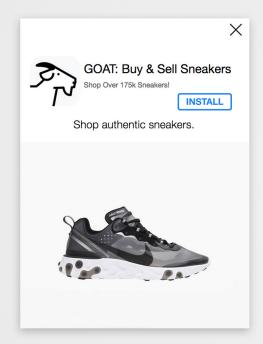
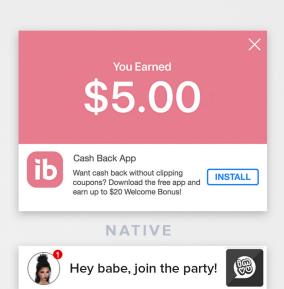


· MOBILE AD · CREATIVE INDEX

2019 PERFORMANCE TRENDS & BENCHMARKS





INTERSTITIAL

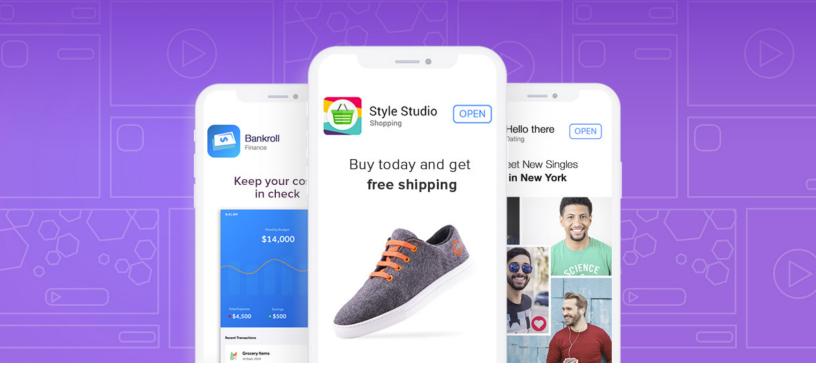




LIFTOFF MOBILE AD CREATIVE INDEX

2019 PERFORMANCE TRENDS & BENCHMARKS

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Introduction

In 2019, people around the world will spend more time online than they do watching TV. <u>That's a first</u> -- and mobile will be responsible for all growth in Internet consumption.

This opportunity is driven by two key trends: record-high smartphone penetration rates and a growing number of apps -- over five million in the two leading app stores combined. That means marketers can reach more users, with more ad placements and more data to refine their targeting.

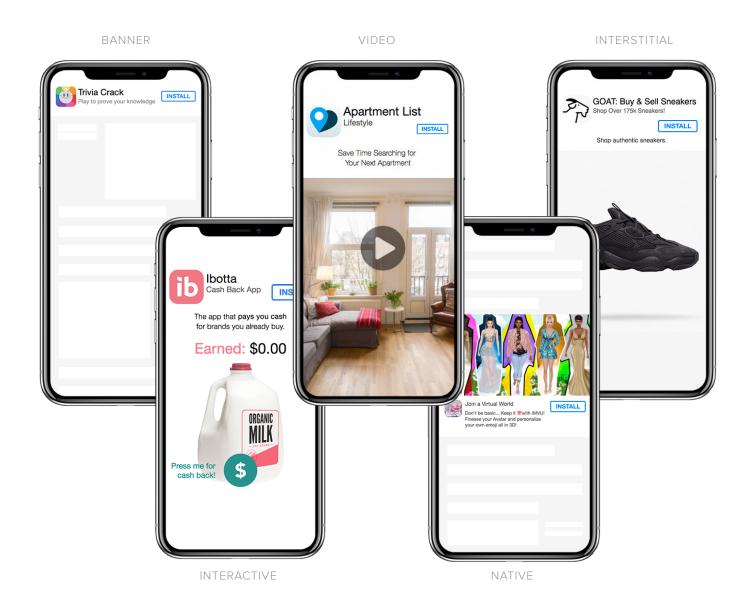
And even though more people now own a smartphone, have access to

more apps and spend a quarter of their waking hours on mobile screens, capturing people's attention -- today's most scarce resource -- has never been harder. By a modest count, the average person is exposed to 5,000 ads a day, online and off. To be relevant, marketers need data and technology to gauge people's context, and human creativity to craft the message that resonates.



The 2019 Mobile Ad Creative Index reveals how ad creative impacts user engagement in deep-funnel events, profiling five key ad formats and sharing tips on how to leverage each to drive app growth. These insights will arm mobile marketers with the benchmarks and trends you need to know to effectively win high-value customers on mobile in 2019.

This report draws from Liftoff internal data from November 1, 2017 through October 31, 2018, spanning over 273 billion impressions, over 4.5 billion clicks, 63 million installs and 22 million postinstall events in over 1,200 apps. You will find key takeaways on how banner ads, interstitials, video, interactive (aka playables) and native ads perform.



2019 mobile ad creative index benchmarks

- 👖 Impressions-to-install, calculated as installs divided by impressions.
- CPI Cost-per-install, calculated as ad spend divided by installs.
- CPA Cost-per-action, calculated as ad spend divided by post-install events.
- ITA Install-to-action rate, calculated as post-install events divided by installs.

The data is broken down by ITI, CPI, CPA and ITA to benchmark the cost of acquiring a new user from a paid app install campaign, compare top-funnel performance metrics by format and examine deeper-funnel impact on post-install actions¹ including registrations, purchases, in-app purchases, subscriptions and reservations.

To compare how each format performs on iOS and Android, the report breaks down the data by operating system. We examine how different ad formats perform throughout the year by comparing acquisition costs and engagement rates month-over-month. Finally, we share best practices in designing ad creatives and optimizing ad performance with A/B testing.

This is the first report from Liftoff highlighting ad costs and engagement by ad creative format -- and the largest dataset we analyzed to date. We hope the insights will help you benchmark your mobile ad creative performance and plan your mobile ad creative strategy in 2019.



¹The data includes first-time events only, and doesn't include recurring events.

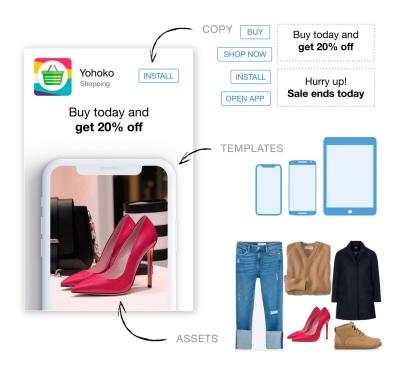
Mobile Ad Creative Benchmarks

The quality of creatives determines <u>75%</u> of an ad's impact. With technology and data upending the advertising industry, it is easy for marketers to lose sight of a fundamental truth: creative is still king.

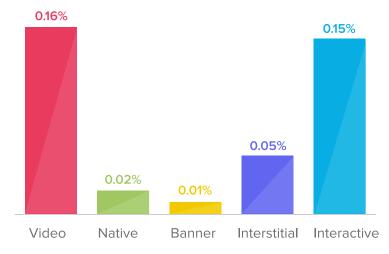
But as screens have shrunk to the size of our hands, people's attention span has markedly decreased too. Mobile users are busy and distracted. On average, they will only spend 1.7 seconds engaging with mobile content. Today's biggest challenge is not to capture location and purchase intent data with accuracy; it is to capture people's attention in a world where ad avoidance is the new default. Naturally, repurposing

a desktop banner to mobile size, or reusing a TV commercial as a video ad on the Display Network is unlikely to work.

Mobile ads that work best are designed for mobile first and foremost, then tested and optimized to deliver on campaign goals. For mobile marketers, getting there starts with understanding the nuances of different ad formats.



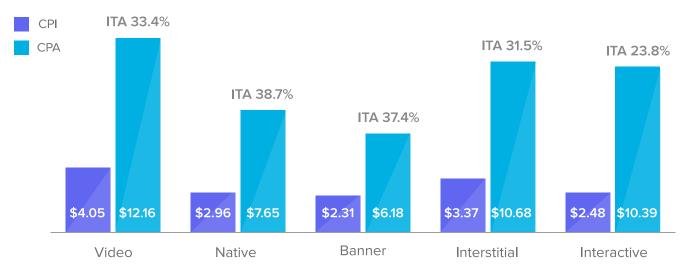




IMPRESSION-TO-INSTALL RATE BY AD FORMAT

Looking at the top of the user acquisition funnel, video (0.16% ITI) and interactive ads (0.15% ITI) show the highest impression-to-install rates, followed by interstitials, native ads and banners.

Based on top-of-funnel metrics alone, video and interactive ads present the biggest opportunity for mobile marketers. But if you drill down to the costs and deeper-funnel conversion rates by ad format, the data shows a different picture of ad creative performance.



COST AND ENGAGEMENT RATE BY AD FORMAT



Key Takeaways

Banner Ads Drive Performance at a Lower Cost

High ad costs don't always translate into higher action rates. In fact, the data shows that at \$2.31 per install and \$6.18 per first time post-install action, banner ads -- the cheapest mobile ad creative type -- deliver the best bang for the buck.

Banner ads also have one of the highest install-to-action (ITA) rates, second only to native ads. People exposed to banner ads are more likely to complete an action (37.4% ITA), such as a registration or in-app purchase, after they install an app, compared to those who saw a video ad (33.4% ITA). And compared to native ads which have the highest ITA rate of all ad types (38.7% ITA), banner ads come with a more attractive price tag.

Though not as exciting as video or interactive ads, banner ads have stood the test of time and remain an important component of our overall marketing mix.

Chris Chee, Performance Marketing Manager at Apartment List





For the Highest Post-Install Conversion Rate, Go Native

Native ads feature the highest postinstall conversion rate across all ad creative types. With a 38.7% ITA, native ads also offer good value when benchmarked against other ad types. On average, with native ads, marketers pay \$2.96 per install and \$7.65 per post-install action. Especially on iOS, native ads deliver a very high post-install engagement rate at a relatively low cost.



Video and Interactive: All Talk, Little Action

If you listen to industry chatter, video format is all the rage. But when it comes to performance, banner and native ads still reign supreme. At \$4.05 per install and \$12.16 per action, the price/performance ratio somewhat limits the appeal of video — that is, if you look purely at performance, not brand lift.

Interactive ads (commonly referred to as "playables" in the gaming app category)

offer a competitive price per install, yet they have the lowest post-install conversion rate of all the ad formats analyzed in this report. Just 23.8% of people who installed an app after engaging with an interactive or playable ad proceeded to convert in a post-install event.

Does it mean that video and interactive ads don't convert as well as the other ad formats? App category data is outside the scope of this report, so we can't apply this insight to all apps. Playables for gaming apps, for example, will likely show a better conversion rate. And how marketers use these new ad formats also varies. Anecdotal feedback from the industry suggests that marketers are still using social media ads and TV commercials in the mobile in-app environment, potentially driving down performance.

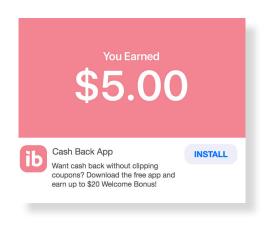
The best performing video ads tend to showcase the value proposition of an app in a clear and concise way. They shouldn't be huge Hollywood productions to gain conversions.

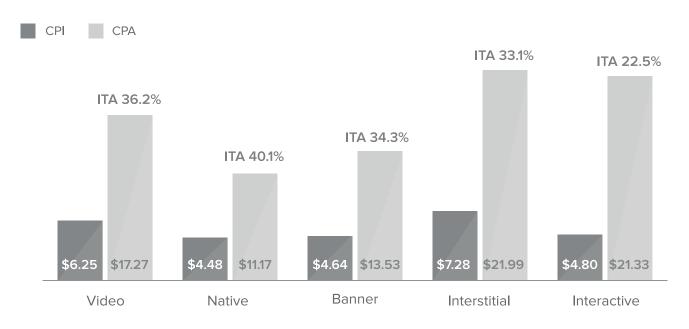
Ira Krachanovskaya, Head of Growth Marketing at Badoo

Ad Creative Performance by Platform

A breakdown of ad creative performance by platform reveals what you might expect: iOS users cost more than Android users. But isolate performance by ad creative type, and you will see curious differences in post-install engagement rates by platform.

Native ads drive better user experiences for iOS users, resulting in a higher install-to-action rate. Native ads feature an impressive 40.1% ITA, followed by video ads (36.2%) and banners (34.3%). And if you look at the costs for iOS, native ads offer better value for money compared to interstitials and interactive ads.





PLATFORM: IOS COSTS & ENGAGEMENT RATE

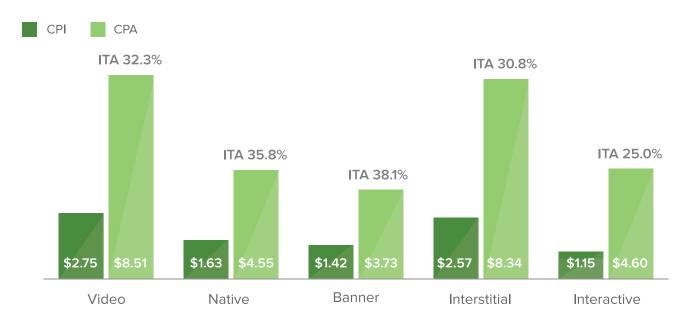


Banner ads, on the other hand, deliver the best post-install engagement rate for Android users at a low \$1.42 per install and \$3.73 per post-install action. Low banner costs coupled with the high popularity of Android devices in developing markets make banners and the Android platform the perfect match for marketers looking to scale ambitiously in 2019.

As stated previously, the high cost to acquire iOS users -- using any ad type -- is no surprise. If you track performance down to deeper-funnel metrics such as revenue and ROAS, you will see that iOS users tend to spend more over time. Our ad

creative performance data show that native (\$11.17 CPA) and banner ads (\$13.53) help acquire the highly valuable iOS users at the best price/ performance ratio.

However, if you are looking to scale fast and cheap, or targeting specific geos where Android dominates the market, look no further than banners and interactive ads on Android. At \$3.73 and \$4.60 per first-time postinstall action respectively, these ad types feature the lowest CPA. Though be mindful that interactive ads show a lower install-to-action rate overall and may work for some categories better than others.



PLATFORM: ANDROID COSTS & ENGAGEMENT RATE



Engagement by Ad Format

Programmatic advertising technology enabled mobile marketers to have 1:1 conversations with thousands of people on their most personal devices. But technology is only meaningful if it fits into people's lives. Mobile marketers have the opportunity to win consumer attention if they focus on adapting their message to mobile in-app context and its new and emerging ad formats.

Banner Ads

This year marks the 25th anniversary of the banner ad, launched as part of an AT&T advertising campaign back in 1994. This may sound like a lifetime for a digital format, but banners are still relevant -- on web and mobile. Of course, the mobile version of a desktop banner has evolved over the years. Modern banners are optimized through responsive serving that customizes ad creative for different devices, content and audiences.

While banners obviously don't push the boundaries of creative tech, they offer broad reach and work with most publishers. Unlike other ad types, banners don't present any inventory scale issues. At \$2.31 CPI and \$6.18 CPA. banners also cost less than other mobile ad creative types while featuring the second-highest ITA rate (after native ads) of all ad types.

And banner size matters, though bigger doesn't always mean better. The "mobile leaderboard," modestly sized at 320x50, provides ample width for readability on mobile screens. This small but mighty ad format features an impressive 39.31% ITA rate and performs nearly four times better than the 728x90 tablet-optimized "leaderboard"



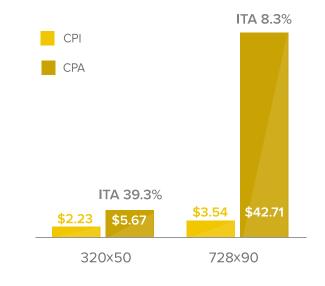
BANNER ADS: COSTS & ENGAGEMENT RATE



Anchored to the top or bottom of the screen, banners follow the user as they scroll through the app and on average, appear for 25-30 seconds -- longer than other formats, according to Liftoff data. But as marketers know well, views can be a deceptive metric. To boost engagement, it is important to get the message across much quicker -- within the first few seconds.

Cheap and versatile, banners work best for scaling campaigns. But when it comes to design and messaging, less is more. The right targeting, fast load time and direct messaging will help boost

performance, while going too far with animation will only annoy users, cause accidental clicks and drive down the value of ads.



BANNER ADS: COSTS & ENGAGEMENT RATE BY SIZE

Interstitial Ads

Interstitial ads are served at natural inapp transition points taking up the entire mobile screen. Depending on how and where they are served, interstitials can be a blessing or a curse. The good news: these full-screen ads capture the user's full attention and year over year, offer a larger media canvas for creativity as our device screens keep getting

bigger. The bad news: interstitials often don't have an immediate option to close the ad, leaving the user feeling annoyed, especially if placed in the wrong type of app. Interstitials are viewed on average for two to four seconds, according to Liftoff data.

Interstitials cost \$3.37 per install and \$10.68 per post-install action, which makes them the second most expensive



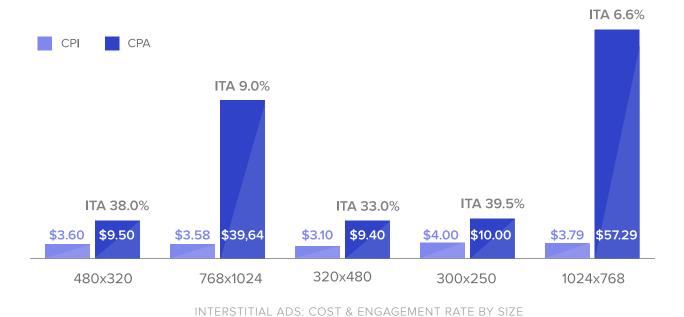
ad format after video. Interstitial ads also feature a fairly low install-to-action rate. At 31.5% ITA, they convert users better than interactive ads but not as well as banners (37.4% ITA), native (38.7% ITA) and video ads (33.4% ITA).

As you can see, on average, interstitials cost a premium and often don't perform as well as other, less expensive ad types. On the positive side, they do offer more room to



INTERSTITIAL ADS: COSTS & ENGAGEMENT RATE

display rich media content and emphasize the CTA. When placed in apps with clear linear user journeys, such as multi-level games, interstitials can be very effective.



Video Ads

As a storytelling medium, video offers marketers a richer way to appeal to our human emotions and senses. But

for direct performance, where brevity trumps detail, video ads don't always live up to the hype. At \$4.05 per install and \$12.16 per first-time postinstall action, video ads are the most



expensive ad type in the data set. At the same time, video offers a fairly high install-to-action rate -- 33.4%.

The numbers, however, don't show the full picture; marketers still have a long way to go when it comes to adapting this exciting ad format for mobile programmatic. Many marketers still use repurposed social media ads and TV commercials. That's unfortunate, as TV ads typically have a long intro and don't get the message across in the few short seconds that marketers have to capture a user's attention.

Short, under-15-second, videos that are typically non-skippable and play all the way through are more effective. And a simple video walkthrough demonstrating the features and user interface will deliver better results -- at a fraction of the budget required to make a TV commercial.



VIDEO ADS: COSTS & ENGAGEMENT RATE

Interactive Ads

Interactive ads, also known as playable ads, offer users the ability to test an app before installing. These ads typically offer some kind of interaction. like playing a game or exploring a product showcase.

Compared to other formats, interactives have lower-than-average costs with a CPI of \$2.48 and CPA of \$10.39.

However, their install-to-action rate is far below the rest at only 23.8%.

While data points to weak performance of this ad type, a further breakdown by app category will likely tell a very different story. Interactive ads seem to be well-liked among younger audiences: recent data on Millennials and Gen Z shows that the "Mobile Prodigies" want mobile creative to be fun and "challenge them to do something active."



To unlock the full potential of interactive ads, marketers will need to up their game in designing ads that are fun to play but also make people feel safe enough to navigate away from their current experience and touch the ad. Unlike other app install ads, where a prominent call to action remains best practice, interactive ads must have a

call to interaction, established clearly through copy and an interaction cue.



INTERACTIVE ADS: COSTS & ENGAGEMENT RATE

Native Ads

Native ads blend in with the app's content, thus appearing "native" to the app experience. These "in-feed" ads, typically consisting of a thumbnail, headline, brand name and logo, are common among news and social apps.

Seamlessly integrated into the app's content and thus appearing less intrusive, this format delivers excellent performance with an ITA rate of 38.7%. an average CPI of \$2.96 and a \$7.65 CPA.

This success of the native ad format on mobile programmatic shows that users respond well to ads that are less disruptive to the user experience, especially when these ads are aligned with user intent. In addition to stellar performance, native ads have been found to trigger a greater lift in positive brand associations compared to display ads. Win-win!



NATIVE ADS: COSTS & ENGAGEMENT RATE





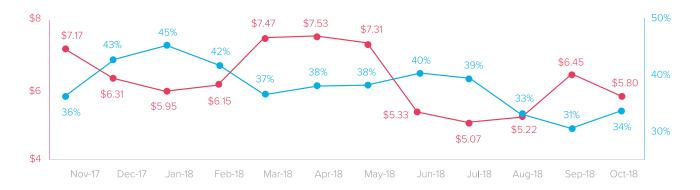
Ad Creative Seasonal Trends

Consumer behavior and purchasing habits tend to shift throughout the year. Adjusting ad campaign budgets seasonally helps marketers make a greater impact.

Some of these consumer behavior shifts are predictable, like the holiday shopping season. Other, less obvious seasonal opportunities, vary significantly by ad format. Identifying the times when lower costs coincide with high engagement rates gives savvy app marketers a leg up over the competition.

Banner Ads

In the winter months and early to midsummer, the cost per first-time postinstall action drops and engagement rates soar. We see a reverse trend in the spring (Mar, Apr, May), when CPAs spike while engagement rates remain average for the year -- not the best time to drive Easter sales with this ad type!



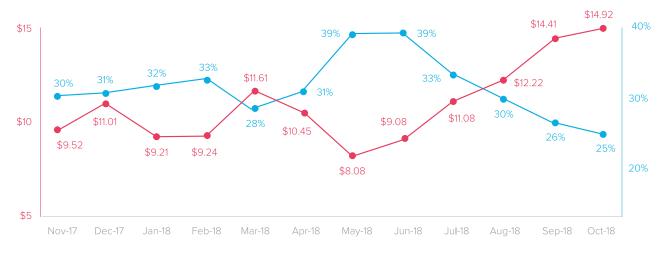
BANNER ADS: MONTHLY COSTS & ENGAGEMENT RATES



Interstitial Ads

For interstitial ads, costs drop in May while engagement skyrockets. On the opposite end, early fall

(Aug-Oct) brings a spike in cost while engagement rates decrease below the average for the year -- don't rely on this ad type for high-ROI back-toschool campaigns.

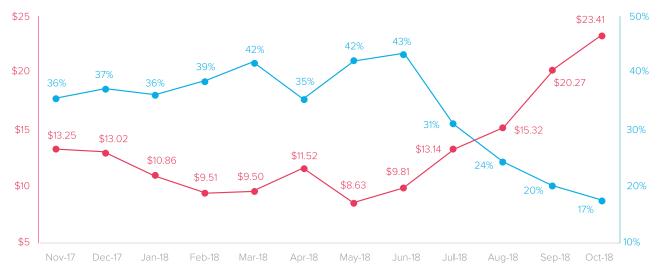


INTERSTITIAL ADS: MONTHLY COSTS & ENGAGEMENT RATES

Video Ads

When it comes to video ads, engagement peaks in March, May and June while costs remain at a record low. In North America, this signals the perfect

opportunity to ramp up your video ad spend for Mother's Day, Memorial Day and Father's Day promotions. Acquisition costs increase at the end of summer and into early fall, while engagement rates plummet.



VIDEO ADS: MONTHLY COSTS & ENGAGEMENT RATES



Interactive Ads

May and late summer through early fall of 2018 were great for interactive ads, with high engagement rates and low

costs. On the flip side, performance dropped significantly in November 2017 with the cost per first-time post-install action increasing to the year's high.

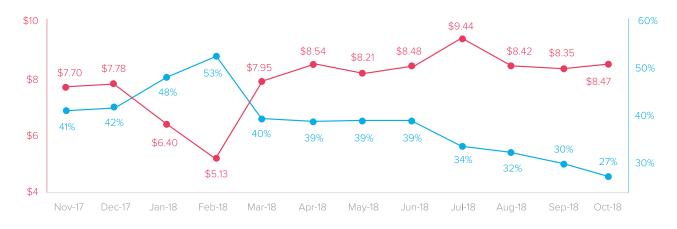


INTERACTIVE ADS: MONTHLY COSTS & ENGAGEMENT RATES

Native Ads

In February, costs cool down while engagement rates increase to 53% -- the year's high. Just in time for Valentine's Day promotions and deals!

Midsummer, however, doesn't offer the best conditions for increasing spend on native. As consumers leave on vacation to soak up some sun in July, costs increase to \$9.44 while engagement rates drop below average.



NATIVE ADS: MONTHLY COSTS & ENGAGEMENT RATES



A/B Testing Mobile Ad Creative

Ad creative is often the first interaction a user has with your product. Testing and optimizing your ads not only improves performance of your app marketing campaigns but also helps create a stronger and more positive impression.

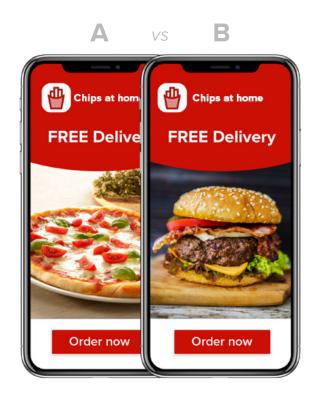
Depending on campaign goals, look at click-through rate, impression-to-install rate, CPA and other metrics to measure the results.

At Liftoff, as of December 2018, we have run over 27,000 A/B tests across all app categories and ad formats. The data that we collect over time reveals patterns and best practices for each vertical -- and sets the direction for what elements to test in a campaign.

Copy, color, images, fonts, animation are some of the many elements to test. For example, moving a button from the top of an ad to the bottom can boost installs by up to 25% -- a significant improvement if you apply this seemingly small alteration to all campaign creatives.

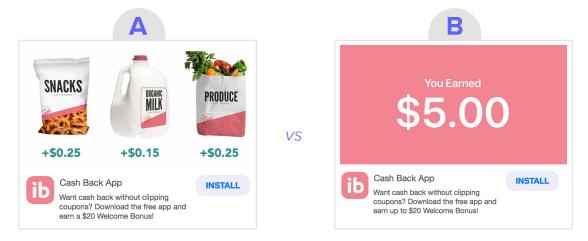
But the biggest impact comes down to identifying the right message. The best performing ads clearly communicate

the app's core benefit by showcasing the in-app experience. Take a ridesharing app for example: what is the core benefit you want to communicate to users? Is it the fact that it is cashless? Its speed? Or that it helps you get from A to B? Once that becomes clear from running a test on a static image, apply your learnings to other formats.



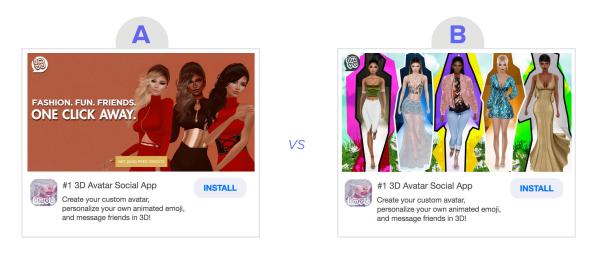


Below is an example of a native ad A/B test we ran to identify the best value proposition for the cash back rewards app lbotta.



Version B had a 44.8% lower CPI and a 49.1% lower CPA compared to Version A. Using simple copy "You Earned \$5.00" more effectively communicates the core benefit than showcasing the savings earned from different product types.

Here is another example of a native A/B test we ran for the avatar-based social game app <u>IMVU</u>. Version A focuses on showing different types of avatars a user can create in the app. Version B focuses more on the fashion elements of the app.



Version A had a 30% lower CPI compared to Version B, likely due to the ad better communicating the main value proposition of the app -- the ability to creative a variety of personalized avatars. All users are different and want to know that their unique style and taste can be met.

In another A/B test for the hidden objects game Seeker's Notes Hidden Mystery, we tested whether finding several different objects (Version A) would be more intriguing than finding multiples of the same object (Version B), in this case, teapots. This test focused on the app's unique gameplay and resulted in a 41% lower CPI for the ad with ten teapots (Version B). This A/B test demonstrates one of our key learnings -- when it comes to mobile ad creative, simplicity is key. It's important to value users' attention and keep the interaction straightforward.

VS





Ongoing A/B tests form best practices that can be applied to specific verticals or across all of our campaign creatives. At the same time, not all the findings can be generalized. Sometimes, A/B tests reveal results with no clear explanation and yet significant performance lifts, pushing mobile marketers to always approach campaigns -- and especially campaign creatives -- with an always-be-testing mindset.

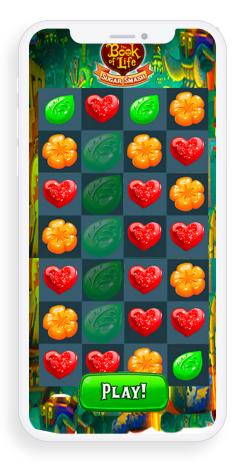
Summary

For today's consumers, the first interaction with a product or brand often happens on-the-go, whenever someone pulls out their mobile device to get what they need in the moment.

For marketers, each person's unique context is valuable to deliver a meaningful message, but how they engage on mobile matters just as much. Understanding the specifics of the five key mobile ad types -- banner, interstitial, video, interactive and native -- helps marketers identify the best way to meet users' needs appropriately and at the right time.

Video and interactive ads show the most impressive performance at the top of the funnel, yet on average, don't convert as well as other ad creative formats. The reason is twofold. First, these ads likely show high performance variance by app category. Second, marketers may need to adapt these formats better for mobile apps. Even today, many mobile video ads are repurposed TV or social media commercials which don't perform on programmatic, and many interactive (aka playable) ads lack a clear call to interaction, which drives down the value of interactive ads.

On the other hand, banner ads feature the lowest impression-to-install rate yet deliver the best bang for the buck if you look at CPI, CPA and post-install engagement rates. Especially on Android. low costs make this ad format the best creative solution for scaling growth in developing markets.





Interstitials cost a premium and don't perform as well as banners, native and video ads. User experience is key: when placed in between levels in gaming apps with linear user journeys, these ads are less disruptive to the user experience -- and more effective.

Seamless integration into the app's content leads to great performance results for **native ads**. This format has the highest post-install conversion rate across all ad creative types — especially on iOS.

Ad creative performance varies significantly by season. For example, interstitials and video ads present the perfect opportunity to benefit from lower CPAs and higher conversion rates in May.

Testing is the best way to identify and optimize high-performing campaign creatives. To test smarter, identify the key value proposition on static banners first, then experiment with more complex and interactive formats.

While some formats work better than others in this data set, in programmatic advertising, it is important to spend on every ad format. Machine learning can take over tasks such as identifying which ad format to run and when, leaving people to do what they do best — create and experiment.

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-peraction 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

