How Adjust is supporting growth through iOS 14

Solutions and insights for a post-iOS 14 world

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Preface

The history of app privacy

The introduction of the App Store in July 2008 led to the modern app economy.The decision made at that time, to have each app run in its own silo on the device, had big implications for monetization — and the development of the nascent app industry.

In order to measure the success of install campaigns, marketers needed to measure an action (viewing an ad) that was happening in one app, and compare it to another action — the install of a different app. The certainty and repeatability provided by this data gave marketers the ability to make efficient marketing decisions. But underpinning this entire data ecosystem was the solution that was created for the silo issue. The first solution was the Unique Device Identifier (UDID), widely used until 2012, when the IDFA became commonly adopted.

Apple allowed each device to have a unique and resettable identifier, which could be accessed by all apps on the phone. Users could opt to limit ad measurement in their settings, but most users did not. By using this ID, marketers could measure clicks and compare them to installs, because the ID would be present at both actions — and mobile measurement partners were able to attribute them.

As the mobile ecosystem has developed, so has user knowledge of the industry. Many users (and legislators) are rightly concerned about how their data is accessed and managed. On the legislative front, regulations like the EU's General Data Protection Regulation (GDPR) and the California Consumer Privacy Act (CCPA) have seen new rules about how data must be respected and processed. The app industry has evolved to continue to thrive through all these changes.

Flash forward to the Worldwide Developers Conference 2020; Apple announced that in their iOS 14 update, app access to the IDFA would be contingent on gaining user consent via a pop up. This means that for many apps and app marketers, the attribution they had come to rely on to measure user acquisition, essentially the basis for certain and profitable investment, can no longer be guaranteed.

So how will businesses continue to thrive in the post-IOS 14 world? We will attempt to explain more on this topic and give our take on some answers in the next pages.
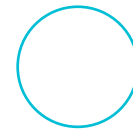
What is Adjust's philosophy — and our approach to a solution?

Since the announcement of Apple's iOS 14 privacy changes in July 2020, Adjust has been taking steps to ensure minimum disruption for our clients, and developing solutions so you can continue to make data-driven decisions in the post-IDFA world. All of these steps have been informed by Adjust's privacy-first mindset and guidelines and with the goal of making sure that our clients are empowered to thrive.

With this philosophy, we've developed a multifaceted approach to empower you to continue to use your data with certainty. This includes:

- Full support for the AppTrackingTransparency (ATT) protocol.
- Our in-house attribution privacy models, which include Extended Privacy Measurement and Probabilistic Attribution, designed to bridge the gap between deterministic and SKAdNetwork approaches.
- Our comprehensive SKAdNetwork solution.

A key important part of this solution is that our SKAdNetwork solution is free. We're a product-orientated company, and believe that testing, research and innovation is key to success. As the industry is still in the early days of SKAdNetwork, we want to make sure that our clients have time to experiment with campaigns and figure out the best possible SKAdNetwork strategy — without worrying about the cost.

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Adjust's iOS 14 solutions

Convert: Full AppTrackingTransparency (ATT) support

Apple's AppTrackingTransparency is the framework that allows ad targeting and measurement when consent is granted. Securing high user opt-in rates on Apple's ATT framework is the single best way to minimize disruption on iOS 14 — allowing marketers to continue receiving deterministic attribution, and carry on with segmentation and retargeting.

Securing high user opt-in rates will also allow apps to gain a competitive advantage, both on the supply and demand side. While we are offering full support for novel iOS 14 features, we recommend clients focus on maximizing opt-ins wherever possible: even a relatively low percentage of opt-in rates can prove crucial to your success.

> "The impact [of iOS14] is going to be felt more heavily by certain verticals, particularly those that rely heavily on advertising for app installs and digitally engaging prospective customers; for example, retail, gaming, travel, automotive, CPG, etc. Brands that provide free, ad-supported content or services, including those with free to paid subscription models, are also heavily impacted."
>
> "They are going to need to figure out new ways to get users to opt-in and ensure they are explaining the value to the user for whatever data they are requesting. Many users have come to rely on the fact that their favorite app is free, and so brands should seek to educate the user about how collecting data not only allows them to provide more relevant ads, but that ads are also an important part of keeping the experience free."
>
> **AIRSHIP**

This is why we have carried out extensive research, and worked closely with clients across sectors, to develop best practices on user consent flows. You can find many of these learnings in our guide to mobile advertising on iOS 14, or our blog post on opt-in design do's & don'ts. There remain some key challenges for advertisers on ATT.
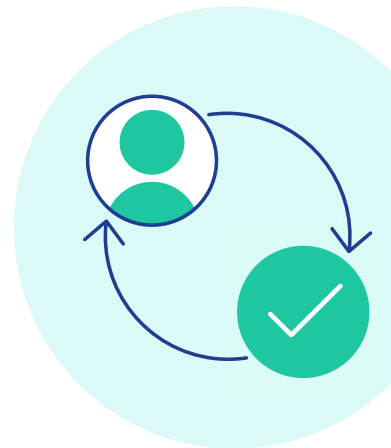
Key challenges of ATT

Deterministic Attribution: If a user consents to sharing IDFA both on the media source your ad appears and within your app once they download it, IDFA will be present on both sides and we can match deterministically as long as you run your click (or view) through Adjust tracking links.

Imprecise or Probabilistic Attribution: We can use some basic device information to create a best guess at which advertisement drove which install. While less accurate, this level of data will provide you with enough information to analyze creatives and build some efficiency models around your media spend. Because this method is not deterministic, nor is it persistent, we believe it is acceptable within the policy and you have the option to enable it.

Deep linking

Deep linking will be heavily affected by iOS 14. The main benefit of deep linking is to provide the user with better UX, and iOS 14 strikes right at the heart of that. If advertisers run campaigns, they usually do not know whether the user has the app installed or not, meaning that conditional deep linking is necessary. If the app is not installed, deferred deep linking — where the deep link is triggered once the app is installed — is a possibility, but will require the user to consent when the app is first opened.

Deferred deep linking will only work once the user has been attributed, since it's at that point that the newly installed app knows that the user should be deep linked. Since consent is required to do IDFA-based matching, deferred deep linking works much better via deterministic attribution (matching based on a common identifier like the IDFA) — because you can be sure that the user gets reliably deep linked to the in-app screen they expect. This is because deterministic attribution gives absolute certainty in matching.

User rewards

Similarly to deep linking, user rewards can only work when the app knows the source of install.
As above, the app needs to be able to link that install to a specific click or view, which contains
a code for the user rewards. Without consent, it is harder to make this match as the app does not
automatically know the reward code it should apply. Using Probabilistic Attribution, we may still
be able to make the match, but it will be less than 100% accurate.

Without consent, apps that want to run reward programs will likely need to ask the user
to manually enter a code into the app if they want to ensure the user is reliable given the reward.

Attribution

As we currently understand Apple's guidelines, ATT consent is required for Adjust to perform
attribution. Without this consent, we will have less precision in providing matching.

Brands that continue with fingerprinting risk having their app removed from the App Store,
so Adjust is instead offering its Probabilistic Attribution. Probabilistic Attribution operates from
aggregated data rather than fingerprinting, so it is compliant with Apple's policies, keeping
our clients protected.

### Consent on the advertising side — Facebook / Google / SANs

At the time of writing, all the self-attributing networks — except Google — will ask for
consent in their app. Google is currently indicating they are not planning to ask for consent
for their owned apps — YouTube and their search app 'Google'. Their display inventory
will likely request consent as it is run on third party apps, who will most likely be asking
for consent.

All consented inventory can be claimed via the attribution API, as is the case currently,
for optimal campaign performance and optimization.

Compute: Attribution Privacy Models

Our Attribution Privacy Models are Adjust's primary technical solution to the iOS 14 changes. The guiding principle behind developing these conversion models was to make the transition as seamless as possible for our clients. It's for this reason that your conversion modelling data in your Adjust Dashboard will look very similar to what you're used to.

Extended Privacy Measurement is our model that protects non-consented user data from being shared with third parties. This ensures you maintain the highest privacy threshold for all measurement and analysis performed. With this attribution privacy model, as a first-party you can see aggregated attributions per channel in the Adjust dashboard and receive raw data callbacks for your users.
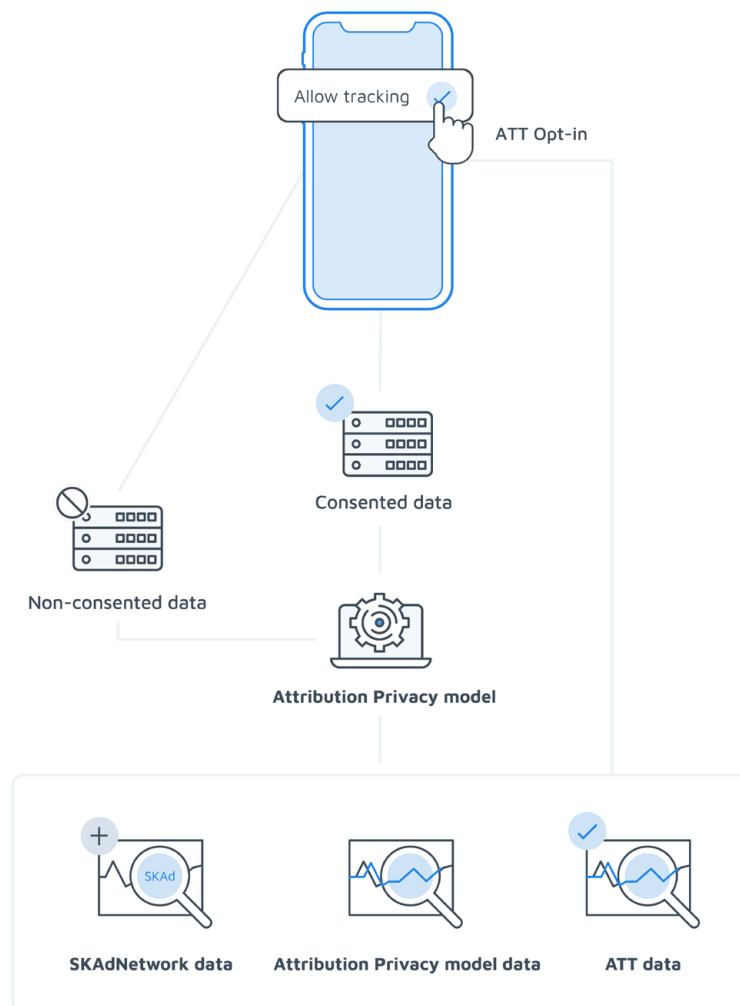
All performance KPIs and aggregated attribution data will still be available in your Adjust dashboard and through our KPI service. Cohorts, Deliverables, Ad Spend, Fraud Prevention Suite, and Adjust Automate features will all function as usual — ensuring your aggregated data remains actionable.

How does it work?

Any model used for forecasting or projection — in any industry — is only as powerful and precise as the data you feed it. If you feed your model only a few aggregated, anonymized data points, your model will be inherently less accurate than if you fed it defined user-level data.

This is why we stress the importance of a strong opt-in strategy. Not only does your deterministic data provide your typical user-level insights, those data points will also be harnessed in our model solutions to drive calculations of the performance of your non-consented users as well.

There are four research areas that we're focusing on to make this model as powerful as possible:

- **Relative Channel Importance (RCI)** — In general, the more you spend more on ads, the more installs you get. But which channels drive the biggest increases? RCI looks at the variances within your data to indirectly map the impact of each marketing channel on a bottom-line metric (like installs). This approach works even when we have no attributed data.

- **Extrapolation** - Starting from a 10% user consent rate, we can compare data across networks where attribution share is similar, and infer the total number of installs.

- **Predictive measurement** - Harnessing the power of machine learning algorithms means we can match a clickstream across networks with a particular install using device attributes.

- **Behavioral classification** - By deploying machine learning algorithms to look for patterns in user events from different networks, we can then use them to classify unattributed installs.
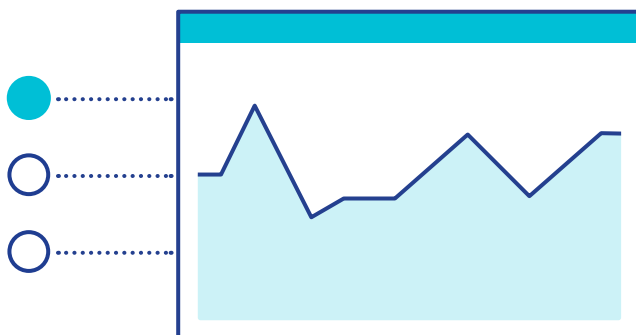
Collect: SKAdNetwork

Our support for SKAdNetwork is the third pillar of our iOS 14 solution — including full support for SKAdNetwork's features via our new Data Canvas visualization tool and our existing Adjust Automate product.

Apple introduced SKAdNetwork in 2018, ushering in a different approach to campaign measurement where data at the user level is not available. With iOS 14, the SKAdNetwork framework has been developed and expanded as Apple attempts to lessen the impact of reducing developers' access to the IDFA.

SKAdNetwork provides space for 6-bits of downstream metrics, a number between 0 and 63 (or between 000000 and 111111 in binary), with an initial 24-hour timer. This 'conversion value' can be assigned any value that can be expressed in binary. Every time the conversion value is updated, to a fresh six-bit code defined within the app, this extends the timer window by a further 24 hours.

Once this conversion value-window expires, a second 24-hour timer for attribution starts counting down. Within this 24 hour window, randomly, the SKAdNetwork returns the attribution data. The idea behind this random timer is to obfuscate the time of install, so that event triggers cannot be linked to individual users. The SKAdNetwork system shares this data in the aggregate, with no granular data accessible at the user level.

SKAdNetwork (cont.)
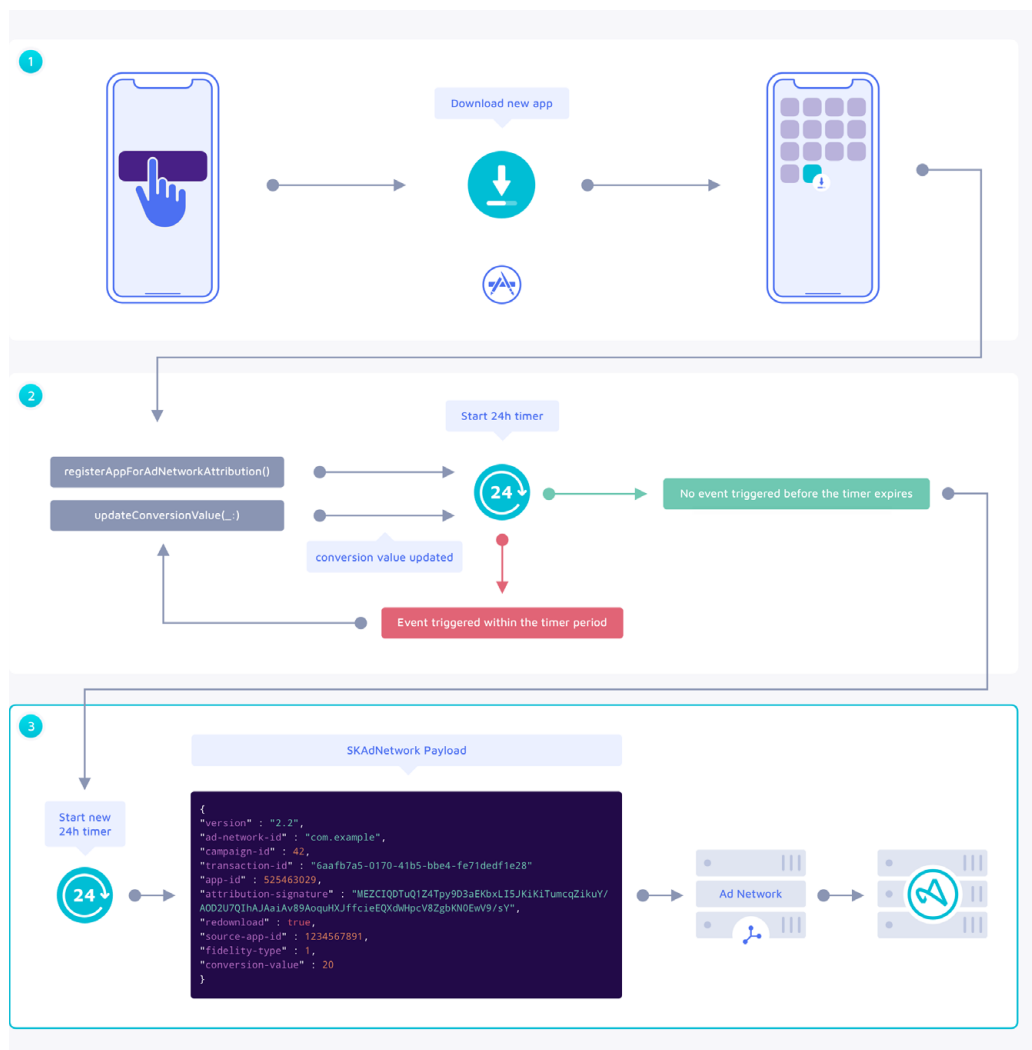
Adjust currently has the most SKAdNetwork integrations in the industry, so you can run your campaigns uninterrupted, no matter who your partners are. You can find an updated list here.

Conversion values

Adjust will support two main approaches to conversion values: our standard event-based solution and our advanced value-based solution.
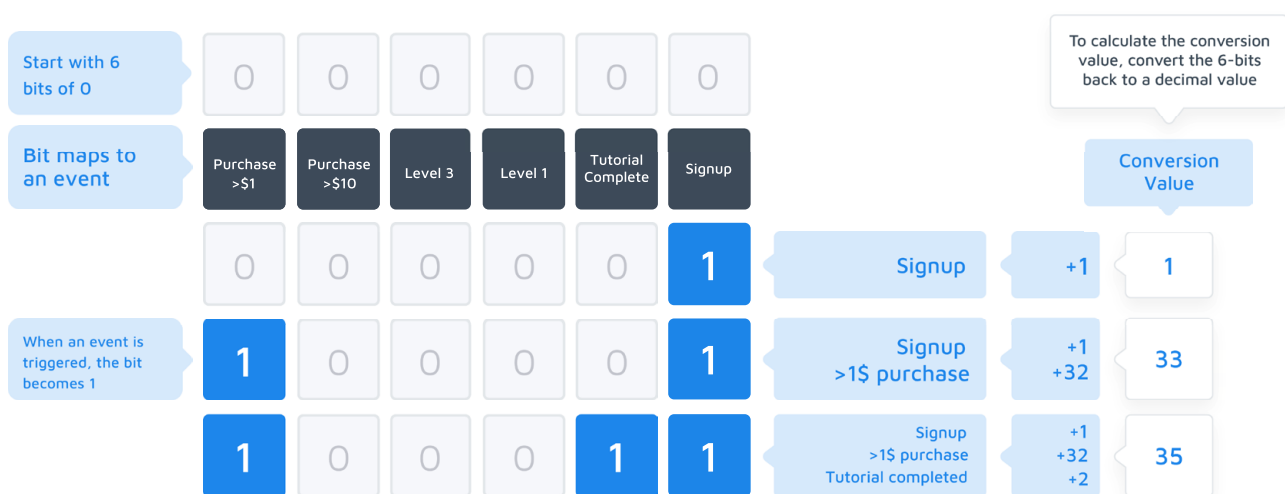
> "Marketers will have the challenge of selecting the minimum amount of post-install information needed to calculate the LTV in less than 24/48h ideally. The optimization signal will have less data points and a delay — forcing optimization strategies to change drastically relying on a more contextual approach."
>
> **S smadex**
> powered by entravision

Standard conversion value solution/event-based solution

Our standard conversion value system allows you to map six events to conversion values. Each bit of the conversion value maps to an event. If the relevant bit is set to 1, the event happened; if it's set to 0, it did not happen.

In the below example, the user signs up, buys an in-app purchase, and then completes the tutorial. The bit that corresponds to each event updates after each of these actions, returning a conversion value that tracks all the events.

	Purchase >$1	Purchase >$10	Level 3	Level 1	Tutorial Complete	Signup				Conversion Value
Start with 6 bits of 0	0	0	0	0	0	0		To calculate the conversion value, convert the 6-bits back to a decimal value		
Bit maps to an event	Purchase >$1	Purchase >$10	Level 3	Level 1	Tutorial Complete	Signup				Conversion Value
	0	0	0	0	0	1	Signup	+1		1
When an event is triggered, the bit becomes 1	1	0	0	0	0	1	Signup >1$ purchase	+1 +32		33
	1	0	0	0	1	1	Signup >1$ purchase Tutorial completed	+1 +32 +2		35

Advanced conversion value solution/value based solution

Having just six bits to link to six events is suitable for many use-cases, but it does not meet all the business needs of our clients. For example, what's vital for mid-core/hardcore game clients is to measure in-app purchases by range count. Clients in these verticals want to understand how many users spend US$10-15 or how many users have made 1-5 purchases within the app. For hyper casual game clients, they want to measure how many users have made 20-30 ad impressions or generated US$1-2 in ad revenue.

To support this, we have provided clients with a more flexible way to set conversion value: an advanced schema that also supports count or value ranges. With this method, advertisers have more granularity in examining user behavior. They can count how many sessions, events, IAP revenue, or ad revenue (or any combination of them) and link these buckets to a conversion value.

| Activity	Revenue	Revenue	Revenue	Revenue	…	Revenue
Range	>$1	$1 - $4.99	$5 - $9.99	$10 - $24.99	…	> $100
Conversion Value	1	2	3	4	…	63

Within this schema, clients have complete flexibility to assign the values how they like:

- **Single event mapping**: Allows clients to map, for instance, their add-to-cart event to conversion value 6; when this value is returned, they'll know the user added an item to cart.
- **Multiple events mapping**: Clients can map combinations of events to different values; for example, you could map the 'complete level one' and 'purchase an IAP' to the conversion value 20.
- **Single event ranges mapping**: Gives the option to map a spread of events to different values. For instance, you could map spending US$10-15 on in-app purchases to conversion value 15; you could map a user making 1-5 IAP to conversion value 25; you could map a user racking up 20-30 ad impressions to conversion value 3.
- **Multiple events range mapping**: You can also map combinations of ranges; for instance, you can map 'add-to-cart' and 'spending US$101-200 on IAP' to conversion value 63; or map 'completing level 1' and 'spending US$21-50 on IAP' to conversion value 29.

The conversion value gets triggered when all the conditions for a specific value are met. If multiple conversion values match the device state, then the highest value from the schema takes precedence.

When coming up with a schema to assign values to different buckets or actions, remember that SKAdNetwork conversion values can only be updated when the app is in the foreground. For this reason, make sure the combinations of actions will happen when the user is active in a session — don't rely on things that might not trigger if the user switches out of the app while only partially completed.

Similarly, when plotting user journeys, remember that conversion values can only be revised upward, so don't put your 'add to cart' event as 55 when your 'complete purchase' event is 22.
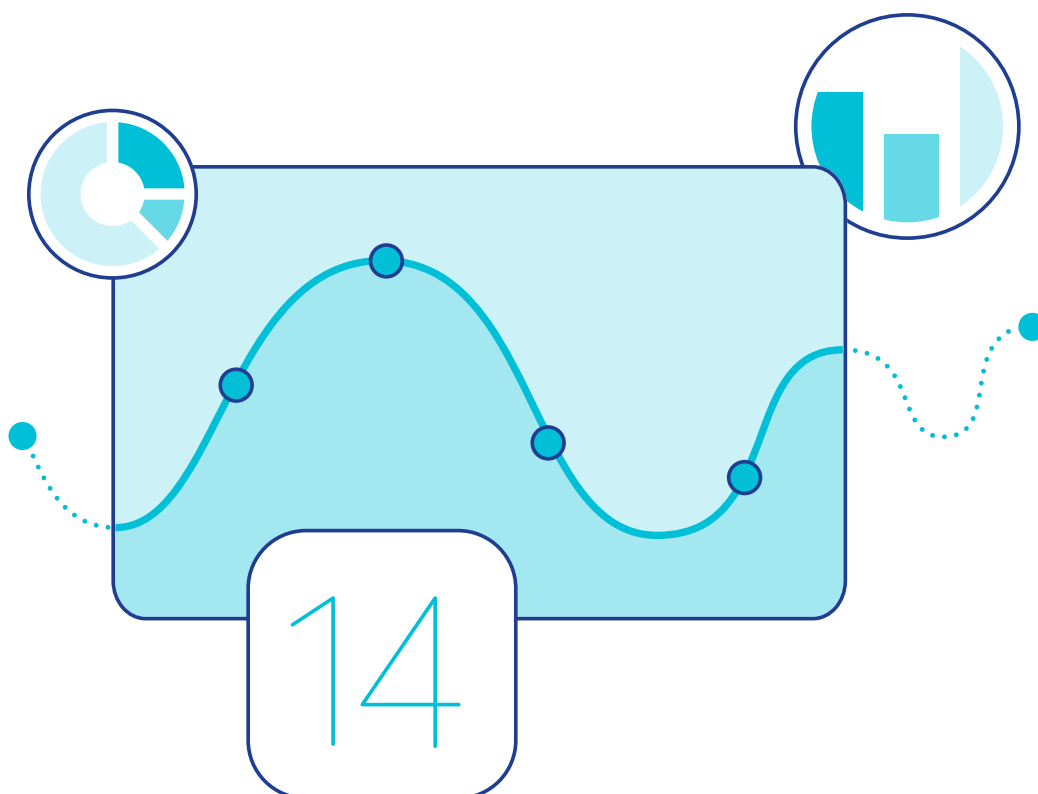
Best practices for iOS 14 according to monetization strategy

Ad monetization

Hundreds of thousands of app publishers monetize through advertising, partnering with networks that display advertising in their apps. Every time an ad is viewed, the app publishers get a share of the ad revenue.

There are two types of ads:
- Contextual
- Targeted

Contextual ads are non-targeted ads, meaning that they do not target specific users. These ads are usually cheaper than targeted ads as they're less specific — and less likely to convert.

Targeted ads are served to specific users that are targeted via their IDFA. As they are more expensive than contextual ads, and usually convert better, they're preferred in the ecosystem.

With iOS 14, any user who does not opt-in will not be served targeted ads, which means that the publisher will see a drop in revenue per ad. This is why some publishers may warn their users that opting out will mean seeing more ads — since they need to make up for that loss in revenue with volume if they're missing out on quality.

> "Developers relying on advertising for revenue will need to iterate their prompt strategy fast to get high opt-in rates as their CPM and revenue will be at stake from D1 after ATT."
>
> **smadex**
> powered by entravision

SKAdNetwork for ad monetization

For SKAdNetwork set-up, the "adrevenue" condition in our advanced solution allows developers to track ad impression and ad revenue counters.

In the below example, the conversion value '1' will be returned if the user generated between $0.20-1.00 (or app reporting currency) in revenue.

```
"adrevenue": {

  "revenue_min": 0.20,
  "revenue_max": 1.00
}
```

Up to 63 Ad revenue or Ad impression buckets can be configured. 24 hour conversion window is recommended. On-device ad revenue integrations (like MAX, Mopub and others) is substantially more reliable for conversion value management compared to the s2s next day solutions.

In-app purchases

In terms of actual revenue, iOS 14 shouldn't impact on how much users spend in-app. In-app purchases will still cost the same; users can still pay for in-app goods like gold coins or extra lives. However, the lack of deterministic attribution for opted-out users could make it harder for app publishers to know exactly how much revenue each campaign generated.

SKAdNetwork for in-app purchases

Depending on the level of precision you require, you can track in-app purchase behavior with SKAdNetwork in either our standard or advanced solutions.

If you'd like to track six or fewer IAP events, then the standard solution can be simply linked to each event, from where you can track these conversions.

Similar to the above, if you want more detailed insights, you can use the "purchases" condition in our advanced solution. The "purchases" condition allows you to track total purchase events and total purchase revenue count.

In the example below, the conversion value will be triggered if the user makes at least 3 purchases, spending below $20 (or app reporting currency).

```
"purchases": {
    "count_min": 3,
    "revenue_max": 20.0
}
```

Purchase buckets allow measuring overall IAP revenue (or number of purchases), or cumulative revenue of a specific custom event. Purchase buckets can be combined with other triggers like event flags or counters for a more complex measurement.

> For gaming, e-commerce, delivery or travel booking verticals, Average Order Value (AOV) is a commonly-used KPI that measures the amount spent by users in-app. If you're optimizing towards AOV, we recommend using these "purchases" conditions.
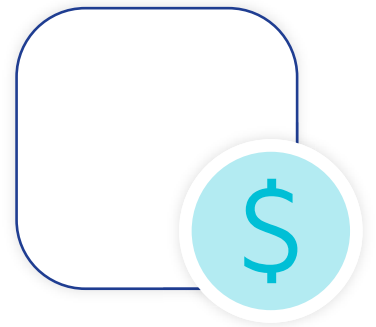
Subscriptions

For apps that monetize via subscriptions, the difficulty in iOS 14 is being able to reliably defer the SKAdNetwork timer beyond 24 hours. It is possible to extend the timer by using a bit to prolong the conversion window — simply triggering a conversion value update periodically to gain another 24 hours — but it requires the user to log in every day, so that the conversion value trigger can run with the app in the foreground.

For this reason, subscription apps may want to use 'trial start' as their SKAdNetwork signal to optimize toward, as this may happen more reliably in the window where you have visibility.

SKAdNetwork for subscriptions

Our standard SKAdNetwork solution allows you to map conversion events to the subscription events you already track in the Adjust dashboard.

For video streaming or dating apps, user engagement is among the most important metrics — so we recommend clients use the "sessions" conditions in our advanced solution.

The "sessions" condition allows you to track the total number of sessions logged. In the example below, a conversion value of "3" will be returned if the user registers between 5 and 10 sessions.

```
"sessions": {
    "count_min": 5,
    "count_max": 10
}
```

- **count_min** (defaults to 1) – The total amount of sessions tracked should not be less than the specified amount;
- **count_max** (defaults to unlimited) - The total amount of sessions tracked should not exceed the specified amount;
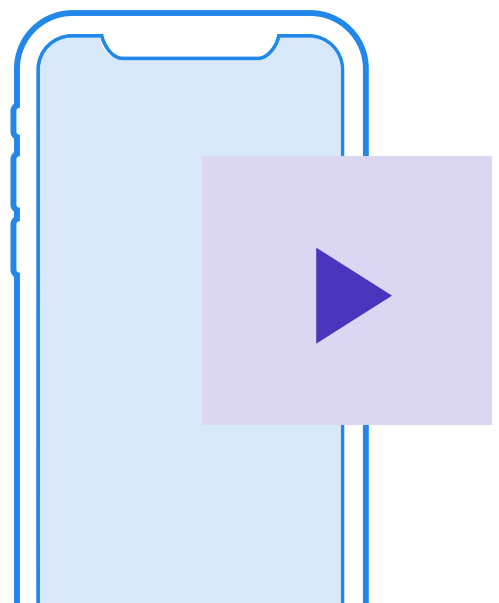
Conclusion

We understand that iOS 14 parameters are constantly evolving. We are working hard to stay well-connected with our partners in the industry — and with our clients — so we'll continue to be one of the first MMPs to know of any changes. And we have the experience to be agile enough to accommodate any additional privacy-parameters.

Our approach, to ensure we are still serving our clients in iOS 14, is to empower marketers to make data-driven decisions with confidence.

This philosophy focuses on continuing to leverage powerful user-level data while ensuring end-users' privacy. By using our solution, we can continue to deliver the accuracy required for you to make smart business decisions and ensure the continued growth of your user base.

If you'd like to find out more about Adjust's iOS 14 solutions, please reach out to your Adjust rep, who will be able to offer tailored advice, or request a demo to see how the Adjust solution works in practice. You can also browse our iOS14 resource center for an overview of all our iOS 14 guides and information.
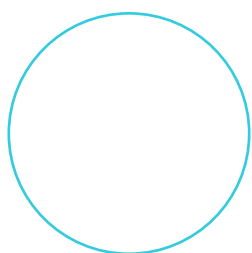
adjust

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

Want to learn how we can help you? Contact us now to find out how we can fit your specific use case.

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