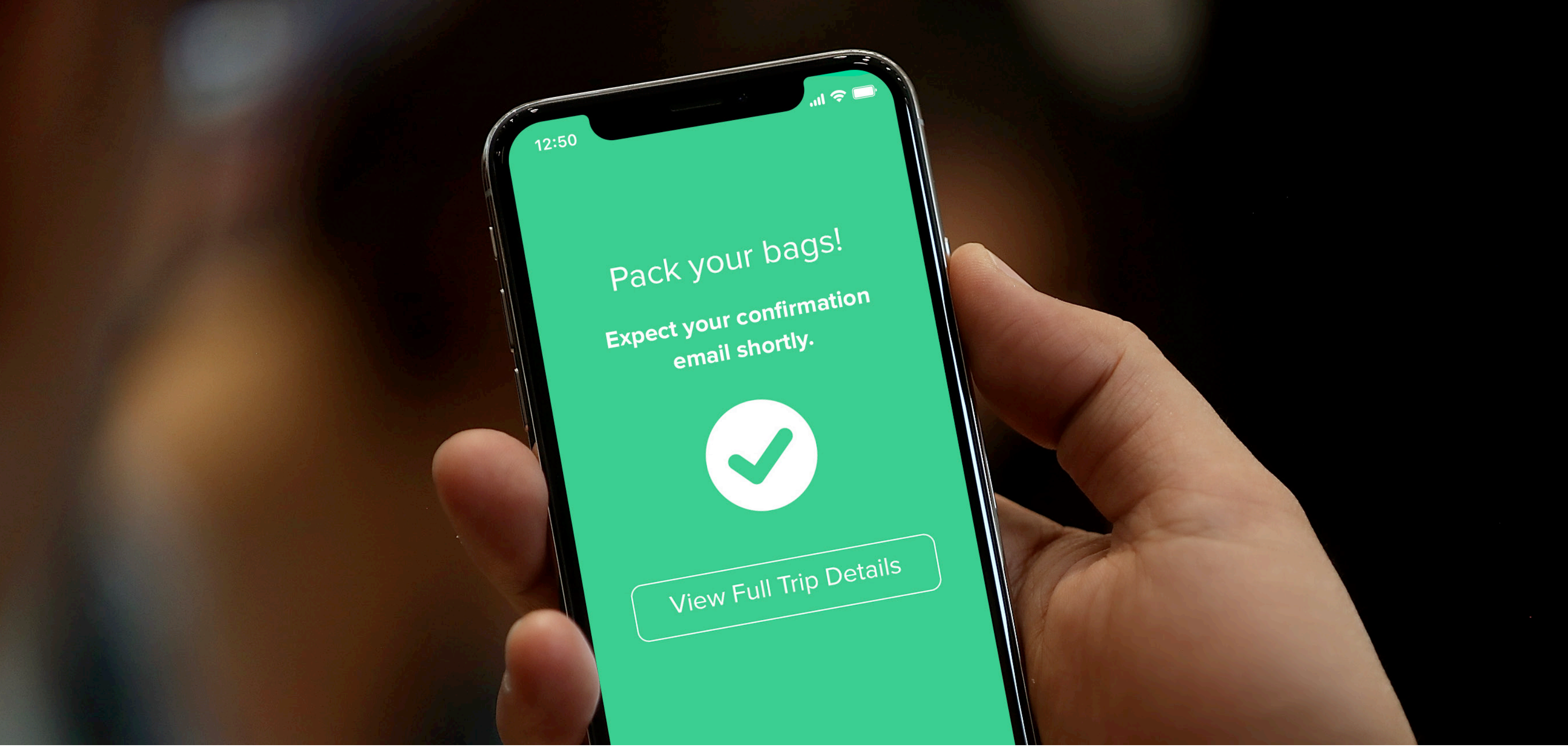
After all, Registration is an engagement event that is more relevant to apps in categories such as dating, travel and finance—app categories that have a lot to offer during summer months. It's a period when many users are no doubt looking for a special someone to join them on trips and holidays. For that matter, many users are surely planning last-minute holidays—and need travel apps and finance apps to help them make the right (and affordable) choice. Users on "staycations" are no exception. Shopping never sleeps, and neither does money, so summer downtime is still buzzing with activity marketers can influence with the right campaigns–reinforced with the help of effective notifications and communications.

Reserve: Monthly Costs & Engagement Rates

The Reservation Index measures the cost to acquire a user who then continues to make a reservation – for a flight, dinner, hotel or car sharing service–using the app.



RESERVE: MONTHLY COSTS & ENGAGEMENT RATES



Once again, the Index shows barriers to this engagement event are down–and so are CPIs. Compared to last year, when the price tag for a user who completed a booking ranged between roughly $27 and $37, CPIs for users who complete this activity are a steal. But don't celebrate just yet. Modest install-to-reserve rates–particularly in months when CPIs are hitting their highest–represents an unsettling disconnect.

Is marketing off the mark? Or are users simply not interested in making bookings from September through December? The data can't say for sure. However, the lack of alignment suggests marketers need to rethink and re-evaluate their campaign timetable. Planning a trip–or just a night out–using a mobile app is now a mainstream activity. Now it's up to marketers to double-down on efforts to ensure their campaigns motivate and activate audiences more frequently and, importantly, during intent-rich moments when they are in planning mode.

Low costs and impressive conversion rates from December through April show marketers know how to do this (and do it successfully). Now to tackle months at the two extremes, when the mismatch is costing marketers money and opportunity.

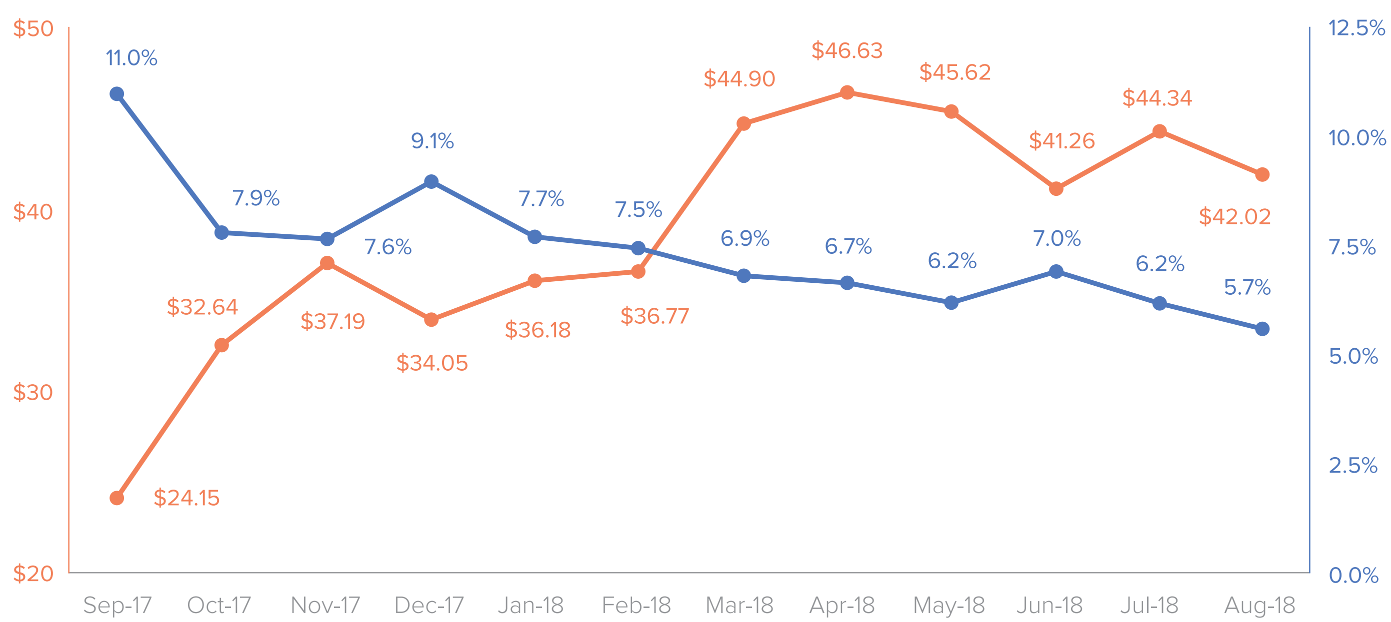
Purchase: Monthly Costs & Engagement Rates

The Purchase Index measures the cost to acquire a user who completes a first purchase using the app.

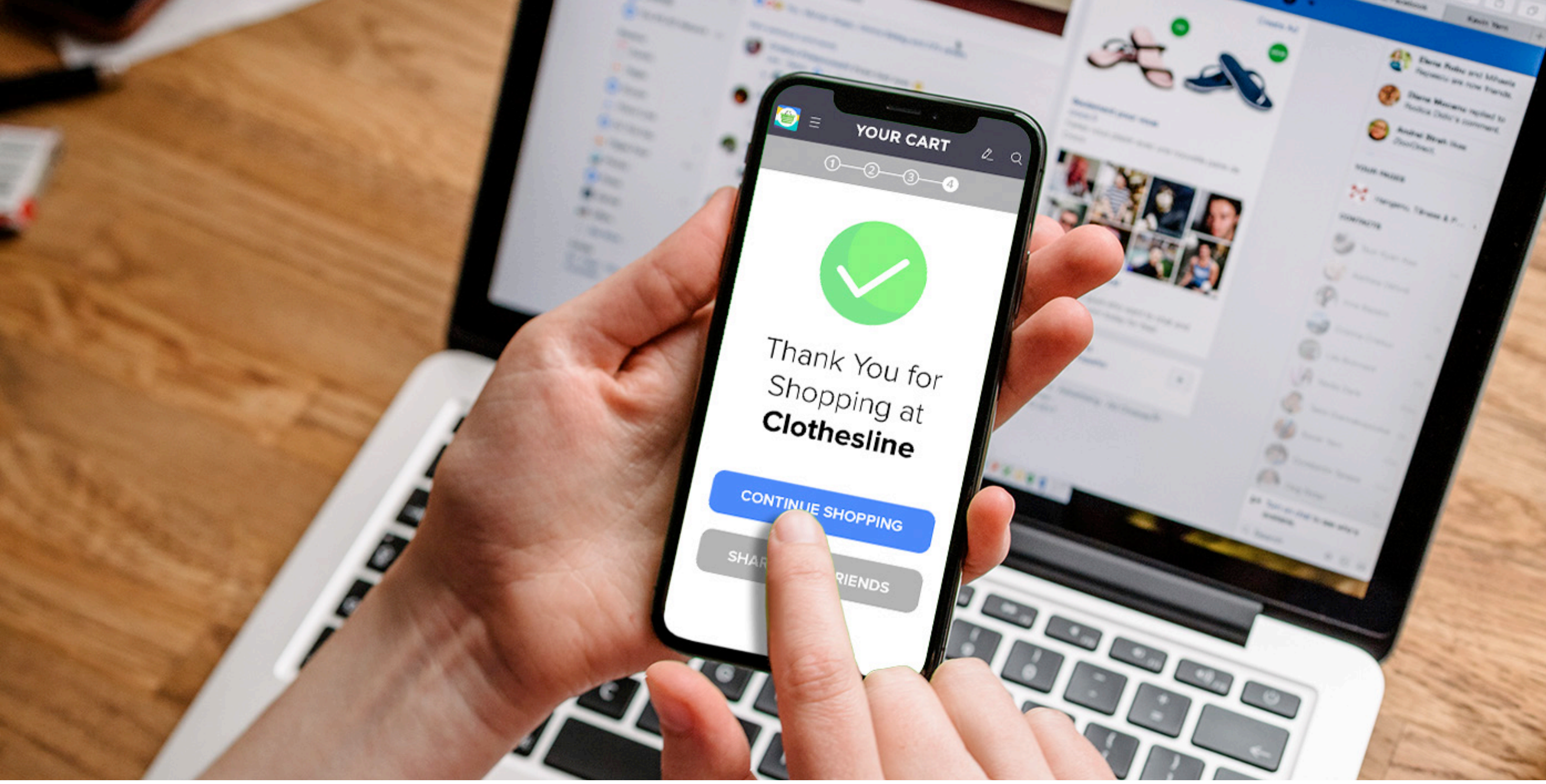
The good news: throughout the year costs of purchasing users–which range from a low of $24.15 to a high of $46.63– are significantly lower than they were the previous year when they fluctuated between $37.61 and $78.51. The bad news: conversions–though higher than they were in 2017–still show considerable room for improvement.

The pattern that emerges in March and continues through August, when costs and conversions are completely out of sync, raises the most questions.

Granted, the data doesn't tell us the dollar value for purchases. But even if it could shed light on this information, it is still overshadowed by a dynamic that suggests marketers are spending to reach audiences that aren't listening—and certainly not converting. Are tired or irrelevant creatives failing to excite shoppers? Are users choosing to ignore loud, hard-sell campaigns? Must marketers do more to shine in a space dominated by Amazon and Co.? So many questions—and so many queries outside the scope of the Index.



PURCHASE: MONTHLY COSTS & ENGAGEMENT RATES



On the flip-side, it appears that marketers have a handle on much of the year. Notably from September through February the cost to acquire a user who completes a purchase is low and conversion for this key engagement activity is robust. This, of course, begs the question: could marketers achieve even more with the help of optimized creatives and personalized push?

One thing is for sure, shopping is an activity that spans the entire year, as the [2018 Liftoff Shopping Apps report shows]. It distills research and findings from retail organizations to identify six shopping seasons, distinct periods when shoppers' interest and activity in making a purchase is in high gear. In APAC it's a shopping spree much of the year—albeit on a different timeline. China's Singles' Day (11 November) is a massive shopping day gaining traction in other countries such as Japan. Meanwhile, South Korea appears to have taken some inspiration from Black Friday, celebrating Korea Sale Feta, which runs from the end of September to the end of October every year.

Connect the dots, and the seasonal shopping calendar has evolved and expanded, opening up new opportunities for smart marketers to cash in on user interest and intent. Marketers have done better this year than last, and they should be confident that they have what it takes to make 2019 an even greater success.

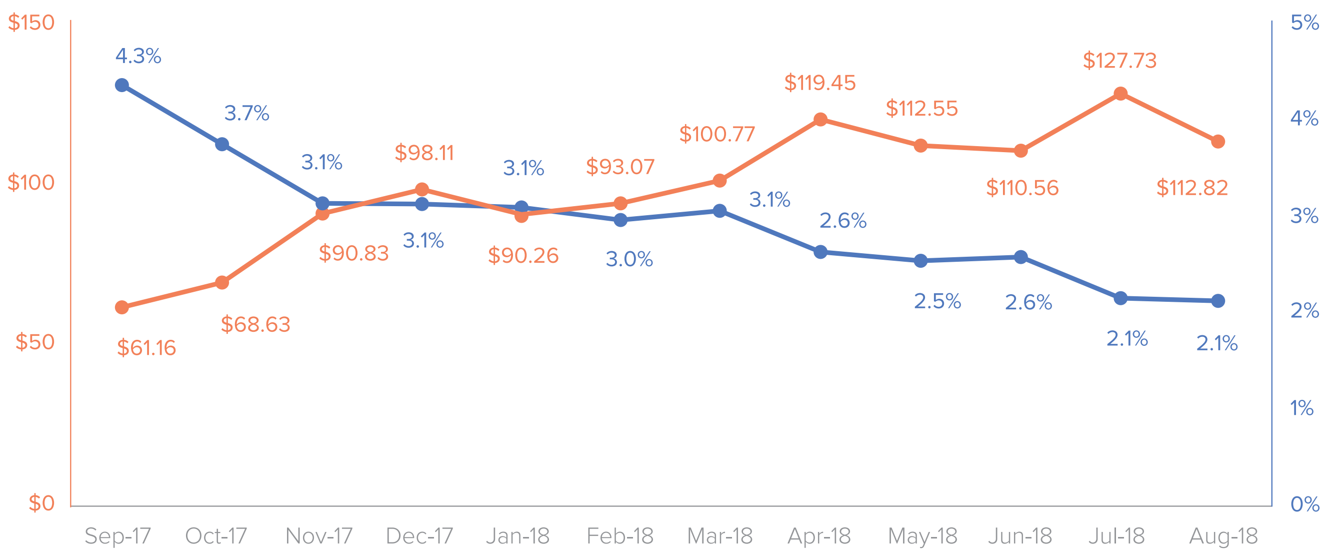
In-App Purchase: Monthly Costs & Engagement Rates

The In-App Purchase Index measures the cost to acquire a user who completes a first in-app purchase in an app, such as a mobile game, that monetizes by motivating users to pay a sum of money to gain access to some additional features that are otherwise locked.

For much of the year, it would appear that costs and conversions for this engagement activity are flat. This is what you would expect in a buyer's market–and that is exactly what the gaming space has become. On the supply side, we have an avalanche of apps. On the demand side, we have a sophisticated audience that will pay if–and only if–they genuinely appreciate the extra features and benefits.

Against this backdrop, it's quite possible that conversion rates are not increasing, because the value proposition offered by the app is not convincing. If that is the case, then marketers must literally up their game in both marketing and product because even the best campaign can't sell users on poor gameplay.

Whatever the reason for this development, the data also pinpoints some months when some extra effort would likely pay dividends. A prime example is September, a month marked by the highest engagement rate (4.3%)



IN-APP PURCHASE: MONTHLY COSTS & ENGAGEMENT RATES

> "You definitely want to strike while the iron is hot, take advantage of the months when the costs are low and engagement is high, but you also have to keep in mind, if you want to have a sustainable business you have to keep acquiring users throughout the other months, as painful as it might be. The trick is to keep enough meat on the bone to keep generating those users that come into your app."

Harry Bienenstock, Digital Marketing Manager at Playtika

at the lowest cost. It's a similar situation in October when engagement dips slightly to 3.7% and costs increase to $68.63. This dovetails with expert advice recently provided by Harry Bienenstock, Playtika Digital Marketing Manager specializing in user acquisition, the world's largest social casino gaming company, during a Liftoff webinar. "You definitely want to strike while the iron is hot, take advantage of the months when the costs are low and engagement is high," Harry explains. "But you also have to keep in mind, if you want to have a sustainable business you have to keep acquiring users throughout the other months, as painful as it might be." The trick, he adds, is to "keep enough meat on the bone to keep generating those users that come into your app."

It's an important lesson that explains why marketing during the holidays can be an uphill battle—and why marketers have no choice but to try harder. This dynamic is supported by Index data that shows costs and conversions, though aligned, are not stellar. After all, this is also the noisiest time of year when apps across all categories—not just games and apps that offer IAPs—are competing for audience attention and spend. What's worse, both are in short supply as users are also looking for gifts for others, not entertainment for themselves.

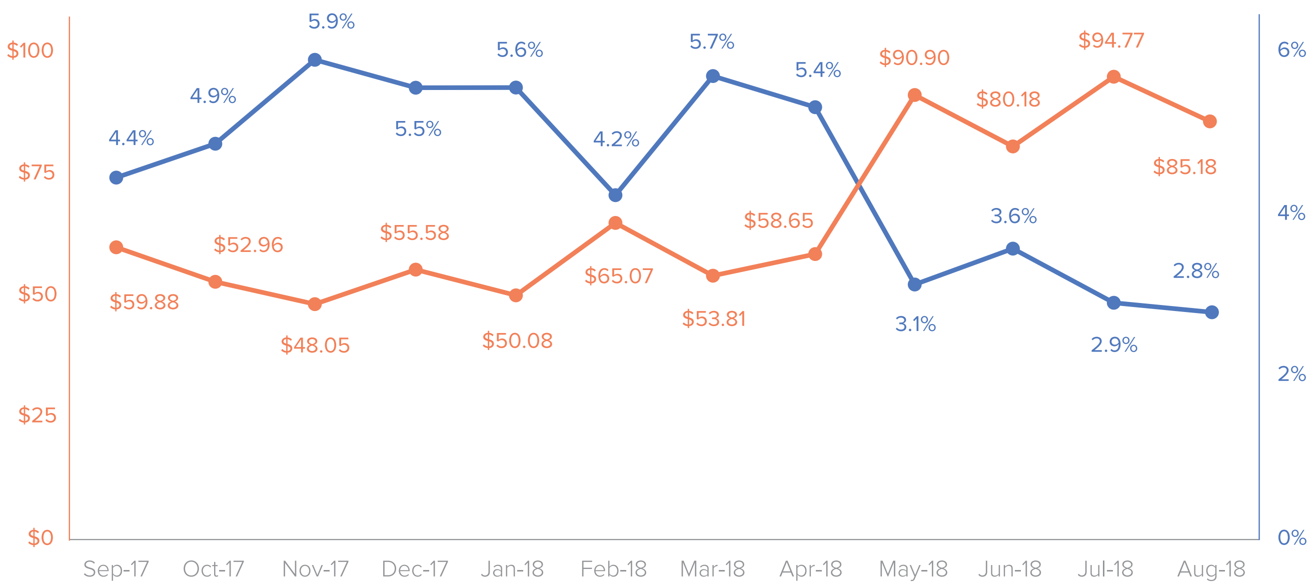
The alternative may be to focus more effort on getting more mileage during the summer months, when users may be looking for games to enhance the downtime could pay dividends. High costs indicate marketers are already spending to acquire users. But flat conversion rates (that dip from 2.5% in May to 2.1% in August) suggest marketers also need to do more than spend. Campaigns need a boost from ad creatives that inspire, not annoy, and the support of other touchpoints to make the sale.

Subscribe: Monthly Costs & Engagement Rates

Subscription apps offer value that users are willing to pay for, again and again. But predictable cash flow comes at a cost. This explains why the cost to acquire users who buy into a subscription isn't a bargain. However, we consider that cheap, when shifting from a low of $48.05 in November to a high of $94.77 in July.

However, a review of popular dating apps, a category of subscription apps analyzed in the Index, shows most charge between $30 and $60 per month. Do the math and a campaign that converts a user who came at a cost of $94.77 (and buys into an annual subscription of, say, $360.00) still leaves a tidy profit.

Install-to-conversion rates are fairly stable from September to April (in the 4-5% range), before declining to 3.1% in May. This would indicate that the decision to commit to a subscription app is a move users make during months when planning and preparation is high on the agenda. An example is September after summer holidays



SUBSCRIBE: MONTHLY COSTS & ENGAGEMENT RATES

when users are getting back into a routine and reach to utility apps or are looking for a partner who's a "keeper" after summer romances have run their course. Either way, costs and conversions are in rare balance throughout the fall and into early spring, suggesting campaigns launched during this period will deliver positive results. Granted there is a notable dip in engagement rates in February, but this could be linked to the massive number of apps targeting Valentine's Day, a holiday where dating apps have to compete with shopping apps, for example, for a share of mind and wallet.

The Index reveals several months when the window of opportunity is wide open. But why limit your efforts to a select number of months in the year? The 2017 Liftoff Subscriptions App Report shows interest in and use of these apps is inextricably intertwined with internal factors like consumer "need-state," not linked to external events like seasonal holiday shopping sprees. Thus, campaigns power by effective creatives and appropriate messaging can reach, engage and influence user behavior all year long.

Engagement by Gender

Male vs. Female

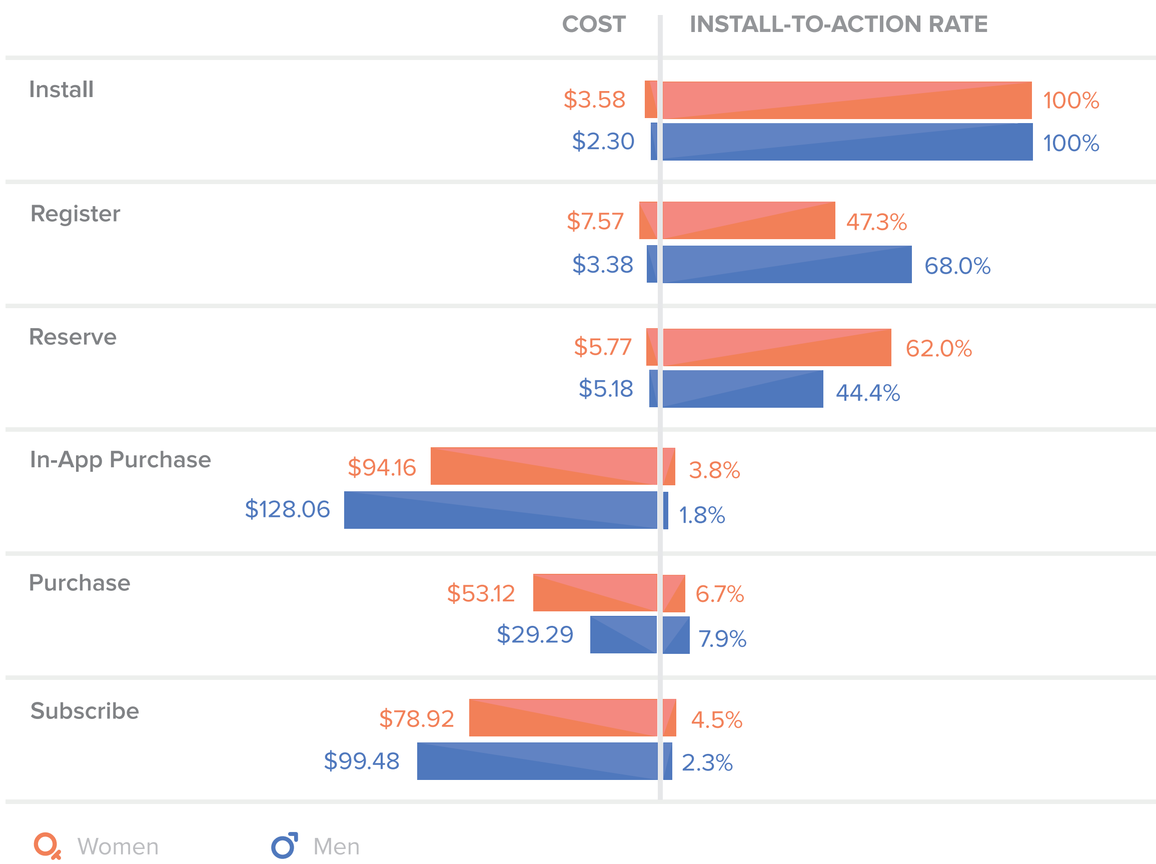
An examination of acquisition costs and engagement rates across the funnel reveals striking differences and exciting opportunities.

Initially, females are only marginally more expensive than males to acquire. But an examination of costs and conversions deeper in the funnel shows females are a premium user segment that comes at a price. It's a trade-off that depends on your app category and post-install goals. In many cases, females shine as a segment of power users and super shoppers that need little coaxing to convert.

An example is Purchase, where the cost to acquire a female who completes a purchase ($53.12) is a whopping 81.4% more than the cost to acquire a male ($29.29). At 6.7% the conversion rate for females may trail males (7.9%) by 1.2%, but research also shows females are more advanced in making purchases with their apps and often manage a sizeable budget (families and household budgets or significant personal wealth—or both). While the data doesn't shed light on the value of purchases made by either gender, it's a safe bet that females—though not a bargain to acquire—are primed to make a purchase.

It's a similar situation with In-App Purchase. Once again, the cost to acquire a female ($94.16) is pricey, but the conversion rate of 3.8% is more than double their male counterparts (1.8%). Add to the equation a key finding in the last Liftoff Mobile Gaming Apps Report that females are 79% more likely to complete an in-app purchase after installing a mobile game, and it's clear that catering to females can clinch the sale.

Reserve, where the cost to acquire a female who completes a booking at $5.77 is 11.4% more than males ($5.18), is a post-install event where females present marketers with another easy win. At 62%, females engage at a rate that is 39.6% higher than males (44.4%). But the real news is the shift from last year's Mobile App Engagement Index, which found females were costlier to acquire and less engaged overall. This could be linked to the mix of apps included in the sample, or it could be impacted by the ability of app marketers to target females effectively and successfully at this stage of the journey. The data doesn't say for sure.



GENDER: COSTS & ENGAGEMENT RATES

However, impressive conversion rates for females are a blessing and a curse. Granted, marketers can plan and execute campaigns with a high degree of certainty that they will reach their targets. But it's also a given that competition for the female demographic—across all app categories—is bound to get tough in the year ahead.

Marketers are faced with a choice. They can develop more targeted approaches to acquire and engage females. Or they can do more to interact with males at key points in the funnel where prices are low, and the propensity to engage in deep-funnel activities is high. A prime example is Register, a critical middle-funnel stage where a little nudge could go a long way. At $3.38 (compared to the $7.57 price tag for females) males are a bargain. Even better, conversion rates for males (68%) are an impressive 43.8% higher than for females (47.3%).

Connect the dots in the data, and the comparatively low cost to acquire males is overshadowed in the vast majority of cases by the extraordinarily high engagement rates of females. If we accept that competition for females is likely to increase in the year ahead, then a strategy that focuses on engaging females, though clearly worth it, may be short-sighted. Instead, marketers should consider turning their attention to males, building on the interaction and data males provide at key stages (such as Register) to drive deep-funnel conversions and—ultimately—clinch the sale.

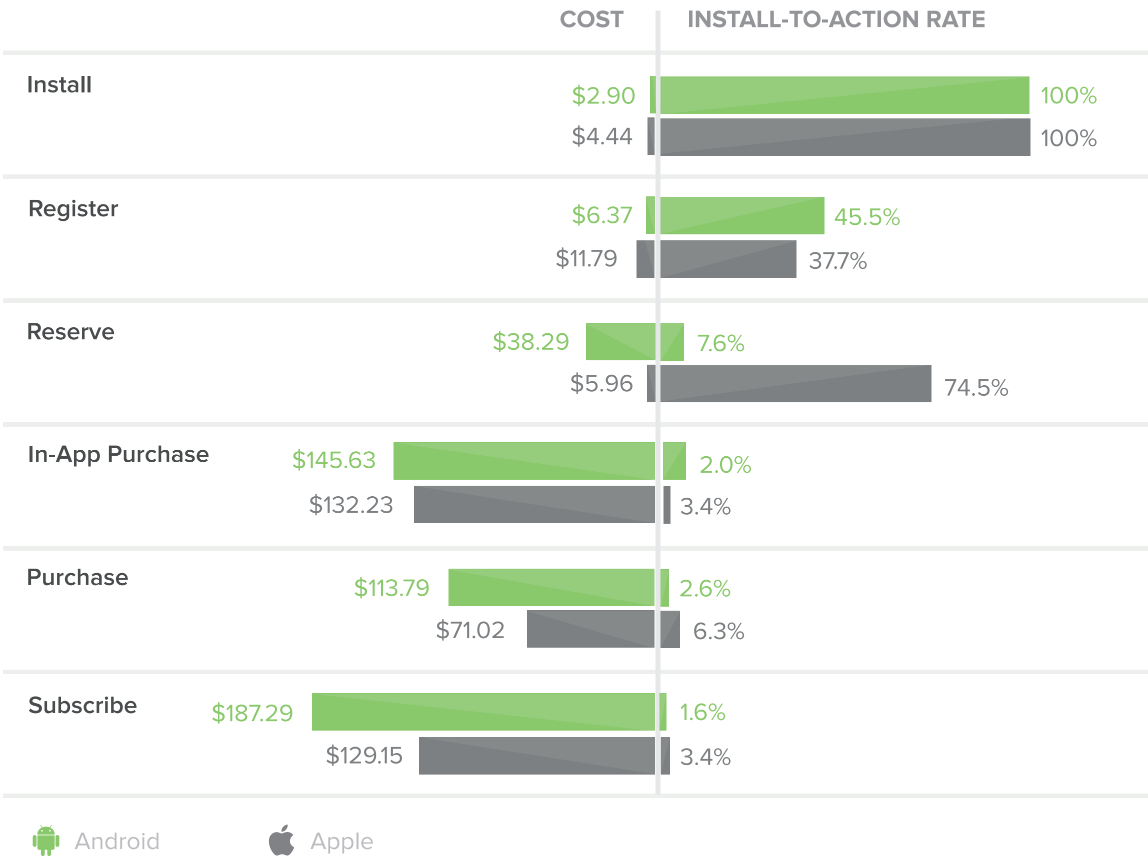
The choice is yours. Whether you decide to encourage females to do and spend more on their apps or shift focus on developing better-targeted campaigns and creatives to inspire male users, use data to determine your next move.

Engagement by Platform

iOS vs. Android

Platform Post-Install Engagement Rates by Action

Impressive engagement rates suggest iOS users offer better value for money than their Android counterparts. While Android users may not be a steal, it may pay for marketers to do more to drive deep-funnel actions. Across the post-install engagement activity tracked in the Index, iOS users offer the best of both worlds. It's the segment that tends to engage more—and, in several cases, at a lower cost. An example is Subscribe where, at $129.15, iOS users are 45% less expensive to acquire than Android ($187.29) users. But the main attraction is the install-to-subscribe rate, which at 3.4% is more than double the rate for Android users. Another example is Purchase, where at $113.79 iOS users cost 45% more than their Android counterparts ($71.02). It's a post-install activity where iOS users aren't a bargain. However, the iOS install-to purchase rate of 6.3%—more than double the rate for Android (2.5%)—is a compelling reason to pursue them with campaigns and efforts to convince and convert.



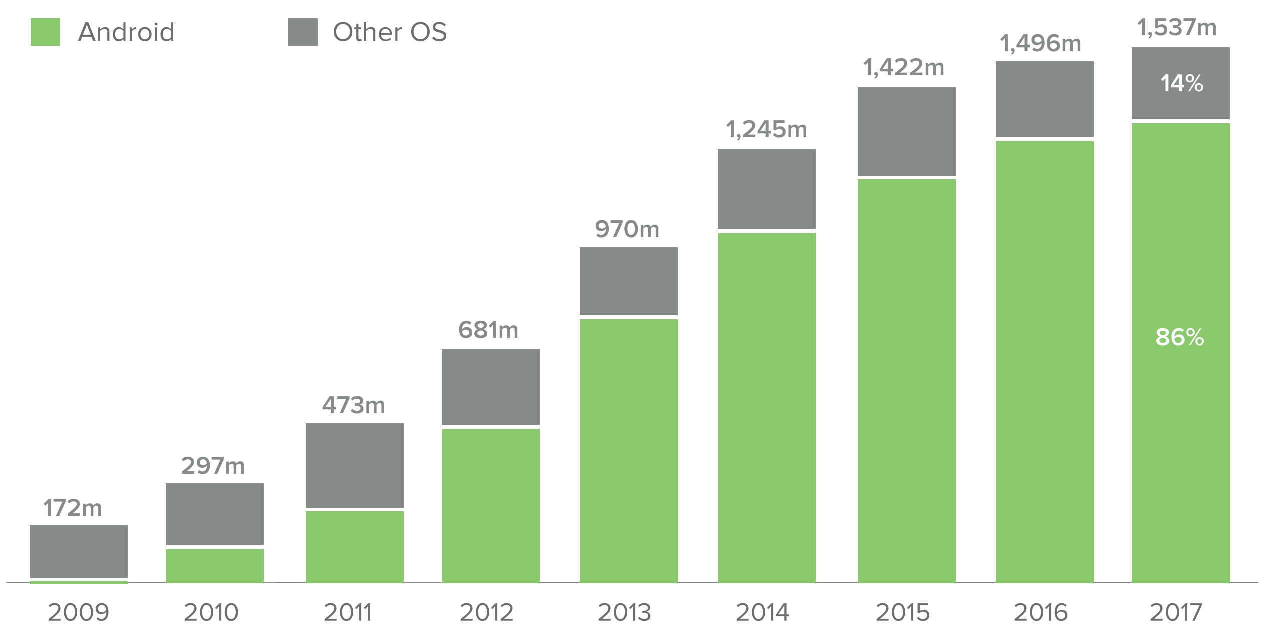
PLATFORM: COSTS & ENGAGEMENT RATES

Of course, marketers should factor another important variable—namely, the dollar amount of the transaction—into the equation. While this data is outside the scope of this Index, independent research indicates the perception that iOS users are the "Big Spenders" of the app ecosystem is much more than a mere stereotype. It's a scientific observation supported by fact.

Digital marketing scientists at Wolfgang Digital analyzed a dataset of 31 million sessions unearthing "astonishing results." On average, Android users spend $11.54 per transaction. iPhone users, on the other hand, spend a whopping $32.94. This is not to say that iOS users, as a rule, spend almost three times as much as Android users. But it is a significant data point that marketers would do well to consider as they develop strategies to get the most mileage out of their engagement campaigns.

A closer examination of Android activity (and cost) highlights areas of opportunity and instances when marketers might benefit from a sharper focus on this user segment and efforts to convert them. A prime example is Register. On the cost side, Android users are a steal at $6.37. Couple that with an impressive install-to-register rate of 45.5% (20.9% more than iOS), and it's clear app marketers have earned the attention (even trust) of Android users; users who are willing to interact with the app and input essential data that smart app marketers can use to engage and re-engage these users to drive deeper funnel conversions.

If you're looking for big wins, it's also important to consider the bigger picture and the wider global trend to Android. New numbers from market research firm IDC predict buoyant growth and significant benefits for marketers that target the platform. According to IDC's Worldwide Quarterly Mobile Phone Tracker 2018, Android mobile devices are poised to take around 85% share of the global market in 2018 as volumes are expected to grow at a five-year Compound Annual Growth Rate (CAGR) of 2.4%, with shipments approaching 1.41 billion in 2022. In contrast, Apple is expected to grow by 2.1% in 2018—which means iPhones would grow at a five-year CAGR of 2%, reaching volumes of 238.5 million by 2022.



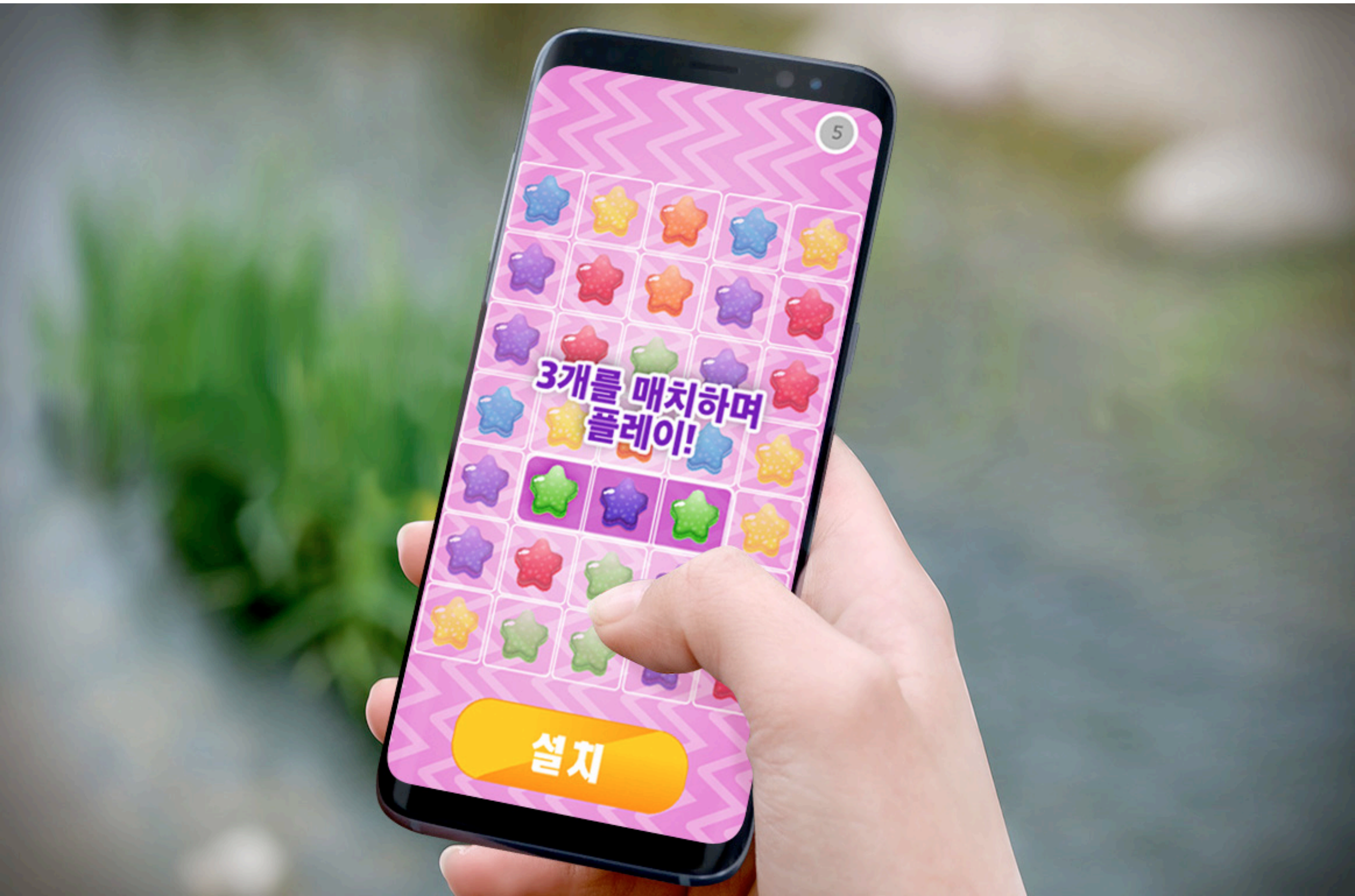
ESTIMATED WORLDWIDE SMARTPHONE SALES BY OPERATING SYSTEM (IN MILLION UNITS)

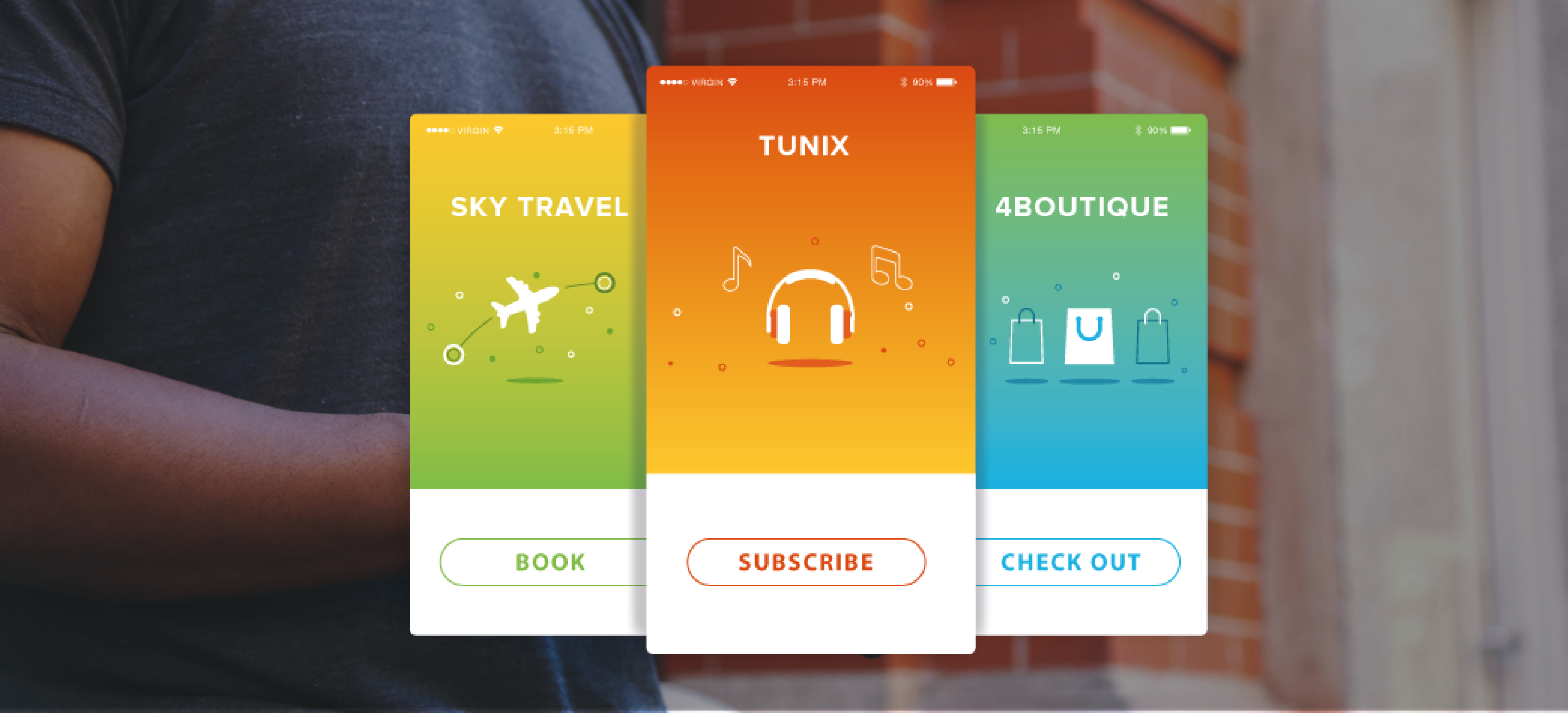
Source: Statista

Gartner data is even more bullish, noting that Apple's performance was flat for much of 2018, in part due to "minimal incremental value in Apple's current-generation flagship iPhones." This, Gartner adds, allowed Android to further extend its lead over iOS, from 86% in 2017 to over 88% as of August 2018.

Should marketers target heavy spenders among iOS users or should they cater to Android users, whose numbers are continuing to grow from strength to strength? The decision, as always, will depend on your app category, your target audience and, above all, your grasp of data to direct your marketing efforts. Keep in mind that targeting iOS users in regions where Android rules may be a great way to burn money, not make it. Prioritize your campaign targets and tactics based on the app you offer and the audience you want to engage.

"Keep in mind that targeting iOS users in regions where Android rules may be a great way to burn money, not make it."





Engagement by App Category

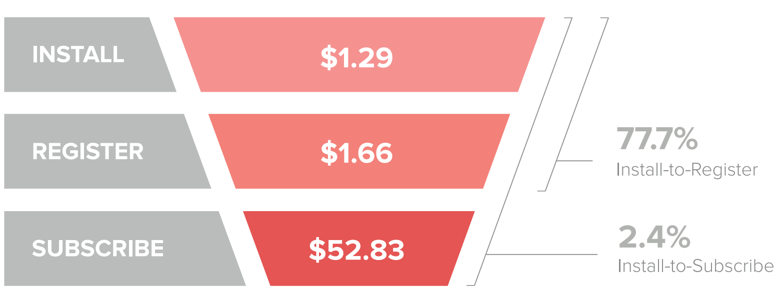
Mobile apps have created new paradigms and new opportunities for marketers to engage with users. The best time to reach users is all the time–provided advertising fits the fragmented moments they spend on their apps.

Whether you call them 'micro-leisure' moments or micro-moments, the fact is they can happen at any time. This brings a boost to apps that are front and center with advertising that is targeted to satisfy the user's urge to learn, do, find, or buy something at that moment. And this opens doors for new marketing and campaign approaches for the wide range of apps we reach to at every step of the journey.

The Index draws from data on costs and conversions of post-install events throughout the funnel (App Installs, Registrations, Reservations, In-App Purchases, Purchases and Subscriptions) across leading app categories (Dating, Finance, Gaming, Shopping, Travel and Utilities). A breakdown of data by gender helps marketers tailor their campaigns to suit specific user segments and craft creatives sure to resonate with their target audience.

Dating App Engagement

An explosion of dating apps is driving big revenues around the world, but it's also fueling increased competition for users. Fortunately, it's not all an uphill battle. A comparison with 2017 data reveals ideal conditions for marketers to drive deep-funnel engagement activities.



DATING APPS: COSTS & ENGAGEMENT RATES

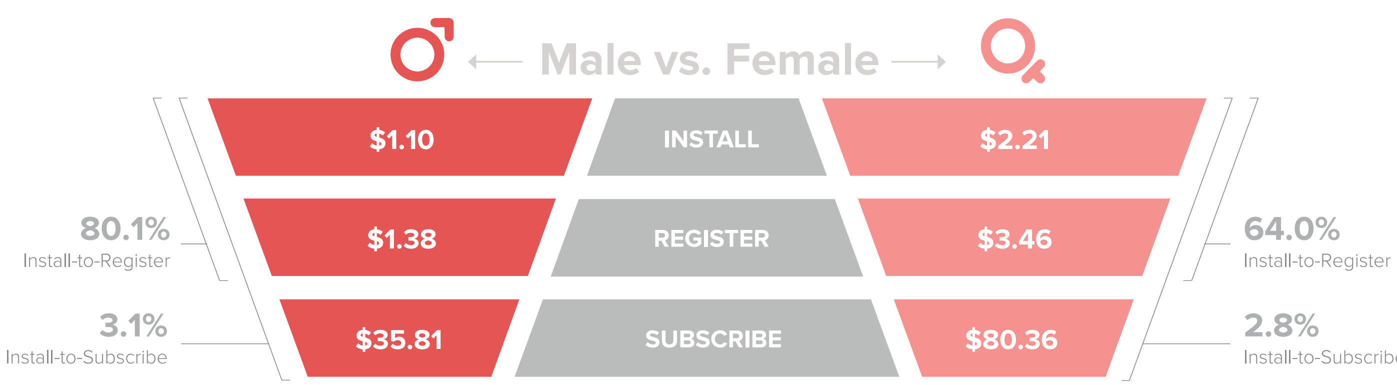
Overall, a significant decline in install costs ($1.29 in 2018 compared with $2.54 in 2017) and a massive increase in the install-to-register conversion rates (77.7% in 2018 compared to 43.0% in 2017) couple to signify

> Keep in mind that targeting iOS users in regions where Android rules may be a great way to burn money, not make it.

a positive trend. It's performance that should inspire marketers to reach higher and go deeper in the funnel—because they can.

The opportunity: Males appear to be the bargain, coming in at costs across the funnel that are a fraction of females. Males are also more engaged at key stages - Register and Subscribe, suggesting that this segment understands and appreciates the value proposition offered by dating apps. Marketers would do well to wield the data they have gathered and the trust they have garnered through mid-funnel interactions to align engagement (and re-engagement) campaigns with deep-funnel targets.

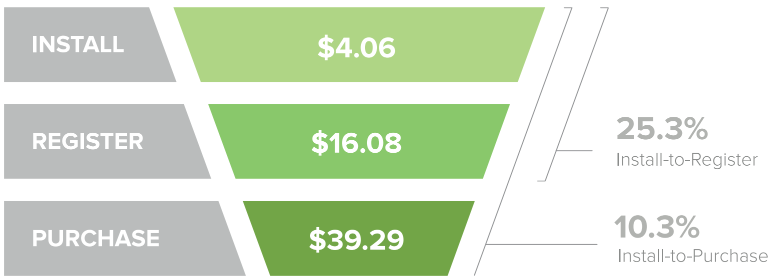
The challenge: Driving the all-important recurring subscription remains the big hurdle marketers face in their efforts to court—and convert—male and female dating app users alike. High costs ($35.81 for males and $80.36 for females) coupled with lackluster conversion rates suggest marketers need to up their game. Granted, the cost of acquiring a user who subscribes to a dating app may be at the high end of the scale, but so are the dividends. (A review of popular dating apps shows many charge anywhere between $30 and $60 per month.) The best growth hack may be creatives and campaigns that move audiences to take the plunge.



DATING APPS: COSTS & ENGAGEMENT RATES BY GENDER

Finance App Engagement

Users are listening, marketers are delivering—and this is reflected in moderate install costs across the funnel.



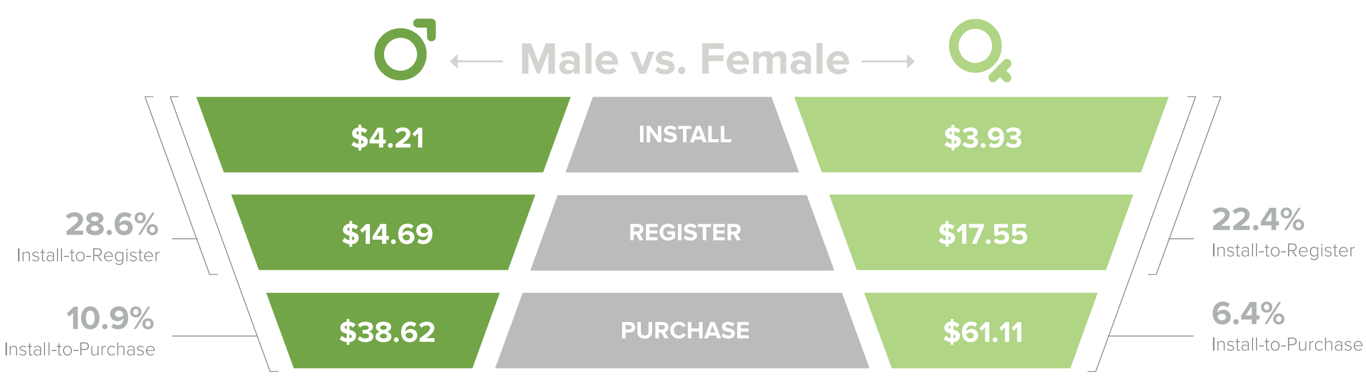
FINANCE APPS: COSTS & ENGAGEMENT RATES

One-quarter (25.3%) of users are completing a registration, marking an important post-install event and providing data marketers can harness in campaigns to engage and re-engage this valuable audience.

Overall, modest engagement rates deeper in the funnel and significant differences between males and females suggest marketers may be missing an opportunity to close the gap. Campaigns that build trust and loyalty (through creatives that inspire males and empower females) would encourage both groups to do more and engage more with their apps.

The opportunity: At $4.21 males are pricey to acquire (7.13% more than females at $3.93), but you get what you pay for—and in this case, the reward is an install-to-purchase rate for males of 10.9%–a whopping 70.3% more than females.

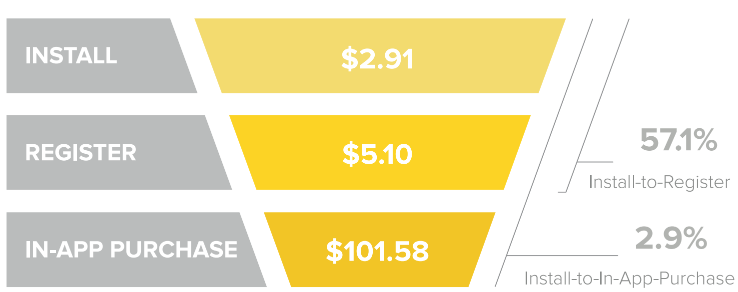
The challenge: At $3.93 females are a bargain, but they lose interest (and increase in cost) deeper in the funnel. Granted, females may tread more carefully than males when it comes to money matters. But research shows this gender gap is closing—fast. Marketers would do well to develop fresh campaigns that activate females, helping them feel confident about taking control of their finances.



FINANCE APPS: COSTS & ENGAGEMENT RATES BY GENDER

Gaming App Engagement

Gaming apps, the app category that represents roughly 15% of the total apps live in the app stores today, is a crowded and competitive space where the ability to acquire and engage audiences that are highly valuable can make or break a business. But a steep drop in conversion rates suggests audiences are showing signs of ad fatigue.



GAMING APPS: COSTS & ENGAGEMENT RATES

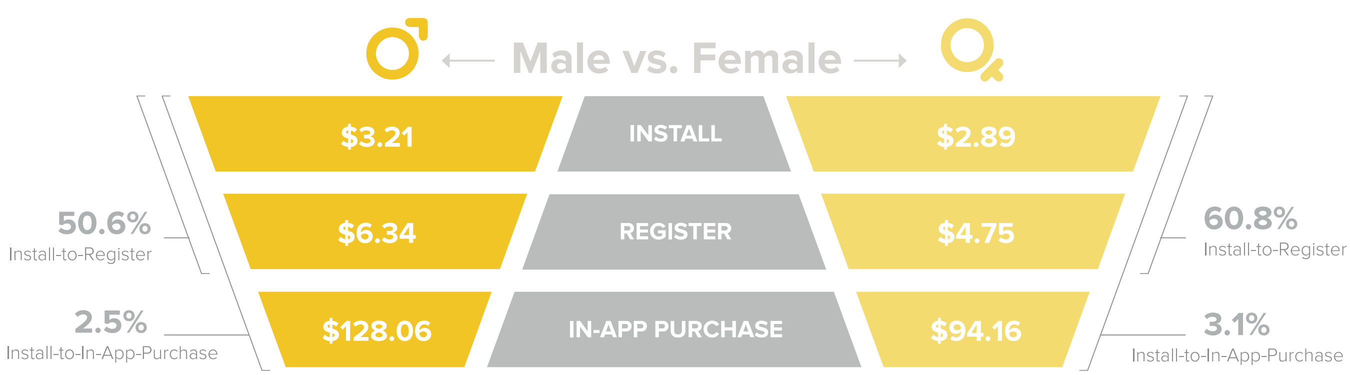
Overall, acquisition costs are down and engagement rates are impressive—until it comes to making a sale. It's at this critical stage that only 2.9% convert (compared to 5% in 2017) at a cost of $101.58 (compared to $76.40 in 2017).

> Marketers should review their campaign assets and approaches to make sure they have what it takes to attract, acquire and convert more females.

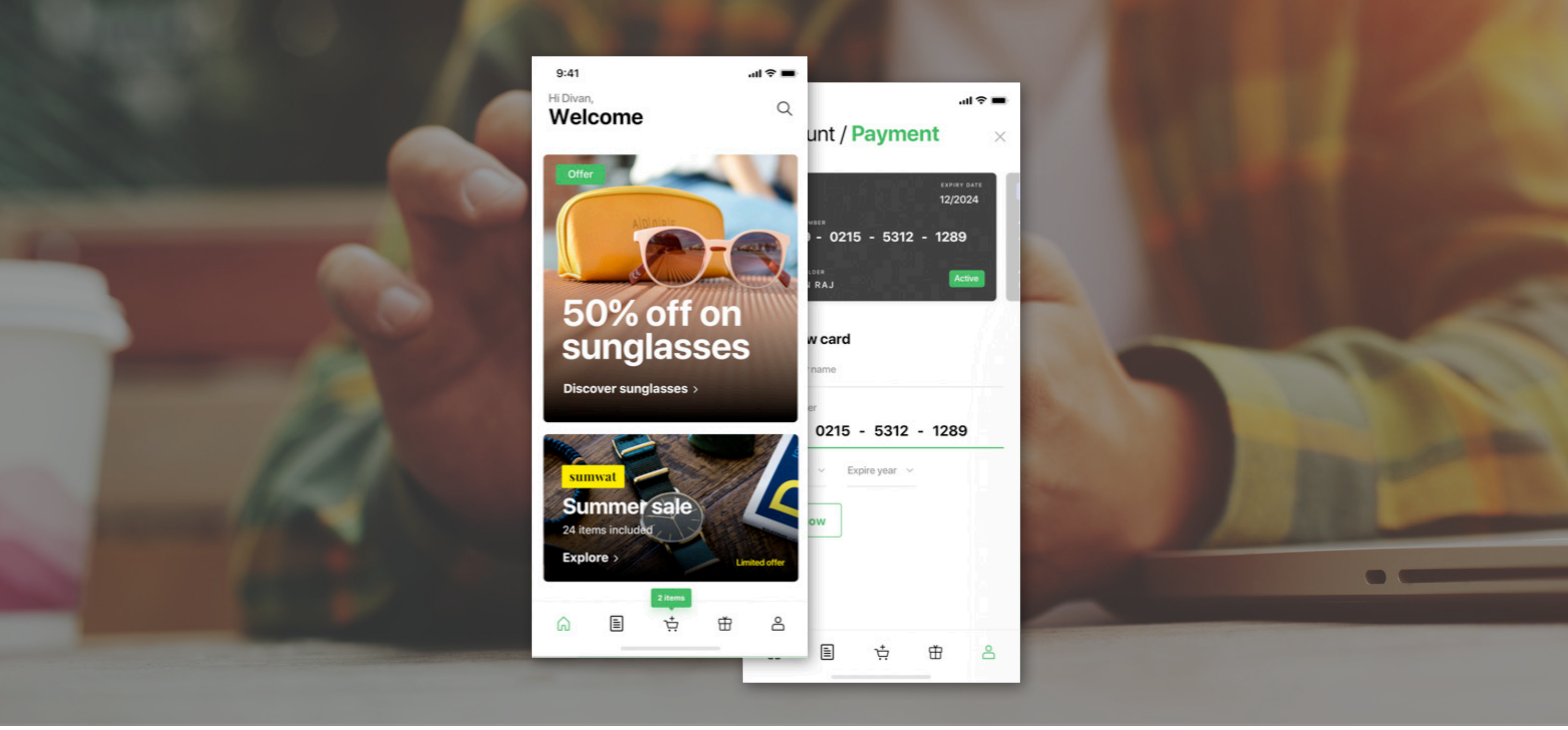
The data doesn't say for sure. Marketers should analyze the data to find where users are dropping off (and why) and develop effective and emotive campaigns to bring them back into the fold.

The opportunity: Consistently low acquisition costs and significantly higher engagement rates for females (notably an install-to-IAP rate of 3.1% that is 24% more than the rate for males) should prompt marketers to abandon stereotypes and adapt campaigns. Some game categories, like Casino, for instance, are gender-neutral—but many others aren't. Marketers should review their campaign assets and approaches to make sure they have what it takes to attract, acquire and convert more females.

The challenge: Males and females are alike in their passion for mobile gaming apps, but game categories that traditionally appeal to males—specifically, Strategy and Action—cost significantly more to make than the Puzzle games that attract females. Drive down the high cost of acquiring males who make an in-app purchase ($128.06) with engaging ad formats and offers—perhaps in clever combination with rewarded video—to break down the barriers to doing more and spending more in your game.



GAMING APPS: COSTS & ENGAGEMENT RATES BY GENDER

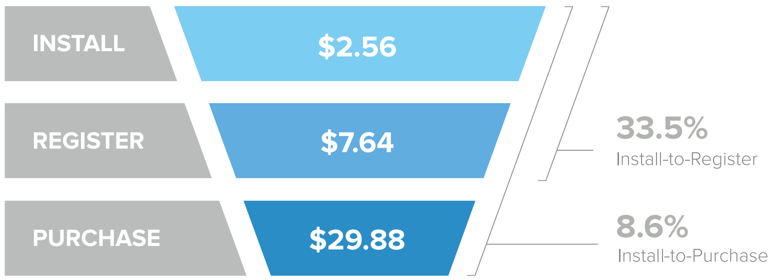


Shopping App Engagement

Shopping apps are the go-to for advice and assistance every step of the journey.

Couple frequent use and familiarity with a clear-cut value proposition and you have what it takes to clinch the deal—provided you take advantage of all opportunities and touch points to interact with users and influence their purchase decisions.

Overall, it would appear that marketers are making strides. Install-to-purchase rates of 8.6% (which represent a 2x increase over the previous year) are eye-watering. At just $29.88 (2.5x less than the 2017 price tag of $73.80) they're also an irresistible bargain.

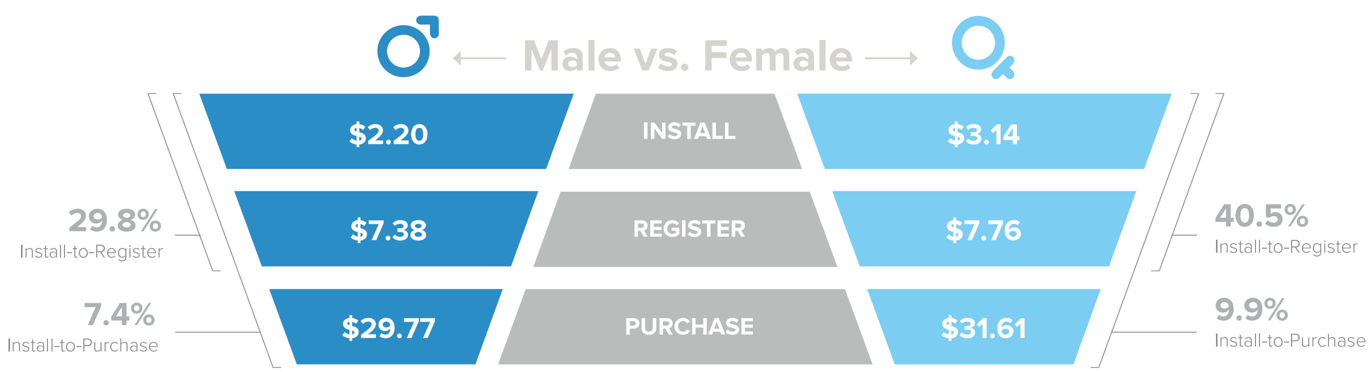


SHOPPING APPS: COSTS & ENGAGEMENT RATES

> Remove friction from interacting with your app, and you could benefit from the natural inclination of males to shop in the moment.

The opportunity: At $3.14 the cost to acquire females may seem expensive, but looks can be deceiving. Impressive engagement rates where it counts (40.5% at Register and 9.9% at Purchase) are encouraging. With the ice broken, campaigns and strategies must focus on ways to turn the strong initial interest into a daily habit.

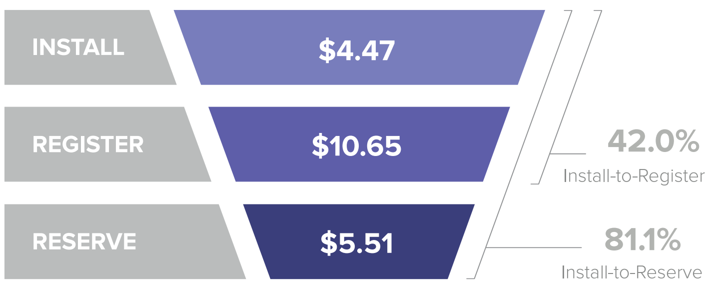
The challenge: Women are engaging high—at a high price. There is a workaround—but it requires a new mindset: Marketers should open the aperture of how they view and engage males. The biggest (and missed) opportunity arises at Register, the stage where males are only marginally cheaper than females but conversion rates are miles apart. Remove friction from interacting with your app, and you could benefit from the natural inclination of males to shop in the moment rather than shop around using apps such as Amazon.



SHOPPING APPS: COSTS & ENGAGEMENT RATES BY GENDER

Travel App Engagement

Research shows travelers are turning to a wider range of apps, in many cases on a more regular basis, to get where they need to go.

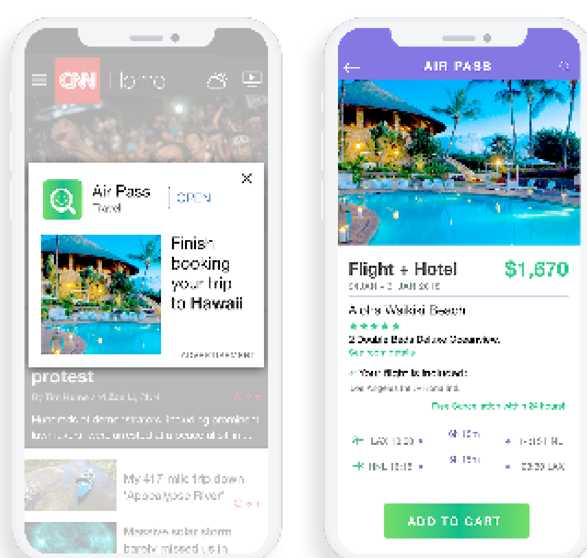


TRAVEL APPS: COSTS & ENGAGEMENT RATES

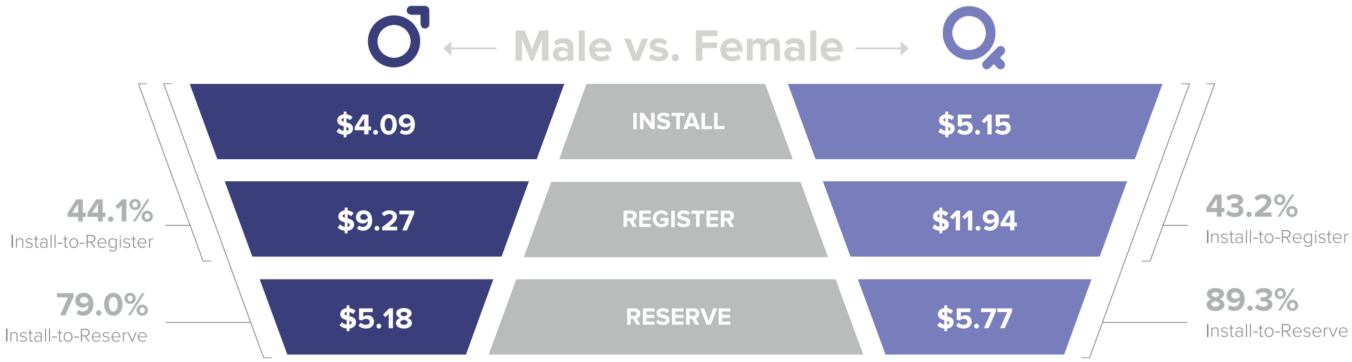
Even better, users expect—even demand—to be communicated with via push messages, in-app notification, and email throughout the travel lifecycle—before, during and after trips—thus creating more opportunities than ever for marketers to deepen engagement.

Overall, costs and conversions are in a rare balance, indicating users are reaching to apps to do much more than evaluate their options. The massive 81.8% install-to-reserve rate (506% more than the 13.5% rate observed in 2017) shows users are relying on their apps to make bookings. While we can't know the dollar value of these transactions, at $5.51 the low cost to acquire a user who completes the action is an offer too good to refuse.

The opportunity: Generally, males appear to be the road warriors (pun intended), engaging more than females at a significantly lower price. However, the high cost to acquire a male user who completes a registration ($9.27) and the 44.1% install-to-register conversion rate indicates marketers have to do more to remove the friction. While both numbers are a significant improvement on 2017—when the cost to acquire males in mid-funnel was higher ($14.39) and engagement rates were lower (32.4%), that's no reason to rest on your laurels.



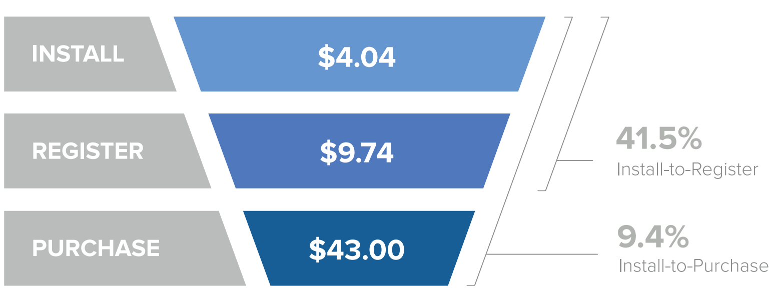
The challenge: At $5.15 females are pricey to acquire, but the deep-funnel benefits—notably an install-to reserve conversion rate of nearly 90% (89.3%)—are worth the extra investment. Nonetheless, a disconnect at the Register stage, when females cost more to acquire and engage less than their male counterparts, suggests optimizing for convenience and personalizing for impact could close the gender gap and open new opportunities.



TRAVEL APPS: COSTS & ENGAGEMENT RATES BY GENDER

Utility App Engagement

The explosive growth of subscription apps across a wide range of categories beyond entertainment is a clear confirmation that users are willing to pay a monthly fee provided the value exchange the app offers is on the money.



UTILITY APPS: COSTS & ENGAGEMENT RATES

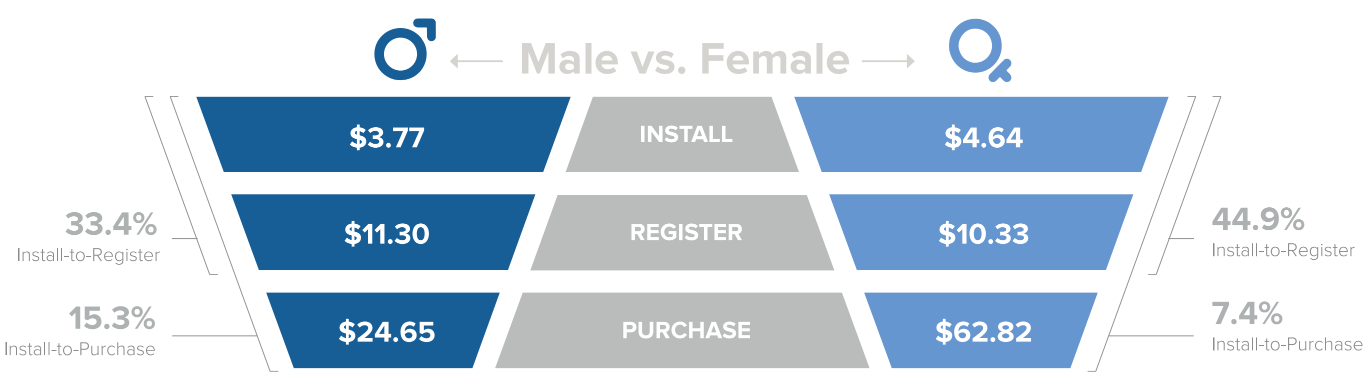
Utility apps are where users spend a significant amount of time on a regular (sometimes daily) basis, providing smart marketers with a multitude of micro-moments to drive connection and conversion.

> Register stands out as the stage where marketers need to up their game or miss their target.

Overall, CPIs ($4.04) are somewhat higher than the previous year ($3.53) but the significant decline in costs combined with the impressive increase in conversion rates deeper in the funnel tells a positive and promising story. At 41.5% the install-to-register rate is 69% more than the previous year for nearly half the cost. Likewise, the install-to purchase rate of 9.4% (up from 5.6% the previous year) is a solid indication that there is an audience primed for purchase. Now it's up to marketers to clinch the deal.

The opportunity: In 2017, females were cheaper to acquire and much more willing to make a purchase. Fast forward, and the opposite is true. Males are the new win-win. At $3.77 CPIs are 19% lower than females and the all-important install-to-purchase rate for males (15.3%) is double the rate for females.

The challenge: Register stands out as the stage where marketers need to up their game or miss their target. At $10.33 the cost to acquire a female who completes a registration is lower than it is for males and the install-to-register conversion rate of 44.9% (compared to 33.4% for males) is impressive. So, why does the install-to-purchase rate for females tank after such a promising start? Use your data to identify the disconnect and design campaigns to communicate the value your app offers for the money.



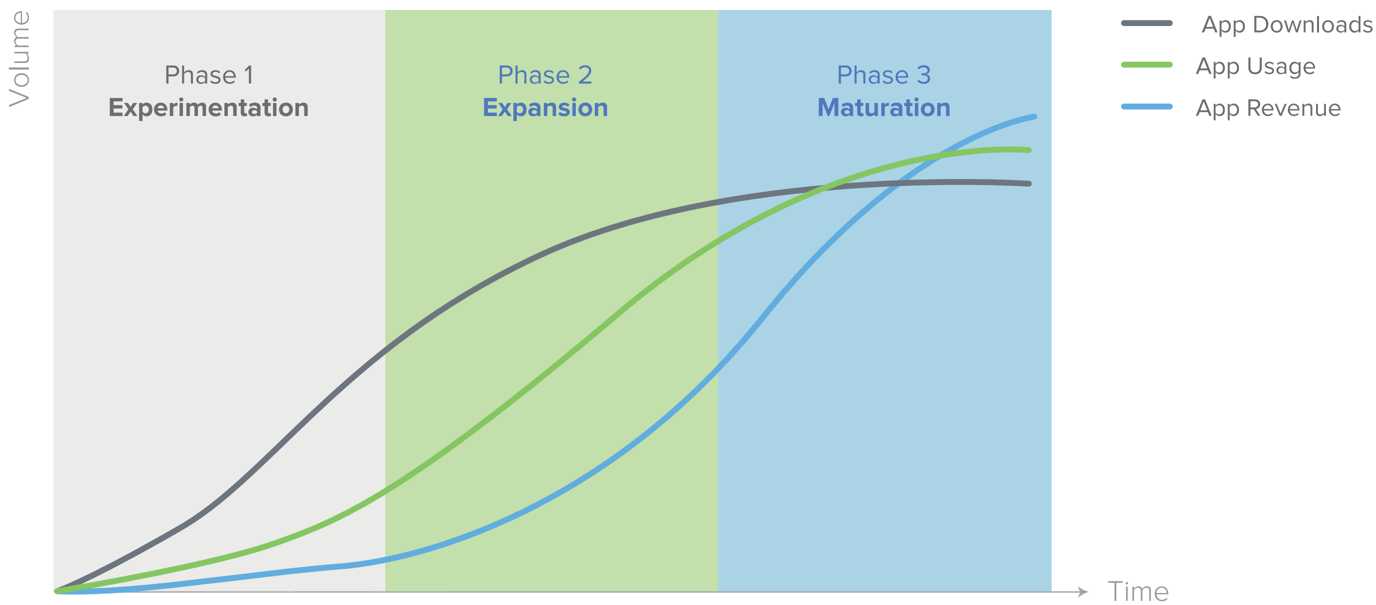
UTILITY APPS: COSTS & ENGAGEMENT RATES BY GENDER

Regional Analysis

The App Economy is firing on all cylinders—but different regions are moving at different speeds. The Index breaks down data and metrics by region (North America, LATAM, EMEA and APAC) to help marketers make data-informed decisions about where to focus campaigns and efforts to fuel growth and drive audience engagement.

But before we focus on areas of opportunity, let's draw from latest data and forecasts from app market intelligence provider App Annie to map out a "Big Picture" of some of the factors and trends, such as market maturity and consumer spend, poised to have the biggest impact on your strategy.

As App Annie sees it: the countries and regions that power the global App Economy can be grouped according to where they find themselves within three different phases of market maturity. Phase 1: Experimentation is all about discovery. Regions in this group have a key characteristic in common: massive growth. Downloads surge driven by new users and new devices entering the market and a huge appetite for trialing apps. Phase 2: Expansion is all about going deep, not wide. Regions in this group are populated by users who have made choices about the types of apps that are the most useful to them and search for new apps less often. Growth rates are slower than they are in Phase 1, but engagement and spend are off the charts.



AN APP MARKET'S PATH TO MATURITY
Source: AppAnnie

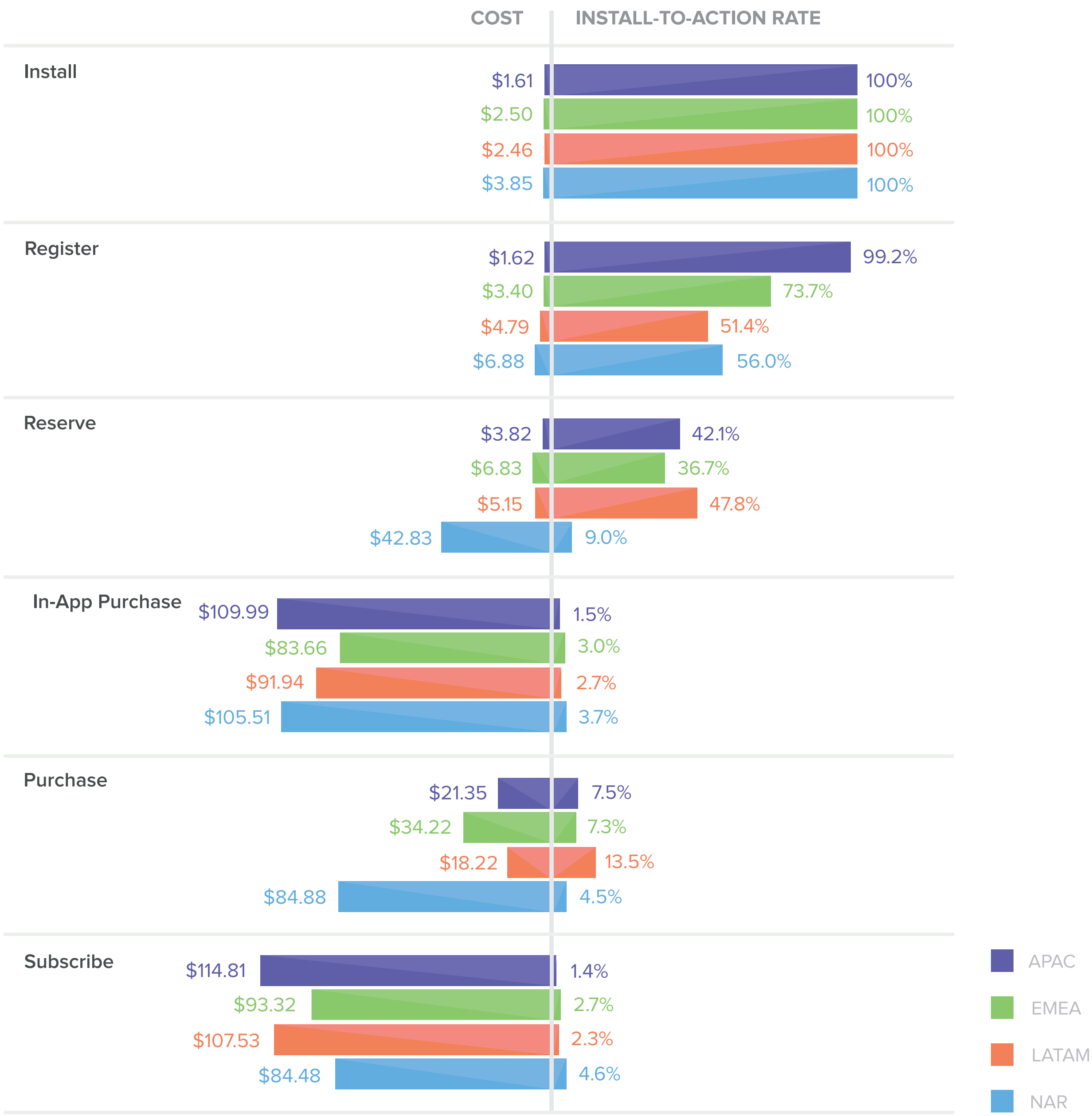
Finally, Phase 3: Maturation is all about sustainability. Regions in this group are advanced and established, and the economy is well on the way to going digital/mobile. Users (literally) buy into the value proposition their apps offer and use them to transact and make in-app purchases.

Combine this construct with a breakdown of conversions by region, and some interesting patterns emerge.

Phase 1 regions, for example LATAM, offer massive growth potential, but lack of robust payment infrastructure across some regions means marketers can influence users to make purchases, but not all users can complete them. What's more, users are confronted by choice overload and the anxiety associated with sifting through (and trying out) millions of apps to find the one that is right for them.

This dynamic is reflected in Liftoff data. Installs ($2.46) have declined by 48.1% compared to the previous year, a clear signal that this region has developed a huge and healthy appetite for apps. Register, the stage at which LATAM users take the plunge, comes at a moderate cost ($4.79), but a low install-to-register rate shows this audience is either unable (or unwilling) to make a commitment–or both. Once users in LATAM make the decision to integrate an app into their daily routine, it seems there's no end to the interaction. At $5.15 the cost to acquire a user who will make a booking is 72% less than the previous year ($18.42). The install-to-reserve rate of 47.8% isn't just 3x the rate (15.2%) observed the previous year—it's the highest of all regions in the Index.

In-app purchase is a hard sell for marketers in most other regions, but data indicates users in LATAM can and will open their wallet if the offer is worth it.



REGION: COSTS & ENGAGEMENT RATES

> You want to make sure your ads are short and go straight to the point. Tell the user what your app is about and what they have to gain by downloading it. If it's a video, keep it short–around 15 seconds, because your user is a step ahead of you, and can't wait to continue with the game.

Etienne de Guébriant, UA Team Lead at Etermax

The cost to acquire a user for this valuable post-install event ($91.94) is down over 50% from $201.71. Costs and conversion rates for Purchase tell another positive story for marketers. At $18.22, the cost to acquire a user who completes a purchase is the lowest of all the regions. However, the data can't shed light on the exact dollar value of the purchases made. Nonetheless, the install-to-purchase rate of 13.5% suggests campaigns that can tap purchase intent will certainly pay dividends. Subscribe is a stage where all users across all regions are tough to convince. However, solid conversion (2.3%) and an affordable price ($107.53) are encouraging.

LATAM is clearly a region where marketing efforts will deliver results. But it's not a walk in the park. Marketers must go the distance to impress with campaigns and creatives that guide users, explaining value propositions users can understand and appreciate. As Mobile Hero Etienne de Guébriant, User Acquisition Leader at Etermax, LATAM's leading game development company, put it in a recent podcast interview: "You want to make sure your ads are short and go straight to the point. Tell the user what your app is about and what they have to gain by downloading it." Images make a great impression–but don't get carried away. "If it's a video keep it short–around 15 seconds." And if it's a rewarded video, remember user attention spans are short. "Keep it short because your user is a step ahead of you, and can't wait to continue with the game."

Phase 2 regions, such as **EMEA** and **APAC**, offer abundant opportunity, but populations across countries differ widely in how they use apps and perceive their benefits. To complicate matters, a mix of local languages, sensitivities and preferences require marketers to deliver campaigns that are appropriate and well aligned with users' culture and context.

APAC is a region moving at a fierce pace with a ferocious appetite for apps. It's the region app market intelligence provider App Annie consistently calls out as the one watch, with some countries such as Japan and Korea accounting for the lion's share of hours spent on app—and the amount of money spent in-app. It's an audience eager to explore apps, but closing a deal in a hypercompetitive market moving at hyper-speed requires efforts that match. This dynamic—which dovetails with Liftoff data—explains why users in this region, though cheaper to acquire and guide through mid-funnel

> “Japan and Korea account for the lion's share of hours spent on app—and the amount of money spent in-app.”

engagement activities, are harder to pin down to a purchase. At $1.61 users in APAC are a steal, compared to the price tag of $3.10 the previous year. Register is also the stage where the response to campaign nudges is overwhelmingly positive. The cost to acquire a user who completes a registration is the lowest of the group ($1.62) and the install-to-register rate is nearly 100% (99.2%). It's an incredibly high percentage rate likely linked to the fact that audiences, who are eager and affordable at the Install stage, are following through to this next stage in the funnel with the same level of enthusiasm. Costs and conversions suggest this audience has also made this activity part of their app usage routine. At $3.32 the cost to acquire a user who completes a reservation is the lowest in the group and the conversion rate of 42.1% is also attractive.

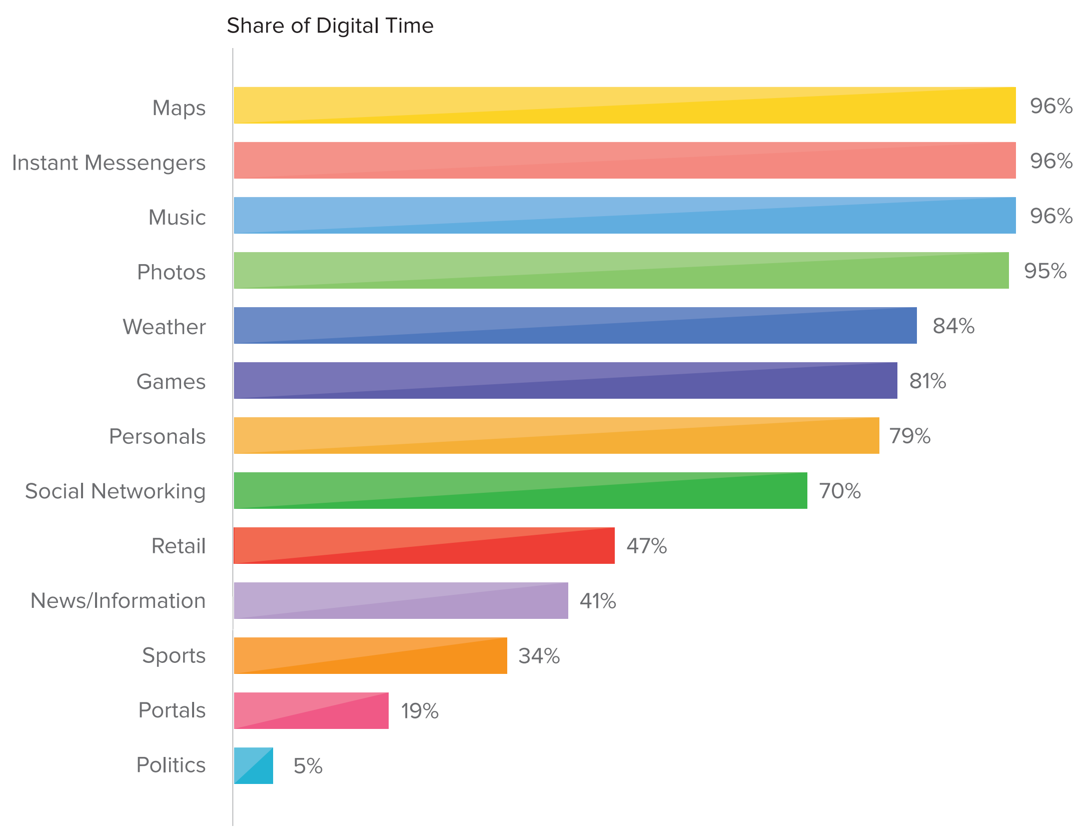
Deeper in the funnel, marketing successfully to users in the region is more challenging. In-App Purchase costs and conversion rates are off the charts—but in the wrong direction, as high costs (the highest of the group at $109.99) and conversion rates (the lowest of the group at 1.5%) indicate a dangerous disconnect between what marketers want and what they get.

Especially if we consider both are miles away from levels in the previous year, when cost came in at $76.98 and conversion rates (4%) were the highest in the group. It could be that campaigns are not rising above the noise, or simply not sensitive to cultural nuances. The data doesn't say for sure. But the massive success of games by studios in the West shows it can be done.

While APAC users are lukewarm on in-app purchases, they appear to be shopping-addicted. The cost to acquire a user who will make a purchase is modest at $21.35 (compared to $58.12 last year) and the install-to-purchase rate is 7.5%, up from 5.3% the previous year. Predictably, Subscribe is the toughest stage in the funnel—but Liftoff data suggests it can offer the biggest pay-off depending on the dollar value of the deal. At a cost of $114.81 (compared to $135.29 the previous year), APAC is the most expensive in the group. What's worse, the install-to-subscribe rate of 1.4% (down from 2.3% the previous year) shows this is now a market where marketers will have to up their game to convince users to commit.

Against this backdrop, EMEA mirrors APAC in many ways at many stages, exhibiting similar costs and conversions and coming in a close second to APAC at most stages in the funnel. It's a trend the 2017 Index hinted at—but this year it comes through loud and clear. It's a message marketers would do well to acknowledge—and factor into their 2019 campaign planning as they seek to grow their app audience and footprint markets where pay-offs and trade-offs are in a favorable balance.

At $2.60 the cost to acquire a user in EMEA comes in second to APAC (and 32% less than the 2017 price tag of $3.42). EMEA also trails APAC at Register, where the cost to acquire a user is $3.40 and the install-to-register rate is 73.7%. Both regions have a similar passion for making purchases, as shown by an install-to-purchase rate for EMEA of 7.3%, the second highest in the group after APAC. At $34.22, the cost to acquire a user who completes a purchase is higher than APAC, but fortunately nowhere near the massive $84.88 it costs to convert users at this stage in North America. Once again, campaigns to drive subscriptions have their price. However, it may also be a case of you get what you pay for



MOBILE APP SHARE OF TOTAL DIGITAL TIME SPENT ON SELECTED CONTENT CATEGORIES IN THE UNITED STATES IN JUNE 2017
Source: Statista

> EMEA is a region of different languages and cultures. But it's also a region where stringent privacy laws, such as GDPR, make targeting more complicated.

since the data doesn't shed light on the dollar amounts (or the retention rates) marketers can count on in return.

The In-App Purchase data bodes well for marketers interested in driving this action. At $83.66 users are a bargain—however, the install-to-IAP rate (3%) is identical to the previous year. Put simply, this is an audience that is moderately priced and modestly interested. Now it's up to marketers to turn intention into transaction. Localization is a must–as EMEA is a region of different languages and cultures. But it's also a region where stringent privacy laws, such as GDPR, make targeting more complicated. Marketers are therefore well-advised to make better use of more traditional channels—such as TV advertising and Out-Of-Home (OOH) campaigns—to complement app marketing campaigns and reach users in scenarios where they expect and accept advertising without an explicit opt-in.

Phase 3 regions, specifically **North America**, are advanced and mobile-first audiences have long made apps part of their everyday existence. However, there is a trade-off. Sophisticated audiences in a saturated market is a combination that tests the mettle of marketers across all app categories.

High costs across most engagement activities are not always offset by high engagement rates. However, audiences are well accustomed to using a wide array of apps for a significant amount of time—every day. Now it's up to marketers to deepen that loyalty and turn interested users into outright app fans. Granted it will always cost more to acquire new users than keep the ones you have. But the biggest wins are when the users you have interact—and transact—again and again.

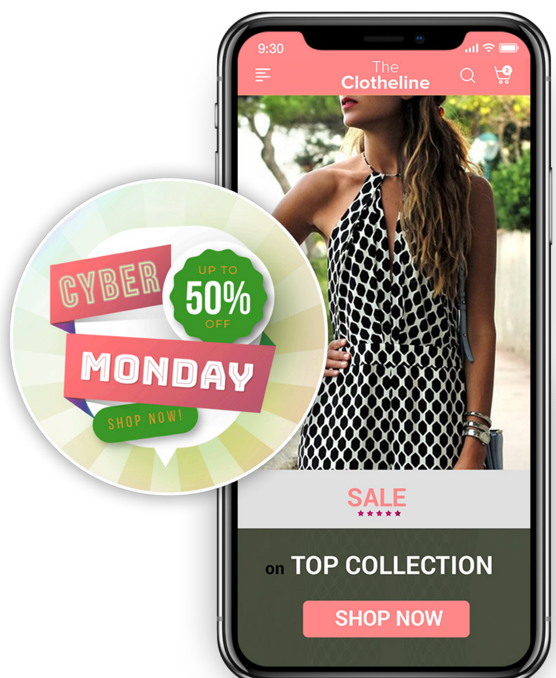
At $3.85, CPIs lead the pack but are still down 36% compared with the previous year. At Register, the cost to acquire a user who will engage in this activity is pricey at $6.88 (again the highest in the group), and install-to-registration rate (56%) comes in only slightly ahead of

LATAM and markedly under that of APAC and EMEA. In-App Purchase is a stage that makes sense if you consider that North America has witnessed both the birth of apps and the rise of blockbuster F2P titles. At $105.51, the cost to acquire a user who completes an in-app purchase comes in a close second to APAC. However, the willingness to engage in this activity—evidenced by an install-to-IAP rate of 3.7%–is the highest in the group. But interest has cooled considerably if we consider this is a drop of 62% compared to the previous year when the rate was just under 10%.

Reserve appears to be another activity where interest is waning—and where marketers can do more to engage and re-engage audiences with effective campaigns supported by push notifications and emails. At $42.83 the cost to acquire a user who completes a booking is 42% more than it was the previous year ($30.12). Moreover, the install-to-reserve conversion rate (9%) has dropped by nearly half compared with 2017.

It's a similar story when we examine costs and conversions for deep-funnel activities Purchase and Subscribe.

An increase in costs accompanied by lower engagement rates is a clear indication that competition for users is tough—and likely to get tougher. However, record purchases via mobile and apps during the holidays (2017 marked the first time Cyber Monday mobile shopping in the U.S. raked in $2 billion sales in one day) confirm North America is home to an audience of shopping-obsessed users whose appetite for retail is continuous and growing. It's an audience worth fighting for, and marketers who fight smart—using data to understand and engage their audiences at intent-rich moments—will be richly rewarded.



In-App Mobile Retention

A review of the Index reveals a single finding that is common across all app categories: The deeper you go in the funnel, the harder—and more expensive—it is to drive engagement.

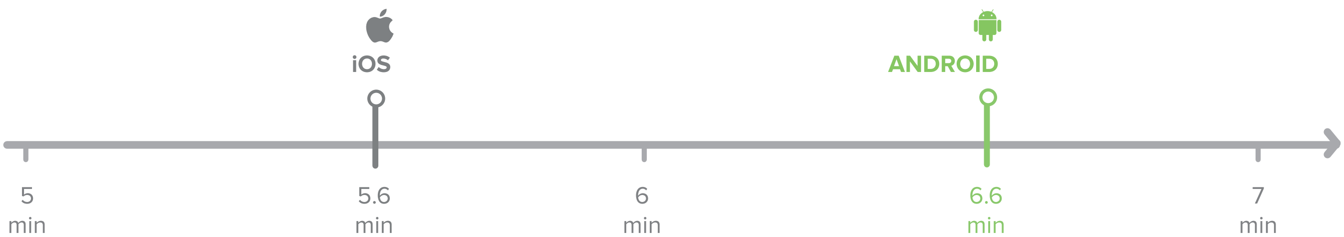
Marketers can narrow the odds in their favor by segmenting and re-engaging users who have shown by their actions (completing a registration or making a purchase) that they are eager to do more.

This is what you achieve when you pursue a comprehensive strategy to activate and engage users, again and again. But is that really the outcome? To provide insights and answers around user engagement and the factors that affect it, Liftoff partnered with mobile engagement platform Leanplum.

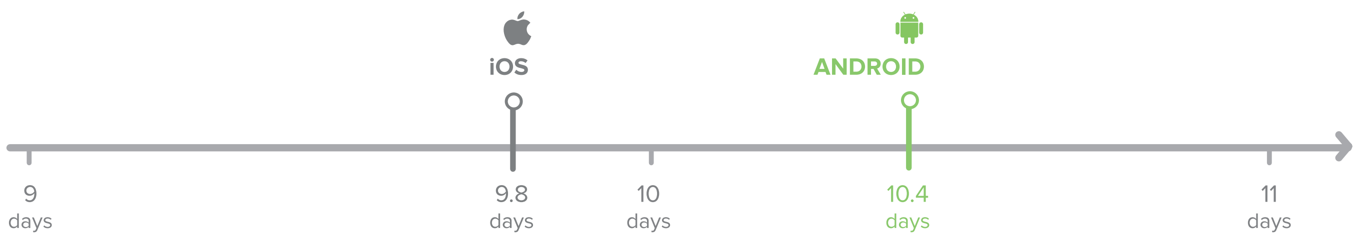
Leanplum draws from a sample that covers apps across platforms, categories and geos to provide an analysis of retention data (average session length, amount of time since the last app activation and percentage of active users). The data also shows the real and measurable impact of communication channels (push notifications and email) on retention metrics.

In-App Engagement by Platform

A breakdown of in-app engagement data by platform reveals Android users have slightly longer sessions—but iOS users return quicker to the app.



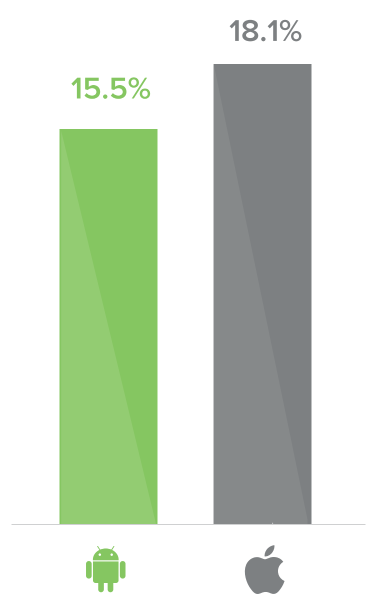
PLATFORM: SESSION DURATION IN MINUTES



PLATFORM: DAYS SINCE LAST ACTIVE

Clocked at 6 minutes and 37 seconds, Android users have longer sessions with their apps, compared to iOS users at 5 minutes and 37 seconds. However, iOS users come back to the app sooner—after a total of 9 days and 19 hours, compared with Android users who return after 10 days and 9 hours.

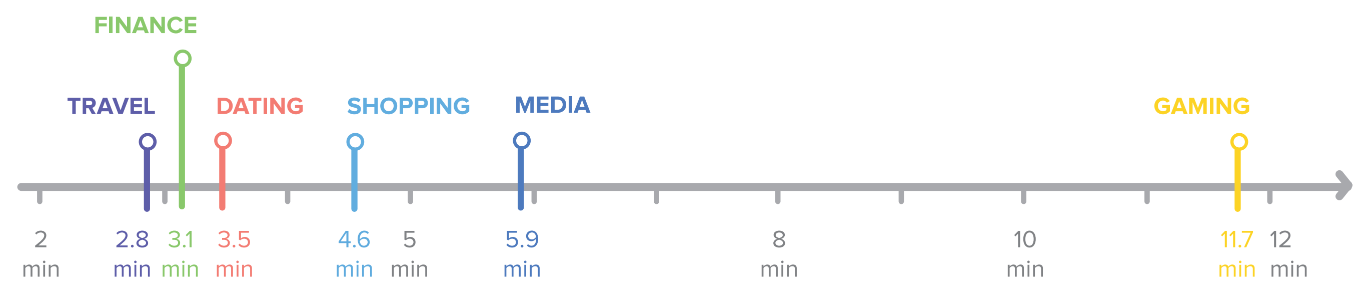
But iOS users aren't only the quickest to return to the app. As a segment, they are the most active. Specifically, 18.1% of iOS users are active on a given app, compared with only 15.5% of Android users. Do the math, and that means iOS has about 17% higher retention.



PLATFORM: ACTIVE USERS
IN THE LAST 30 DAYS

In-App Engagement by Category

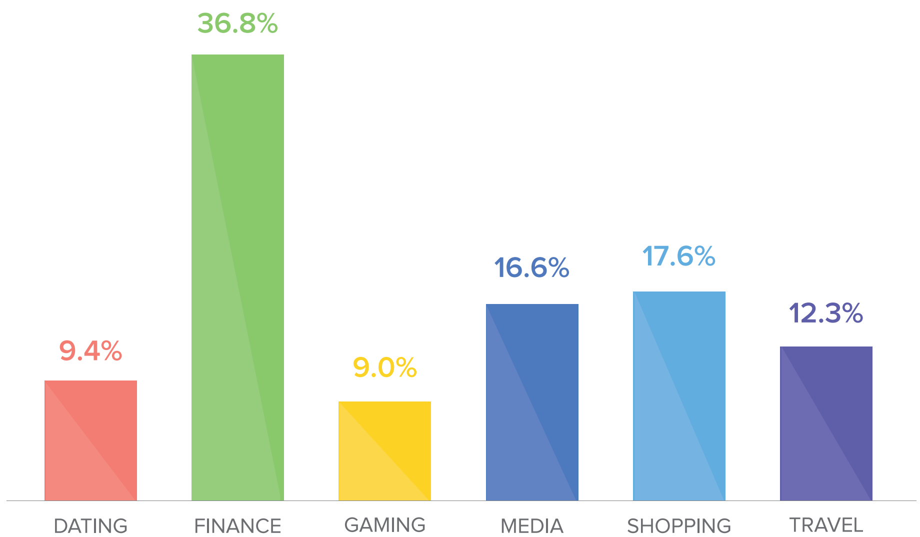
A breakdown by app category tells an interesting story. But it's important to remember that each category also has its own benchmarks—what might be important to one category may not matter as much to another.



CATEGORY: SESSION DURATION IN MINUTES

For example, if you have a hotel booking app, then it's not realistic to influence travelers to return to the app every week. Each app category has a natural usage frequency and what is realistic will depend on your app category and your business objectives. Knowing the metrics that are uniquely important to your app, the ones that drive business value, is crucial.

CATEGORY: DAYS SINCE LAST ACTIVE



CATEGORY: ACTIVE USERS IN THE LAST 30 DAYS

SHOPPING

The data: Mobile shoppers spend an average of 4 minutes and 36 seconds per session. Time since last active is roughly in the middle at just over 10 days. But there's nothing medium about the level of use, as the percentage of active users (17.6%) comes in second only to Finance apps.

Improving shopping engagement: Mobile has reshaped the retail industry by changing the customer journey. In fact, Forrester reports mobile is driving commerce, playing a pivotal role in enabling sales totaling more than $1 trillion in the U.S. alone.

To ensure brand differentiation, long-term growth, and revenue, retailers have to make mobile the centerpiece of their overall marketing strategy. Leanplum's advice to marketers determined to increase mobile engagement with their retail apps: make sure to personalize the experience, both in and out of the app. During the onboarding experience, encourage profile creation to let users set their preferences. On your home screen, show brands or styles users have purchased in the past. To curate the perfect re-engagement recommendations, draw from wishlist items or products abandoned in shopping carts and alert shoppers across channels.

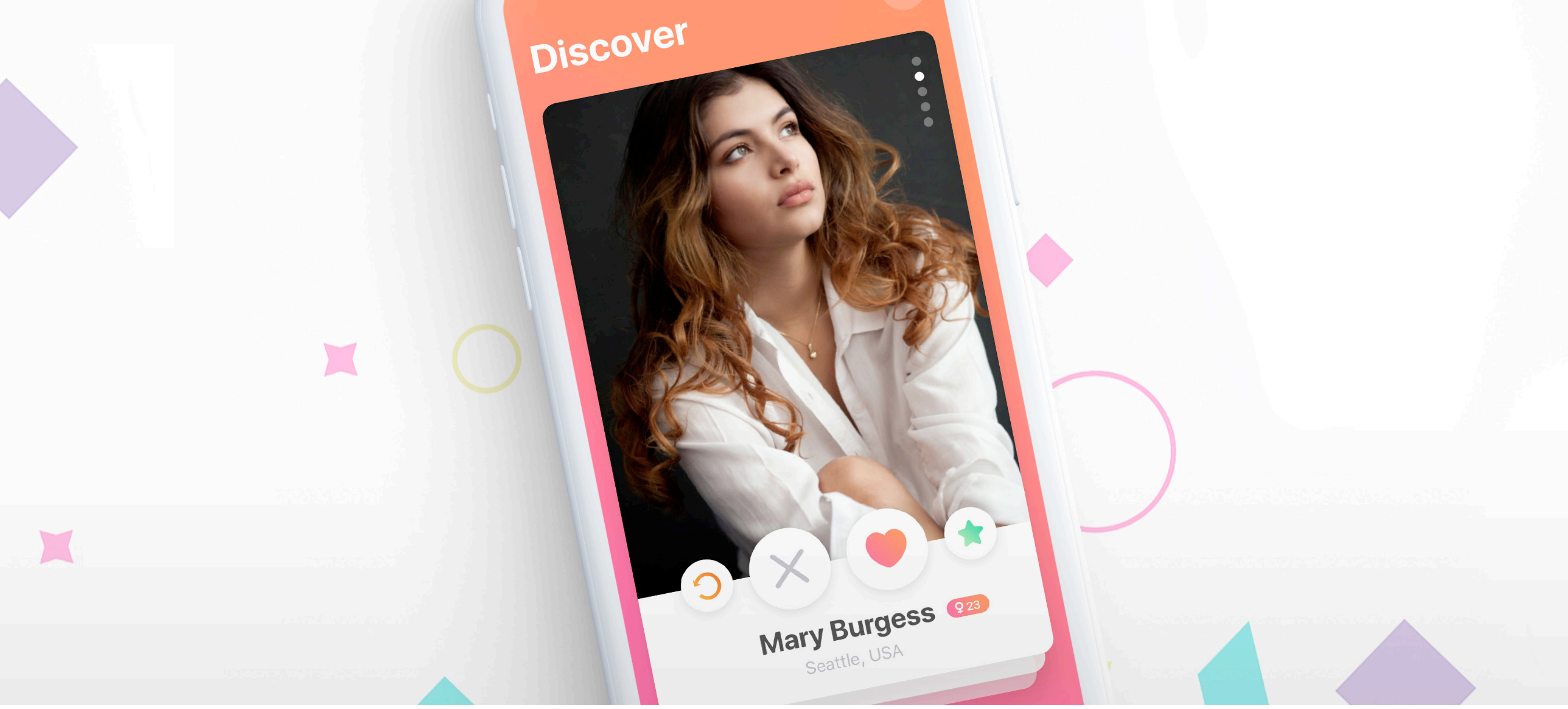
MEDIA

The data: Media users are fairly engaged. They have the second-highest average session length, coming in at 5 minutes and 54 seconds. However, time since the last active session is at the higher end of the spectrum–13 days and 12 hours.

Improving media engagement: Media apps, particularly those that provide Over-The-Top (OTT) content such as streaming media over connected TV and other platforms, are the fastest growing segment app in the media landscape. However, effective monetization of media apps requires marketers to embrace new approaches and strategies to deliver personalized content users will accept and appreciate.

What can media apps do to increase engagement? A news app could go beyond "headline news" and send alerts to users based on their individual interests. In this scenario, readers interested in climate news would receive updates on environmental news and developments. Streaming apps, on the other hand, could alert users about new episodes of a favorite show or suggest users check out a similar series after they binge the last season. In both cases, tying in-app behavior with web behavior is a must.

Once you lure users back into the app, keep them there by tailoring the in-app experience to ensure the most interesting content for each user has prominent placement. If you offer an ad-free subscription model, try experimenting with targeted promotions. Advertising a trial after a user views several videos or has only a few free content views remaining can be an effective way to make sure they come back. What's more, If the ad-free version of your app is a more pleasant experience, users may even return sooner.



DATING

The data: Dating app users tend to bounce from the app pretty quickly, spending an average of only 3 minutes and 30 seconds per session length. Surprisingly, dating apps also had the longest time since last active, at 14 days and 5 hours. This can be linked to the nature of the app and the natural frequency of use. It may be that users match with someone they like, go on a couple dates, and only return later if (and when) the match is unsuccessful.

Improving dating engagement: Borrow a page from online dating sites and the tactics they employ to keep users coming back. It's essential to communicate your value proposition clearly and often—and it's not a bad idea to play on users' FOMO (fear of missing out) and an opportunity to connect with that special someone.

Dating should be fun, so send creative notifications that recommend top matches in a user's network. To motivate your most active power users, consider teasing a free trial subscription to make their in-app browsing experience more successful (and entice a conversion after the trial). On the flipside, if a user fails to find matches, it could be a sign they need to improve their profile. A gentle reminder may encourage these users to add new images or fill out a bio that will help them get more out of the app. It's a positive outcome sure to increase user satisfaction and drive sessions with your app.

TRAVEL

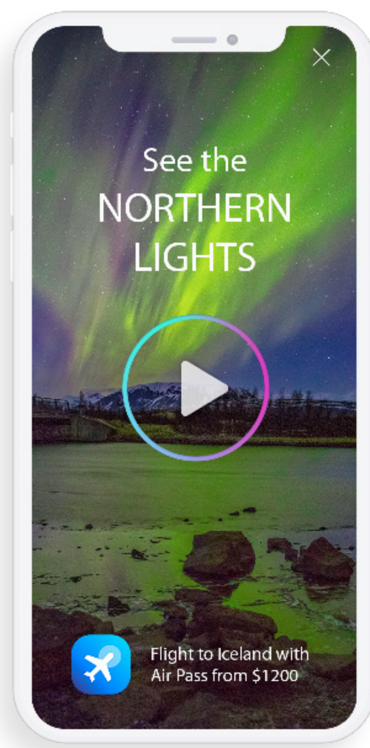
The data: The hypothesis that travel apps would have the longest time since last active was disproved by the data. Of all the app categories analyzed, travel apps had the second-shortest time since last active, with 9 days and 19 hours.

But users don't stay in the app for very long—only 2 minutes and 48 seconds, on average. This session length is the shortest of all the categories in the group. It may be that travel app users are laser-focused in how they use their sessions, looking for quick answers and less likely to search for the sheer fun of it.

Improving travel engagement:
According to research firm eMarketer, 40% of travelers book their trips on mobile devices. This creates the opportunity for brands to better understand their customers and respond to their needs and requirements–sometimes before customers even know they have them.

Tap personalization to increase the amount of time travel users spend in-app. Capture interest and encourage exploration in-app with enticing offers that open up possibilities–and user imagination. If there's a snow blizzard in the area where the user is located, promote a deal to sunny Mexico when a user opens the app.

Marketers can look at past behavior for engagement inspiration. If a user purchased a flight to San Francisco to visit family for the holidays last year, try surfacing that destination again. Displaying results the user already chose once will expedite their search process and remind them how convenient your app is versus competing apps.



FINANCE

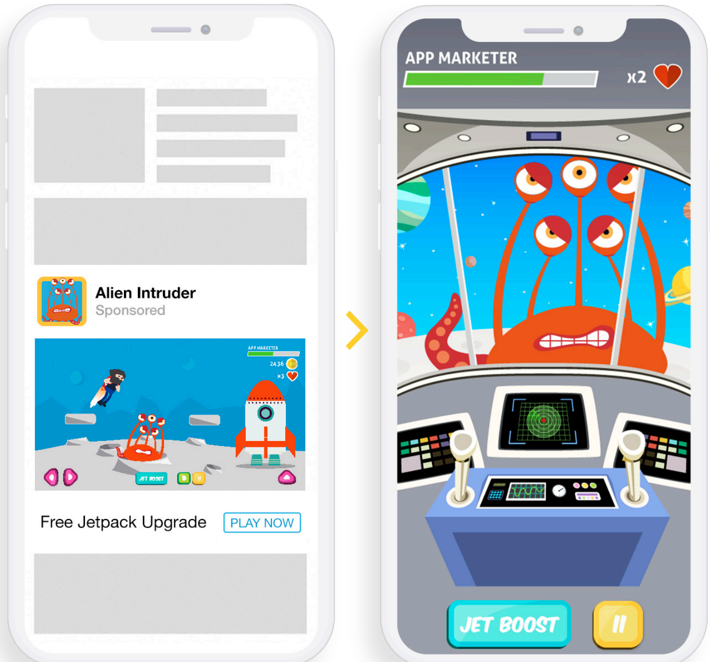
The data: At 36.8%, finance has the highest percentage of active users. These users are also the quickest to return to the app, taking only 8 days and 5 hours to come back. This frequency makes sense if you consider that the task of managing personal finances is part of the regular routine. This also explains why sessions are short (2 minutes 6 seconds). It doesn't take long to check a credit score or complete a transaction.

Improving finance engagement: Finance apps—the apps users trust to manage bank accounts and track personal budgets—play a major role in daily life. Of course, with great power comes great responsibility. The sensitive nature of finance apps means an alert or push notification will get noticed—immediately. But marketers shouldn't overdo it. If the content isn't urgent or valuable, you risk damaging user trust or losing it altogether.

To provide that value and increase user engagement, offer convenience. If users are looking for advice around a range of topics, such as saving, investing and paying off loans, help them with a virtual assistant that can answer questions or services with a more personal touch. Or perhaps your app can give them a glimpse into how their long-term savings may shift depending on factors like a sabbatical or a recession.

There are no limits to the assistance you can offer—just be sure that your communications focus on what matters to users most. Notifications like account balance updates or fraud notifications are always welcome—and always appreciated.

> “Keep players interested—and coming back—with notifications and rich push messages that feature images of characters gamers have yet to battle or prizes they could win if they clear the next level.”



GAMING

The Data: Mobile games, the biggest and most popular app category, naturally garner the most engagement in terms of average session length, measuring a whopping 11 minutes and 42 seconds. Yet, out of all the categories analyzed, mobile games have the lowest percentage of active users. There is much more churn with players either dialing down usage or deleting the app altogether.

Improving gaming engagement: While games can strike it big, fierce competition, fickle users, and increasing user acquisition costs can limit publishers' profitability. To succeed in this fast-changing space and drive long-term growth, mobile gaming marketers need to focus on maximizing engagement, retention, and monetization. It's not an easy task, but there are approaches that can boost metrics.

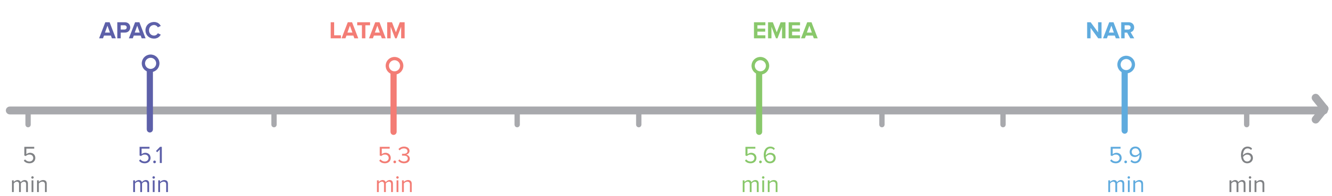
Extend the in-app experience with daily challenges and time-sensitive deals. Keep players interested—and coming back—with notifications and rich push messages that feature images of characters gamers have yet to battle or prizes they could win if they clear the next level.

In-App Engagement by Region

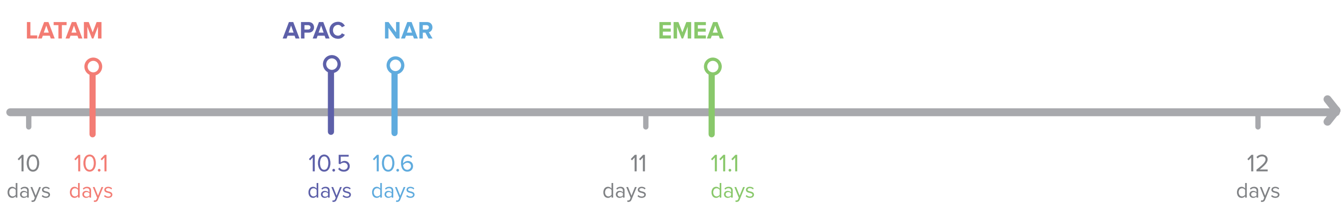
A breakdown of engagement trends by region (APAC, EMEA, LATAM and North America) shows users around the world engage in much the same way—and for the same length of time.

That provides a baseline for engagement across regions. But how many active users who engage with an app return to the same app within a 30-day period? The data reveals some striking differences.

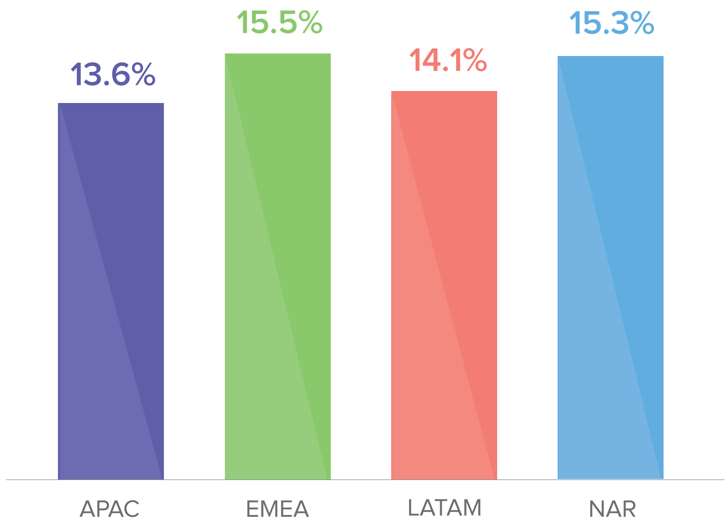
Specifically, it’s not a case that users in regions that engage the longest also engage the quickest. A prime example is APAC. Users in this region have shorter sessions (5.1 minutes), but the data also suggests they can’t get enough of the apps—on average they return after just 10.5 days. But it’s not a win-win situation. A comparison in the percentage of active users between EMEA and APAC—the regions with the most and least active users—reveals that EMEA has the edge with roughly 14% more active users.



REGION: SESSION DURATION IN MINUTES



REGION: DAYS SINCE LAST ACTIVE



REGION: ACTIVE USERS IN THE LAST 30 DAYS

Data for **EMEA** shows users in that region spend 5 minutes and 38 seconds per session. However, it also takes them the longest to return, at 11 days and 2 hours. Fortunately for marketers, EMEA also has the highest rate of active users in the group, coming in with a solid 15.5%.

LATAM comes in at the lower end of the scale with 14.1% active users. The same goes for time spent in app–LATAM is on the lower end of the scale, where users also spend about 5 minutes and 19 seconds per session, coming in only ahead of APAC. But LATAM leads the pack when it comes to days since last active. Users return to the app after just 10 days and 3 hours.

Predictably, North America–a mature market–is also home to the app-addicted. In fact, a study conducted by Omnicom, a company that provides brand and advertising services to over 5,000 clients in over 100 countries, found that consumers in the U.S. spend 5 hours a day on mobile apps.

This dovetails with Leanplum data that shows users in North America have the highest average session length, spending 5 minutes and 53 seconds in their apps. And users in North America have the second-highest percent of active users, at 15.3%. However, they are not the quickest to return. At 10 days and 15 hours, users in this region come in third, following LATAM and APAC.

The Impact of Channels on Retention

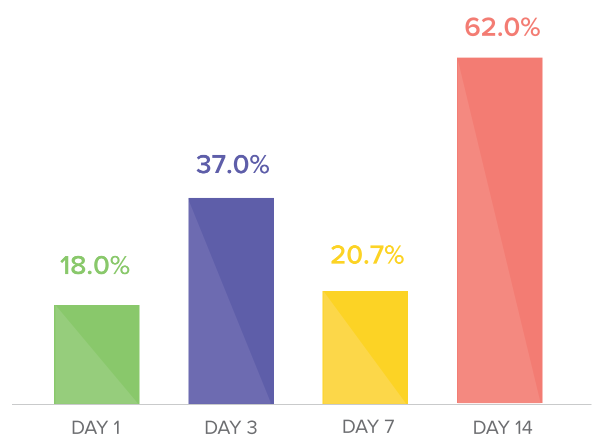
As seen in the number of active users in the previous charts, the majority of users you acquire will abandon your app.

When you consider how much you spend to obtain app users in the first place, it's clear you need to protect your acquisition investment with a solid retention strategy. That's where mobile messaging comes in, providing you with more opportunities to knock on the door and convince users–even those who have lapsed–to return to your app. Using mobile messaging has an impact, and the data shows it.

At Day 3 data shows the retention rate increases by 37%. Day 7 temporarily tapers off to 21%, a development that can be linked to the difference in app categories and how each benchmarks retention. But it's more of a glitch than an issue as Day 14 retention rockets, showing an incredible 62% increase. The bottom line: The more value you can prove—the more loyal users you can keep engaged inside of your app.

PUSH NOTIFICATIONS

Push notifications are a powerful component in an effective strategy to drive app re-engagement. In fact, there is a clear correlation between the use of push and the increase in average retention. Push, it appears, is a case of "the earlier, the better." For example, sending push notifications results in an average Day 1 retention rate increase of 18%–and the numbers only get better from there.



AVERAGE RETENTION INCREASE
WITH PUSH NOTIFICATIONS

> When Leanplum looked at the impact of combining two channels—specifically, emails and push notifications—the average weekly number of sessions increased 3x.

EMAIL

Sending messages across channels is even better. When Leanplum looked at the impact of combining two channels—specifically, emails and push notifications—the average weekly number of sessions increased 3x. It's easy to conclude that luring users back to your app with a multi-channel approach is far more effective than using one channel alone.

Email stands out as a particularly strong channel for re-engaging users who have uninstalled your app or never opted in to receive push notifications in the first place. In fact, Leanplum data shows that half of the dormant users you email may come back to your app as a result.

LESSONS IN MULTI-CHANNEL MESSAGING

It's important to note: what works for one user won't necessarily work across your entire user base. Reach your users across channels, where and how *they* prefer.

Email is a form of communication that has its fans. Some users, particularly those who strive for "inbox zero," will open your emails in near real-time. But email can also have the opposite effect. Some users ignore their inboxes for months–and an email about your app will not be the exception to this rule.

The same goes for push notifications. Some alerts may capture users' attention immediately, while others may be annoyed and choose to dismiss or ignore the alert altogether.

It's why the best approach is also the most coordinated. Harnessing and integrating all channels into your strategy–mobile push notifications, web push notifications, email, in-app messages, App Inbox, and even the in-app experience—is the best and most effective way to capture user attention, drive connection, increase engagement and stay top of mind with a value proposition they genuinely appreciate and gladly accept.

Conclusion

Costs & engagement rates - The sharp decline in costs and significant increases in conversion rates for key engagement activities deeper in the funnel can be read as a welcome confirmation that marketers have become more effective in architecting campaigns and strategies to convince consumers to interact–and transact–with their apps. But there is one significant and unsettling exception: the cost to acquire a user that opens their wallet to make an in-app purchase. At $101.58 this cost comes in at a whopping 32.96% more than the previous year ($64.96). What's worse, conversion rates have dropped by nearly half (48.1%) to hit 2.8%. But this is what you would expect in a market flooded by gaming apps. Companies that depend on F2P for profits need to sharpen segmentation, optimize targeting and craft campaigns to rise above the noise and reach an audience bordering on ad fatigue.

Months & patterns - Map Index data to defined patterns in user behavior, and a clear and compelling picture emerges. Low CPIs correlate with a low level of activities during rather uneventful periods of the year. An example is October. It follows the September rush to get back up to speed after summer trips and vacations—a month when users are buying into apps to help them ramp up their routine. Predictably, CPIs rise in the run up to the holidays—a period that sees a flurry of acquisition activity and a flood of new apps. Heated competition for users—many who received new devices as holiday gifts—cools slightly in January. Overall, seasonality has some influence on user behavior and propensity to convert across the funnel, but it's not the deciding factor. In the case of many app categories, user activity is constant so make sure your campaigns are ever-present and always effective.

Gender & platforms - Females are a premium user segment that comes at a price. It's a trade-off that depends on your app category and post-install goals. In many cases, females shine as a segment of power users and super shoppers that need little coaxing to convert. But marketers should also do more to interact with males at key points in the funnel where prices are low and the opportunities to engage in deep-funnel activities are high. A prime example is Register, a critical middle-funnel stage where a little nudge could go a long way. Impressive engagement rates suggest iOS users offer better value for money than their Android counterparts. It's the segment that tends to engage more—and, in several cases, at a lower cost. And there's an even bigger reason to focus more effort on Android users: data that shows the platform will further extend its lead over iOS, reaching an 88% market share as of August 2018.

“Impressive engagement rates suggest iOS users offer better value for money than their Android counterparts. It's the segment that tends to engage more—and, in several cases, at a lower cost.”

Regions & markets - LATAM offers massive growth potential, but lack of a robust payment infrastructure across some regions means marketers can influence users to make purchases but not all users can complete them. EMEA and APAC also offer abundant opportunity, but populations across countries differ widely in how they use apps and perceive their benefits. APAC is moving at a fierce pace, but closing a deal in a hypercompetitive market can be an uphill battle. Users in this region, though cheaper to acquire and guide through mid-funnel engagement activities, are harder to pin down to a purchase.

> Apps that help users get stuff done (like Finance), have more active users, and those users return quicker.

EMEA mirrors APAC in many ways at many stages, exhibiting similar costs and conversions and coming in a close second to APAC at most stages in the funnel. North America is an advanced and expensive market where high costs across most engagement activities are not always offset by high conversion rates. However, it's also an audience well worth fighting for and marketers who fight smart—using data to understand and engage their audiences at intent-rich moments—will be richly rewarded.

Engagement & retention - For the first time, Liftoff has teamed up with Leanplum to provide an analysis of retention data (average session length, amount of time since the last app activation and percentage of active users), highlighting the real and measurable impact of communication channels (push notifications and email) on retention metrics. A comparison across regions shows users in North America have the highest average session length, spending 5 minutes and 53 seconds in their apps. However, they take 10 days and 15 hours to return to the app, taking third place after LATAM and APAC. A breakdown of in-app engagement data by platform reveals Android users have slightly longer sessions–but iOS users return more often to the app. Finally, a breakdown by app categories tells an interesting story, showing that apps that help users get stuff done (like Finance), have more active users, and those users return quicker. No matter what app you have, push notifications are a powerful component in an effective strategy to drive app re-engagement. In fact, there is a clear correlation between the use of push and the increase in average retention–sending users push notifications from the get-go results in an average Day 1 retention rate increase of 18%–and the numbers only get better from there.

LIFTOFF

Liftoff is a performance-based mobile app marketing and retargeting platform which uses post-install user data to run true cost-per-action user acquisition and re-engagement campaigns. Powered by advanced machine learning and lookalike targeting, Liftoff campaigns are optimized to drive actions beyond the install, like booking a hotel, making a reservation, or renewing a subscription.

Liftoff's cost-per-action model helps customers scale and grow by acquiring users that actively spend in revenue-producing events. Headquartered in Palo Alto, CA with offices in New York, London, Singapore, Tokyo, and Paris, Liftoff works with leading app publishers and brands across the globe.

www.liftoff.io

LEANPLUM

Leanplum is a mobile engagement platform that helps forward-looking brands like Grab, Tinder, and Tesco meet the real-time needs of their customers. By transforming data into an understanding of users' needs and wants, our platform delivers unified experiences that are timely, tested, and relevant — building the customer loyalty that fuels business growth. Founded in San Francisco, Leanplum has offices across North America, Europe, and Asia, and has received more than $98 million in funding from leading Silicon Valley venture capital firms. Leanplum has also been recognized as **Fortune's Best Companies to Work For** and **Entrepreneur's Best Entrepreneurial Companies in America**. Download the **media kit** and learn more at:

www.leanplum.com