



BENCHMARKS REPORT:

How Push Notifications Impact Mobile App Retention Rates

Analysis of Data from 63 Million New App Users Reveals How Push Notification Opt-In Rates & Frequency Influence Mobile App Retention



EXECUTIVE SUMMARY

In this study, we wanted to answer the question: *how do push notifications impact app retention rates?*

To get at the answer, we looked at the behavior of 63 million app users. We tracked how many push notifications they received in the 90 days after their first open, and compared that to app retention rates during those same 90 days. ([More on report Methodology.](#))

IN THE FIRST STUDY TO CORRELATE MESSAGE FREQUENCY TO USER RETENTION, AIRSHIP FOUND:

While many mobile pros worry about over-messaging app users, their real worry should be under-messaging app users

- Users who received Daily+ notifications had the highest retention rates across all vertical and platforms.
- More than one-quarter of opt-in users never receive a push notification.
- App users who receive one or more notifications in their first 90-days have an average retention rate that's nearly 3x higher than users who receive no push notifications.
- Sending even one push notification has a significant impact on app retention rates.

95% of opt-in users who don't receive a push notification in the first 90 days will churn

That means that app publishers are essentially wasting \$.95 cents of every dollar spent to acquire coveted opt-in app users.

Overall, more frequent push notifications increase app retention rates — and the more frequent (while staying relevant!), the better

- Users receiving Daily+ push notifications had 820% higher app retention rates than users who received Zero push notifications.
- Users receiving Weekly push notifications had 440% higher app retention rates than users who received Zero push notifications.
- Users receiving One push notification had 120% higher app retention rates than users who received Zero push notifications.

WE ALSO SLICED THE DATA BY KEY VERTICALS AND FOUND:

Retail Retention Highlights

- The ideal push notification send frequency for Retail apps is Weekly, Daily or Daily+.
- Users receiving Weekly push notifications have 2-5x higher app retention rates than users who receive no push notifications.
- Users receiving Daily+ push notifications have 3-6x higher app retention rates than users who receive no push notifications.

Media Retention Highlights

- The ideal push notification send frequency for Media apps is Daily or Daily+.
- Users receiving Daily+ push notifications have 2x app retention rates than those receiving Weekly push notifications.
- However, around one-third of opt-in users for media apps received no push notifications — or only one.

Utility & Productivity Retention Highlights

- The ideal push notification send frequency for Utility & Productivity apps is Daily or Daily+.
- However, 39% of the users analyzed in our study didn't receive any push notifications in the first 90 days — or only received one.
- Regardless of how many push notifications received, opt-in users of Utility & Productivity apps stick around longer. They're retained 49% longer than opt-out users — the highest of any vertical in our study.

Sports & Recreation Retention Highlights

- The ideal push notification send frequency for Sports & Recreation apps is Daily or Daily+ (although Weekly push notification sends also perform very well with Android users).
- However, 41% of Android users and 23% of iOS users received only one push notification — or none at all.

NOT ALL USER CHURN CAN BE ADDRESSED WITH PUSH NOTIFICATIONS. USERS WHO HAVE OPTED OUT OF PUSH NOTIFICATIONS CAN'T BE ENGAGED THROUGH THAT CHANNEL.

Even at optimal notification frequency levels, 54% of app users will churn in the first 90 days after opening an app

- To address this segment, it's critical to be able to detect signals app users are sending that they're likely to churn. Airship now has a solution that “listens” for you through machine learning. It analyzes user patterns for each app, then assigns them a churn risk level, giving app publishers the chance to take action before a user is gone.

Take advantage of this data to improve retention — and your app investment. Visit the [Recommendations](#) section of the report for best practices to engage users and gain the opt in.

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GLOSSARY OF TERMS

APP RETENTION: “App retention” or “app retention rates” is when a user continues to open an app (at least one time) during the 90 days after their first app open.

CHURN: Churn includes both “hard churn” — user uninstalled the app — and “soft churn” — a user who no longer opens the app during the defined period.

FREQUENCY COHORTS

Within the first 90 days of app usage:

- *Zero Push Notifications Sent:* User received no push notifications
- *One Push Notification Sent:* User received one push notification
- *~2x Monthly Push Notifications Sent:* User received approximately two push notifications per month
- *~Weekly Push Notifications Sent:* User received approximately one push notification per week
- *~Daily Push Notifications Sent:* User received approximately one push notification each day
- *Daily+ Push Notifications Sent:* User received multiple push notifications per day

OPT-IN APP USERS: Opt-in app users are those who have agreed to receive push notifications from an app. On iOS, users receive a permissions dialogue — usually on first open — prompting them to choose whether they want to allow push notifications. On Android, users are opted in to receive push notifications from apps by default.

OPT-OUT APP USERS: Opt-out app users are those who have declined to receive push notifications from an app when asked, or have taken steps to opt out of an app's push notifications through app or system-level settings.

PUSH NOTIFICATIONS: A push notification is a message that pops up on a mobile device. Push notifications can be simple text-based messages, but can also include rich media like images and videos. They only reach users who are opted in to receive them. Push notifications can be targeted to segments of your user base, and personalized for specific app users. For more, see our cheat sheet, [Push Notifications Explained](#).

PREDICTIVE CHURN ANALYTICS: Predictive Churn Analytics is a proprietary machine learning model to help app owners determine which of their users are likely to churn. Airship offers Predictive Churn through our Performance Analytics and Real-Time Data Streaming Solutions.

PLATFORMS:



Android



iOS

How Push Notification Opt-In Rates Impact App Retention Rates

GET DATA TO ANSWER:

- How many app users opt in to receive push notifications?
- Do opt-in rates vary by mobile platform?

PUSH NOTIFICATION OPT-IN RATES: ANDROID VS. iOS

App owners can only communicate with app users via push notifications if users are willing to receive them. In other words, the more users who opt in, the better.

Of the 63 million new app users we analyzed for this report, 85% of Android users and 50% of iOS users were opted in to receive notifications. These opt-in rates are roughly consistent with findings from many analyses over the [past three years](#), though iOS rates are seeing small increases year-over-year, and slightly more Android users seem to be taking steps to opt out of the automatic permission apps receive.

Overall Opt-in Rates for New App Users in This Analysis:

 85%

 50%

KEY TAKEAWAY:

Getting users to opt in is a critical step in app onboarding. If a user doesn't opt in — or opts out — you lose the chance to engage them with push notifications. [Our top resources for getting the opt in are listed in this blog post.](#)

How Push Notification Opt-In Rates Impact App Retention Rates

IN THIS SECTION, GET DATA TO QUESTIONS LIKE:

- Does sending push notifications increase retention?
- Does sending too many push notifications cause users to churn?
- Is there a relationship between the frequency of push notifications and app retention rates?

PUSH NOTIFICATION FREQUENCY IMPACT ON APP RETENTION RATES

For new app users in the first 90 days, our data shows more frequent push notifications are correlated to better app retention rates. App users who receive any push notifications in the 90 days after their first app open have nearly 3x (190%) higher retention rates than those who do not.

| | | Opt-out | Zero | Once | ~2X Month | ~Weekly | ~Daily | Daily+ |
|--|---------|---------|------|---------------|---------------|---------------|---------------|---------------|
| <i>Overall 90-day App Retention Rate Increase, Moving from Sending Zero Push Notifications to Higher Messaging Frequencies</i> | Week 1 | 46% | 22% | 40% | 64% | 79% | 83% | 90% |
| | Week 2 | 41% | 19% | 34% | 53% | 72% | 76% | 86% |
| | Month 1 | 35% | 15% | 27% | 42% | 59% | 65% | 78% |
| | Month 2 | 26% | 10% | 20% | 28% | 45% | 50% | 65% |
| | Month 3 | 15% | 5% | 11% | 14% | 27% | 30% | 46% |
| 90-day Retention Lift Comparing Zero & Daily+ Push Notification Frequency | | | | + 120% | + 180% | + 440% | + 500% | + 820% |

KEY TAKEAWAY:

Relevant, timely and frequent notifications help engage and retain users. To send at a Daily or Daily+ level of messaging – and get the increased app retention benefit – brands are [automating and personalizing push notifications](#).

95% OF UNADDRESSED NEW USERS CHURN WITHIN 90 DAYS

Within 90 days after first app open, 95% of opt-in users in our study who didn't receive any push notifications churned — that is, they deleted or stopped using the app. Meaning, app publishers who don't send push notifications are effectively wasting \$.95 cents of every dollar spent acquiring new users.

*Retention Rates for
Non-Messaged Users*
(iOS and Android)



KEY TAKEAWAY:

When brands don't send a push notification of any kind to new users, they're wasting user acquisition investments and ignoring an important and direct channel to [engage users who have opted in](#). There's also a significant opportunity cost: any revenue that could have been generated from actively engaged users is lost.

A SIGNIFICANT NUMBER OF OPT-IN USERS DO NOT RECEIVE ANY PUSH NOTIFICATIONS

Our data shows more than one-quarter (27%) of opt-in users don't receive any push notifications in their first 90-days of using an app. In fact, for Android users, the Zero frequency cohort was the largest frequency cohort — both in our overall data analysis, as well as in every vertical we analyzed. On iOS, Zero frequency was the second largest cohort overall.

Push Notifications Sent in the First 90 Days After First App Open



30% received zero push notifications
13% received only one push notification



15% received zero push notifications
17% received only one push notification

KEY TAKEAWAY:

App users who receive *any* push notifications in their first 90-days have a 3x higher app retention rate when compared to those who received no push notifications.

[Building a messaging strategy](#) for app users doesn't have to be hard — and it pays dividends. [Tools and templates](#) exist to help you build a content plan that converts occasional users into your most loyal fans.

COMPARING PUSH NOTIFICATION FREQUENCY COHORTS

Moving from sending zero push notifications to sending weekly push notifications results in a significant app retention rate increase on Android (6x), and a more modest doubling increase on iOS.

Increasing send frequency to Daily+ creates an even greater retention rate boost of 10x on Android and 3x on iOS.

Moving from Sending Zero Push Notifications to Sending *Weekly* Push Notifications

 2x app retention

 6x app retention

Moving from Sending Zero Push Notifications to Sending *Daily+* Push Notifications

 3x app retention

 10x app retention

KEY TAKEAWAY:

Weekly notifications should be a reasonable goal for any app in terms of push notification send frequency. In fact, by monitoring user lifecycle signals (new install, app opens, completed registration, completed in-app purchase, app upgrades, etc.) most apps could achieve automated, triggered weekly push notifications virtually overnight.

Beyond transactional push notifications, brands need a cohesive strategy for creating the right cadence of relevant and timely push notifications that meet app engagement goals. See our blog post [5 Things the Best Mobile Notifications Have in Common](#) for more insights on creating push notifications your users will welcome.

A Deeper Dive: Benchmarks for Four Key Verticals

We've provided benchmarks for apps in four key verticals — Retail, Media, Utility & Productivity and Sports & Recreation. Let's look at what analysis of their messaging and retention patterns revealed.

RETAIL

The Retail apps category — with 19,736,469 users — encompasses 210 apps including:

- online and brick-and-mortar brands,
- fashion/apparel (department or mall stores),
- specialty stores,
- grocery stores,
- discount/deal/samples/flash sale,
- big box/warehouse stores, and
- luxury retailer apps.

Data and assertions made in this section are specific to analysis of the Retail users outlined above.

PUSH NOTIFICATION FREQUENCY IMPACT ON APP RETENTION RATES: ANDROID

| | | Opt out | Zero | Once | ~2X Month | ~Weekly | ~Daily | Daily+ |
|---|---|---------|------|------|------------|-------------|-------------|-------------|
| <i>Retail: 90-day App Retention Rate Increase, Moving from Sending Zero Push Notifications to Higher Messaging Frequencies on Android</i> | Week 1 | 32% | 22% | 44% | 61% | 80% | 80% | 88% |
| | Week 2 | 28% | 19% | 34% | 53% | 73% | 73% | 82% |
| | Month 1 | 22% | 15% | 24% | 42% | 62% | 61% | 71% |
| | Month 2 | 16% | 10% | 17% | 27% | 50% | 47% | 55% |
| | Month 3 | 9% | 6% | 9% | 13% | 30% | 27% | 38% |
| | 90-day retention lift > 0-level | | | | 50% | 117% | 400% | 350% |

n = 11,798,654

PUSH NOTIFICATION FREQUENCY IMPACT ON APP RETENTION RATES: iOS

A closer look at the impact on retention of frequency rates over time on both iOS and Android for the Retail vertical is broken out by platform.

| | | Opt out | Zero | Once | ~2X Month | ~Weekly | ~Daily | Daily+ |
|---|----------------|---------|------|-----------|------------|-------------|-------------|-------------|
| <i>Retail: 90-day App Retention Rate Increase, Moving from Sending Zero Push Notifications to Higher Messaging Frequencies on iOS</i> | Week 1 | 57% | 53% | 48% | 75% | 87% | 92% | 93% |
| | Week 2 | 52% | 47% | 43% | 68% | 83% | 89% | 89% |
| | Month 1 | 46% | 39% | 36% | 57% | 75% | 82% | 83% |
| | Month 2 | 35% | 28% | 27% | 43% | 62% | 69% | 70% |
| | Month 3 | 19% | 14% | 15% | 23% | 39% | 46% | 50% |
| 90-day retention lift > 0-level | | | | 7% | 64% | 179% | 229% | 257% |

n = 7,937,815

RETAIL OPT-IN RATES ARE GENERALLY HIGHER

With an opt-in rate that's just shy of the overall average for iOS, and the absolute highest among Android verticals (92%), Retail apps have an addressable advantage.

Average Opt-In Rate:

92% 

49% 

75% Overall*

*weighted by audience size

RETAIL OPT-IN USERS HAVE SIGNIFICANTLY HIGHER APP RETENTION RATES THAN OPT-OUT USERS

Retail apps see opt-in users retained longer than opt-out audiences — some of the biggest gains for any vertical.

User Retention



Opt-in users have app retention rates **40%** longer than opt-out users



Opt-in users have app retention rates **90%** longer than opt-out users

That said, Retail opt-out users have better 90-day retention rates than opt-in users who receive no messages — 50% higher on Android and 36% higher on iOS.

RETAIL APP USERS RECEIVING ANY NOTIFICATIONS ARE RETAINED 110% MORE ON AVERAGE THAN THOSE WHO DON'T

Retailers appear to know the value of messaging their audience: this vertical had the lowest percentage of app users who received Zero push notifications — 21% for Android and 9% for iOS.

Increase in App Retention Rate When Messaged At All Over the First 90 Days

 212%

 110%

INCREASING PUSH NOTIFICATION FREQUENCY HAS A SIGNIFICANT RELATIONSHIP WITH APP RETENTION RATES FOR RETAILERS

On both Android and iOS, there are benefits of increasing push notification send frequency. Analysis of 90-day retention levels point specifically to Weekly, Daily or Daily+ as good messaging frequencies.

90-day Retention Rates For Users Receiving Daily+ Notifications

 50%

 38%

The retention rate for the Daily+ cohort is a 257% increase over the Zero cohort on iOS, and a 533% increase over the Zero cohort for Android.

KEY TAKEAWAYS FROM THE RETAIL VERTICAL

- Retail customers have many channels to learn about brands. Reward the loyalty of opt-ins with messages targeted to behaviors shown in-app, or data from other channels. ([See Recommendations section.](#))
- [Getting the opt-in is truly critical to better retention](#), especially for Retail apps. But, while the opt-in is critical to app use longevity, notifications must be used to have an impact.
- There is plenty of opportunity to increase retention with even a single relevant push notification. And sending relevant Weekly, Daily or Daily+ notifications significantly improves retention for both Android and iOS users overall as well. Daily+ notifications generated a 50% retention rate for iOS (a 257% increase over Zero) and 38% retention rate for Android (a 533% increase over Zero) at 90 days.
- Daily+ notifications has the highest 90-day retention rate, but it must be carefully managed — a mix of transactional, automated and campaign messaging will yield the best results. A carefully devised and implemented strategy based on user preferences, behaviors and transactional updates can reap big rewards. ([See Recommendations section.](#))
- To extend the longevity of notification strategies, consider adding an [in-app Message Center](#). According to our data, medium-performing iOS apps (the 50th percentile) achieve 8x greater Message Center read rates than direct taps on a notification. When looking at retail apps alone, data showed [customers read nearly half of all message center messages](#). Ensure users have a location to see your messaging at their convenience.

MEDIA

The Media apps category — with 10,520,630 users — encompasses 727 apps including:

- global media,
- national & breaking news,
- national radio stations,
- local news (includes niche news such as finance),
- local TV and radio stations,
- books & magazines (both subscription and newsstand), and
- major newspaper apps.

Data and assertions made in this section are specific to analysis of the Media users outlined above.

PUSH NOTIFICATION FREQUENCY IMPACT ON APP RETENTION RATES: ANDROID

A closer look at the impact on retention of frequency rates over time on both iOS and Android for the Media vertical is broken out by platform.

| | | Opt out | Zero | Once | ~2X Month | ~Weekly | ~Daily | Daily+ |
|--|---|---------|------|------|-------------|------------|-------------|-------------|
| <i>Media: 90-day App Retention Rate Increase, Moving from Sending Zero Push Notifications to Higher Messaging Frequencies on Android</i> | Week 1 | 46% | 31% | 64% | 52% | 61% | 85% | 89% |
| | Week 2 | 39% | 27% | 58% | 45% | 51% | 75% | 84% |
| | Month 1 | 30% | 21% | 50% | 37% | 40% | 65% | 73% |
| | Month 2 | 21% | 14% | 38% | 26% | 30% | 51% | 58% |
| | Month 3 | 12% | 8% | 21% | 15% | 18% | 31% | 39% |
| | 90-day retention lift > 0-level | | | | 163% | 88% | 125% | 288% |

n = 6,791,112

PUSH NOTIFICATION FREQUENCY IMPACT ON APP RETENTION RATES: iOS

| | | Opt out | Zero | Once | ~2X Month | ~Weekly | ~Daily | Daily+ |
|--|---|---------|------|------|-------------|------------|------------|-------------|
| <i>Media: 90-day App Retention Rate Increase, Moving from Sending Zero Push Notifications to Higher Messaging Frequencies on iOS</i> | Week 1 | 60% | 52% | 65% | 66% | 69% | 88% | 92% |
| | Week 2 | 56% | 46% | 62% | 59% | 62% | 83% | 89% |
| | Month 1 | 49% | 36% | 58% | 49% | 53% | 76% | 84% |
| | Month 2 | 38% | 24% | 52% | 38% | 39% | 63% | 73% |
| | Month 3 | 23% | 13% | 30% | 23% | 22% | 43% | 50% |
| | 90-day retention lift > 0-level | | | | 131% | 77% | 69% | 231% |

n = 3,729,518

MEDIA OPT-IN RATES CAN BE IMPROVED

Staying informed about the news users care about is even easier when users opt in to notifications. But, interestingly, Media has one of the lower Android and iOS opt-in rates out of the verticals analyzed. Having the right balance of timely, relevant messaging matters to long term user retention.

Average Opt-In Rate:

68% 

47% 

60% Overall*

*weighted by audience size

THE DELTA BETWEEN DAILY+ AND ZERO NOTIFICATIONS IN MEDIA APPS

It's not surprising that more than one-third (35%) of iOS Media app users and 21% of Android users receive Daily+ notifications over the initial 90 day period after downloading a Media app — higher than any other vertical.

However, it is surprising so many Media app users who opted in to notifications received either zero or only one notification over 90 days given the nature of the media business.

Percentage of Opt-Ins Receiving Zero or One Notification

 28%

 43%

In fact, opt-out users have 50% higher 90-day retention rates than opt-in users receiving zero notifications on Android, and 77% better on iOS.

PUSH NOTIFICATION FREQUENCY IN MEDIA APPS

Particular to the Media vertical, from an app retention standpoint, it's better to send a single notification or be at the very high end of push notification send frequency.

Media app users on both Android and iOS who receive one notification have better 90-day app retention rates than users who are in the ~2x Monthly or ~Weekly cohorts.

However, Media apps that make themselves a Daily or Daily+ companion to users see much higher retention rates. Moving from Weekly to Daily+ is more than a 2x multiplier on 90-day retention rates for both platforms.

Increase in Retention Rate When Moving from Zero to Greater Notification Frequency

Sending *~Weekly* Notifications vs.
Sending Zero Notifications

 125% app retention

 69% app retention

Sending *Daily+* Notifications vs.
Sending Zero Notifications

 388% app retention

 285% app retention

KEY TAKEAWAYS FOR THE MEDIA VERTICAL

- A 147% overall increase in retention by messaging a user even once in the first 90 days is powerful incentive to [implement an engagement strategy](#). Within the Media vertical, this can be accomplished through [tagging and automation triggers](#) around topical areas of interest — even simply sending a welcome message to opt-ins directing users to a preference center or providing an app tour highlighting how to find the content they seek can significantly increase retention. ([See Recommendations section.](#))
- Media apps can be doing more to build user habit. A full 43% of Android and 28% of iOS users opted in to notifications, receive zero or only one push over 90 days.
- Users expect Media apps to provide news alerts as they happen. Sporadic, or even weekly messaging doesn't meet this need, as evidenced by the gap in retention rates.
 - Users receiving one notification have better 90-day retention rates than 2x/month or Weekly across both iOS and Android.
- In the Media vertical particularly, the push notification itself is often the reward — not necessarily action taken from the message. Ensure users have a way to receive the notifications most relevant to their interests.

UTILITY & PRODUCTIVITY

The Utility & Productivity apps category — with 6,961,907 users — encompasses 167 apps including:

- weather,
- navigation,
- reference,
- controls,
- on-demand services (booking or scheduling),
- sharing economy,
- classified, and
- task-related apps.

Data and assertions made in this section are specific to analysis of the Utility & Productivity users outlined above.

PUSH NOTIFICATION FREQUENCY IMPACT ON APP RETENTION RATES: ANDROID

A closer look at the impact on retention of frequency rates over time on both iOS and Android for the Utility & Productivity vertical is broken out by platform.

| | | Opt out | Zero | Once | ~2X Month | ~Weekly | ~Daily | Daily+ |
|---|---|---------|------|------|-------------|------------|-----------|-------------|
| <i>Utility & Productivity: 90-day App Retention Rate Increase, Moving from Sending Zero Push Notifications to Higher Messaging Frequencies on Android</i> | Week 1 | 36% | 24% | 45% | 39% | 66% | 80% | 74% |
| | Week 2 | 31% | 20% | 41% | 23% | 48% | 73% | 64% |
| | Month 1 | 24% | 15% | 36% | 16% | 23% | 62% | 52% |
| | Month 2 | 16% | 10% | 28% | 11% | 11% | 44% | 39% |
| | Month 3 | 9% | 5% | 15% | 7% | 5% | 24% | 28% |
| | 90-day retention lift > 0-level | | | | 200% | 40% | 0% | 380% |

n = 5,531,015

PUSH NOTIFICATION FREQUENCY IMPACT ON APP RETENTION RATES: iOS

| | | Opt out | Zero | Once | ~2X Month | ~Weekly | ~Daily | Daily+ |
|---|---|---------|------|------|-------------|------------|-------------|-------------|
| <i>Utility & Productivity: 90-day App Retention Rate Increase, Moving from Sending Zero Push Notifications to Higher Messaging Frequencies on iOS</i> | Week 1 | 54% | 67% | 59% | 82% | 88% | 92% | 92% |
| | Week 2 | 50% | 61% | 52% | 76% | 85% | 89% | 88% |
| | Month 1 | 42% | 52% | 42% | 65% | 78% | 82% | 83% |
| | Month 2 | 32% | 37% | 30% | 40% | 67% | 70% | 75% |
| | Month 3 | 19% | 20% | 18% | 22% | 45% | 49% | 58% |
| | 90-day retention lift > 0-level | | | | -10% | 10% | 125% | 145% |

n = 1,430,892

UTILITY & PRODUCTIVITY OPT-IN RATES ARE HIGHEST

Of all the verticals included in our analysis, Utility & Productivity apps have the highest opt-in rate, likely given the often transactional or functional nature of their messaging. That is, users expect these apps to help them accomplish tasks — and push notifications are an integral part of that usefulness (i.e. reminders, alerts, status updates, etc.).

Average Opt-In Rate:

87% 

57% 

81% Overall*

*weighted by audience size

UTILITY &
PRODUCTIVITY

OPT-INS ARE MOST IMPORTANT FOR UTILITY & PRODUCTIVITY APP RETENTION

Utility & Productivity apps experience the biggest average retention gain between opt-in and opt-out audiences, likely pointing to the engaged nature of app users and their desire to fully use the functionality provided.



Opt-in
users are
retained

49% LONGER than opt-out users –
the highest for any vertical.

UTILITY &
PRODUCTIVITY

AN EXTREMELY HIGH NUMBER OF USERS RECEIVE ZERO PUSH NOTIFICATIONS FROM UTILITY & PRODUCTIVITY APPS

Despite the highest opt-in rate and the biggest retention gain for opt-in users, many users still do not receive any push notifications from Utility & Productivity apps. Many Utility & Productivity apps (such as taxi or car services) use SMS in combination with [push notifications to message about real-time actions](#). Mobile notifications provide a nuanced complement to SMS in reaching users in the moment, and the ability to provide follow up messaging via in-app content, and a less intrusive way to re-engage lapsed users than SMS.



38% of Utility & Productivity users are in the Zero or One notification frequency cohorts.



33% of Utility & Productivity users receive zero push notifications — *the largest zero-send percentage among all verticals and both platforms.*

IDEAL PUSH NOTIFICATION SEND FREQUENCY FOR UTILITY & PRODUCTIVITY APPS IS DAILY OR MORE

Data shows the best retention rates are seen from Daily or Daily+ frequency, although Weekly on iOS also performs well.

Increase in Retention Rate When Moving from Zero to Greater Notification Frequency


Zero to Weekly Notification Frequency

 125%

 0%

Zero to Daily+ Notification Frequency

 190%

 460%

Users receiving Daily+ messaging had a 58% 90-day retention rate on iOS (highest of all verticals) and a 28% retention rate on Android.

KEY TAKEAWAYS FOR THE UTILITY & PRODUCTIVITY VERTICAL

- Utility means just that — people find it useful. So it makes sense that, if the habit is formed, users are retained longer. Given the value these apps provide and that their audience is more likely to want to hear from them, Utility & Productivity apps have an opportunity to increase engagement with their users. Yet, 38% of Android and 46% of iOS opt-in users receive zero or only one push over the first 90 days.
- Users want apps to help them accomplish tasks more quickly and easily than they can on their own. Be sure to [tailor messaging strategies around user activities](#) and key next steps for end-to-end assistance and encouragement.
- Utility & Productivity apps frequently use triggered messaging to respond to key user actions. Some of the most successful in this category [pair triggered messaging](#) with seasonally or personally relevant marketing or educational content to retain their highest-value users.
- Careful consideration of when to message, and use of triggers — for example, just after a successful ride or delivery — may lead to better results than at other times.

SPORTS & RECREATION

The Sports & Recreation apps category — with 6,034,541 users — encompasses 163 apps including:

- sports organizations,
- sports associations,
- individual team,
- sports-only news, and
- recreation apps (i.e. skiing, hiking, golf, hunting).

Data and assertions made in this section are specific to analysis of the Sports & Recreation users outlined above.

PUSH NOTIFICATION FREQUENCY IMPACT ON APP RETENTION RATES: ANDROID

A closer look at the impact on retention of frequency rates over time on both iOS and Android for the Sports & Recreation vertical is broken out by platform.

| | | Opt out | Zero | Once | ~2X Month | ~Weekly | ~Daily | Daily+ |
|--|---|---------|------|------------|------------|-------------|-------------|-------------|
| <i>Sports & Recreation: 90-day App Retention Rate Increase, Moving from Sending Zero Push Notifications to Higher Messaging Frequencies on Android</i> | Week 1 | 43% | 29% | 45% | 60% | 76% | 88% | 92% |
| | Week 2 | 36% | 24% | 39% | 45% | 63% | 84% | 88% |
| | Month 1 | 28% | 18% | 31% | 29% | 49% | 73% | 80% |
| | Month 2 | 19% | 12% | 22% | 18% | 39% | 57% | 68% |
| | Month 3 | 11% | 7% | 12% | 10% | 25% | 35% | 51% |
| | 90-day retention lift > 0-level | | | 71% | 43% | 257% | 400% | 629% |

n = 3,497,824

PUSH NOTIFICATION FREQUENCY IMPACT ON APP RETENTION RATES: iOS

| | | Opt out | Zero | Once | ~2X Month | ~Weekly | ~Daily | Daily+ |
|--|---|---------|------|------|-------------|-------------|------------|-------------|
| <i>Sports & Recreation: 90-day App Retention Rate Increase, Moving from Sending Zero Push Notifications to Higher Messaging Frequencies on iOS</i> | Week 1 | 58% | 55% | 28% | 44% | 67% | 86% | 93% |
| | Week 2 | 52% | 49% | 24% | 29% | 58% | 81% | 91% |
| | Month 1 | 46% | 41% | 19% | 22% | 48% | 69% | 86% |
| | Month 2 | 36% | 29% | 13% | 16% | 36% | 52% | 76% |
| | Month 3 | 22% | 14% | 7% | 9% | 21% | 32% | 55% |
| | 90-day retention lift > 0-level | | | | -50% | -36% | 50% | 129% |

n = 2,536,717

SPORTS & RECREATION OPT-IN RATES ARE IN LINE WITH INDUSTRY AVERAGES

Sports & Recreation apps provide valuable information to users about their interests, hobbies and even what they'd describe as passions. With the second highest iOS opt-in rate of verticals analyzed — only Utility & Productivity was higher — Sports & Recreation app users truly are fans.

Average Opt-In Rate:

80% 

51% 

68% Overall*

*weighted by audience size

SPORTS & RECREATION APPS MUST STRIKE WHILE THE IRON (AND INTEREST) IS HOT

One-third (33%) of iOS sports app users receive Daily+ push notifications over a 90 day period. The vertical lends itself to high engagement. But that engagement must be cultivated... and frequently.



Opt-out
users have

57% GREATER

90-day retention rates than opt-in users receiving
Zero notifications on both Android and iOS.

WEEKLY, DAILY AND DAILY+ VOLUMES PAY DIVIDENDS FOR SPORTS & RECREATION APPS

In the Sports & Recreation vertical, 90 day send volume was widely distributed, perhaps as a result of more segmented messaging. Data shows the best retention rates are seen from Daily or Daily+ frequency, although Weekly on Android also performs well. A bi-monthly frequency on either platform, just doesn't cut it — you'd be better off not asking for the opt-in at all.

51%  users were retained through Daily+ messaging

55%  users were retained through Daily+ messaging

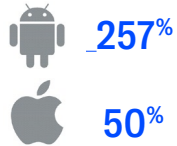
some of the highest 90-day retention rates across all verticals.

INCREASING FREQUENCY — THROUGH ADDED UTILITY — INCREASES RETENTION RATES

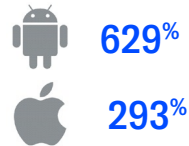
However, as with other verticals, the number of users not receiving any notifications after opt-in is still high. A solid 41% of Android users and 23% of iOS users who opted in receive zero or only one push notification over the first 90 days. Increasing that rate through a thoughtful messaging strategy will improve overall app retention.

Increase in Retention Rate When Moving from Zero to Greater Notification Frequency

Zero to *Weekly* Notification Frequency



Zero to *Daily+* Notification Frequency



KEY TAKEAWAYS FOR THE SPORTS & RECREATION VERTICAL

- Users are very passionate about sports and recreation activities they care about, as evidenced by one of the highest retention rates for opt-out users on both platforms, as well as the largest retention gains in moving from Zero to Daily+ for both Android and iOS.
- Don't squander the opt in; use it. Opt-out users have 57% greater 90-day retention rates than opt-in users receiving zero notifications on both Android and iOS. More frequent, relevant notifications improve retention.
- Sports & Recreation apps make it easier for messaging to be targeted. Users are asked for, and frequently provide, their interests (team, player, game level notifications). This level of personalization allows more relevant notifications to be sent more frequently, which has a positive impact on retention.
- As with other verticals, increasing messaging through a concerted strategy to provide value to users will increase retention without fear of over-messaging. ([See Recommendations section.](#))

RECOMMENDATIONS

We've provided a lot of data, and plenty of useful insights. What actions can you take to keep users engaged and reduce their likelihood of churning? Focus on the app purpose and user goals.

APP MESSAGING STRATEGY:

- Every business and type of app serve a different purpose, [requiring mobile engagement strategies that carefully consider the intersection of brand goals and users' goals](#). Ways to add value include: personalized & targeted content, specific offers, reminders, educational content, automation based on in-app behaviors and other in-the-moment activities across other channels.
- Some engagement challenges like the Zero-send users can be solved virtually overnight with [simple automation rules](#) and lifecycle triggers for [a welcome message or series](#). Increasing message frequency often involves more thoughtful segmentation and automation rules, using cross-channel and in-app data to reach people at the right moment with the right message. [\(We can help with that.\)](#)
- Message users from day one: highlight benefits or features of your app in a welcome message upon first app open. The [Redbox](#) app's welcome campaign combined notifications with its [Message Center](#) (or in-app inbox) and real-time marketing automation to realize 33% higher open rates and 300% greater redemption than its typical freebie promotions.
- [Build in habit from the start](#). Is there a weekly offer or a specific day new content or products are released? Even reminders users can opt in to — providing utility for the user — give them a repeatable reason to re-engage.
- Provide a reason to authenticate and capture a secondary channel (such as email) to allow for retargeting and omnichannel engagement.

GETTING THE OPT IN

- Retention starts with getting the opt-in, and that dovetails with having a clear value proposition for your app at the start. Demonstrate value at first app open. Prepare for churn early by finding out more about user interests to allowing for both a better app experience, but also for better retargeting down the line.
- Educate app users about the benefits of opting in to push notifications. It doesn't have to be done in the app. Any channel (email, print, web, social) where the mobile app value is highlighted will work.
- Don't give up on opted-out users! Opt-ins can always be earned.
 - Use in-app messaging to target users with a new ask when a high-value action — for the user — has just been completed (e.g. immediately post-purchase, ask if they want to stay up to date on shipping by opting in to notifications).
 - Message Centers reach the entire app audience, and are easy to implement. In high-performing apps, [opt-out users read 25% of all Message Center messages](#).

Looking for a little more help?

Airship has the best mobile strategists in the business. They do everything from consulting on a particular challenge you're facing, to helping concept your mobile growth strategy and team structure. But don't just take our word for it — some of the biggest global brands are happy to chat about the value they provide. [Request a consultation with our Strategic Services team today.](#)

ENGAGING NOTIFICATION CONTENT

- First, have a plan for content — from the value of each notification, to the message type to the action requested to ensure ensure user value is provided with each attempt at engagement. (Our [Mobile Content Plan Template](#) provides a great framework.)
- Make notifications [stand out with rich media](#) (image, GIF or even video). Our analysis of nearly five million notifications showed that big picture notifications see a 56% higher direct open rate on average than notifications without images. (Get more detail in our [Rich Notifications Inspiration Guide](#).)
- Create engaging notifications with interactive buttons encouraging user action. Airship offers [30+ button pairs OOTB](#), not to mention emojis. If you don't already have an Airship account to send notifications, [sign up to get going today](#). (More ideas can be found in our [Interactive Notifications Inspiration Guide](#).)
- Ensure you leave time to design and test compelling inactivity messaging based on value to the user. Consider timing it with the launch of new features, seasonal content, new offers, etc. to re-engage the lapsed user and demonstrate the utility that builds habit.

EFFECTIVE MESSAGING: BEST PRACTICES

- Provide an exclusive offer to entice users back into your app. Let users know when products or services they've shown interest in are on sale. Use your knowledge of what the user has previously engaged with to trigger their return.
- Promote new app features they might like, based on past behavior or feedback they've shared. Let them know about what has been added since their last visit that makes the app more useful for them.
- Use deep links to send users to specific app screens that support your message and drive their interest.
- Share special content: for example, a sports app can provide an exclusive guide to building the perfect bracket, available only through the app.
- Increase click-through rates with [interactive buttons](#) in your push notifications, together with [rich notifications](#) that support photos, videos, GIFs and even audio.
- Avoid needy or empty messages such as “we have missed you” as they don't drive action to get users back in the app.

Need a better way to organize and map your notification content?

Writing for mobile can be hard, as can balancing the types and frequency of messages sent. Our [Mobile Content Plan](#) template can help you ensure the efficacy and variety of your messaging by writing, organizing and cataloging it better.

TAKE GREATER CONTROL

Predictive Churn Can Help

STOP APP USER CHURN BEFORE IT HAPPENS

You've taken in all the recommendations — and implemented many — but what about the 50+% of users who are still likely to churn? What can you do to reach them?

Our data science team researched this common challenge and developed one of the first machine-learning models to predict churn risk. We call it [Predictive Churn](#).

Simply put, **Predictive Churn is a machine learning model to assess a user's risk of churning, allowing brands to take preemptive action to keep at-risk users.** It analyzes user patterns for each app to assess a user's likelihood to churn *before they do so*. The model also fuels look-alike targeting for those at low risk to churn.

And “churn,” to reiterate, refers to both users who uninstalled an app (sometimes called “hard churn”) as well as those who just don't open it anymore (sometimes called “soft churn”).

Based on a proprietary machine-learning model trained using more than 10 billion data points, Predictive Churn classifies users into three risk profiles — Low, Medium and High — and makes it easy to take action in Airship channels. Lists of users can also be exported to re-message in any other marketing system that accepts a .CSV file.

PREDICTIVE CHURN INCLUDES:

- Dashboards to benchmark performance and easily see results over time
- User profiles to meld with other user attributes for highly-relevant messaging, including pre-built automation triggers
- Ad hoc drill down analysis with any other data point to determine content and offers most likely to generate action
- Real-time data streaming to an external data warehouse or business system for cross-channel analysis and re-marketing — or look-alike targeting against users with a low likelihood to churn

KEY TAKEAWAY:

You likely know how much each app user costs to acquire. If Predictive Churn allows you to re-engage even 5% of the users who are likely to churn, what does that mean for both your app's success and your business? [Bain & Company research](#) found increasing customer retention rates by 5% boosts profits by 25% to 95%.

Mobile is where your users are today, do what you can to keep them.

RESOURCES

Keep Users Engaged With Your App

RESOURCES TO HELP KEEP USERS ENGAGED WITH YOUR APP

There are a variety of ways to increase your app retention and opt-in rates, regardless of vertical. We've gathered a few resources to help with everything from inspiration to strategy and data enrichment — along with best practices and how-to content to help you move faster.

PREDICTIVE CHURN RESOURCES:

- [Video Overview: Predictive Churn](#)
- [Technical Documentation: Predictive Churn](#)
- [Blog post: Want to Predict & Prevent Customer Churn – and Increase App Retention? This Blog Post is For You.](#)

APP ENGAGEMENT RESOURCES & BEST PRACTICES:

- [eBook: How to Boost Mobile Engagement & Achieve Mobile Growth](#)
- [eBook: 10 Mobile Engagement Best Practices Explained](#)
- [Benchmarks Report: Push Notification Engagement Rates](#)
- [Benchmarks Report: First Look - Message Center Read Rates](#)
- [Blog Post: 7 Mobile Engagement Statistics That Show How Push Notifications Boost ROI](#)

TEMPLATES & HOW-TO'S:

- [Template: Building a Mobile Content Plan](#)
- [Blog Post: How to Make a Successful App: 10 Fundamentals for Maximizing Your Investment](#)
- [Blog Post: How to Earn Push Notification Opt-Ins: 7 Essential Resources](#)
- [Blog Post: How to Write a Better App Store Update \(and Boost App Store Optimization\)](#)
- [Blog Post: Mobile App Marketing How To Series: Getting the Opt In](#)

INSPIRATION GUIDES:

- [Rich Notifications Inspiration Guide](#)
- [Interactive Notifications Inspiration Guide](#)
- [In-App Campaigns Inspiration Guide](#)
- [Message Center Inspiration Guide](#)

Want More Resources?

Check out our online [Content Library, Documentation](#) and [blog](#) for more best practices, how-to's and help with mobile strategy.

METHODOLOGY

Airship analyzed customer data in aggregate to identify apps with at least 5,000 downloads that had sent at least 1,000 cumulative push notifications in one month. That group included more than 63 million app users across 1,500 apps with deep dives on four industry verticals. Analysis focused on app users that first opened an app in September 2016 and tracked their notification opt-in status, app open behavior and volume of notifications received through December 2016.

EXPLORE THE FULL SUITE OF MOBILE GROWTH DRIVERS

AIRSHIP MOBILE APP ENGAGEMENT: Grow and retain your mobile app audience with personalized push notifications, in-app messages, message center and more.

AIRSHIP MOBILE WALLET: Accelerate mobile engagement — no app required — by leveraging mobile wallet passes to power your loyalty/reward cards, coupons, boarding passes, tickets, identification cards, gift cards and more.

AIRSHIP WEB NOTIFICATIONS: Create deeper relationships with website visitors, whether on desktop or mobile. Streamlined web notifications allow marketers to engage with web visitors through timely, relevant alerts.

AIRSHIP REAL-TIME DATA STREAMING: Unlock the power of mobile data by connecting your entire business to rich, real-time mobile insights with the industry's first user-centric mobile data streaming platform.

AIRSHIP PERFORMANCE ANALYTICS: Create smarter, more informed campaigns with user-level mobile analytics. Easily re-target and re-message high-value cohorts guided by powerful ad-hoc analysis.

READY TO GET STARTED?

We're here to help — call +1 (855) 385 3155 (U.S.)
or +44 (0)300 303 8796 (Global) to speak with our team.

ABOUT AIRSHIP

Airship is trusted by thousands of businesses looking to grow with mobile. Every day, marketers and developers depend on Airship to deliver billions of mobile moments that inspire interest and drive action. Airship's mobile growth platform is used by many of the world's most admired companies, including Adidas, Alaska Airlines, The Home Depot, NBC Universal, Sky Media and Zillow.

For more information, visit airship.com, read [our blog](#) and follow us on [Twitter](#) or [LinkedIn](#).



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