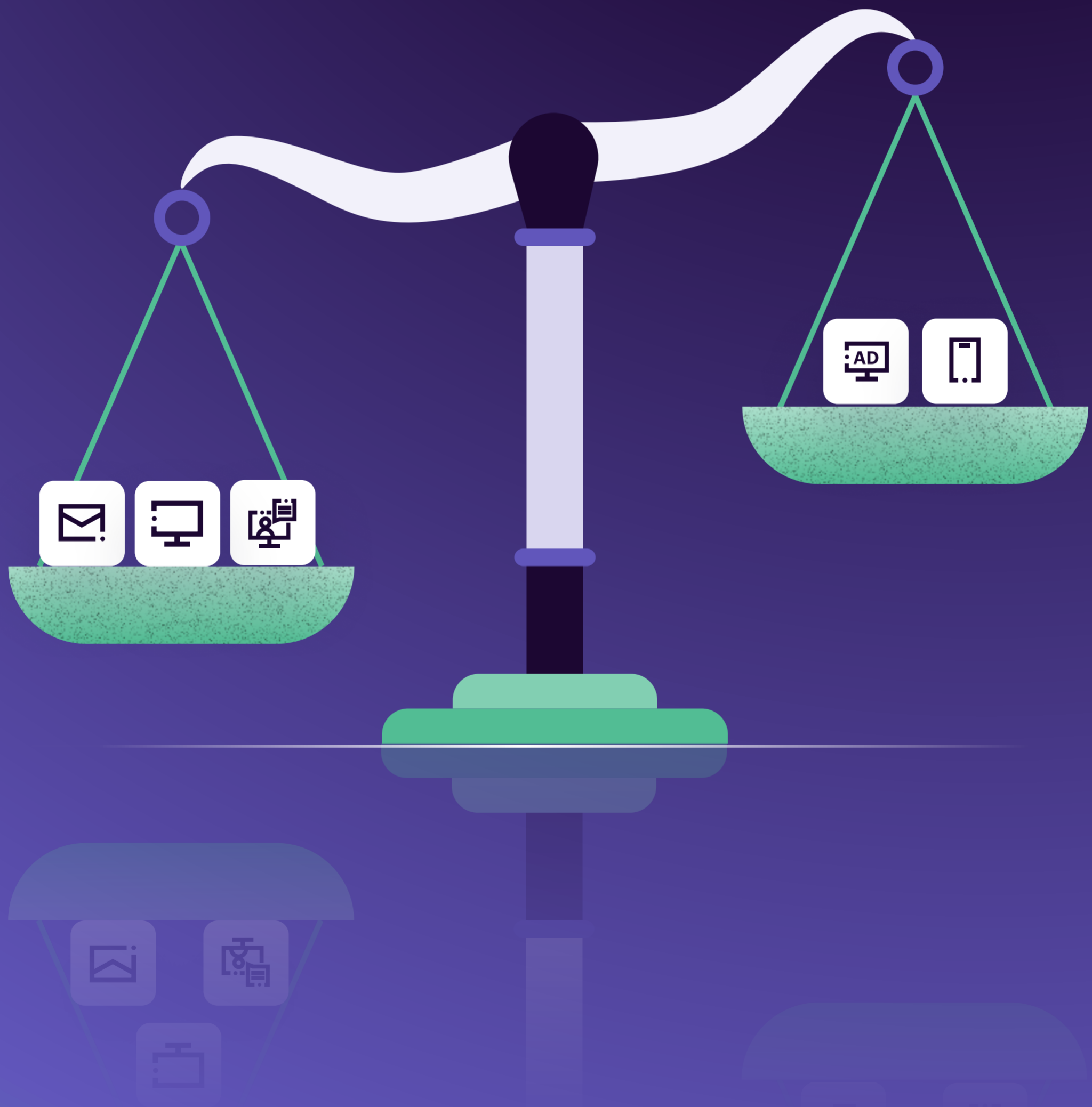TWILIO
segment

The **Ultimate Guide** to Multi-Touch Attribution

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Very few customers buy on their first visit to your website. They usually see a few ads, read some blog posts, hear about your company from friends...making it all the more difficult for marketers to understand: *which channels and touchpoints are actually contributing to our bottom line? And which ones are falling short?*

This is why multi-channel attribution has become critically important to spot nascent and high-quality user acquisition channels.

Seemingly every week, channels and platforms develop more and more sophisticated ways to understand and improve performance. But despite these advancements, it's still difficult to understand how these channels and platforms work together. Each platform has its own agenda (i.e., they want you to spend more money with them), so they can't provide the full picture of marketing performance.

And that full picture is important because every touchpoint a customer has with your brand can influence their decision to convert.

This is where multi-touch attribution comes into play: it shows the role of each touchpoint in creating a new customer and contributing to revenue. But implementing multi-touch attribution can be complex, especially when customer journeys are becoming increasingly fragmented.

According to Google, "90% of multiple device owners switch between screens to complete a task," while Salesforce found that customers use roughly 10 channels to communicate with businesses.

Getting all these touchpoints across devices, channels, and platforms to talk to each other is the main hurdle in implementing multi-touch attribution – which is exactly why a CDP is so essential to this effort.

With a customer data platform like Segment, you can easily collect and consolidate data that exists in the various platforms within your tech stack – and then send this data to any destination (whether it be a data warehouse, business intelligence tool, etc.)

Now let's break down what multi-touch attribution is, exactly, and how it's implemented.

What is multi-touch attribution?

Multi-touch attribution is the act of determining the value of each customer touchpoint that leads to a conversion.

The goal is to figure out which marketing channels or campaigns should be credited with the conversion, with the ultimate intention of allocating future spend to acquire customers more effectively.

With multi-touch attribution, you take a conversion event – like a customer signing up for a free trial – and look at the role each touchpoint played in creating that sign-up.

Customer Journey

Facebook
Twitter
Organic
Direct
Google Paid

Sign Up
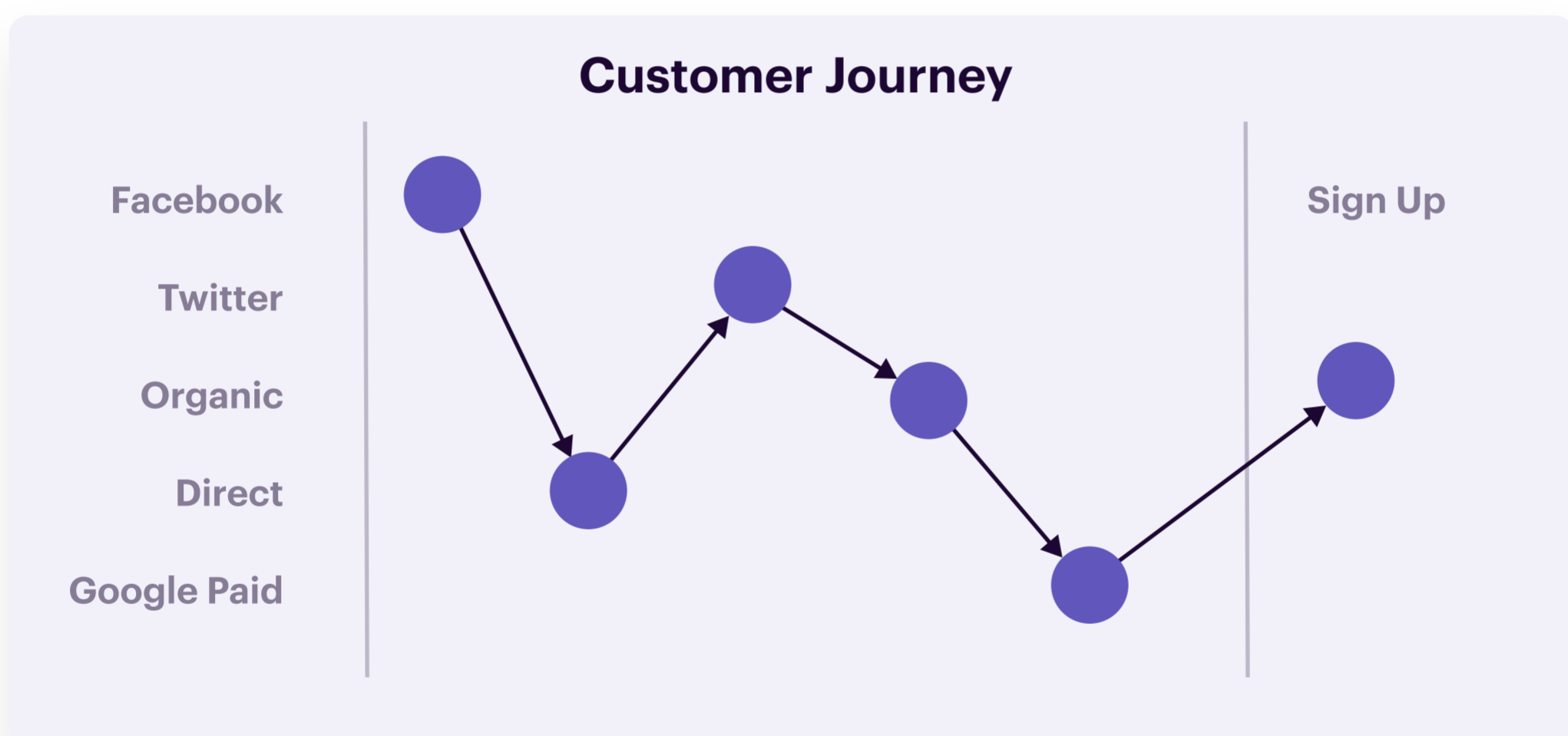
Take the graph above: should the Facebook ad that kicked off the customer journey get more credit for the conversion than the Google paid-search ad?

In rough mathematical terms, the way multi-touch attribution answers this question is by taking into account the cost of each touchpoint and the weight (i.e., importance) you give its stage of the customer journey.

Then, it compares that relationship to the value of the conversion (i.e., how much that free trial contributes to revenue).

The formulas for this can get complicated and verge into true data science territory, but the basic relationship of these values is important to understand as we continue.

Perhaps the best way to understand multi-touch attribution is in contrast to other leading attribution models you may be familiar with: last-touch attribution and first-touch attribution.

Last-touch attribution vs. multi-touch attribution

Last-touch attribution credits the last touchpoint of the customer journey for the end conversion. Many analytics and ad platforms prefer this model because it's easier for them to track, and it often credits themselves with the final conversion.

Last-touch attribution is popular because, on the surface, it makes sense. What matters most is what finally caused the conversion, right?

But if you dig a little deeper, you'll notice that this doesn't paint the full picture. Last-touch doesn't take into account the full customer journey, so it can sway results in favor of certain platforms and lead to incorrect optimization decisions.

Say you have a YouTube pre-roll ad campaign running alongside a paid search campaign. After seeing your video ad, some customers decide to search for your product on Google. They decide to click your paid search ad and then buy the product that was advertised in the video ad.

Last-touch would only tell you that people searching for your product will convert. What about the YouTube ad that kicked everything off?

One metaphor we like to use for last-touch attribution is that you're a world-famous actor accepting an Oscar.

You have the opportunity to thank the many people throughout your life who helped you reach this point. With last-touch attribution, you would only thank the director for giving you the chance to play an award-winning role.
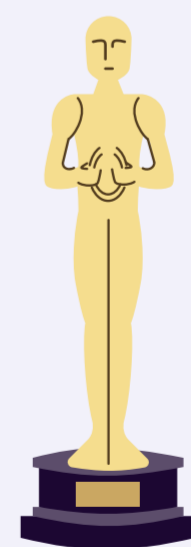
1. Parents   2. Teachers   3. Agent   4. Fellow actors   5. Director

But what about your parents, teachers, and fellow actors who had helped as well?

First-touch attribution vs. multi-touch attribution

On the flip side, first-touch attribution credits the first touchpoint of the customer journey for the end conversion. It's preferred by some marketers because it shows how top-funnel efforts can lead to bottom-funnel conversions.

But it still only shows a small part of the picture.

In the YouTube-to-paid-search example above, first-touch attribution would overemphasize the importance of the YouTube ad, which would make YouTube look great. But the paid search ad still played an important role in that end conversion.

As an Oscar-winning actor, if you were to use first-touch attribution in your thank-you speech, you would only thank your parents, leaving out your teachers, agent, fellow actors, and director.

1. Parents   2. Teachers   3. Agent   4. Fellow actors   5. Director

Different multi-touch attribution models

Overall, there are four standard models for multi-touch attribution (linear, time-decay, U-shape, and W-shape) as well as a fifth way of modeling multi-touch attribution that's totally customized to your business.

Each model emphasizes (or weighs) different stages of the customer journey and provides differing levels of insight.

Linear multi-touch attribution model

The linear multi-touch attribution model gives all interactions the same credit in the lead's conversion. This is more sophisticated than first- and last-touch attribution, but again, it doesn't tell the whole story.

Linear multi-touch attribution doesn't emphasize any tactic over another, but instead focuses on each touchpoint throughout the customer journey equally. This is good for gaining a strong understanding of the overall customer journey, but it doesn't give any insight into how effective each stage is at driving a conversion.

All you can glean from this type of modeling is that these stages helped, but you don't know to what extent. In the Oscar-speech example, everyone you mention will get equal airtime and, therefore, equal credit.

The audience would understand who helped you earn the Oscar, but they wouldn't know who had the most impact versus who you were mentioning to be polite.

20%	20%	20%	20%	20%
1. Parents	2. Teachers	3. Agent	4. Fellow actors	5. Director

Time-decay multi-touch attribution model

The time-decay multi-touch attribution model gives most of the conversion credit to interactions that happen closer to the conversion event. It focuses on bottom-funnel touchpoints, but doesn't totally discount upper- and mid-funnel tactics like last-touch attribution.

Analytics expert Avinash Kaushik advocates for this model, saying that the earlier touchpoints are weighted less because "if [those] were magnificent, why did they not convert?" Time-decay modeling provides a fuller picture of the customer journey, while providing insight into which tactics more directly lead to conversions.

In this case, during your Oscar thank-you speech, you'd thank people who led to your success in chronological order. However, toward the end, each individual you mentioned would receive a longer, more deliberate recognition.

The audience would realize that those you mentioned toward the end of your speech contributed more to your success than those you mentioned earlier.

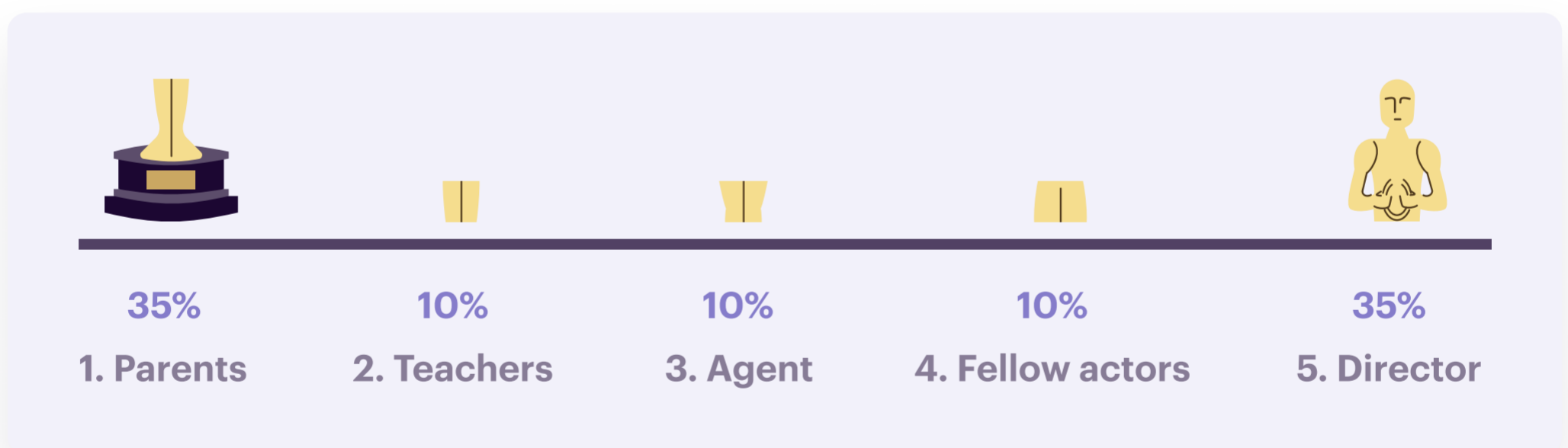| 5%	10%	15%	20%	50%
1. Parents	2. Teachers	3. Agent	4. Fellow actors	5. Director

U-shape multi-touch attribution model

The U-Shape multi-touch attribution model gives most of the conversion credit to the first and last touchpoints. The focus here is on the top- and bottom-funnel touchpoints, with less emphasis on mid-funnel engagement tactics.

This model provides an understanding of which tactics are good at kicking off the customer journey and which ones are good at creating a conversion. In this case, your Oscar speech would go through everyone chronologically, but most of your time would be spent thanking your parents and your director.

During your speech, the audience would see that your parents played a big role in developing a love for acting at a young age, and that your director took a big chance on you that paid off.

35%	10%	10%	10%	35%
1. Parents	2. Teachers	3. Agent	4. Fellow actors	5. Director

W-shape multi-touch attribution model

The W-Shape multi-touch attribution model spreads most of the conversion credit across the first, middle, and last touchpoints. This model is best suited for complex cross-channel campaigns with many touchpoints.

In this case, your Oscar speech would give slight emphasis to your parents, your agent, and your director while giving small mentions to your teachers and fellow actors. Here, the audience would get a wider picture of your journey to becoming a successful actor, realizing that your parents got you started, your agent kept you motivated during hard times, and your director helped bring out your best performance.

25%	12.5%	25%	12.5%	25%
1. Parents	2. Teachers	3. Agent	4. Fellow actors	5. Director
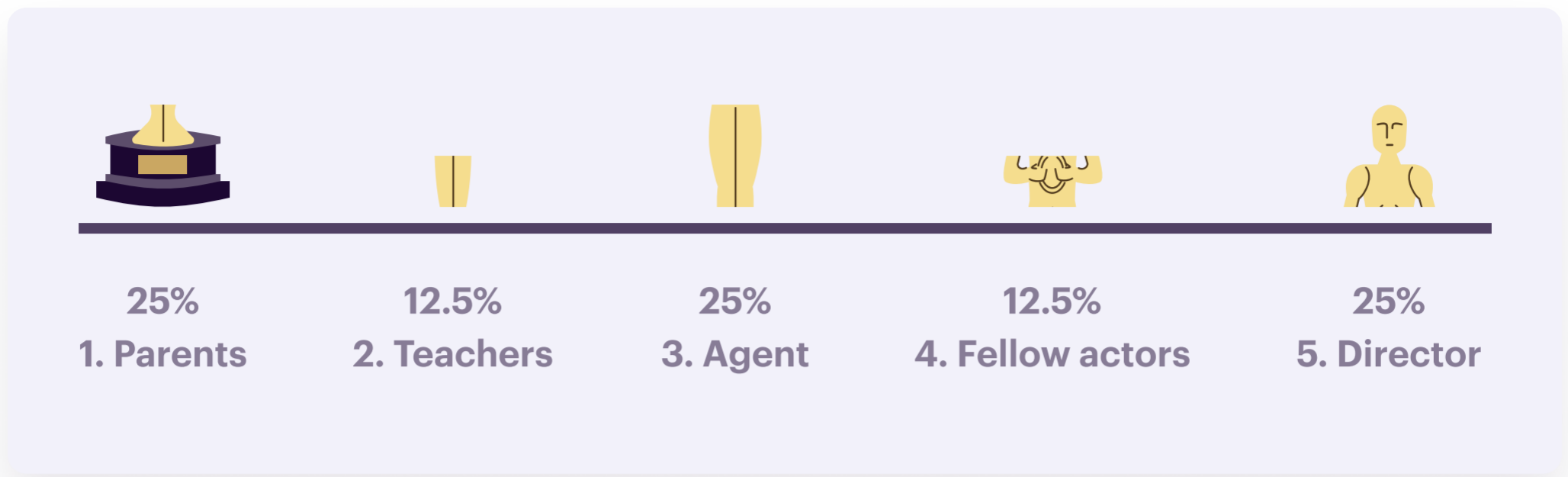
Custom multi-touch attribution model

None of the models so far are necessarily good or bad; they just have different use cases. And if none of those use cases fit with your business, you can create a custom model. This is fairly complex and requires an intimate knowledge of which models have worked well for you, which didn't, and why (i.e., long-term experimentation).

For your Oscar speech, with a custom multi-attribution model, you'd thank everyone at varying degrees based on who you've determined to have the greatest impact on your career.

25%	5%	15%	25%	30%
1. Parents	2. Teachers	3. Agent	4. Fellow actors	5. Director
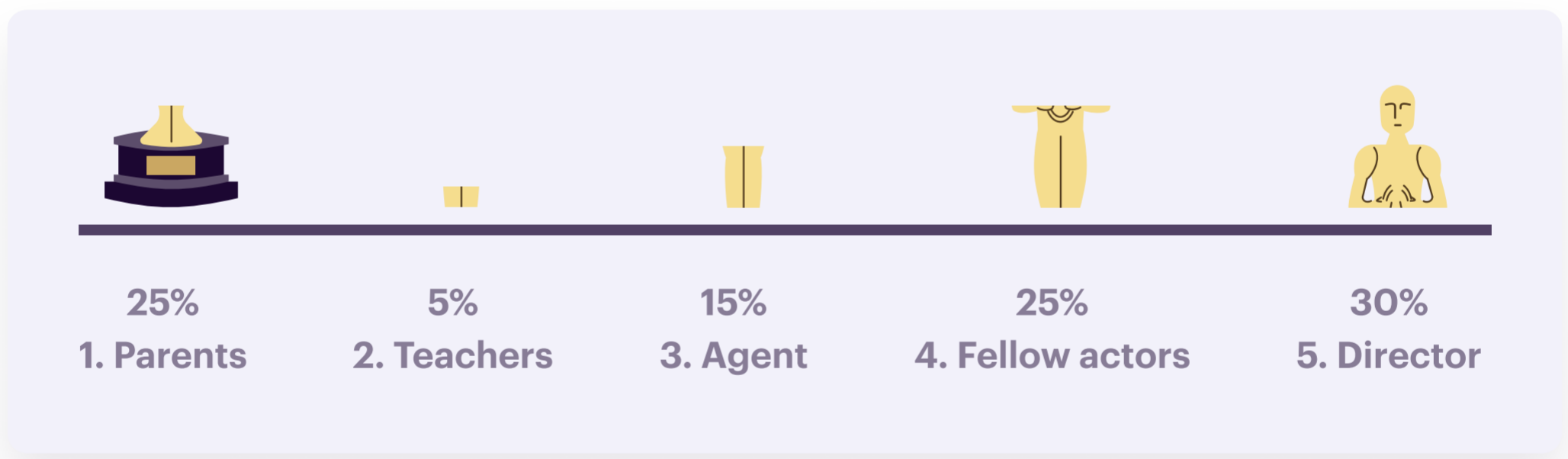
Setting up multi-touch attribution with Segment

Now that we're up to speed on the different models for multi-touch attribution, it's time to tackle the next step: how to implement it within your organization.

While this is a nuanced process, we've broken it down into three overarching steps, which we cover in more detail below.

1. Collect the data

First, you need to collect data on who's visiting your site, how they got there, and whether or not they convert. There are three ways that you can do this (usually used in tandem):

JavaScript, where you plug code into your web pages to understand who is interacting with your site and how. This includes calls like:

- page, which records when a customer views the page.

- track, which records what the customer does on the page.

- identify, which ties that behavior to other known traits.

- inbound, which identifies where the customer comes from (e.g., Twitter, email, organic social).

UTMs, which are snippets that populate at the end of URLs. They provide data about where the customer comes from, including information like the source (e.g., "Facebook"), the campaign (e.g., "fourth-of-july"), and the creative type (e.g., "fireworks-background"). You can integrate these with the JavaScript calls to get a clearer, more complete picture of your user

APIs: integrations you have with your CRM, advertising vendors, and others that have proprietary ways of identifying your customers.

Segment simplifies data collection in a few ways. First, you can use analytics.js, Segment's JavaScript source, to start tracking user behavior on your website. Segment's page call also automatically captures important context traits, like UTM parameters, to see which campaign brought a user to a specific web page.

Segment also offers hundreds of integrations so engineers don't have to do the manual work of building ETL pipelines to your different analytics or advertising tools. (You can even set up a custom integration with just ten lines of JavaScript).
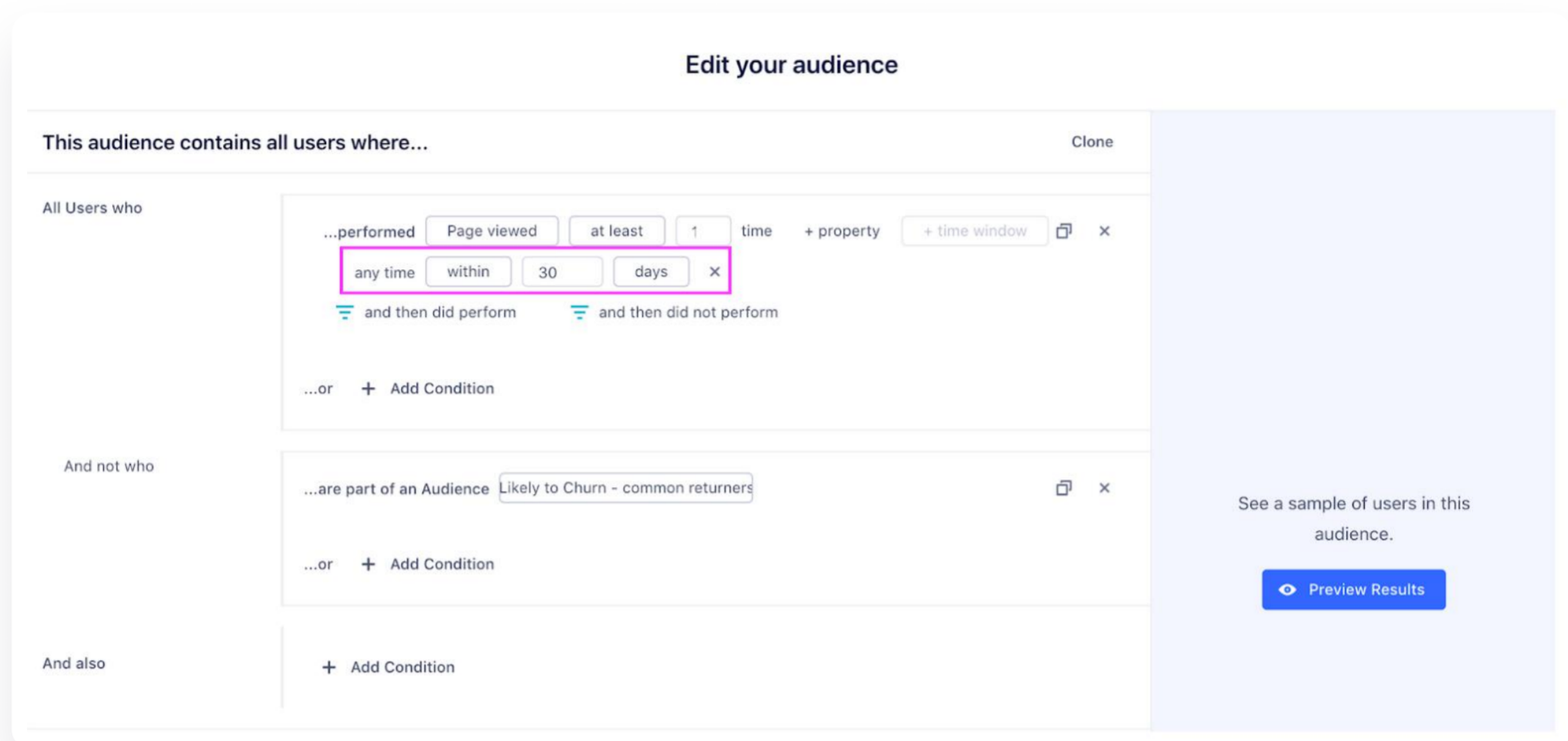
Setting lookback windows

When setting up the right attribution model for your business, there's an important caveat to consider: the time frame.

Let's go back to the example we used before, when a customer sees a YouTube pre-roll ad campaign, and then later searches for your product on Google (ultimately clicking on a paid search ad).

What if a few weeks had passed between when the customer saw the YouTube ad and decided to conduct a Google search? Would this impact the way you weighed these different touchpoints? The answer is, most likely, yes.

This is why lookback windows are important – they put a time limit on the data that can be considered for attribution. For instance, if you set a lookback window for 30 days, every user touchpoint in that month-long period would count toward the conversion (whereas any interaction outside that 30-day period would be excluded).

A lookback window set up in Segment Personas, for an audience that viewed a specific page within the last month.

Some important things to keep in mind when setting a lookback window with Segment:

- Historical lookback windows are based on the event `timestamp` field.

- Lookback windows are precise, down to the hour, so a 90-day lookback window will include any events with a `timestamp` within the last 2,160 hours (24 hr/day * 90 days).

- The trait and audience will automatically update going forward as historical events exceed the lookback window.

2. Combine data

Next, you need to make sense of all this data by combining it in one place. One solution is to pipe it all into a data warehouse, like Snowflake or BigQuery, for secure storage.

Of course, there are other options. For instance, Gijs Nelissen, co-founder of Prezly, found webhooks useful for this stage, but this depends on your capacity and technical ability.

3. Visualize

Finally, you need a way to query and report on all this data to turn it into graphs and charts you can understand.

Looker, a business intelligence tool, has made this process much smoother with pre-built pieces of code (called Blocks) – including a specific Segment Looker Block for Marketing Attribution.

Here's a quick overview of how this works: Segment collects events from your website and mobile app (e.g., `product_viewed`, `product_added`, `order_completed`, etc.) as well as campaign data from Facebook and Google Ads.

This data is then sent – and consolidated in – your data warehouse (e.g., Snowflake). From there, Segment can send this data on to Looker.

With the Segment Marketing Attribution Block, this data is formatted to create dashboards that show which channels yield the most conversions, first- and last-touch revenue attribution, customer acquisition costs, and so on.

In simple terms, this Block links event tracking data to a specific user session and campaign. Teams can then see how many users (and conversions) were tied to marketing campaigns.
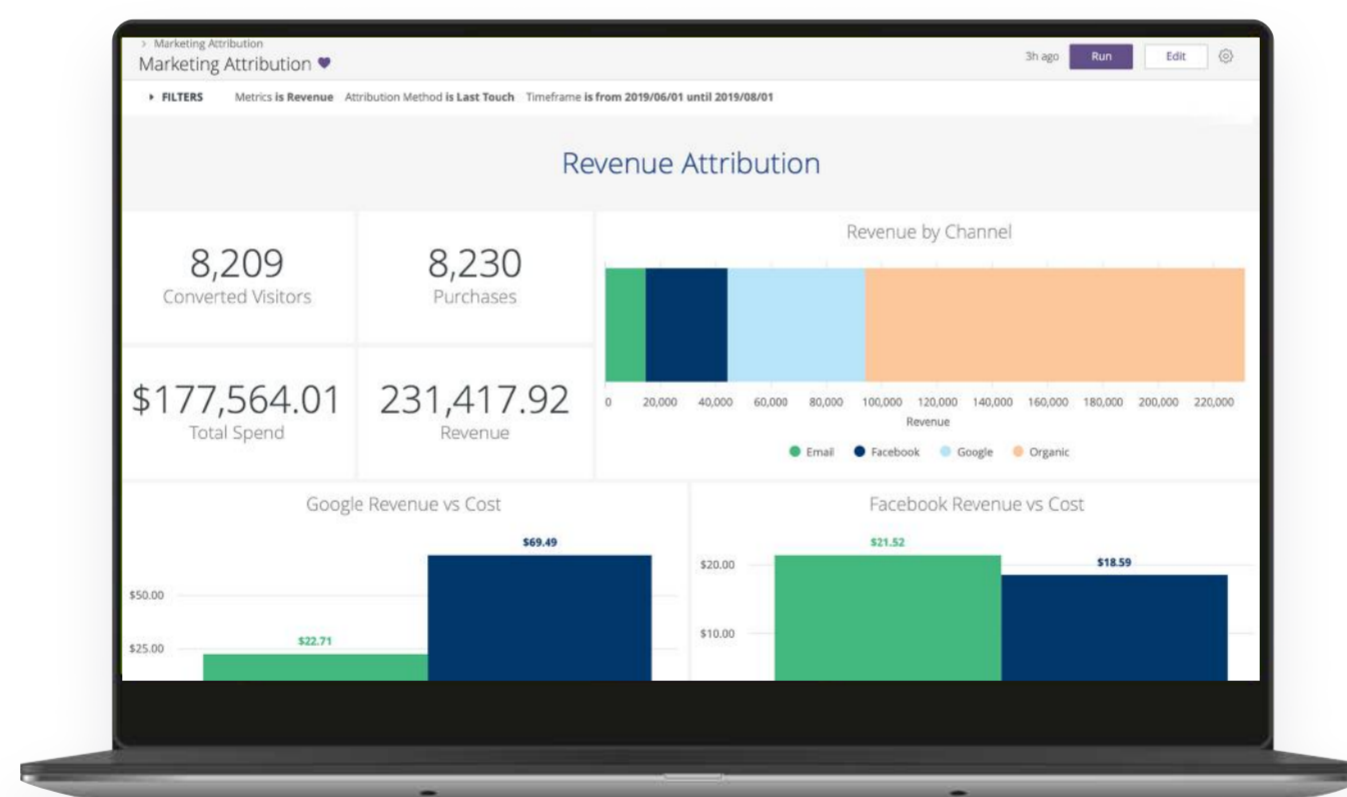
Source: Looker

Another approach to customizing marketing attribution is to send Segment data to BigQuery, and then use SQL analytic functions to pull out useful insights. (You can then plug this SQL query into Looker to create a dashboard.)

For instance, the FIRST_VALUE SQL function can pinpoint a user's first session in their customer journey. This is useful for first-touch attribution, where 100% of the conversion value would go to that first touchpoint.

On the flip side, the LAST_VALUE SQL function can be used to highlight the user's final touchpoint before converting (for last-touch attribution).

You can also pull up a user's complete journey to see how long it took them to convert, and start distributing conversion value to these different touchpoints accordingly (e.g. more value placed on the touchpoints that occurred closer to the conversion in a time-decay model).

```
SELECT w.full_name,
       s.session_start_tstamp,
       s.session_end_tstamp,
       s.session_id
FROM   `ra-development.analytics.segment_web_sessions__stitched`
```

SQL query to pull up the complete history of a user's sessions.
Source: Rittman Analytics

Rittman Analytics outlined the steps (and complete SQL query) to do this. You can download the SQL query as a Github gist here.

Choosing the right attribution tool

There are also dedicated attribution tools that can help with the heavy lifting of creating a multi-touch attribution model.

Segment makes it easier for you to try different attribution tools because you don't have to integrate each SDK one by one. You can collect customer data with our API, integrate one SDK, and then simply flip a switch to integrate new tools.

Not to mention, Segment allows you to easily access all the historical user data you've collected, and use it to your advantage. While this may seem like a given, some attribution tools do charge extra to access this data (which is important to take into consideration).

We listed other important criteria to consider when choosing an attribution tool below:

1. **How suitable the tool is for your business:** Attribution is a very different game for B2B companies than it is for B2C or Mobile companies. Make sure you're selecting a tool that excels with your specific use case, and that has demonstrated value with companies like yours.

2. **How many integrations the attribution tool has.** Generally, the more integrations, the better. At a minimum, your attribution tool should have an API that integrates with your CRM, email provider, online ad platforms (including cost data per campaign to understand return on ad spend), and SEO tools. Make sure it has more integrations than you need right now so it can accommodate your team as your business grows.

3. **How many devices the tool covers.** Some attribution tools specialize in certain devices (e.g., mobile-only), while others cover a broad spectrum (e.g., mobile, desktop, TV). Depending on your business model and budget, you may need to prioritize specialized attribution tools over more general ones.

4. **How secure the platform and data is.** Your attribution tool will be home to your end users' data, and any breach of that data will have serious ramifications. If your business takes privacy seriously (and it should) you'll want to choose a tool with best-in-class security features. Additionally, you probably want to check whether data is stored on servers compliant to your local regulations – e.g. GDPR in the EU.

5. **How they handle over-attribution and fraud.** Fraud costs the advertising industry billions of dollars every year, and wreaks havoc on a businesses' ability to make informed, accurate decisions about their advertising. Make sure you choose a tool that takes serious steps to detect fraud and block fraudulent attribution.
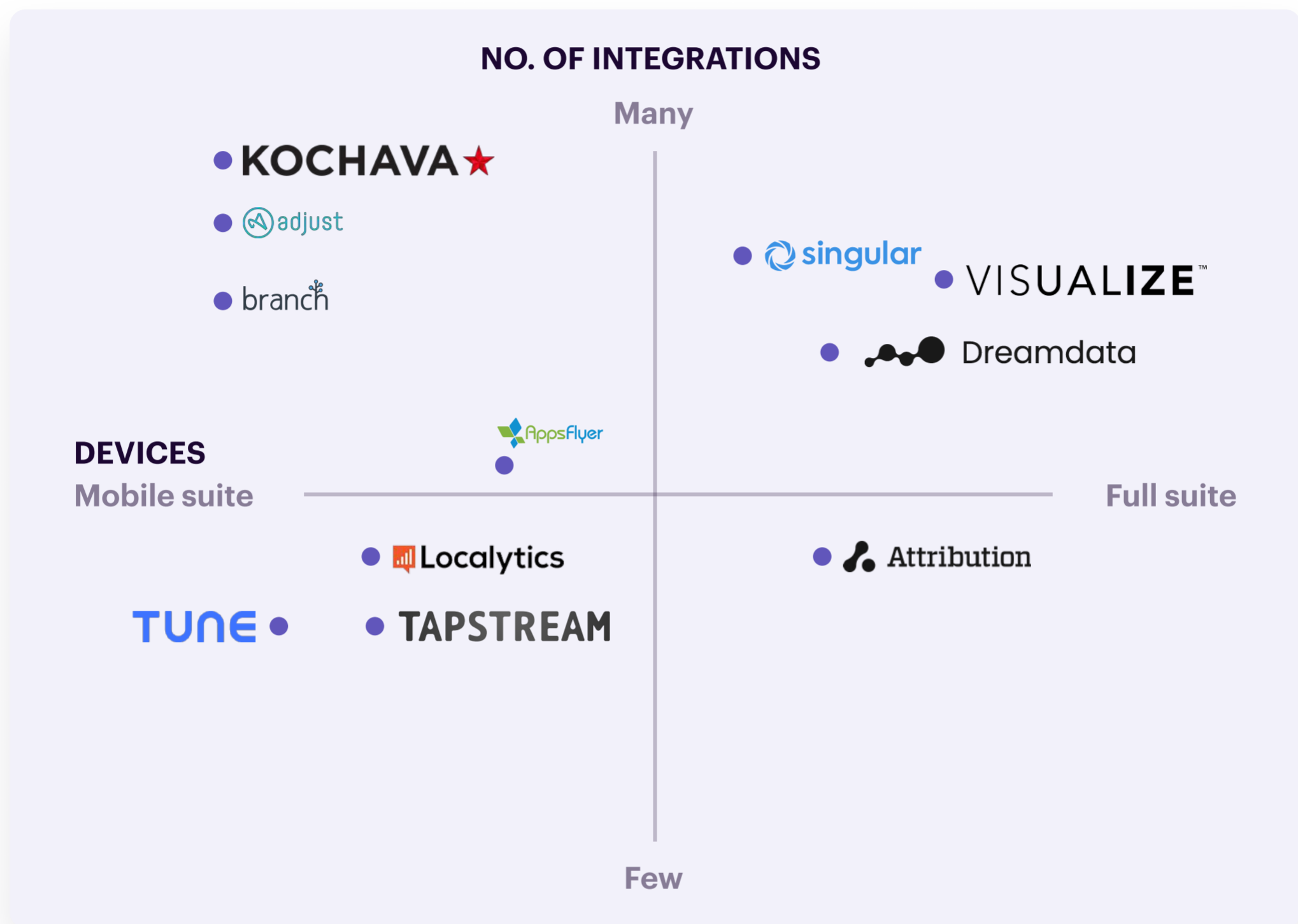
We plotted out a few of the most popular attribution tools based on the number of integrations and the number of devices.

The best attribution tools

Here are a few top players in the market when it comes to attribution tools.

Each tool comes with its own set of strengths, and as mentioned above, it's always best to consider the unique needs of your business when evaluating new technology (which often varies between Mobile, B2C, and B2B companies.)

(All these tools can be integrated with Segment, either by browsing our integrations library or setting up a custom function.)

Adjust:

Adjust enables mobile attribution tracking for marketers by providing insight into organic installs, ad clicks, and in-app events, all with unlimited look-back. They also offer mobile analytics, audience-building, fraud prevention, along with uninstall and reinstall products.

AppsFlyer:

AppsFlyer is a mobile attribution tracking platform that specializes in app-install attribution. Their technology attributes every new installation to the marketing campaign and media source that drove it using granular dashboards. With these dashboards, you can optimize marketing performance across user acquisition and retargeting campaigns. AppsFlyer acts almost like a hybrid between application monitoring and mobile attribution, connecting app installs and performance back to marketing campaigns. AppsFlyer enables universal deep linking, fingerprinting, and secure postbacks, while having best in class security features.

Attribution:

The aptly named Attribution is an enterprise-grade multi-touch attribution software with a focus on allowing marketers to see their return on ad spend. Pulling cost data from all major ad platforms, it correlates that spend to specific users or accounts and then tracks ROI from those over time. It spreads credit across all sources, including ad platforms and social channels.

Dreamdata:

Dreamdata.io is a B2B attribution and revenue analytics tool that gathers, joins, and cleans all revenue-related data in order to present a transparent, actionable analysis of what drives B2B revenue. This enables companies to understand B2B attribution, LTV of ads, content marketing ROI, benchmark growth, and decide what efforts to scale next.

Singular:

Singular is the marketing intelligence platform that unifies marketing campaign data and attribution data in a single dashboard. With over 2,000 integrations globally, partner relationships with all the major ad networks, and almost half of the top 200 grossing apps as customers, Singular's scale unlocks intelligent insights for growth marketers, who currently optimize more than $10B in annual ad spend on the platform.

Tapstream:

Tapstream focuses on mobile app attribution that is network-agnostic, which means it requires fewer SDK installs. They have integrations with multiple ad platforms, and their attribution platform allows for some customization. Offers app analytics, event tracking, A/B testing, and has a turnkey incentivized referral program.

Nielsen Attribution (formerly Visual IQ):

Nielsen Attribution is one of the few vendors with a native Facebook integration. Because it's owned by the Nielsen company (a giant in analytics), it can also leverage offline tracking integration. While this feature is more of a "nice to have" it helps to show positive ROI, particularly for retailers. It also provides access to Nielsen insights.

How StackCommerce made paid ad attribution more accurate

StackCommerce partners with publishers and merchants to create data-driven commerce content that fits seamlessly into the user experience. StackCommerce creates fully branded on-site shops for publishers, while offering brands product discovery at scale through native advertising and this network of marketplaces.

The challenge of paid ad attribution

StackCommerce runs paid advertisements for its publishing partners – with Facebook and Google ads delivering significant business.

But they had a problem: reliable attribution.

Most customer journeys span multiple touchpoints and channels. But for StackCommerce, this journey is particularly unique.

When a user clicks on a paid ad, they're taken to content on a publisher's site, which contains links to these advertised products. Clicking on one of these links will then take the user to a StackCommerce shop to complete a purchase.

Except, Facebook didn't offer product-level reporting.

As we know, user behavior doesn't always follow a linear pattern. People may click on a paid advertisement for one product and ultimately purchase another after landing in the StackCommerce store – making attribution even more complex.

Initially, StackCommerce built their own pixel to better match paid ads to specific orders. This left StackCommerce with the familiar "build vs. buy" debate: should they continue to iterate on their homegrown pixel, or invest in an outside solution?

Building a new redirect system with Segment

StackCommerce needed to rethink its approach to attribution.

The team had been evaluating Segment to help break down data silos and standardize data collection across the company – and saw an opportunity to build redirect links for paid ads using a CDP.

First, the product team created an internal schema for paid ads to specify which partner was aligned with a specific product. Then, they used Segment to track user behavior. When a user would click on a paid ad, the analytics.js hit would register in Segment as an anonymous user ID. Once that user landed on a product detail page (PDP), StackCommerce could match these anonymous users to a specific sale.

When comparing this new strategy to their homegrown pixel, StackCommerce found that Segment was more accurate at matching paid ads to orders. And with Segment, their team was now curating a rich data set that could be used to cohort users and gain a more nuanced view of their behavior.

Scaling with automation

StackCommerce provides publishers and merchants with a partner dashboard to monitor content creation and track earnings. But before Segment, these reports were putting a strain on internal resources.

Account Managers were often spending time manually updating partner reports. With Segment, attribution data was not only more accurate but automatically fed into these partner dashboards. What had once been a manual process now took an hour – without Account Managers having to manually crunch numbers. These dashboards were now functioning as intended, providing transparency and validating partners' investment in StackCommerce.

In the end, Account Managers collectively saved **hundreds of hours** of work a year by automating these reports. That time could now be spent on business development and strengthening partner relationships, putting StackCommerce in a better position to scale.

The results

StackCommerce's blend of content and commerce is helping partners become more profitable (and adaptable) in a changing industry. And by working with Segment, StackCommerce has been able to:

- Gain more accuracy in paid ad attribution.

- Automate paid ad earnings reports in their partner dashboards.

- Saved **hundreds of hours** of Account Managers' time, annually.

Conclusion

Multi-touch attribution gives you a more complete understanding of the customer journey, no matter how complex or fragmented it is – helping businesses adapt their strategies, and optimize ad spend, in tandem with larger market shifts.

And according to Martech Today, companies' investment in multi-touch attribution solutions is at an all-time high, and only projected to increase.

But if there is one thing that multi-touch attribution hinges on, it's good, reliable data and a complete view of the customer journey – which can be gained with a customer data platform like Segment.