



How to Build a Mobile-Centric MarTech Stack

The Complete Guide



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October 2019

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Introduction

As the digital ecosystem continues to expand and evolve, SaaS technology has become a [mission-critical component](#) for effective marketing operations. Marketing and advertising technology falls into numerous complex and overlapping categories, with literally thousands of partners competing for your marketing dollars.

Whether you're [building your marketing tech stack](#) from a mobile-first or web-first perspective, it can be daunting to know where to start as well as when and how to expand. And while adding or changing marketing technology requires significant investment in terms of vetting, training, development, and other resources, adaptability is key to success.

According to [Ascend2's March 2019 survey](#), 67% of marketers are adding new types of MarTech to the stack on a quarterly or monthly basis.

The reasons for building a mobile marketing tech stack are varied but clear:

- From campaign orchestration to automation, measurement and data enrichment, marketing technology has the ability to significantly increase efficiency, visibility, flexibility, and value across marketing operations.
- While some services can be built in-house, doing so requires significant resources and in some cases, it may be impossible or unscalable to effectively replicate certain products (e.g. [mobile attribution](#)).
- Marketing technology is extremely competitive, with multiple providers offering similar services in each category. While there are clear leaders who carry up to ~80% market share in a given category, there is also a constant influx of new players. This drives rapid innovation and price competition, which means the partner evaluation process is never truly put to rest.
- Although there is no standard formula for success, the purpose of this guide is to provide a framework for how to build a solid marketing tech stack—focusing specifically on mobile as the core platform.

We will examine the following topics throughout the course of this guide:

- **MarTech Stack Foundations:** establishing strategic goals and defining key stack solutions to consider across your product life cycle
- **Category Deep Dives:** product analytics, marketing automation, mobile attribution, and customer data platforms (CDPs)
- **Advanced Considerations:** evaluation criteria, getting internal buy-in, setting timeline expectations, and structural tradeoffs supported by [industry trends](#) (e.g. stack design frameworks, cost/benefit analysis, building vs. buying technology, opting for best-in-breed vs. all-in-one tools, etc.)



Chapter 1:

Mobile Marketing Tech Stack Foundations

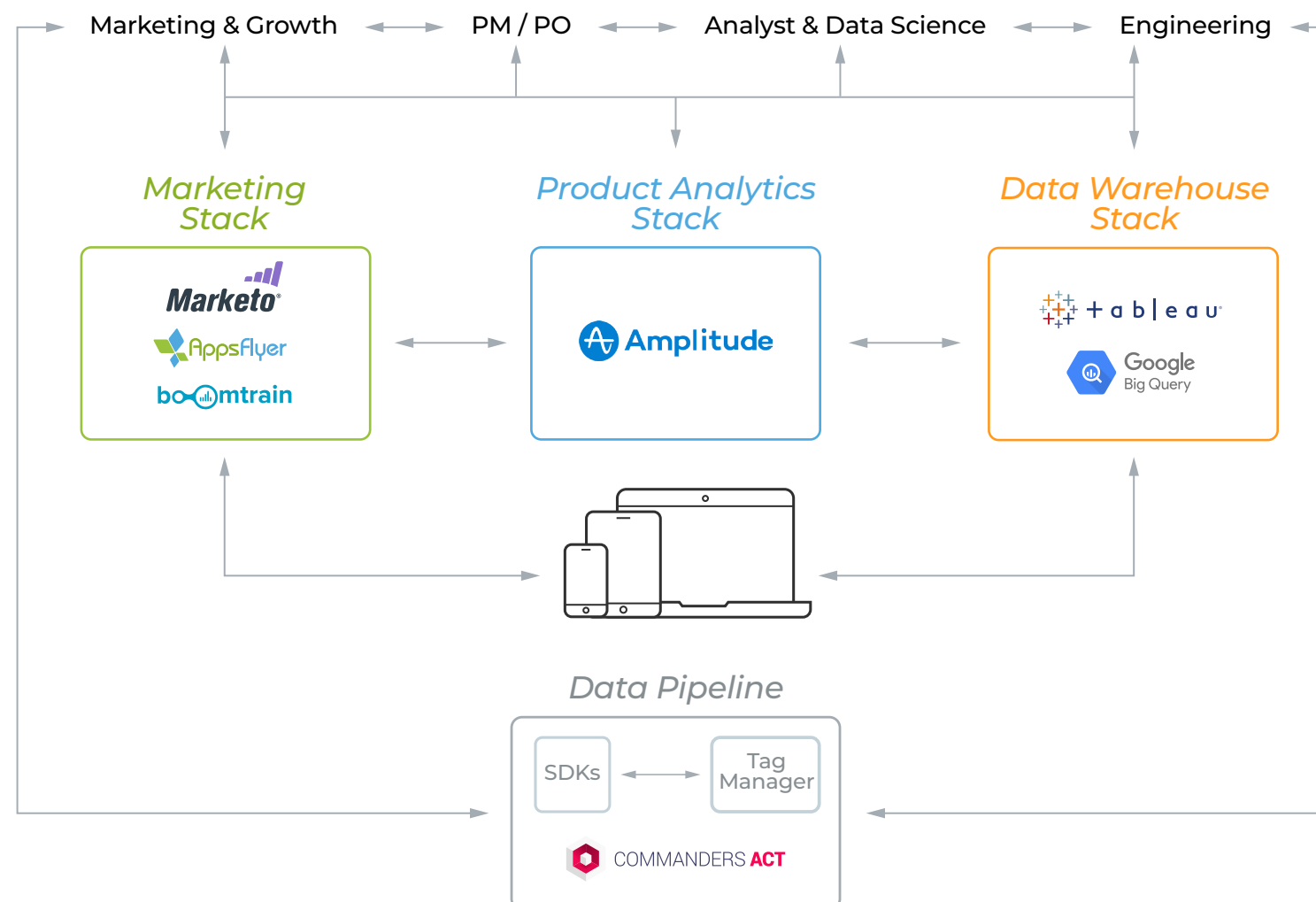
Mobile Marketing Tech Stack Foundations

Why Do You Need a Marketing Tech Stack?

Most modern marketers don't dispute the need for a tech stack, but for those that do, or who don't know what a tech stack is, let's start by defining the term.

A **marketing technology stack** is a collection of technologies marketers use to conduct and optimize their marketing activities. These “MarTech” tools support, simplify, and unify the collection, organization, and utilization of user activity data across paid and owned channels.

Here's an example of a well-rounded tech stack, courtesy of [Amplitude](#):



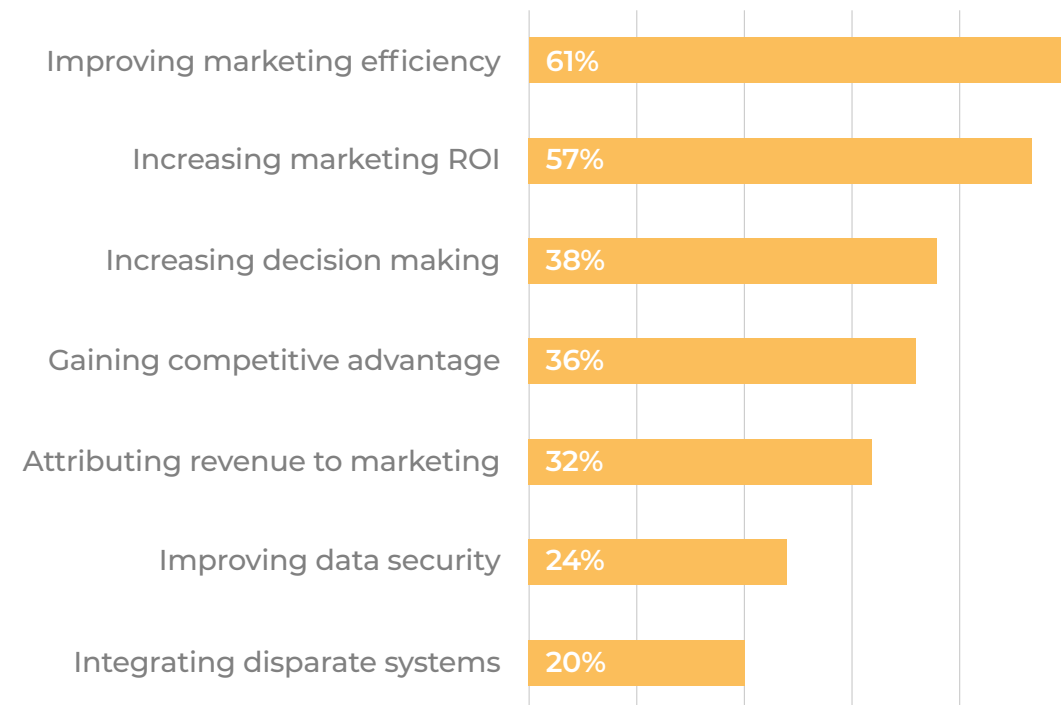
There are varying opinions on the necessity of each stack solution, and whether it is more prudent to build certain solutions internally, choose a free technology service or pay for more advanced solutions. Regardless of the path you choose, the main benefits of MarTech generally boil down to **efficiency, efficacy, and scalability**.

Some examples of how these benefits play out include:

- **Integrating disparate systems** (e.g. data storage, partner integrations, data enrichment for cross-channel analytics, building audiences, [postbacks](#), etc.)
- **Activation and campaign orchestration** (e.g. audience and messaging segmentation, link/creative deployment, A/B testing, email, push, etc.)
- **Advanced insights to improve decision making and ROI** (e.g. data visualization, cohort analysis, [mobile attribution](#), etc.)
- **User flow optimization** (e.g. A/B testing, [deep linking](#), web-to-app banners, etc.)

Indeed, these benefits are clearly reflected in [Ascend2's March 2019](#) survey, which ranked efficiency as the #1 objective for marketing tech utilization:

What are the PRIMARY OBJECTIVES for a MarTech utilization strategy to achieve?

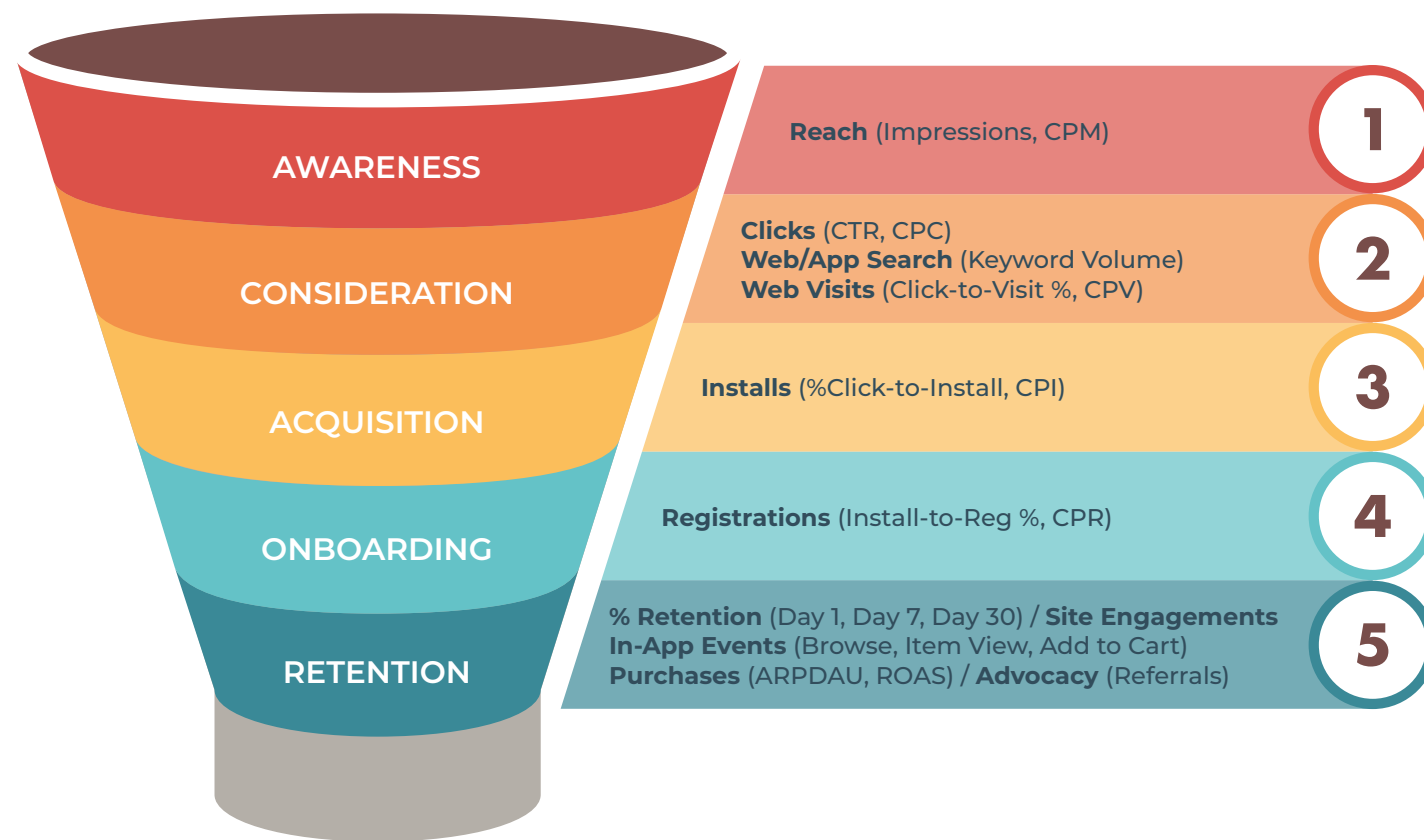


The same survey also found that 63% of marketers plan to moderately increase their total MarTech budget and 24% plan to significantly increase their MarTech budget.

This speaks volumes to the value of MarTech. In many cases, the benefits of paying for more advanced solutions outweigh the costs.

Foundations: How to Start Building a Mobile Marketing Tech Stack

Whether you're [building your mobile marketing tech stack](#) from the ground up or extending your web-first stack to accommodate a new mobile app, the first step to building your tech stack is goal mapping.



Consider questions such as:

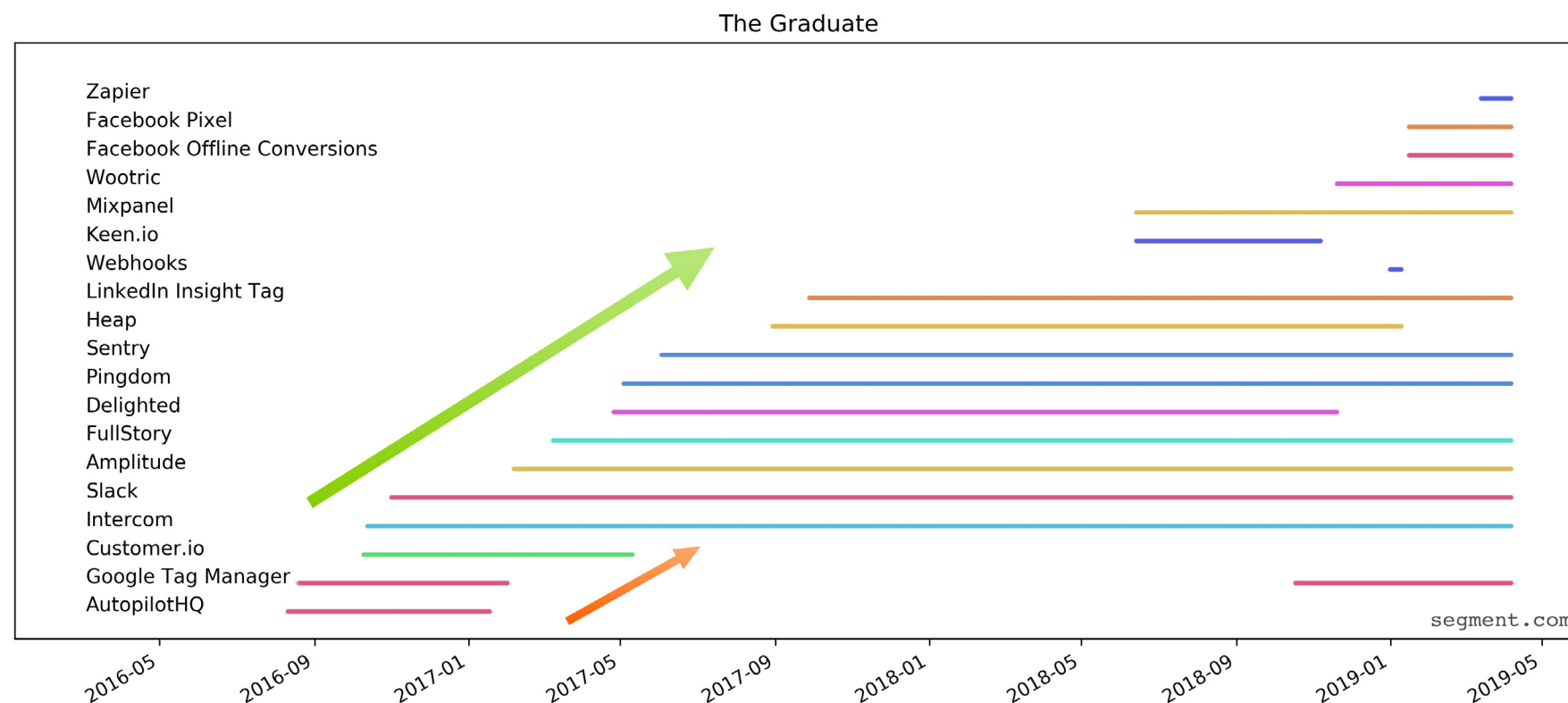
- What are your growth goals (to inform data volume and scalability needs)?
- What does your customer journey look like?
 - What are the primary KPIs for each step of the journey?
 - What additional events would be helpful to measure in order to measure and optimize the full customer journey?
- What channels and functionalities will you need to acquire and retain users?
 - What media partners are you working with (or plan to work with)?
- What infrastructure will you need to store and manage data?
 - Who owns your data, and what security protocols should you consider to ensure your data is safe?
 - How will you visualize marketing and product performance?
 - Is it necessary for you to have a full-funnel view of marketing/product activity across channels and platforms?

These questions will allow you to not only categorize “must-have” vs. “nice-to-have” tools, but they’ll also guide your partner evaluation process as you compare factors such as feature capabilities, cost, partner integrations, support and scalability. Although the first tools you adopt may be contingent on budget, you will be better off in the long run if you design your tech stack for scalability.

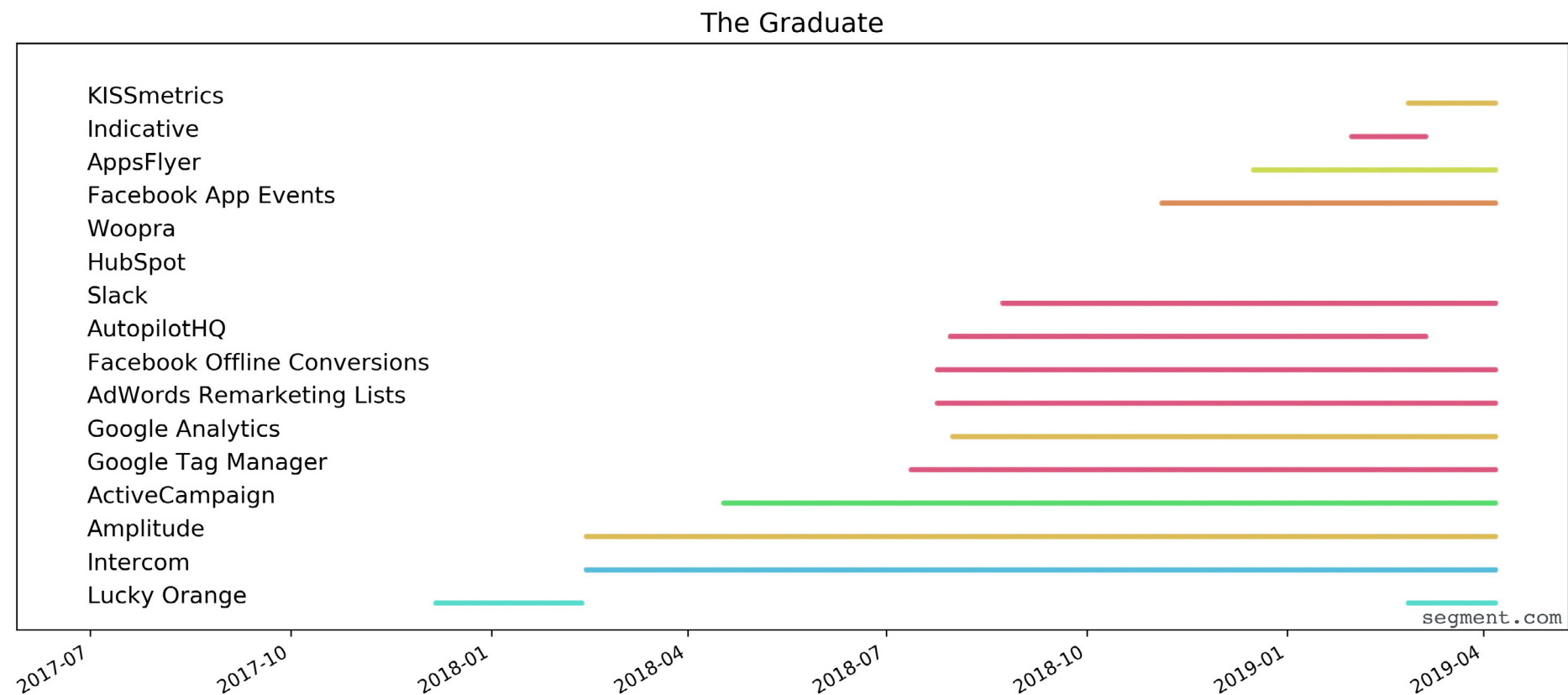
So as you go through the exercise of goal mapping, prioritization, and budgeting, you should also think about future implications to help you build the case for new tools and guide your strategy for MarTech testing and expansion.

Customer data platform [Segment](#) recently released a data study that illustrates various ways this strategy can play out. For example, some “companies have a steady ‘graduation’ across tools—they start with a handful of use cases, and steadily shift those out over time [...] These users add a few tools every month. As they discover new parts of their business to unlock, and new best-in-breed tools, they migrate their business to use the cutting edge.”

The following graphic illustrates an example of this strategy, in which similar colors correspond to similar categories of tools.



Here's another example of a graduate who steadily expanded their tools across analytics, messaging, advertising and attribution over a 1.5 year period.



While this approach may be useful for early-stage companies who are gradually building the funds and knowledge to add new tools over time, it requires thoughtful planning to avoid resulting in a “franken-stack”—meaning a convoluted assortment of tools that are haphazardly connected into a stack.

Taking a more serious upfront approach usually results in more clean, clear and unified tool collections.

Which strategy makes the most sense for your company?

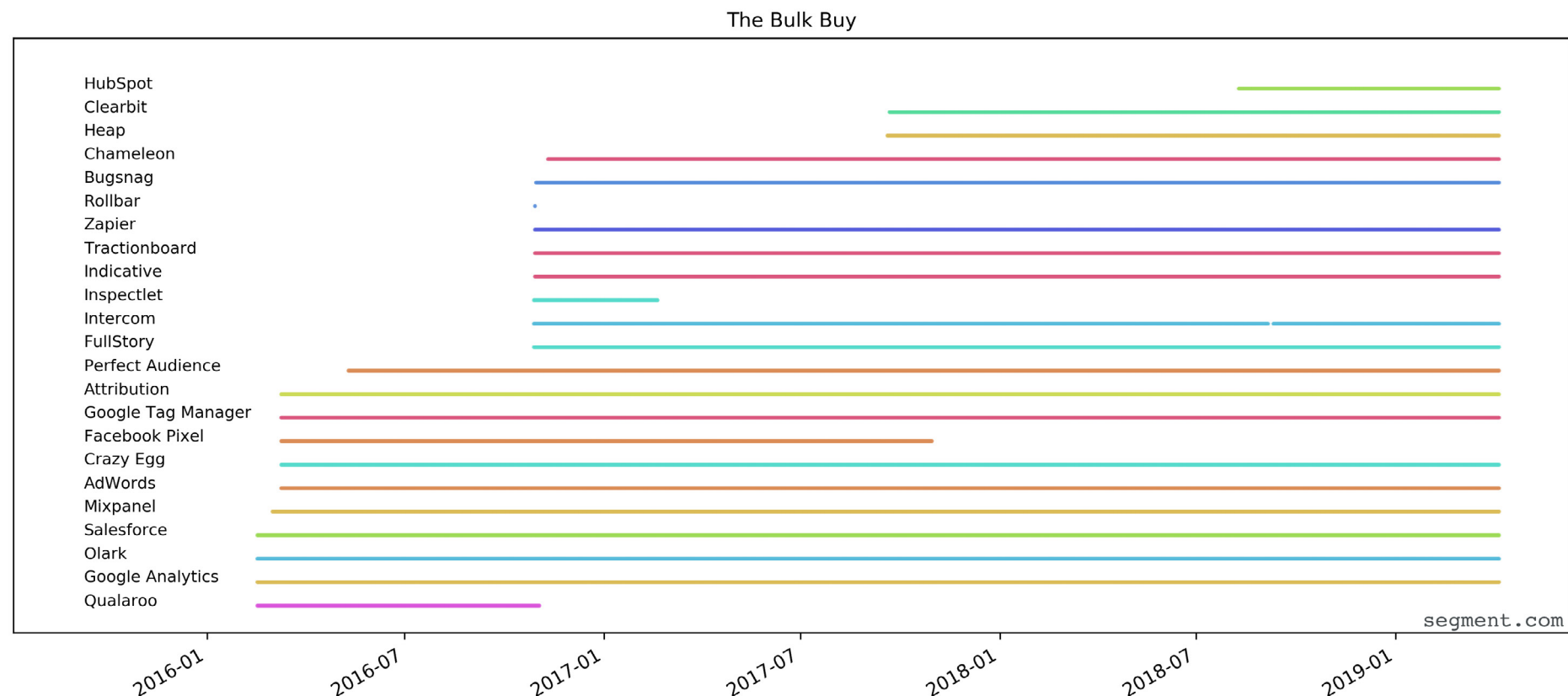
As you start to evaluate partners within each solution category, think about the trade-offs in terms of opportunity costs as well as financial costs—and from there, what impact your strategy will have on your ability to effectively manage and scale your marketing operations over time.

Segment provides a more organized example of an upfront approach called “The Bulk Buy” in which companies “make big stack decisions in bulk. Users don’t just enable tools one at a time. They often enable new destinations in groups of 3 to 5.”

Some trade-offs to consider include:

- Starting with free/basic vs. paid/advanced solutions
- Buying vs. building your own solution
- Legacy “all-in-one” tools vs. modern “best-in-breed” architecture

We’ll dive deeper into each of these topics in later chapters—but first, let’s start by defining the core components of a mobile marketing technology stack.



Fundamentals: Mobile MarTech Hierarchy of Needs

As an attribution company, it goes without saying that we believe [attribution is core to running effective marketing](#). Although attribution might not be the first thing you think about as you build and launch your first app on a budget, the reality is attribution and deep linking tools are [mission-critical](#) to any marketing team that seeks to build a world-class growth and user acquisition function.

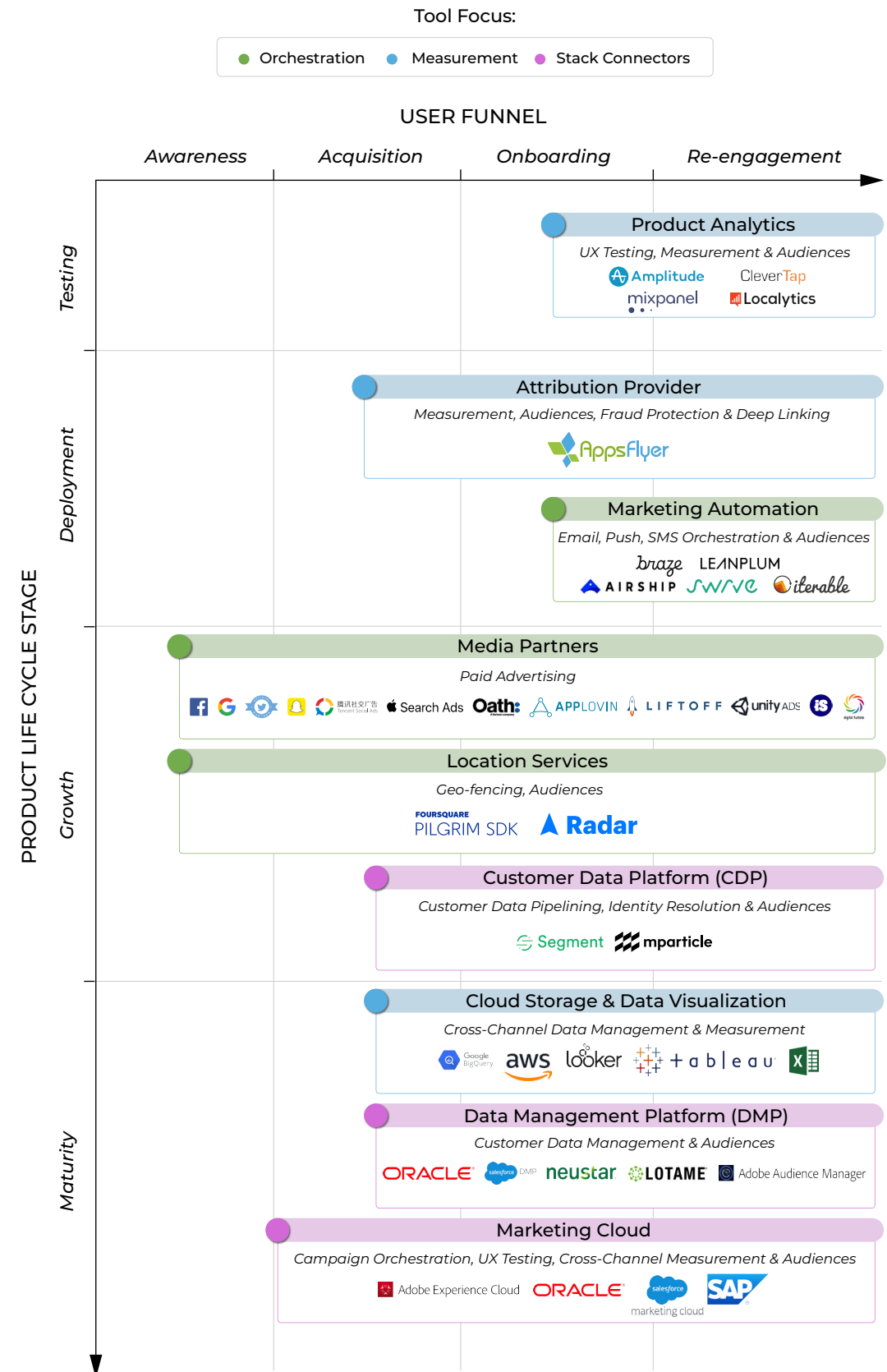
Growth is the name of the game among high-velocity startups and even Fortune 500 companies that are now expanding their digital footprint—and ultimately, growth starts and ends with being able to attribute and track the sources of your traffic across web and mobile.

Still, there are many factors which can feed into the decision-making process and determine whether [mobile attribution is a must-have](#) in your marketing stack or a nice-to-have. These factors can include company stage and size, marketing team technical skillset, budget, legacy tech interoperability, and personal preference among others.

The following graphic illustrates a mobile marketer's typical hierarchy of needs throughout the product lifecycle vs. each solution's role across the user funnel. The order across lifecycle stages indicates the categorical priority from a must-have standpoint, but does not necessarily reflect the most logical order for sequential integration.

For example, BI tools such as CDPs, data visualization and cloud storage tools could be considered the foundational core for a connected tech stack.

Although you don't need all of them to get started, if you're designing for scale you might want to consider integrating some of these solutions sooner than later.



*Logos shown within each category are not an endorsement by AppsFlyer, but rather a sample set of example partners.

With this hierarchy in mind, let's start to define the individual components:

- **Product Analytics:** Focused on mobile app experience, product analytics companies specialize in UX testing and persona categorization. Through behavioral and predictive analytics, they provide an easy structure for product optimization in addition to advanced reporting on retention metrics, user funnels and cohort analysis. For new apps, it's obviously crucial to have a measurement plan in place for UX testing prior to launch. However, we generally see app start-ups begin with basic measurement from free tools such as Firebase and/or in-app analytics provided by mobile attribution and marketing automation providers, prior to investing in product analytics tools with more advanced mobile data such as Amplitude and Mixpanel. Likewise, web-first companies expanding to build their first app often lean on web-first analytics tools such as Adobe Analytics early on in their app lifecycle.
- **Attribution Provider:** The core functionality of partners like AppsFlyer is mobile attribution—measuring and attributing every app install and in-app engagement to the marketing campaign and media source that drove it. Although some might not consider attribution providers to be “necessary” until paid media begins, it's important to remember that most marketing automation providers do not provide tools for universal deep linking. For example, [OneLink](#) by AppsFlyer allows marketers to create a single link that can

automatically detect each user's platform and app state (installed or not) in order to send them to the optimal web or app page. Deep linking is crucial not just for paid media, but also for owned media such as email, webpages, and SMS. In addition to mobile attribution and deep linking, attribution providers also provide 1st party audience segmentation, fraud protection, advanced analytics and depending on the provider, [people-based attribution](#) to connect customer touchpoints across web, app, and TV.

- **Marketing Automation:** Marketing automation partners such as Braze and Leanplum focus on re-engagement with existing users via CRM channels and the core product. Customer engagement can be paired with audience segmentation and A/B testing through push messaging, email marketing, in-app communications or SMS.
- **Media Partners:** Media partners such as Google, Facebook, and Amazon provide advertising inventory across mobile app, web, and TV to drive awareness, acquire new users and re-engage existing users. Media partners can be used to serve ads via various channels and formats—including social, display, video, native and more. You can read more about media partner subcategories in our [Getting Started with Mobile Attribution](#) guide.

- **Location Services:** The King of Cannes 2019 was none other than Burger King, and in their [award-winning marketing use case](#), they demonstrated the power of combining private location preferences data with marketing automation and user acquisition. Location Services effectively give the ability to track users against distinct geofences in an easy, interoperable, and flexible way. This means being able to set up geofences on the fly and ensure that marketing data makes its way to your CDP, attribution and marketing automation tools. Similarly, it incorporates the ability to tie competitor and other places of interest into your user segments for targeting—all without compromising user security and privacy data, as The New York Times [recently reported](#).
- **Customer Data Platform (CDP):** An emerging player in the marketing tech world, CDPs such as mParticle and Segment collect, unify, segment, and activate user data from various SDKs. CDPs automate and enrich the assignment of customer data segments between all other systems in an advertiser's tech stack in real-time. This not only makes it easier to set up new SDKs but also maintains consistency for aggregated raw reports downloaded from data warehouses and visualization products.
- **Cloud Storage:** Cloud storage providers and data warehouses maintain, manage, and remotely backup raw data across all of your tech stack systems. Providers such as AWS, Microsoft Azure, Google Cloud Storage, and Snowflake provide a secure and scalable way to store and access massive amounts of raw data across your organization.
- **Data Visualization:** The simplest data visualization is typically done via spreadsheets (i.e. CSV, Excel, Google Sheets), but

this format may become too manual or unscalable as your business grows. For this reason, more advanced teams often work with products such as Looker and Tableau to create online dashboards, statistical models and automated reports.

- **Data Management Platform (DMP):** DMPs are used to collect audience data across platforms, devices, and channels. Unlike MMPs, DMPs not only collect 1st party data but also 3rd party data to map demographic, psychographic and firmographic segments. Most media partners are able to access 3rd party DMP data for you (charging a mark-up for audience targeting), but some advertisers choose to work with their own dedicated DMP to facilitate standardization across 1st/3rd party audience management.
- **Marketing Cloud:** Perhaps the broadest partner category, marketing cloud companies offer services across the entire spectrum of MarTech, AdTech and BI Tools (in spite of their categorization under marketing automation above). Marketing clouds such as Adobe, Oracle and Salesforce provide customer identity management, audience tools, campaign orchestration and analytics across a full suite of channels including mobile, web, TV and offline CRM. Some cloud providers also offer additional products such as CDPs, data management platforms (DMPs) and demand-side platforms (DSPs).

Now that we've covered definitions, let's dive deeper into the specific features and use cases for the four top tools for mobile marketing: attribution, marketing automation, product analytics, and CDPs.



Chapter 2:

Category Deep Dive: Mobile Attribution

Category Deep Dive: Mobile Attribution

Between paid media campaigns, owned channels, and app store optimization, [user acquisition \(UA\)](#) is a fundamental piece of your mobile business, given that:

- It facilitates growth in the hyper-competitive, free-to-install app ecosystem
- Organic app discovery is largely broken
- UA is the gift that keeps on giving, with effective practice leading to higher app store rankings + more UA

One of the most powerful tools for transforming complex data into actionable insights for UA is the **attribution provider**, also known as a mobile measurement partner (MMP) in the app world. While capabilities vary somewhat between providers, MMPs offer a variety of tools including [deep linking](#), mobile fraud protection, first party audience segmentation, and of course, attribution.

Mobile attribution is the process of measuring and attributing every app install and in-app engagement to the marketing campaign and media source that drove it. Without attribution, marketers lack the right kind of visibility into their performance, which informs wrong decisions and ultimately overspending.

In order to make sense of it all and pay their media partners for demonstrated value, marketers need to work with a partner that has a view from above and is a source of truth that can rule which marketing activity should be credited for delivering a desired action and which should not.

Fitting Mobile Attribution into Your MarTech Stack

As the centrality of the mobile app as the ultimate destination becomes adopted as a standard, marketers need less convincing as to an attribution provider's role in their efforts. Nevertheless, a common misconception is that an attribution provider isn't relevant for non-paid efforts. However, there are two key reasons to integrate mobile attribution early on in your product lifecycle, before paid media begins:

1. Attribution is centered on understanding engagement with both paid and owned media across the user journey, from ad exposure to push notifications and customer emails. Attribution is crucial for optimizing post-acquisition user flows through the measurement of [in-app events](#) such as sign-ups, purchases and level completions, in addition to down-funnel metrics such as retention, revenue and lifetime value (LTV).
2. Using information gathered by an attribution provider, **deep links** allow marketers to create a single link that can automatically detect the user's device, channel, platform and app state (installed or not) to send them to the optimal web or app page. While deep links are helpful for automating paid link trafficking, they are absolutely crucial for optimizing the user experience for owned media.

When opening a marketing email link on your mobile phone, for example, you've probably encountered the frustration of being sent to that brand's website instead of the app store.

This is even more cumbersome for apps that you've already installed, in which case you have to exit the webpage, open the app and manually navigate to the intended in-app page. This is precisely why universal links are so important. Without using a third party deep linking solution, marketers have no way of optimizing the experience by device and platform. And while some email service providers (ESPs) and marketing automation platforms have come up with their own universal link solutions, few are equipped to [handle every edge case](#). AppsFlyer's [OneLink](#) solution solves that, ensuring a seamless user experience across paid advertising, SMS campaigns, user invites, web-to-app banners, cross-app promotions, referral programs, QR codes and more.

Note that, without attribution data on where, when, and how users engage with promotions and apps, deep linking cannot be fully optimized—these two capabilities go hand in hand. That is, deep linking is the process of using attribution data to route the user appropriately. Since deep links are powerful tools at any stage of your app's growth and development, it's crucial to find an attribution provider to unite deep linking and attribution in a single dashboard and maximize the impact of both.

Now that we've covered the top two reasons to integrate attribution early on in your product lifecycle, let's dive deeper into more advanced functionalities and use cases.

Top Attribution Use Cases

While there are many applications of attribution data depending on the marketer's tech savviness, here are five of the most universal and wide-reaching use cases:

1. Break down the silos between paid and owned media.

In many ways, an attribution provider can be considered the common link between advertising and MarTech partners. In addition to providing deep linking functionality across paid and owned media, attribution data is crucial to unify the two. By differentiating the source of in-app events between paid re-engagement and marketing automation campaigns (push, email, etc.), marketers can better synchronize and deduplicate efforts



to maximize their return on investment (ROI). Through built-in partner integrations, MMPs allow marketers to unify measurement from all their advertising partners, providing holistic attribution data to product analytics, marketing automation, developer tools and other stack partners to customize web and in-app user flows by audience and acquisition source. MMPs also prevent the need for a marketer to integrate new SDKs for every new advertising partner, streamlining the testing process while facilitating a continuous feedback loop for media optimization through the use of postbacks.

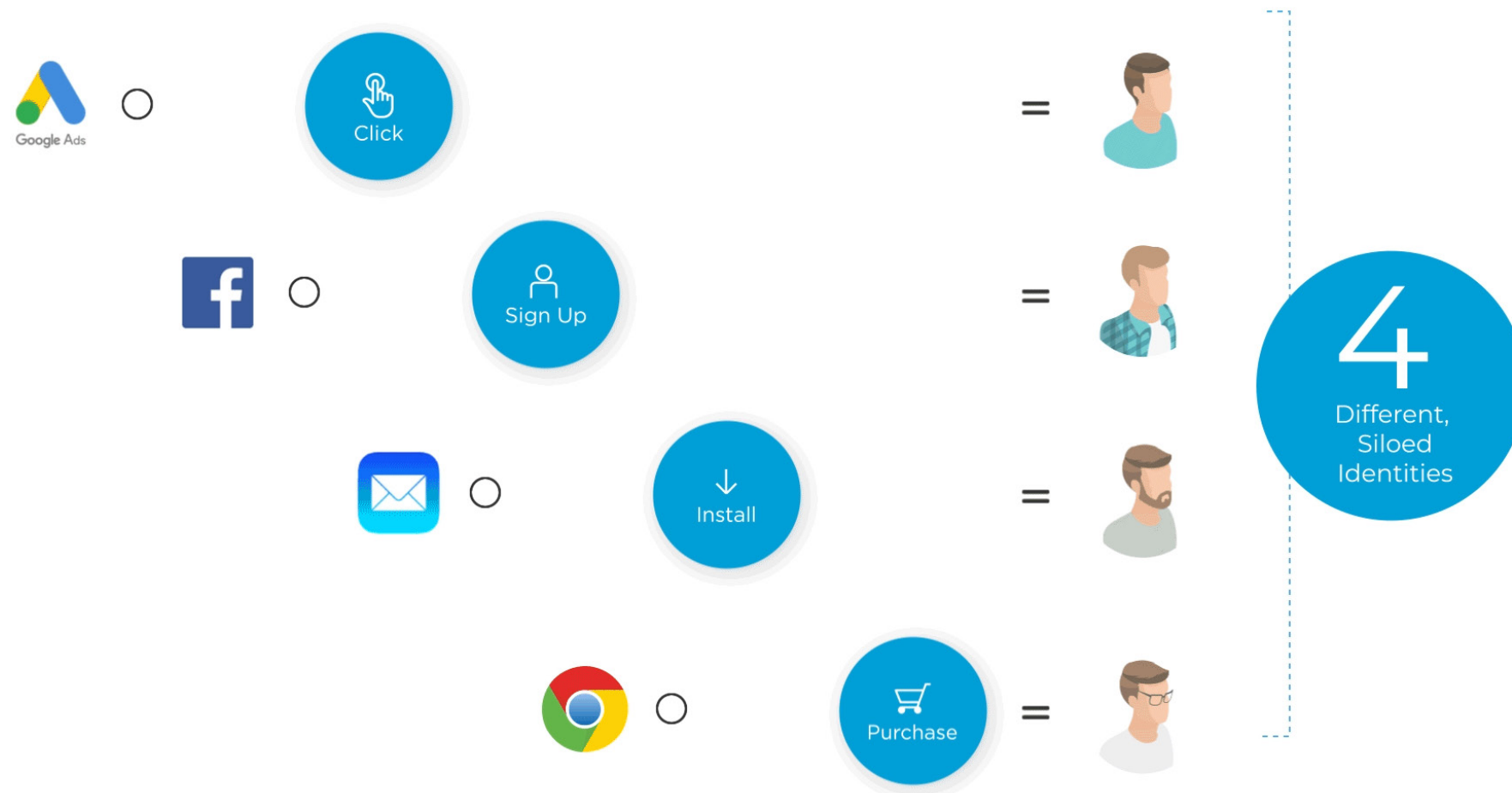
2. Optimize campaigns with advanced attribution and analytics.

From user acquisition to retargeting, effective campaign optimization requires granular measurement. For example, a travel app might focus on basic events such as installs, app opens, registrations, add to cart and bookings as their key performance indicators (KPIs). However, by mapping additional parameters such as origin, destination and class on both content search and booking events, the airline marketer can unlock more granular options for optimization as well as audience segmentation. Rich in-app events are the ideal attribution tool to determine the value of app users and the quality of traffic originating from different media sources. Additionally by analyzing the correlation of specific rich in-app events that tend to precede lower-funnel goals such as bookings and purchases, marketers can build predictive models to better optimize towards ROI and ultimately LTV.

In addition to providing granular measurement of in-app events, attribution providers can also connect the dots between different channels and devices to provide a holistic, [people-based view](#) of user journeys within a single dashboard.

For example, AppsFlyer offers multi-touch attribution to differentiate the last touch that drove a user to install vs. “contributor” media sources that a user may have been exposed to previously across web and app environments. Whether viewed as raw data, cohort reports or other dashboard visualizations, these insights can be used to optimize end-to-end user journeys from awareness to UA and re-engagement.

With that clarity, marketers are better positioned to combat ad fraud, reallocate advertising spend, and prevent double or triple charging by ad networks each claiming credit for an install or other action.

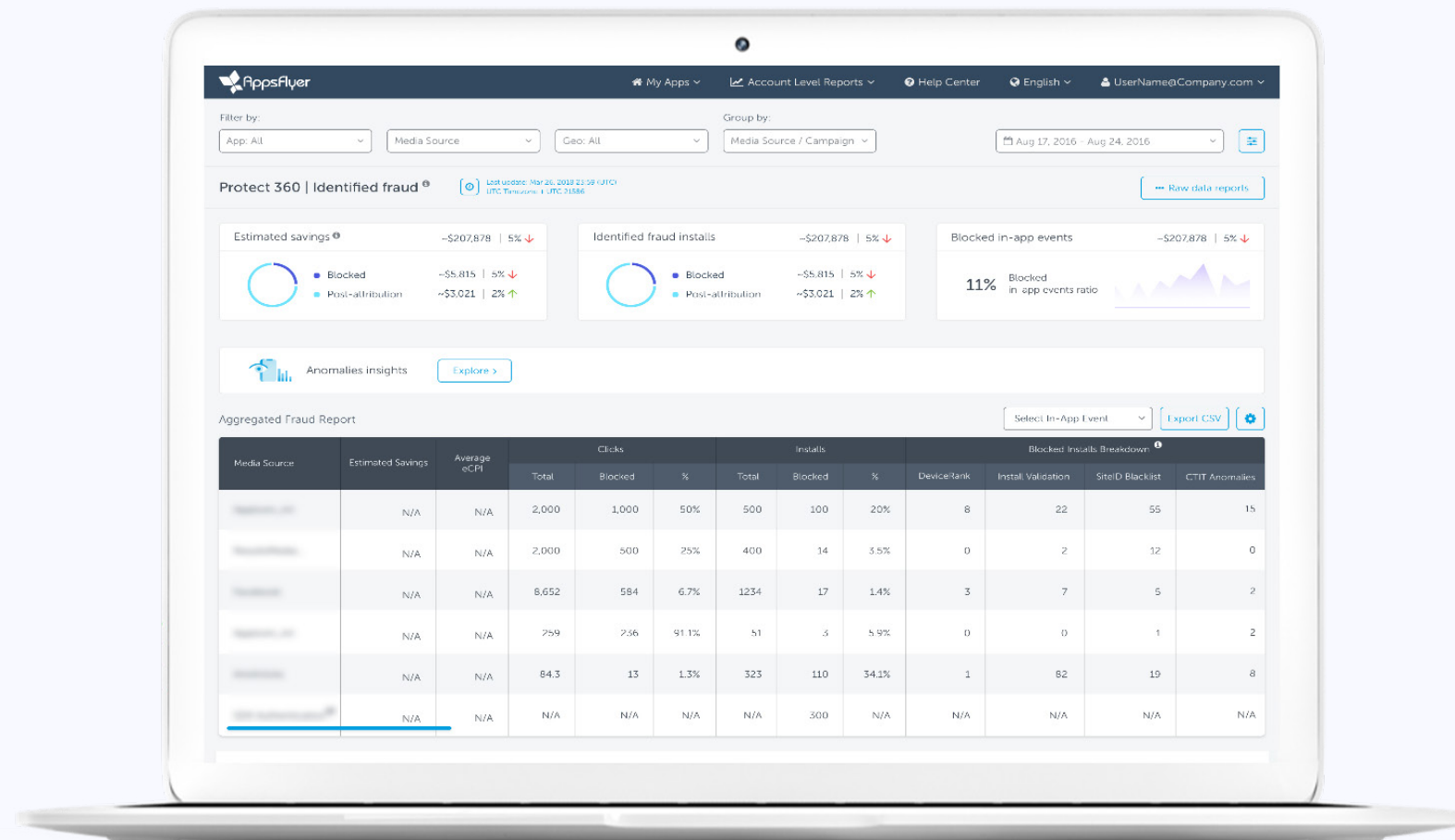


3. Detect and prevent ad fraud in real-time.

Mobile ad fraud is a growing industry problem, comprising 22.6% of non-organic app installs worldwide, according to AppsFlyer's [State of Mobile Fraud \[H1 2019\] report](#). Although it's possible to manually detect certain types of fraud by analyzing click-to-install times, conversion rates and other metrics in-house, policing media partners without the use of anti-fraud technology is a cumbersome and only partially effective process. Fraud is a cat-and-mouse game in which fraudsters are constantly finding new ways to evade detection, such as the use of bots to emulate real users. Given its dynamic development, the best way to stay ahead of sophisticated fraud tactics is by using the massive scale of MMP data to power AI detection and blocking.

By investing in an advanced solution such as AppsFlyer's [Protect360](#), marketers are guaranteed real-time fraud protection, as well as a suite of advanced reporting that can be used to set up custom rules, alerts and enforcement mechanisms for network compliance.

Realizing that [16% of app install fraud](#) is impossible to stop in real-time, Protect 360 is also the first industry solution to provide AI protection against post-install anomalies that contradict standard user behavior.



4. Identify and expand your highest-value users.

In addition to using attribution data to optimize ad spend and user journeys, you can also leverage an attribution provider's audience tools to improve the relevancy of your prospecting and retargeting efforts. By analyzing performance, you can start to understand which actions and metrics correlate most with your highest value users, as well as which types of users are most likely to churn.

Using this insight, you can activate the full potential of your 1st party data by segmenting audiences based on a combination of custom actions and rules, such as ad views, installs, specific in-app events and revenue amounts generated within a set time range.

Rules can be combined and customized to create lookalike audiences modeled off active users, retargeting

audiences for new users who have yet to sign up or engage, and exclusions to remove active users from your UA campaigns. Audience segmentation is also useful for promotional offers, so you can customize the type and value of the offer based on your users' previous interests and levels of engagement or spending.

Audiences can be synced in real-time to all of your integrated ad partners, in addition to your product analytics partner for custom onboarding flows, as well as your marketing automation partner for email, push and in-app messages that are synchronized with your paid re-engagement campaigns.

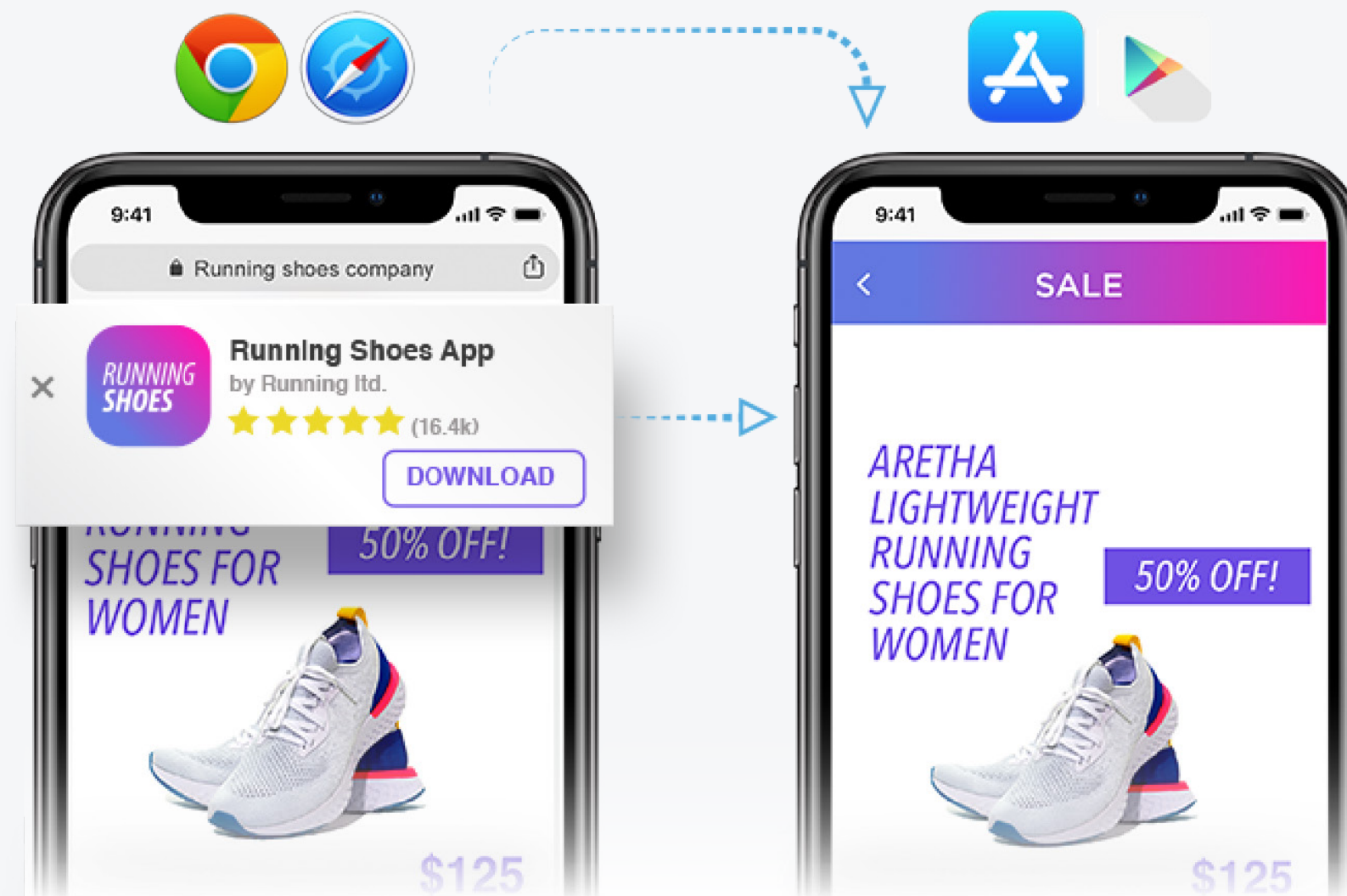
The screenshot displays the Appsflyer audience segmentation interface. It features a rule builder with the following components:

- Logic Connectors:** Two "AND" connectors are visible on the left side of the rule builder.
- Rule 1:**
 - Users of the app:** A dropdown menu showing "Nyxan - Beauty ...".
 - Who have:** A dropdown menu showing "Installed the app".
 - Time Range:** A dropdown menu showing "In the last 120 days".
 - Frequency:** A dropdown menu showing "At least" and a numeric input field showing "1".
 - Unit:** A dropdown menu showing "Times".
- Rule 2:**
 - Did event:** A dropdown menu showing "Did event".
 - Event Attribute:** A dropdown menu showing "af_purchase".
 - Time Range:** A dropdown menu showing "In the last 120 days".
 - Frequency:** A dropdown menu showing "Exactly" and a numeric input field showing "1".
 - Unit:** A dropdown menu showing "Times".
- Intermediate Action:** A blue button labeled "Add Event Attribute" is positioned between Rule 2 and Rule 3.
- Rule 3:**
 - Did not do event:** A dropdown menu showing "Did not do event".
 - Event Attribute:** A dropdown menu showing "af_purchase".
 - Time Range:** A dropdown menu showing "In the last 14 days".
- Final Action:** A blue button labeled "Add Filter" is at the bottom of the rule builder.

5. Optimize user journeys with deep linking and smart banners.

As mentioned previously, deep linking is a critical tool for making the user experience with your app and brand frictionless across channels, platforms, and devices. By providing a more seamless conversion process and enabling contextual experiences customized by a user's interests, acquisition source, and previous brand engagements, deep links can boost conversion rates by 2.5x and retention by 2.1x.

In addition to optimizing journeys across paid and owned media, deep linking can also be used to convert your web users into more valuable app users through the use of smart banners. Let's take eCommerce as an example: Given that 70% of mobile sales occur in app, it's no wonder that conversion rates are 3x higher compared to web. Remember that once you convert a user to your app, you can maintain more consistent



Leave the Data Plumbing to the Plumber

At this point, you may still not be convinced that a mobile attribution provider is necessary for your marketing efforts. For example, if you're entering the app world from an established web-first enterprise, it may be tempting to lean on your marketing cloud or web-based product analytics suite. It's true that you can gain some insight from these legacy tools, as well as partial views of your user journeys from marketing automation and free attribution products such as Firebase. And while some attribution functionalities can be built in-house, taking any of these routes is a compromise that may not be worth taking in the long run.

Take the diverse partner integrations, pre- and post-install attribution, universal deep linking, real-time data, and security protocols for audience data which are only supported by a complex network of mechanics. Such mechanics might not be realistic to build and maintain for companies working with limited team members and resources. Pair this with the complications of working in multiple environments with different methodologies—mobile web and mobile app, for example—and the possibility of things going wrong only increases.

Another consideration is the extent to which you can effectively protect yourself from fraud. Due to the inability to manually counteract every form of fraud, and the time required to continuously update in-house technology to keep up with new fraud tactics, the ROI from a third party anti-fraud suite is usually worth the cost. Attribution providers are far better equipped to fight fraud with their resources, expertise, and scale.

Ultimately, no matter where you are in your app growth or what goals you may have for your data and optimization, an attribution provider can lend invaluable insights and capabilities at multiple stages along your journey.

To learn more about how attribution can support your mobile growth strategy, [request a demo](#) or check out our guide to [Getting Started with Mobile Attribution](#).



Chapter 3:

Category Deep Dive: Marketing Automation

Category Deep Dive: Marketing Automation

Great automated customer engagement strategies can be challenging for brands. Think about the times you've received a push notification or email gone wrong. Was the content not tailored to you at all? Did you receive the message way later than you expected to receive it? Were messages sent to you multiple times?

It's all happened to us—and when it happens, it can have a big impact on the brand at fault. Some customers may opt out of that notification channel so that they don't get that kind of messaging in the future. Others might even uninstall the app or never purchase from that company again. In either scenario, ineffective customer communication can have severe business implications.

Consumers today expect a seamless experience with your brand across devices and channels. In addition, they're becoming more critical of the quality of content that brands send them. And we're beginning to see these customer behaviors and preferences reflected in the tech landscape—just look at the way Apple has given consumers more control around their [push notifications and Notification Center](#).

This shift makes it more important than ever for brands to approach customer engagement thoughtfully from the start. At the end of the day, we're all human. In order to build meaningful human relationships, brands need to understand

their users so they can personalize experiences in ways that speak to each individual.

By integrating marketing automation as one of the first tools in [your MarTech stack](#), brands can more effectively personalize customer experiences at scale. **Marketing automation platforms**, also known as customer engagement platforms, help brands orchestrate, test and automate engagement with their customers through owned channels such as in-app messaging, push notifications, email marketing, and SMS.

Building an Integrated Technology Stack for Customer Engagement

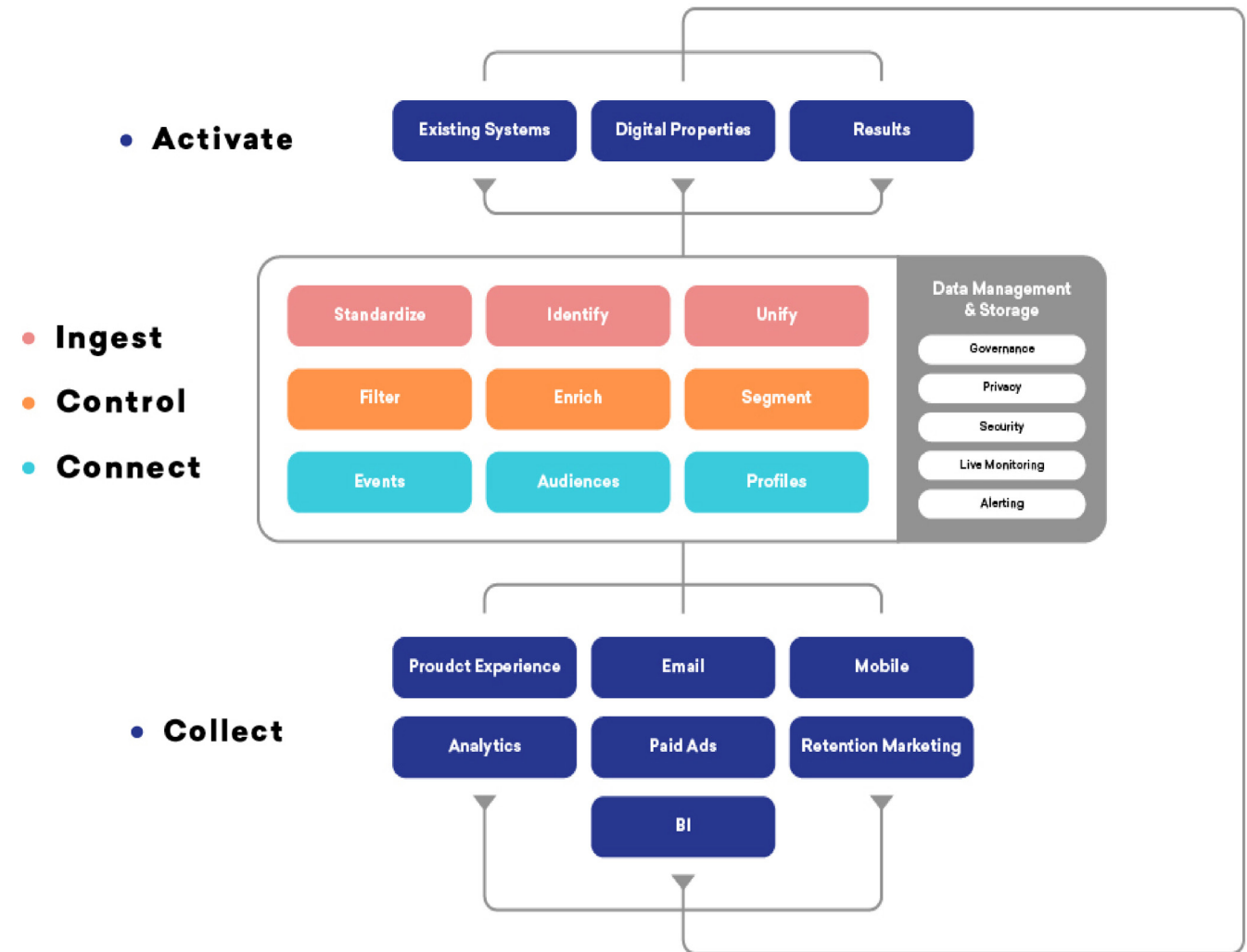
[Marketing technology stacks](#) come in different shapes and sizes. Start-ups may get by with internally-built systems for push and email services. However, as companies grow, it becomes more difficult to effectively scale and automate campaigns without involving significant analyst and engineering resources.

In recent years, we've seen a shift in how brands are thinking about data agility. Previously, brands found it challenging to consolidate 1st and 3rd party data. It required countless hours of engineering resources and Excel analysis to build and optimize marketing campaigns. These manual processes also made it difficult for brands to action and iterate on cross-channel data in real-time. As technologies become more specialized, brands are now building [integrated marketing technology stacks](#) with connectivity and data agility in mind.

Today, marketing automation platforms such as Braze empower marketers to be more nimble and efficient in orchestrating their customer engagement strategies. Brands are able to filter large datasets or enrich their data from third-party integrations such as AppsFlyer or Mixpanel to build targetable audiences. By analyzing the results of cross-channel messaging tests by audience segment, brands can build smarter, more relevant messaging flows. For example, audience filtering can be linked to rules that trigger real-time messages after customers complete specific events in your mobile or web experiences. Taking this a step further, Braze's Connected Content feature allows you to build 1:1 personalized

content with your customers at scale via API triggers.

Rather than working in silos, cross-channel messaging can now be orchestrated within a single interface such as Braze's Canvas, allowing you to automate synchronized messaging for email, push, in-app messages, and in-app content feeds across web and mobile. Partner integrations can also extend messaging to other channels such as paid advertising, SMS and direct mail.



As the above graphic illustrates, these use cases become even more powerful when your marketing automation platform is integrated for holistic data collection and ingestion across your tech stack. For example, many brands find it useful to employ a CDP such as mParticle or Segment to consolidate, centralize and standardize customer data across first- and third-party systems, enabling real-time data flows between tech stack tools. This enriches the data available for marketing automation and in turn, allows marketing automation data to be shared with product analytics and attribution platforms — allowing brands to quickly synchronize audiences, messaging and learnings across paid and owned campaigns.

Likewise, as most marketing automation platforms lack a universal link solution, the previous chapter in this guide emphasized the importance of deploying [deep links](#) from an attribution provider such as AppsFlyer across all marketing channels. In addition to using deep links to automatically route users to the optimal web or app page, attribution data can be used to customize the triggers that are applied to cross-channel marketing automation campaigns.

Building Brilliant Customer Engagement Experiences

Building An integrated marketing technology stack can unlock endless opportunities for brands to build meaningful experiences with their consumers. Let's look at some best practices for building great customer experiences.

Personalize onboarding flows to make a lasting impression

The first few days of acquiring a new customer are crucial. If customers don't see value out of your brand early on, they will most likely churn. Brands should ultimately make customers:

1. **Feel welcome in their app or web environment.**

- It can be as easy as sending a warm welcome email or thanking them for signing up.
- One way of getting to know your customers is asking them what channels they're interested in receiving messages on. Push notification opt-in prompts via in-app messaging have been widely used across web and mobile devices as a means to ask for permission and highlight the value of the content the customer will receive if they enable push.
- If you are sending attribution data from AppsFlyer into Braze, you can also tailor the onboarding experience and content based on the source from which the customer was acquired. Using consistent messaging and imagery from the very first impression

can do a lot to make your brand experience familiar, comfortable, and compelling. For example, if customers installed after viewing a Google ad with a promo code, you could target these customers with a triggered in-app message when they log their first session or send those customers emails that highlight the same promo

2. **Be able to use your app or website to see real value, right from the start.**

- Ensure that you build educational strategies upfront to get new users engaged with your app or website. Create easy milestones for customers to hit in order to gain familiarity with your product or service. If you have an eCommerce app, for instance, you could highlight how easy it is to discover products, purchase and get rewards from purchasing again in the future.

Each new customer journey is unique. For more best practices, check out the [Braze guide to building a personalized cross-channel onboarding experience](#).

Continue to build rich customer experiences post-onboarding

Getting new customers through onboarding is just the first step. Building a long-lasting relationship can be challenging, as it takes time and consistent engagement to really stick.

1. Ensure you continue to stay top-of-mind by responding to your customers' needs and behaviors.

- There might be moments within your user experiences where customers have taken an action that's close to hitting a milestone or driving a conversion. Give them a little push! By triggering a responsive message, your customers will receive timely and relevant content that highlights the value of taking that last step. Maybe forgot about the item they put in their cart. If they're playing a game, maybe they had to stop playing but need a nudge to get back into the app to complete the level. Whatever the motivation is, event-based triggering is a great way to continue that conversation with your customers.

2. Ensure that each message is relevant and timely.

- Many brands are guilty of an overreliance on blast messages. The result? Increasing numbers of unsubscribes, push opt-outs, and even uninstalls. Don't fall into this trap. Although there are some instances where audience-wide communications are necessary, including GDPR-related communications or Terms of Service updates, in most situations it's better to use your customer data to make each message count. Tailor the content of each message based on specific sections of your app or website that each customer has interacted with. For example, if a user of your

gaming app exits the app after completing level 9, then send a quick push reminding them how close they are to completing level 10.

- Furthermore, APIs can be used to unlock powerful segmentation and trigger options for in-the-moment personalization. From product recommendations to personalized messaging based on real-time weather forecasts, dynamic content can have truly powerful results.

3. Effectively communicate across multiple channels.

- Each customer has different preferences about how they want to receive messages. Therefore, it's important to give your customers the option to select what types of messages to receive (and how to receive them) through your notification preference center. By offering customers a choice, they will be less likely to opt out of a channel entirely.
- Cross-channel cohesion is imperative for successful engagement, as each messaging channel has a different purpose. Push is great for short, direct content like alerts or reminders, whereas email is beneficial for providing more context like getting started tips. Regardless of the device or channel, deep links should always be used to ensure a seamless conversion experience with attribution data baked in. From there, a cyclical flow of data will allow you to understand how your customers respond to each channel and personalize their journeys accordingly.

Final Thoughts

Customer engagement is at the center of today's integrated technology stacks. Improvements to data agility have given brands the ability to identify and understand each of their users across first- and third-party data sources in real time. As a result, brands can tailor experiences to each individual customer to have personalized conversations across multiple channels. The importance of this cannot be understated, as effective cross-channel messaging strategies have the potential to [boost customer engagement by 844%](#). Humanizing the digital experience will lead brands to increased customer loyalty and ultimately improved business outcomes.



Chapter 4:

Category Deep Dive: Product Analytics

Category Deep Dive: Product Analytics

Growth has ushered in an era where the science of big data is crucial to offer the best customer experience. From awareness to onboarding and re-engagement across web, app, and physical locations, each brand touchpoint attempts to create a unique user experience captured by data and optimized by the interpretation of it.

In the previous two chapters, we highlighted the importance of [mobile attribution](#) and [marketing automation](#) to optimize the journey through user acquisition, retargeting, and customer engagement. Although both of these technologies provide in-app analytics that facilitate user understanding, they were not designed to optimize the core product experience itself.

It is for this reason that product analytics has become the bedrock of high-performance product, marketing, and growth teams.

[Product analytics](#) is the study and understanding of your product and business through the analysis of your users, their journey through your product experience and their success across various outcomes.

Traditional, non-digital businesses often lack the benefit of massive data teams, top talent, cutting-edge machine learning models, and the people, organization, and processes

to effectively manage user understanding, experimentation, and growth. That type of exercise can take years even among the most polished business environments. Realizing this, companies have turned to self-serve product analytics platforms like [Mixpanel](#) to solve complex digital-first needs, from behavioral analysis to user segmentation, and activation across web and mobile.

The product analytics category didn't develop in a vacuum. Rather, it evolved as legacy, all-in-one technologies failed to meet the needs of digital-first companies, while at the same time the activation energy to DIY was too much to overcome.

The Power of Self-Serve Product Analytics

Product analytics tools bring marketers, product managers, engineers, and data scientists together under a single platform designed to test, understand, and optimize the product experience across devices.

They provide numerous self-serve use cases, including funnel flow optimization, [cohort analysis](#), user segmentation, and integrations with other stack partners. More advanced product analytics platforms like Mixpanel also provide targeted engagement functionalities that intersect with marketing automation—including push, email, SMS, and in-app messaging.

The core emphasis of modern product analytics tools is **self-serve (i.e. no dependency on a business analyst)**. Product analytics facilitates data democratization, enabling cross-functional teams to answer complex behavioral queries without the overhead of a data scientist writing SQL. This allows core business units such as marketing and product to move fast, be flexible, and answer the majority of their data and user behavior questions in minutes, rather than weeks. Likewise, it protects some of your most important and expensive resources – data scientists – from answering basic KPI questions, creating basic dashboards, verifying data, and instead allows them to focus much more on strategic, high value, and extremely complex problems.

Ultimately, product analytics overcomes three crucial hurdles in the growth cycle:

1. Understanding user engagement, the customer experience, and the complete lifecycle through your product – from upstream marketing touchpoints (e.g. clicks, attribution) to downstream user data (e.g. events).
2. Improving the customer experience through deep KPI analysis and robust digital analytics capabilities.
3. Driving positive business outcomes by leveraging this understanding to activate in-platform messaging capabilities or pre-built partner integrations.

With a generalized understanding of product analytics, let's explore a few core use cases within the broader framework of a marketing tech stack.

Example #1: Understanding Users with Behavioral Analytics

Take a common example of a Fortune 500 retail app, where the client – a user acquisition marketer – is trying to understand the user journey by analyzing conversion rates from paid advertising to install to lower-funnel metrics that drive bottom-line revenue. UA marketers are interested in a few things. First, they want to understand the rate at which users convert to their core metric – for a retail app, this is purchasing products. Second, they want to understand how they got there and what drove their **attribution**.

Attribution can be broken into objective and subjective measures...

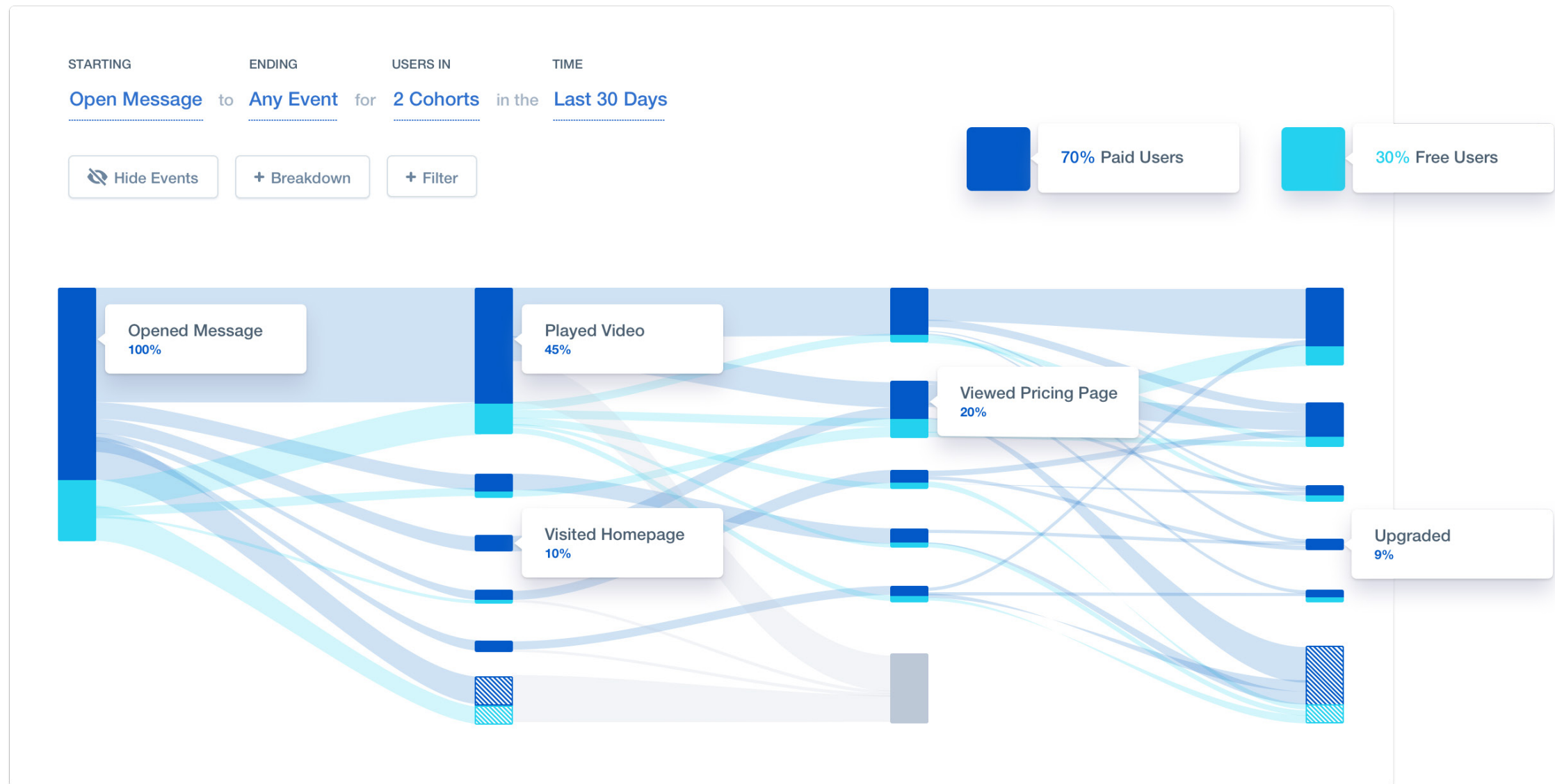
Let's talk about **objective** measures first.

The acquisition funnel starts with the user clicking on an ad shown from one of the client's media sources, such as Facebook, Google, or Apple Search Ads. Through [deep linking](#), the user navigates from the ad to the website, the app if they have it, or the app store to install the app. Once the user installs and opens the app, the attribution provider (e.g. AppsFlyer) attributes that user to the right media source so the client can objectively measure which media sources and creative variants drove the most efficient conversions.

After the installation is where **subjective** measures of attribution come into play.

Ultimately the marketer will be interested in understanding their [return on ad spend \(ROAS\)](#). This is a function of the user's experience with both the acquisition source (the ad itself + deep linking UX), as well as the onboarding experience within the app or website. Following that initial onboarding experience, additional factors can either help or hinder the flow that ultimately leads the user to check out and purchase.

While the UA marketer can draw valuable conclusions from attribution metrics, **the ability to dig in, analyze that experience, and map the flow of the user across a multitude of events such as login, category selection, add to cart – that is what makes product analytics so essential.**



Within Mixpanel, one tool to understand this journey is our [Flows product](#) (above). This allows marketers and product managers to map out the most common flows the user might take and their respective conversions – and identify any roadblocks to onboarding, or poor user experiences that prevent the marketer’s hard-earned dollars from contributing to successful conversion outcomes.

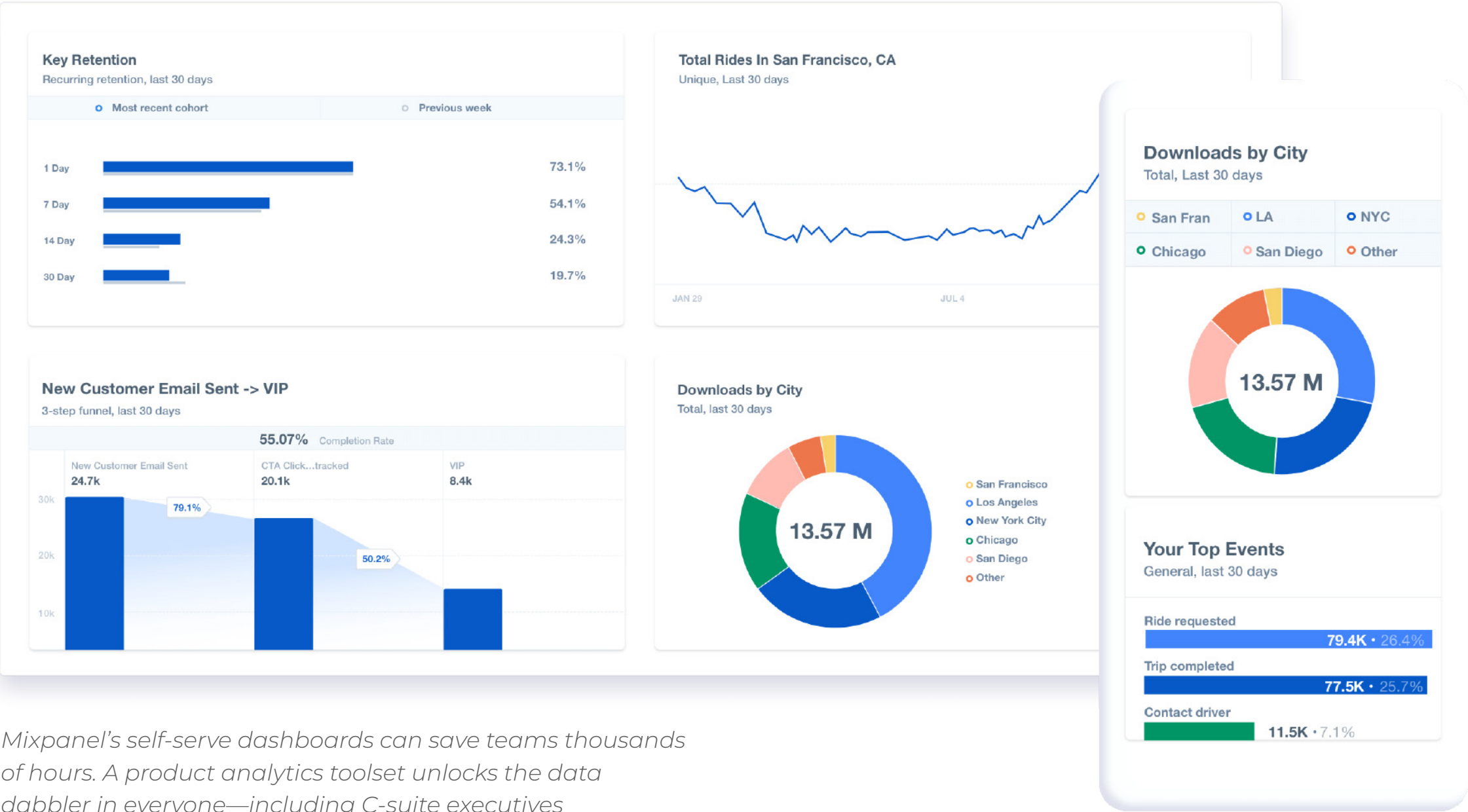
While Flows provide a top-line view, the bread and butter of product analytics tools is in segmentation, funnel, and retention analysis and cohort grouping. Each of these

standalone features facilitates a deeper understanding of user behavior.

For example, Mixpanel’s **Funnels** report allows you to see how your users are converting along a defined event pathway. This means you can identify opportunities to increase conversion rates by nailing down when and where users drop off (or fail to convert) in your product cycle or in your marketing campaigns.

Likewise, the **Retention** analysis product allows teams to see if new users who try your product each day, week or month are coming back after you add, modify or improve features or flows.

From these analytics capabilities, teams can take action of their own, whether it be reporting this data to their key stakeholders and company decision-makers, deciding which paid media platforms to invest in, or choosing which product flows to modify with help from engineering and product.



Mixpanel's self-serve dashboards can save teams thousands of hours. A product analytics toolset unlocks the data dabbler in everyone—including C-suite executives

Example #2: Optimizing Messages and Flows with Cohort Analysis

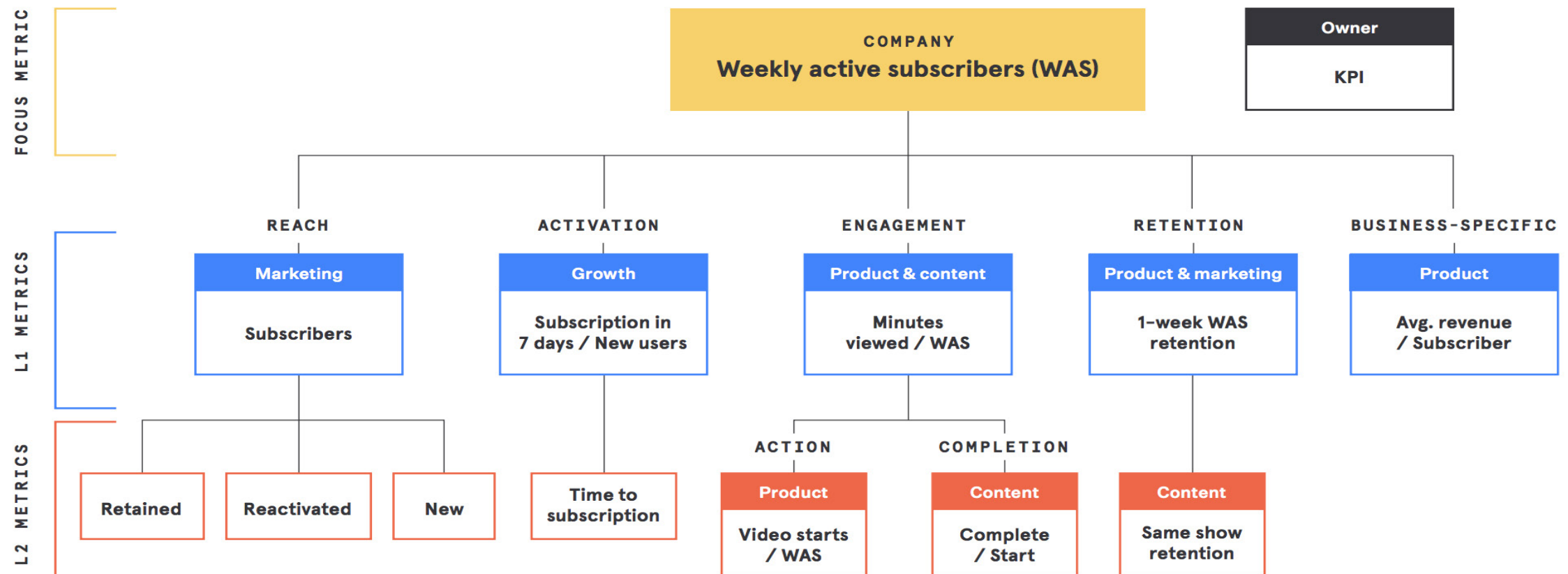
For even deeper analysis and improvement, let us take another example, this time of a subscription-based video streaming company that wants to understand how to best serve its users with relevant content.

Once the user is acquired and attributed to the right source from an attribution provider, it's important for the video streaming company to know **how much time** the user is spending and **on what content** they are spending more time on.

Frequency and repeat consumption are core metrics for their success.

If the product team is working on a new AI-based content suggestion interface, it's important for them to analyze how many hours of particular content the user is watching. Thus, they could create [cohorts](#) based on the **type of content and hours watched**.

The product team might create these cohorts and feed the data in a raw data format to their AI and ML models. Or they could export these cohorts back to the marketing team's attribution tool, like AppsFlyer. The marketing team could also create its own cohorts for comparison, examining retention rates vs. drop-off rates from specific content or within a certain time duration.



Example KPI structure for a subscription-based video streaming product

The possibilities for activation are limitless. Product and marketing teams can work together to customize onboarding flow experiments by combining attribution data (media source, campaign, ad type, etc.) with product analytics cohorts. In Mixpanel, cohorts can be further activated with our built-in messaging capabilities or our integrations with marketing automation partners. Ultimately, the only bound is the team's creativity and motivation to experiment and iterate.

Example #3: Predictive Analytics for Data Science

In addition to customizable reporting and segmentation, some product analytics platforms, including Mixpanel, have additional AI applications to unlock the data scientist in marketers and product managers alike.

For example, Mixpanel's **predictive analytics model** uses past behaviors to surface which users are likely (or unlikely) to perform an action. This allows you to target potential converters or at-risk users with timely messages and special offers through marketing automation, as well as paid retargeting and incrementality testing via audience integrations with attribution providers such as AppsFlyer.

LIKELY TO CONVERT WHO USED
Free trial at least 1 time



| + Segment | People | The number of days later your users were retained | | | | | | |
|-----------|--------|---|--------|-------|-------|-------|-------|-------|
| Facebook | 14,100 | 20% | 28.54% | 26.3% | 24% | 18.5% | 12.4% | 4.31% |
| Google | | | | 2.3% | 31.8% | 15.3% | 10.2% | 3.2% |
| Direct | | | | 6.9% | 13.4% | 13.4% | 15.3% | 5.3% |
| Bing | 13,032 | 13.4% | 13.4% | 13.4% | 13.4% | 13.4% | 13.4% | 3.5% |

Interesting segment detected: Retention

Users where Initial Referrer = Facebook, Retain 17% worse than your overall retention rate for 7 week retention.

30mins ago

Left: Mixpanel's predictive analytics model gives insight into more relevant communications.

Right: Know which user segments are causing metric spikes with automatic segmentation.

These insights can be further amplified by real-time triggers such as automatic segmentation and anomaly detection. Anomaly detection notifies you when important metrics spike or dip unexpectedly for a particular segment, along with the users causing the change.

These automatic insights can be applied to product UX tests, messaging experiments, and even paid media allocation.

Learn More

In each case, product analytics enables down-the-line contributors to take control of their business outcomes and better serve their customers. This empowers teams to be more efficient, propelling growth at every level of an organization and within every individual contributor.

To learn more about best practices for product analytics, check out Mixpanel's [Guide to Product Metrics](#).



Chapter 5:

Category Deep Dive: Customer Data Platform

Category Deep Dive: Customer Data Platform

As the [customer experience becomes increasingly mobile-centric](#), consumers expect brands to be able to understand and speak to them as they jump from device to device, without skipping a beat. Brands now face the problem of piecing together a current, coherent, and—most importantly—complete customer identity from the sea of data points created during every brand interaction across web, app, email, and beyond.

In the Connected Era, marketers need to be able to track the customer journey in real time, at scale, across channels and devices, while complying with industry privacy standards. They also need to be able to connect that data with new tools and vendors to continuously test new avenues of growth. This is where a customer data platform (CDP) comes into play.

Modern, foundational CDPs like mParticle help brands use their own customer data to improve user journeys on mobile and web alike through identity resolution.

More specifically, CDPs facilitate:

- Standardized implementation of new SDKs via CDP partner plug-ins, as well as standardized alignment of data identifiers across each SDK
- Real-time data flows between stack partners that can be used to enrich and unify customer identities for multithreaded customer journeys
- Consistent regulation of privacy standards for customer data across partners

MarTech is More Specialized Than Ever

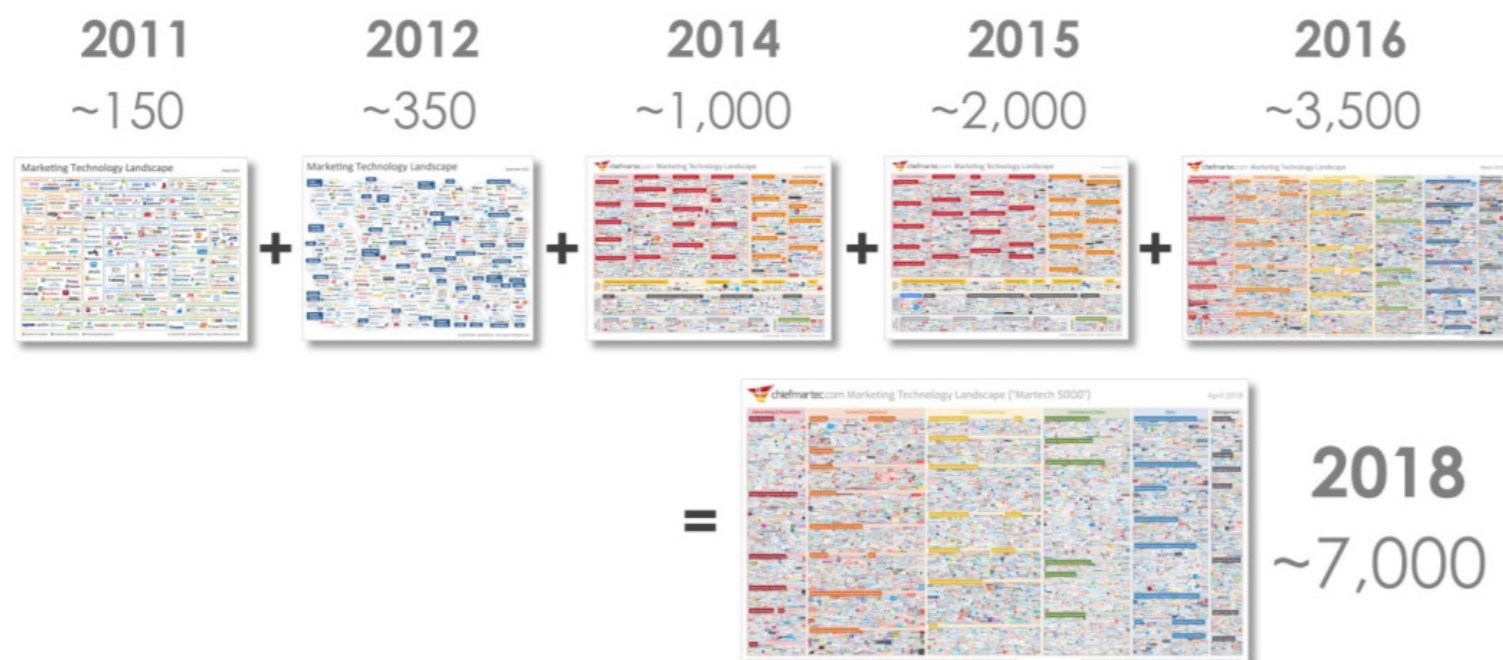
To keep up with the evolving customer journey in the Connected Era, the average brand's marketing stack requires more and more tools.

If you look at the [MarTech landscape](#) that has emerged over the past few years, there is a strong trend towards specialization. That's both good and bad for marketers; good in that specialized technologies are better suited to address hyper-specific needs like [mobile attribution](#) and [fraud protection](#) on mobile vs. web, but also "bad" because it warrants a bigger MarTech stack to gather all of the data necessary to create a continuous marketing experience.

A bigger stack wouldn't be a problem were data identifiers standardized across tools, but brands are currently faced with a variety of naming systems. Fortunately, CDPs are able to transform and piece together data from different systems across a data stack to create a single view of the customer, regardless of incompatibility between systems. This allows marketers to send their customer data seamlessly to [pre-built integrations with 250+ vendors](#) across analytics, marketing, business intelligence, and data warehousing.

CDPs help marketers launch and test new tools quickly, as these pre-built integrations require almost no support from developers to set up and maintain.

VENDOR SPECIALIZATION CONTINUES



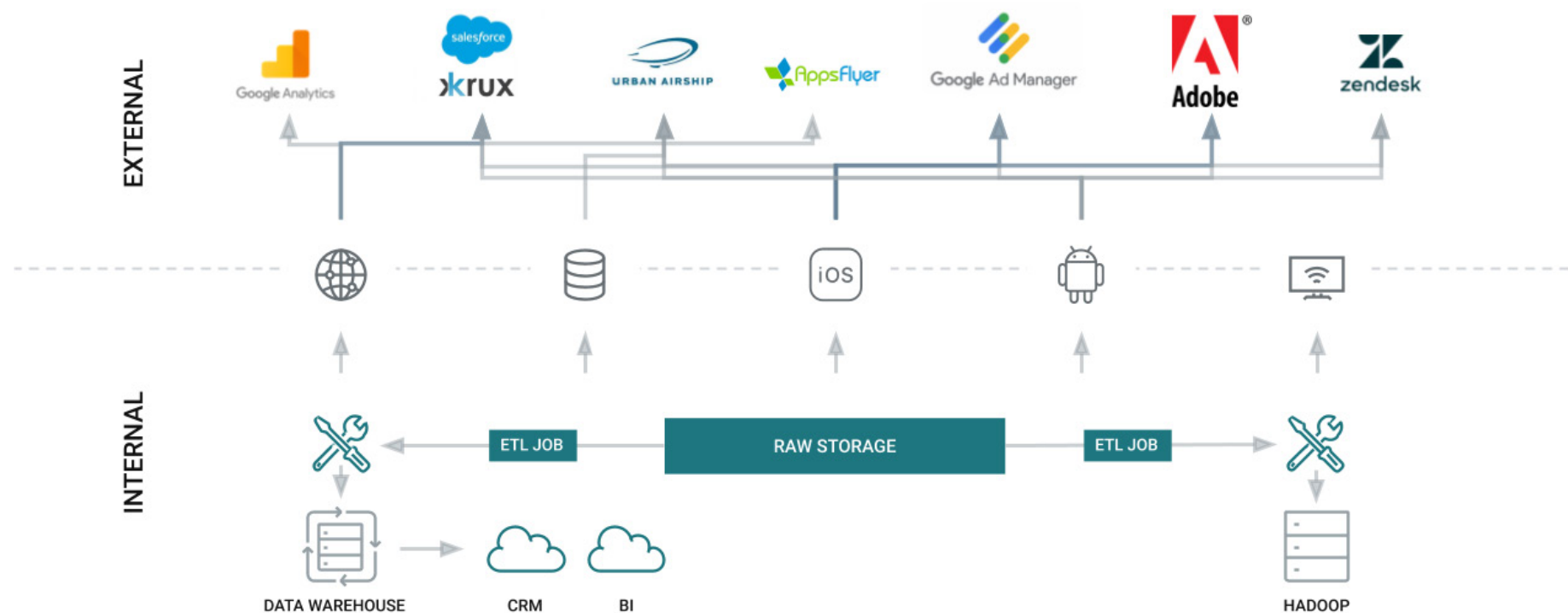
Real-Time Data Enables Multithreaded Customer Journeys

The operating word in the Connected Era is connected. Mobile devices have made it so that we are not just constantly connected to each other, but also to our emails, social profiles, apps, and so on. This translates to heightened consumer expectations for brands, who are tasked with anticipating and reacting to customer actions across platforms and devices.

To minimize reaction time and effectively leverage the goldmine of customer data available through best-of-breed stacks, marketers need to be able to access and activate this data across devices in real time.

In contrast to DMPs before them, CDPs use APIs to collect real-time data across the entire customer lifecycle to create comprehensive customer profiles—no matter the source—that can then be forwarded to the services and platforms in your stack so you can take immediate action.

MOST DATA ARCHITECTURE IS SLOW



This is what most companies' data stacks looked like before CDPs came about, where connections between sources often lagged by 1-7 days. This model has become outdated in the Connected Era.

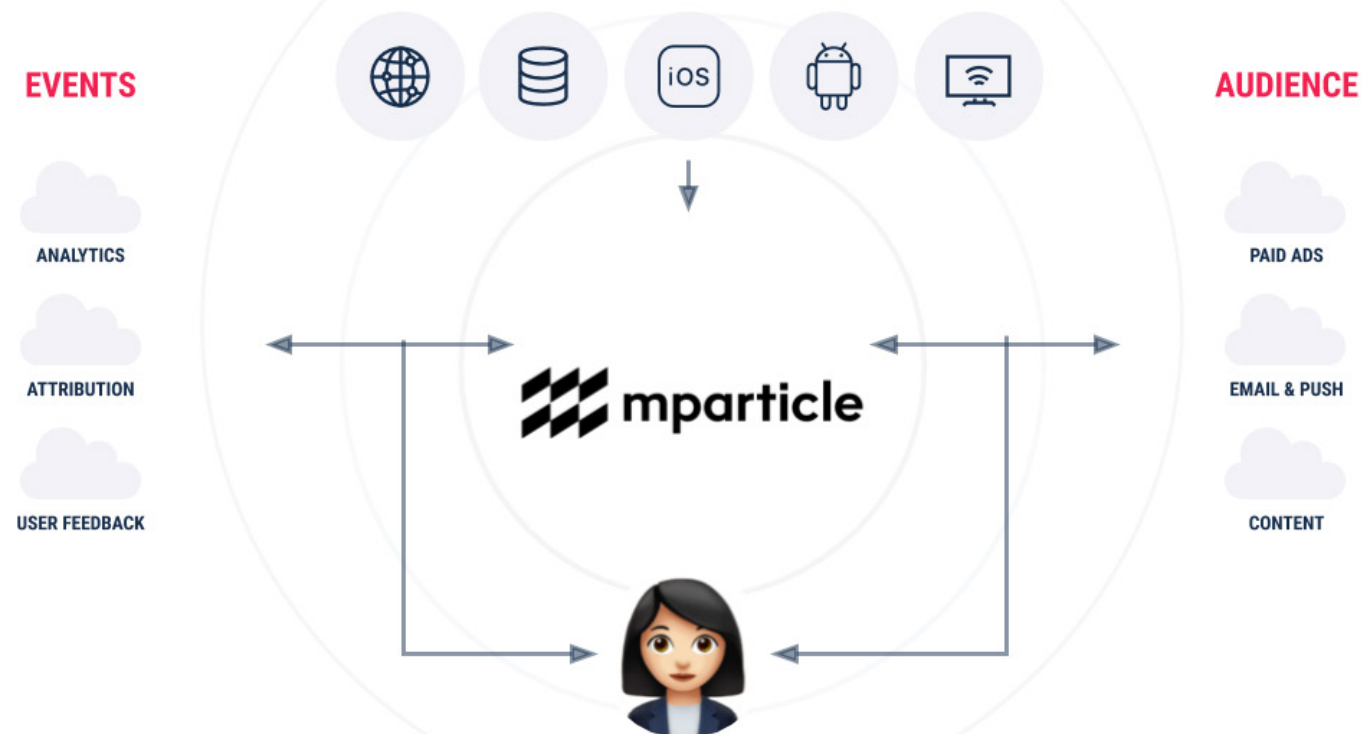
Using real-time data provides brands with a way to contextualize engagements with customers, making their experiences relevant to customers' preferences and current circumstances.

For example, sneaker retailer GOAT uses AppsFlyer as the source of truth for mobile attribution and mParticle as the CDP to sync data across all the tools in their stack. mParticle connects GOAT's event history across mobile and web, such as screen views and items added to cart, which the GOAT team exports to analyze cross-channel reporting. GOAT also uses mParticle to create audiences and update their marketing automation campaigns in real time to ensure they deliver the most relevant remarketing message. This allows them to optimize the customer experience by designing a user-centric flow that is channel and platform agnostic.

Another prime example of integrated, multithreaded customer journeys can be seen from Burger King's award-winning ["Whopper Detour" campaign](#). By using mParticle to link real-time location data from Radar to their paid advertising and marketing automation campaigns, Burger King offered a free Whopper via the Burger King mobile app whenever a customer was within 600 feet of a McDonald's. This campaign not only propelled Burger King's app from a ranking of #686 to the #1 across all app store categories, but it also drove the highest foot traffic in 4.5 years.

As these best-in-class examples illustrate, CDPs open a world of options for seamless, interconnected audiences, messaging, activation, and reporting.

CREATE A REAL-TIME SOURCE OF TRUTH



Effective marketing execution in the Connected Era requires customer data management to connect to all of your data sources bi-directionally.

Privacy by Design

Brands have to accept that customer data is the most valuable asset available to them in 2019, just as customers have started to demand increased control over how their personal data is collected and used.

The wild west of customer data management is no more, with GDPR in full force and [upcoming regulation from CCPA](#) in the United States.

Companies relying solely on outdated data management systems that are unable to meet GDPR standards can be forced to face fines equating up to 4% of global revenue or stop collecting data altogether in an effort to avoid punishment. It doesn't have to be this way; [CDPs are designed with privacy and identity at their core](#), allowing them to meet the new regulatory data standards without sacrificing the insight and actionability provided by customer data.

Bringing it All Together

As the glue to unite an interconnected [mobile marketing tech stack](#), there is obviously a huge advantage of integrating a CDP early on for bread-and-butter needs like privacy compliance, cross-channel reporting, and streamlined partner onboarding. For companies with more mature tech stacks that don't yet have a CDP in play, adding a CDP may become a more tactical move to streamline old processes and unlock new use cases (e.g. real-time triggering, synchronized audiences for paid and owned re-engagement, [cross-channel A/B testing](#), etc.).

What this all boils down to is the customer experience; the moments that matter in the Connected Era are fleeting and so the margin for conversion is razor-thin. **In 2019, the answer to the marketer's maxim of creating the right message, to the right user, at the right time, in the right place, is to get the right data, to the right system, in real time.** Simply, you can't expect to do that if the right system isn't mapping the right identity, to the right system, all the time.

If you'd like to learn more about how mParticle helps brand win in the Connected Era, feel free to reach out. Or, to learn more about CDPs, check out our [in-depth CDP guide](#).



Chapter 6: Advanced Considerations: Designing Your Stack for Growth

Advanced Considerations: Designing Your Stack for Growth

Introduction

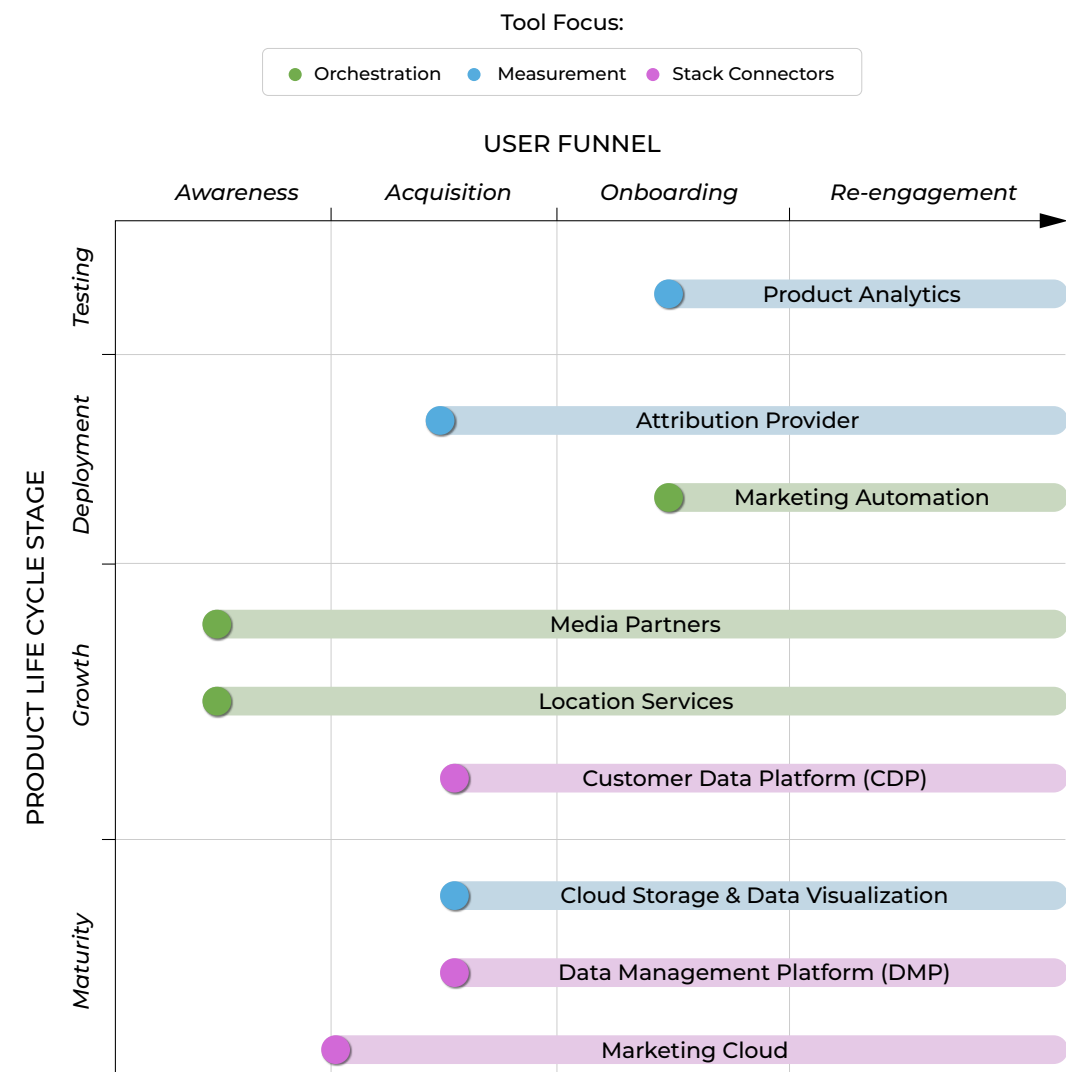
At this point, we've laid the foundations for building a mobile-first marketing tech stack, from goal setting to definitions and use cases across the top MarTech categories. Perhaps you've been inspired by some of the new applications that can be activated from tools or features that you're not using today. But given the wealth of options available, you may still be wondering how to prioritize which new tools to consider adding to your stack, and in what order. After all, it's rare to work at an organization with the resources to add multiple tools at once—even if you can justify the financial cost of doing so, a phased adoption plan may be more realistic when it comes to team resources for partner evaluation, integration and onboarding.

In this chapter, we'll dive deeper into industry trends and questions to consider when designing your tech stack strategy for sustainable growth, including:

- Common adoption trends and stack examples across the mobile industry
- The trade-offs of using all-in-one vs. best-in-breed technologies
- How to determine whether to build or to buy a new stack solution

Tech Stack Adoption Trends

Let's start by returning to the central visual for MarTech tool positioning across your user funnel and product lifecycle, introduced in chapter 1:



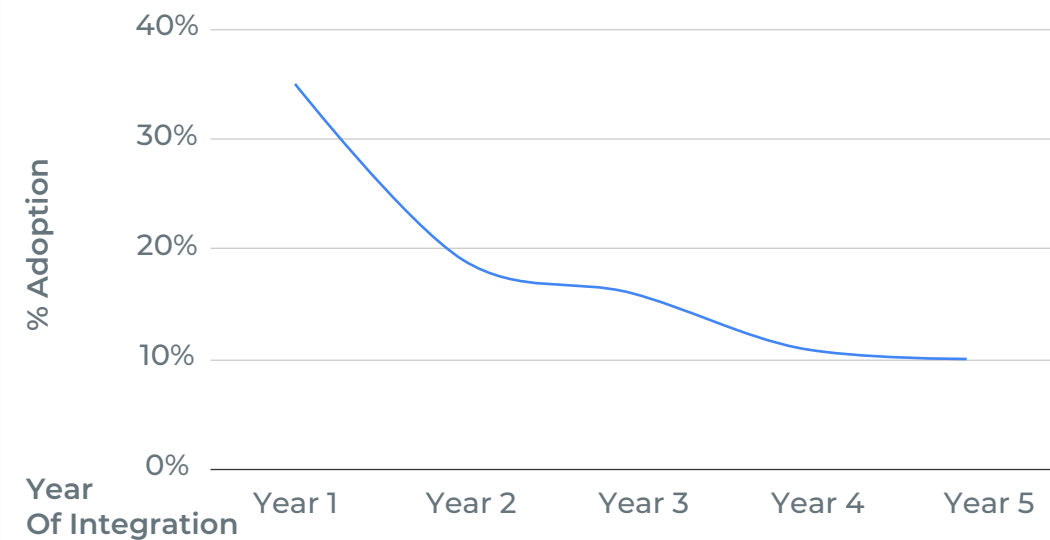
If you recall, we mentioned that most mobile-first companies tend to start with a free product analytics tool before advancing to more robust, paid product analytics suites provided by mobile-first leaders like Mixpanel and Amplitude. For those entering the app space from established web-first enterprises, you might already be leveraging product analytics and customer engagement tools through your marketing cloud provider. Regardless for web-first and mobile-first companies alike, the next paid solutions that will be mission-critical for your app's success are attribution and marketing automation. The reason for this is that you cannot successfully orchestrate app lifecycle marketing without effective tools for customer engagement, deep linking and attribution from your paid and owned campaigns.

To see if the logic from this argument holds true, we analyzed Mighty Signal data on SDK adoption across 650 AppsFlyer clients. The graphs on the next three pages validate our hypotheses, illustrating the proportion of apps that integrated specific types of MarTech tools over time.

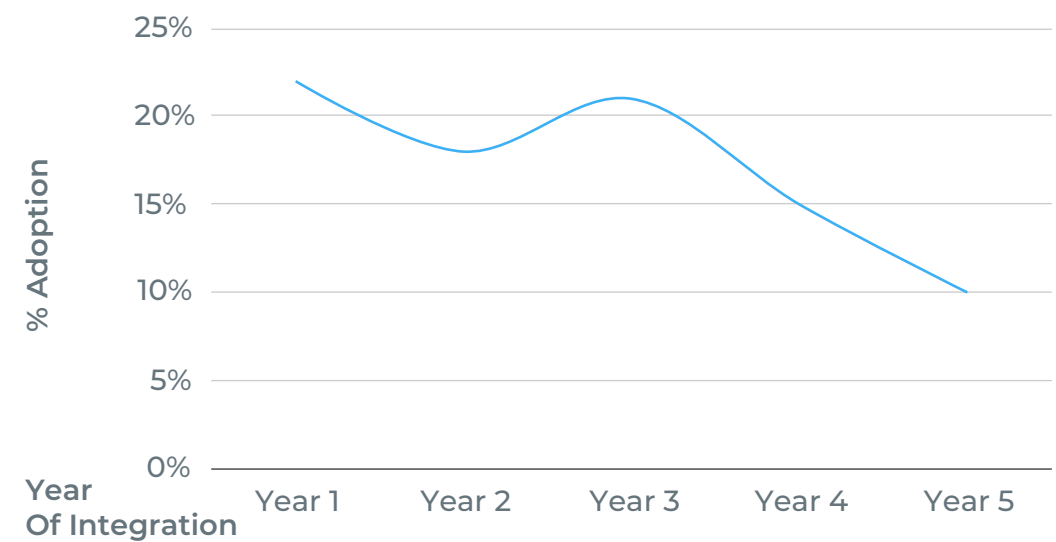
Early Adoption

Product analytics (35%) and attribution (22%) are the top two tools integrated in the first year. As most apps integrate these mission-critical tools early on, adoption rates decrease over time.

Product Analytics



Attribution Provider

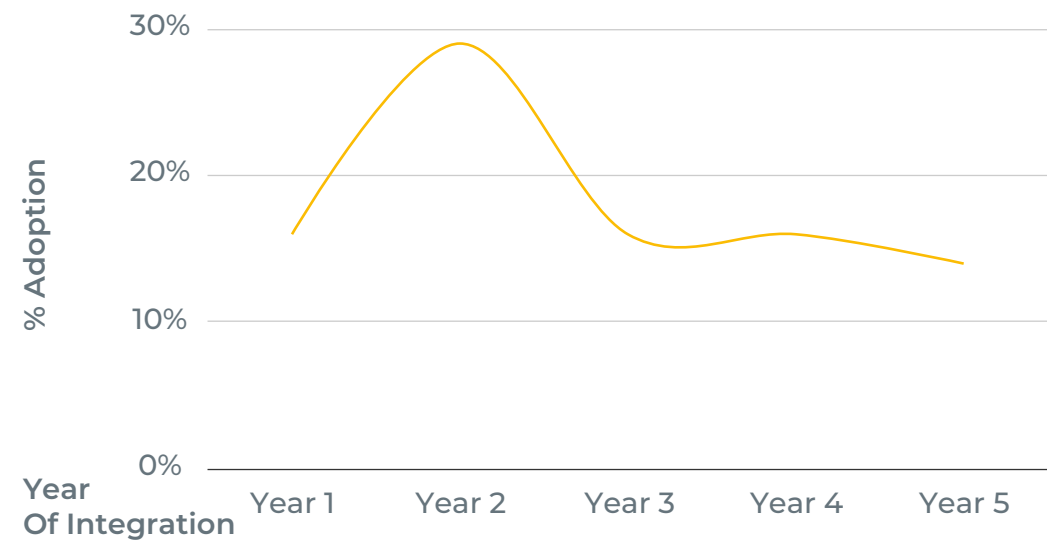


**Source: Mighty Signal (SDK adoption) & Sensor Tower (app release date), August 2019; dataset includes 650 AppsFlyer clients that are 5+ years old.*

Mid Stage Adoption

Payments (16%), marketing automation (13%) and marketing cloud (11%) are less likely to be integrated in the first year. We see a bell curve trend for all three, with adoption rates peaking in years 2-3.

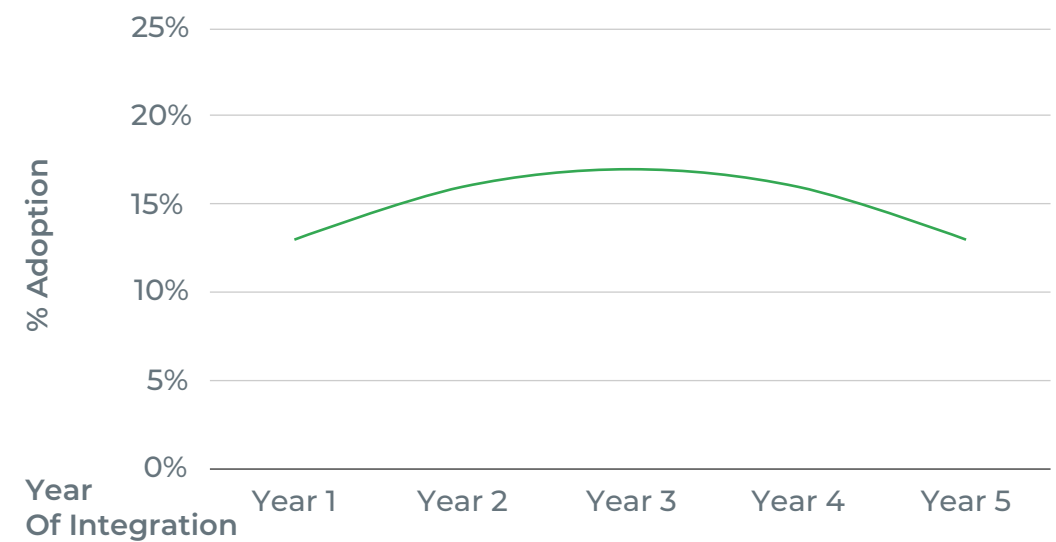
Payments



Marketing Cloud



Marketing Automation

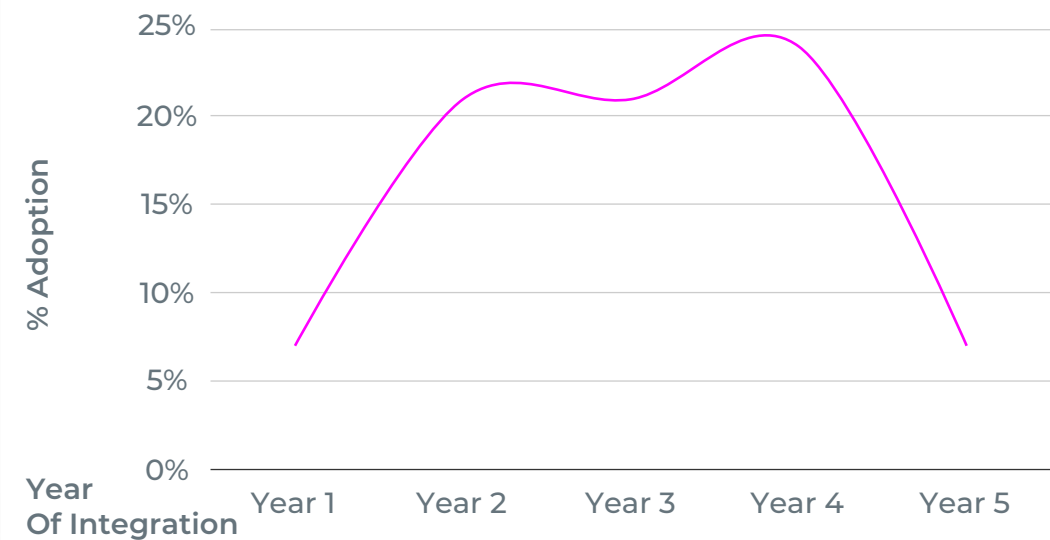


**Source: Mighty Signal (SDK adoption) & Sensor Tower (app release date), August 2019; dataset includes 650 AppsFlyer clients that are 5+ years old.*

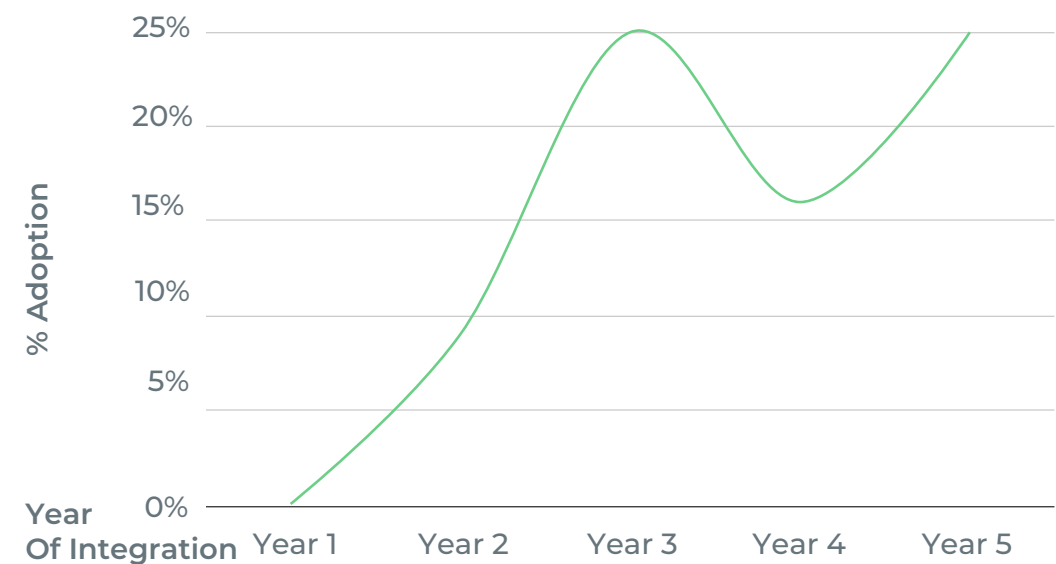
Mid/Late Stage Adoption

CDPs (7%) and location services (0%) are the least likely to be integrated in the first year. These tools are generally found in larger stacks, with adoption peaking in years 3-4.

CDP



Location Services



*Source: Mighty Signal (SDK adoption) & Sensor Tower (app release date), August 2019; dataset includes 650 AppsFlyer clients that are 5+ years old.

As you can see, within the first year, 35% of apps use product analytics and 22% use attribution. It's important to note that while product analytics is the clear leader for first-year adoption, the vast majority of this category is represented by free tools. As integration of both product analytics and attribution goes down over time, late stage adoption is often a sign of partner migration—and in the case of product analytics, that means advancing from free to paid partner solutions.

Interestingly, although we've emphasized the importance of integrating both attribution and marketing automation early on, attribution is far more likely to be adopted first (22% vs. 13% in year one, respectively). This might be because web-first companies are able to orchestrate customer engagement with existing product analytics and marketing cloud tools at the outset, before recognizing the need for more advanced, mobile-first solutions provided by best-in-breed marketing automation tools. On the other hand, for the reasons stated in chapter 2, it would be unrealistic to scale mobile UA and deep link implementation without a dedicated mobile attribution provider. No other MarTech category offers parity solutions.

In year two, we start to see more advanced tools rise to the top, with 21% adopting a CDP and 29% adopting a tool for payments, such as Amazon, Braintree, Paypal or Stripe. As mentioned previously, CDPs become more valuable when they are used as the switchboard for more tools. For example, let's say you already have attribution and marketing automation, and you're considering adding product analytics, payments, and location services tools within the next year—in this case, it would be wise to add a CDP before you go through the pains

of manual integration for the next three tools. In addition to facilitating real-time data transfer between stack tools, CDPs also make it far easier to update in-app event mapping to each tool as you continuously iterate on product design.

Marketing clouds follow a similar trendline to CDPs, as adoption doubles from 11% in year one to 22% in year three. Generally speaking, marketing cloud solutions are far more valuable for clients managing web-to-app flows and/or analyzing data across multiple apps than those focusing on one app alone. Therefore, it's likely that most of those using marketing cloud in year one were more established enterprises who already had other products or websites in market prior to adding a new app. Likewise, the addition of marketing cloud technology in later years is more typical of start-ups who expanded from one app to additional apps and/or platforms.

Given the significance of the marketing cloud as an enterprise solution, we'd be remiss to ignore the question: Where do marketing clouds fit within your strategy?

Strategic Trade-offs: Best-in-Breed vs. All-in-One

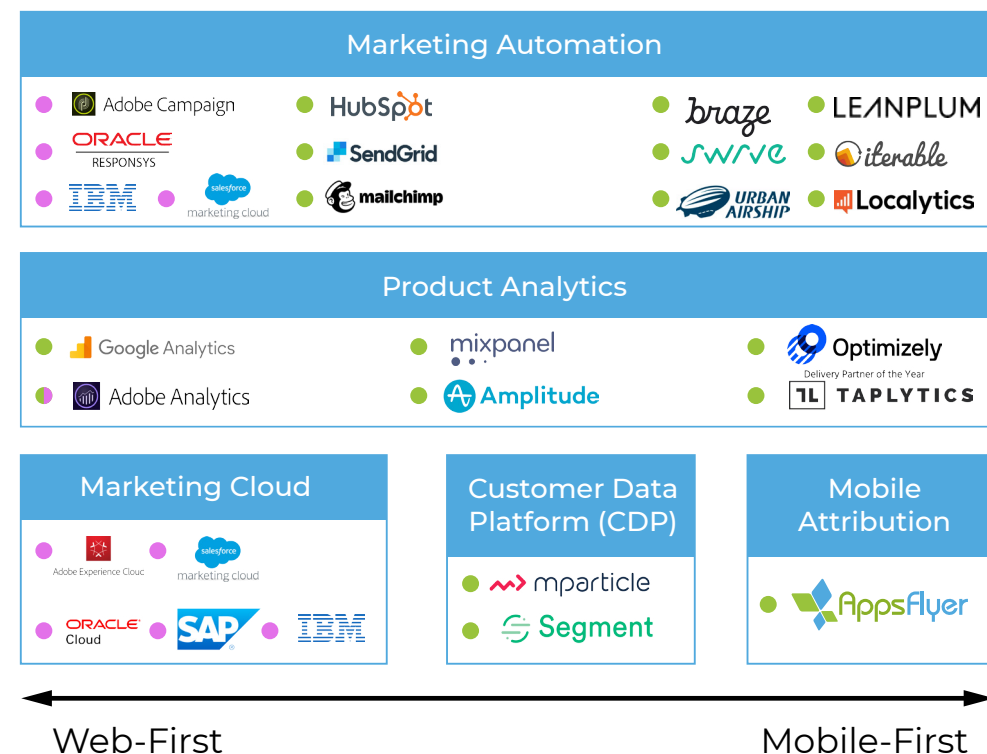
Thus far we've focused primarily on best-in-breed tools, which can be broadly defined as innovative products that specialize in a specific category or use case. Generally speaking, there are two common types of tech stacks that we see across the marketing industry:

- Best-in-Breed:** Mobile-first teams tend to seek point solutions for each MarTech category. We call this “best-in-breed” because savvy marketers are constantly reevaluating each MarTech solution to ensure they have the best version of that product. They then work with a CDP or their engineering team to update SDKs as needed to ensure consistent integrations between Stack Components. Not surprisingly, best-in-breed technology for mobile marketing tends to come from mobile-first providers, such as AppsFlyer or Braze, although there are some exceptions—for example, the product analytics category started by specializing in web analytics, and over time, companies like Amplitude, Mixpanel and Adobe expanded to support mobile.
- All-in-One:** As mentioned, the all-in-one solution tends to be more common for web-first companies with large enterprise teams. Although the term “all-in-one” can technically apply to any product that spans multiple MarTech categories, the term is epitomized by marketing cloud providers like Adobe, Oracle, Salesforce and IBM. Because these “all-in-one” products tick so many boxes, some marketers find it easier to consolidate the majority of their marketing operations within a single marketing cloud solution. As Gartner describes, these “platforms are

typically anchored by a CRM or other large customer data system” and while they do “offer native mobile marketing capabilities, [they] also partner with third parties to support capabilities around delivery, monetization and measurement.” Marketing clouds generally have more advanced capabilities for web than mobile, and may not be as nimble as smaller, mobile-first companies when it comes to product evolution and innovation. For both of these reasons, mobile marketers often seek “best-in-breed” solutions to fill in gaps that cannot be fully solved by the “all-in-one” provider.

All-in-One vs. Best-in-Breed Solution Examples

- All-in-One
- Best-in-Breed





There is something to be said for the Swiss Army knife. It's a great little tool that can help you in a jam. But if you're not in a time-sensitive predicament and you have the opportunity to plan, then it's better to be prepared with a full size set of tools so that you can perform the task at hand thoroughly and with precision and accuracy. Indeed, there will always be a market for Swiss Army knives. Consumers will find the use of the all-in-one tool convenient and suitable to satisfy their basic requirements. However, many consumers have complex requirements that occur with greater frequency. In these cases, modifiability and flexibility are the quality attributes prioritized ahead of convenience. These are the tasks that cannot be performed without a full size set of tools. The same is true with technology. Many all-in-one solutions, with the good intention of providing better value, fail to satisfy large segments of consumers who require greater quality and flexibility attributes.



Eric Camulli

Vice President - Virtual Hold Technology

Source: VHT via CRM Exchange, [*"Best-of-Breed vs. All-in-One Solutions"*](#)

While it's unlikely that an all-in-one solution can solve all your MarTech needs, leveraging a marketing cloud as the core of your stack has several benefits, especially for those who focus heavily on web and offline channels. In addition to offering various solutions that fall outside the scope of the core mobile MarTech products highlighted in chapters 2-5, all-in-one providers lend well to economies of scale by offering bundled **pricing** for multiple products. These packages have the added benefit of saving your engineering team **time** by integrating fewer partners into your app and/or website. All-in-one solutions for product analytics can also make it easier to see a single view of cross-channel analytics in one platform, rather than working with internal BI tools to customize an aggregate view from all the other tools and inputs in your stack.

Taking the **cross-channel analytics** use case a step further, it's important to remember that not all tools from all-in-one providers are created equally. Most sell different products of their suite in a modular fashion, meaning you can pick and choose the specific offerings that make sense for your needs.

For example, Adobe offers solutions for several of the core mobile MarTech categories mentioned previously, including marketing automation, product analytics, and CDP plug-ins via Adobe Campaign, Adobe Audiences, Adobe Analytics and Adobe Launch. Although Adobe Analytics is renowned as a best-in-breed solution for web and cross-channel analytics, Adobe lacks a mobile attribution product and their deep linking capabilities are relatively limited. For this reason, many marketers find value in [funneling AppsFlyer data into Adobe Analytics](#) for a more holistic view of performance across web, mobile and offline platforms.

“

“I’m a proponent of aiming for specialized companies that do one thing and do it well, rather than companies that are trying to win over every industry and feel incentivized to sell you into all their other products.”

”

**Christopher Winn**

Director of Digital Acquisition at Slice | AppsFlyer Customer

one and best-in-breed providers, you will typically want to **pick one platform as the source of truth for a given need**. It typically would not make sense to have more than one mobile attribution provider, but it can be valuable to see an MMP's mobile data integrated into a cloud platform. As another example, some cloud companies and email service providers (ESPs) are better at marketing automation for desktop, but lack the competitive edge when it comes to mobile (as with [Gartner's analysis](#)). So if the majority of your traffic comes from web, you might choose to lead your CRM or email automation from a web-first ESP or cloud solution, but use the push notification and SMS components of a mobile-first provider.

So what's the key takeaway here? It might seem more complicated to have more stack components than less, but when it comes to the real benefits you'll get out of these solutions you'll need to take a closer look. Some may find value in the ["80/20 strategy"](#) of consolidating 80% of your needs in an all-in-one solution, seeking best-in-breed solutions for the remaining 20%. Others may find all-in-one solutions unsuitable for their needs, finding frequent reassessment of best-in-breed solutions worthwhile. There is no easy way out when it comes to MarTech evaluation.

“

“We don’t see a single solution in the marketing technology landscape that can enable perfect integration, where all systems and channels are synced up. It’s true that a lot of vendors out there say they have it solved, but we don’t see that. Instead, we have to figure out how to cobble together the right pieces of the stack that give us the right data, enable integration and help us make the best decisions.”

”

**Brandon Jensen**

Director, Marketing Ops at Workfront

Source: [eMarketer](#)

Strategic Trade-offs: Build vs. Buy

In addition to deciding whether to work with an all-in-one provider, another fundamental trade-off is the question of whether to build or buy various solutions in your stack.

In many ways, MarTech partners can be considered natural extensions of your team, filling gaps and complementing in-house operations. So for each unique stack solution, it's important to assess not just the needs that solution will solve, but whether it's something that actually makes sense to outsource.

While the answer to this question varies by use case, one simple way to think about this is in terms of **the cost of a given solution in relation to your media budget and/or expected user acquisition volume** for the channel that solution is designed to improve.

Steve Katz from [NewsCred](#) gives some helpful advice here:

To determine your marketing technology budget, look first at what you're spending (or plan on spending) your marketing dollars on. Some companies invest heavily in events, some in advertising, content, or experiential. Based on your company's big ticket channels, you can then begin to work backwards from there to determine realistically, how much to spend.

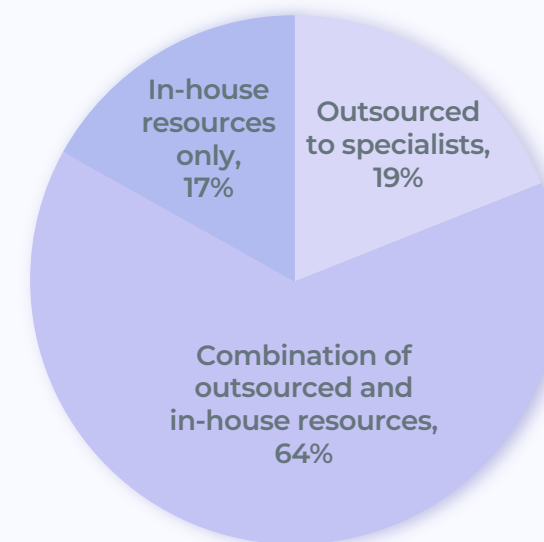
For example, 53% of marketers find marketing automation to be the most effective type of MarTech (according to [Ascend2](#)). Given the importance of email and push notifications for onboarding and lifecycle marketing, investing in a stack solution for marketing automation is probably worthwhile for most marketers.

By contrast, [Advanced TV Analytics](#) technology that uses custom logic to attribute cross-device acquisition to TV

advertising, such as Tatari or TVSquared, might only make sense for those who are spending heavily on TV advertising. For lower TV spenders, in-house uplift analysis and/or basic TV analytics provided by an MMP is probably sufficient.

A similar analysis can be used to assess the value of hiring an agency for outsourced media management. Does the incremental improvement in performance and human capital savings outweigh the cost of the agency fee? In many ways this is about scale—the higher the channel's spend, volume or cost to manage manually, the higher the payoff of a stack solution that automates and improves that channel's operations.

Which best describes the RESOURCES for MarTech utilization?



The difficulty of many types of MarTech is one reason that nearly two-thirds (64%) of marketing influencers say they prefer to use a combination of outsourced and in-house resources to utilize MarTech.

Source: [Ascend2](#), Marketing Technology Utilization Survey, April 2019

From a short term perspective, you may also want to consider **the time it would take to build or buy a given solution, relative to its urgency**. For example, it might make sense to start with a free email service provider (ESP) to announce updates to your app beta users, prior to determining your long-term plan for marketing automation. As another example, you could probably get by with a free, basic link shortening tool for your first social announcements while you evaluate a more holistic deep linking solution.

Vivek Girotra, Director of Performance Marketing at FoxNext, suggested another way to think about this in a recent [Q&A with Liftoff](#):

*The other question one needs to ask is **whether the service is a parity product or if it gives you a competitive edge** in the market. For example, few mobile advertisers want to build their own attribution technology [...] On the other hand, investing resources into an in-house programmatic bidder is a different matter, because we can build out something that is customized for our product and our internal monetization methodology.*

[AppsFlyer customer Hopper](#) provides a prime example of how these two concepts can work in tandem. By building an ads automation engine with a few engineers in-house, Hopper has achieved top 10 rankings in the U.S. travel app category with a small marketing team and a fraction of the media spend of competitors like Expedia and Booking.com. Automation scripts customize thousands of unique offers everyday, something that likely could not be replicated by a standard campaign optimization stack solution. That being said, Hopper uses Smartly's ad creation tool to execute these

scripts and relies on AppsFlyer data as the source of truth for performance, because it would not be realistic to build similar products in-house.

Taking this example further, there are a number of factors that make it unrealistic to build a competitive mobile attribution platform in-house. In chapter 2, we explained the complexity of the mechanics that go into partner integrations, pre- and post-install attribution methodology, universal deep linking, real-time analytics and security protocols for audience data. For instance, AppsFlyer has over 4,600 partner integrations. That means that once you install the AppsFlyer SDK, you can press a few buttons for each new partner to automatically enable integration and everything that comes with that: automatic cost, LTV and ROI data, postbacks of the specific events you choose, multi-touch attribution, fraud protection and more. Without this setup, it's easy to imagine how cumbersome it would be to manually integrate a new SDK for every new media partner you decide to test. Not to mention the fact that there are certain capabilities such as fraud protection that can only be partially fought with in-house logic. Comprehensive fraud protection requires AI to block behavioral anomalies from bots, constantly evolving IP / site ID blacklists, validation rules and more.

To build or to buy? Ultimately, this decision comes down to a cost benefit analysis as it relates to the importance of the channel or need, as well as an analysis of whether a free or in-house solution could come close to what is offered by top paid providers.

Real Tech Stack Examples

Now that we've covered the main considerations that go into tech stack design, we'd like to bring these options to life by illustrating a few examples of real tech stacks from AppsFlyer customers. As you'll see on the next page, stack complexity is not always correlated with company size.

Which framework makes sense for your business?

This is not a simple or easy question to answer, but if you've read this far, you already have much of the knowledge you'll need to start designing your tech stack for success. In our final chapter, we'll complete the picture by walking through the specific components that go into the evaluation and decision-making process for a new MarTech partner.

Small & Medium Companies

| Co. Profile | Company Size | Small | Small | Small | Medium | Medium |
|--------------|----------------------|-----------------------------|------------------|--------------------------|------------------------------|------------------------------------|
| | App Category | Dating | Health & Fitness | Entertainment | Lifestyle | Automotive |
| Stack Design | Attribution Provider | AppsFlyer | AppsFlyer | AppsFlyer | AppsFlyer | AppsFlyer |
| | Marketing Cloud | | | | | Adobe |
| | Marketing Automation | | Mixpanel | Swrve | Amplitude | Urban Airship |
| | Product Analytics | Google Analytics & Firebase | Mixpanel | Amplitude | Amplitude & Google Analytics | Google Analytics & Adobe Analytics |
| | CDP | mParticle | | Segment | In-House | Segment |
| | BI Infrastructure | | S3 (AWS) | Google BigQuery, Tableau | Redshift (AWS) | Redshift (AWS) & Looker |
| | Other | | | Search Ads HQ | | |
| | # Partners | 3 | 3 | 7 | 4 | 7 |

Large Companies

| Co. Profile | Company Size | Large | Large | Large | Large | Large |
|--------------|----------------------|-----------|-------------------|-----------|----------------|-------------------------------|
| | App Category | Gaming | eCommerce | Finance | eCommerce | Automotive |
| Stack Design | Attribution Provider | AppsFlyer | AppsFlyer | AppsFlyer | AppsFlyer | AppsFlyer, Visual IQ |
| | Marketing Cloud | | Oracle | | Salesforce | Adobe |
| | Marketing Automation | Braze | | Braze | Leanplum | Iterable |
| | Product Analytics | Mixpanel | In-House | Mixpanel | Amplitude | Adobe Analytics |
| | CDP | | mParticle | Segment | mParticle | mParticle & Adobe Launch |
| | BI Infrastructure | Tableau | S3 (AWS) | | Redshift (AWS) | BOBI (SAP), Tableau, In-House |
| | Other | | S3 (AWS), Tableau | Radar | | |
| | # Partners | 4 | 5 | 5 | 6 | 7 |



Chapter 7: Advanced Considerations: The MarTech Evaluation & Buy-In Process

Advanced Considerations: The MarTech Evaluation & Buy-In Process

Introduction

As the marketing technology ecosystem has matured in recent years, so too has the process of selecting and implementing technology in a unified way. This shouldn't come as a surprise. Just a few short years ago, mobile was still nascent. Marketers were still figuring out what ad types and channels were effective. Much of the marketing technology that is now widely accepted as essential was once considered optional, either because these tools were expensive, under-developed or they lacked a compelling proof of concept.

As marketers became familiar with their requirements from a user acquisition and growth perspective, the products around them evolved. And in turn, marketers became more familiar with the tools that would help them execute against their requirements. However as companies have found more successful channels and technology for acquiring users, it has become harder to find new growth channels and to optimize existing ones. Winning has meant focusing on highly specific and complicated marketing technology at scale. This is why so many mobile marketers have gravitated toward best-in-breed tools such as AppsFlyer, in lieu of legacy all-in-one solutions.

Although in some ways it has become easier to identify the best stack tools, the costs of getting decisions wrong are much higher. This is because as stacks and measurement

frameworks have become more complex, the process of ripping and replacing partners has become more nuanced and time consuming. This has led to more checks and balances in the buying process, with multiple departments involved before decisions are finalized.

In this chapter, we'll walk through the typical buying process. Starting with top evaluation criteria, we'll unpack the process of assessing capabilities and getting inter-departmental buy-in. Although there are numerous approaches to selecting new tools, the goal is to provide a common framework that can be adapted to your business case.

The Anatomy of a Buying Decision

The evaluation process can come about in a number of ways. A marketing manager recognizes a need—they have little visibility into user actions in the app, they need a way to automate customer engagement, or perhaps they simply feel frustrated with an existing MarTech tool. In some cases, the decision to evaluate new partners may be timed with an organization's semi-annual budgeting and planning process. In other cases, a marketer may choose to reevaluate an existing stack tool as their contract end date approaches, or in response to an enticing new product offering from a competitor.

Typically a single project owner will lead the evaluation process—this tends to be the marketing manager (or director) for core MarTech tools such as attribution and marketing automation, or perhaps the product manager for cross-functional tools like product analytics.

Let's use the marketing manager as a basic example. They are either asked to investigate a new tool or they proactively present the idea to their director or VP, who gives them the greenlight to move forward.

At this point, the marketing manager will start to map out their goals and requirements. They'll also conduct some basic research on potential tools to consider through a combination of online browsing and discussions with colleagues. As the partner consideration set is refined, the marketing manager's initial goals and requirements are fleshed out into a more defined list of criteria and questions.

While the exact questions vary, there is typically a common set of criteria that is relevant for any new stack tool. This usually starts with a basic assessment of product features and capabilities, as a direct response to the pain points that induced the evaluation process in the first place. Once the basic capabilities are understood, there are a number of equally important questions to address. Here is a typical hierarchy of MarTech tool evaluation criteria:

1. Product Features

- a. Capabilities / Use Cases
- b. Interface / Ease of Usability

2. Stack Compatibility

- a. Partner Integrations
- b. Flexibility & Agility (Dependence)
- c. Scalability

3. Trust & Support

- a. Reputation & Case Studies (Proof of Concept)
- b. Customer Service
- c. Flexibility & Agility (Product)

4. Security & Privacy Compliance

5. Cost Benefit Analysis

- a. Financial Cost vs. ROI
- b. Development Time
- c. Training & Onboarding Time

While the list above reflects what we've seen from most mobile marketers, it's important to note that the exact prioritization and bucketing of criteria is flexible and fluid. Many marketers choose to bucket compliance issues, like GDPR tooling, or integration compatibility with CDPs, into the features assessment. This also depends on the nature of the tool in question, as well as input from key stakeholders in marketing, product, data science, infosec, engineering, etc. There is no right or wrong, so long as the key points are captured as part of the full evaluation process.

“(1) Whenever we’re looking for a new tool for our MarTech stack, I do all the research. Now that I’ve gone through this process a few times, I have a list of questions that I always ask myself so that I remember to look at it from every angle—from accounting to operations to data sharing and privacy.

(2) Once I establish the need to evaluate a tool, I’ll generally have a spreadsheet where I’ll start with our pain points and why I think we need a new solution. Then, I’ll fill in the answers to all my questions based on an initial phone call, product walkthrough and further email correspondence with each partner. I’ll evaluate most of these answers myself, but I’ll also send a list of specs and questions for dev, legal and infosec so I can cover all my bases before presenting the business case.

(3) Once I narrow it down to the one I think is the winner, I’ll typically go to our VP of marketing and show him the top two options, trying to be objective to see what he thinks. Then if we agree on the winner, we’ll go to our CEO and say hey, I think we need to add this to the stack. ”



Amy Nelson

Digital Marketing Director at Takl | AppsFlyer Customer

Once the questions, goals and process are established, the next step is to start evaluating the partners in consideration. The marketing manager sets up meetings with each of the partners and goes about the basic Q&A process, gathering information, assessing capabilities, and getting a basic understanding of the potential price range. Depending on the size and style of the organization, the marketing manager will then take one of two routes:

1. Meet with their director for an informal discussion of which tools seem more promising than others before delving further into the Q&A process with other departments
2. Get all questions answered by the pertinent inter-departmental stakeholders prior to presenting a more formal business case to upper management, sometimes with multiple phases of approval (e.g. present to VP marketing → get approval/support from team leads across product/dev/legal → present final, full business case to CMO/CEO)

The level of involvement from different department leads varies across the different stages of evaluation, and oftentimes it's not a strictly linear process. Buying decisions can happen in as little as four weeks or in some cases, they may drag out for a year or more. That being said, here's a summary of the basic framework of MarTech evaluation:

1. Marketing Manager Starts Evaluating

- a. Evaluate/meet multiple partners
- b. Full feature & cost comparison
- c. Gather specs and scope of work from engineering
- d. Optional advice from other departments (e.g. data science, product, legal)

2. Present to Upper Management

- a. Explain & justify need
- b. Present consideration set
- c. Estimate rough range of cost and development time vs. ROI

3. Vet Top Candidates with Product, Engineering & InfoSec

- a. Product manager acts as advisor to narrow consideration set
- b. Engineering estimates migration time and integration contingencies
- c. InfoSec checks for privacy & security

4. Final Choice Approved by Legal & CEO/CFO

- a. Final partner and package approved by CEO/CFO
- b. Legal approves final contract

Now that we've unpacked the basic anatomy of a buying decision, let's take a closer look at the specific considerations that will invariably come up along the way.

Conducting a Capability Assessment

Early on in the evaluation process, it's crucial that the person who will be sponsoring and buying the tool understands his or her needs and maps those to product features and capabilities. Without doing so, you risk utilizing a tool that doesn't meet your needs, leading to re-evaluation cycles and wasted resources when you inevitably have to rip and replace.

The capability assessment encapsulates the first two evaluation criteria mentioned previously: **product features** and **stack compatibility**. This assessment should start with a user POV—what I, as a marketer, want to do—and should incorporate feedback and input from Product, Engineering and other verticals that are crucial to your business. This is because you will inevitably need their support in integrating the solution, and having aligned buy-in across an org means that everyone has some skin in the game. Doing this creates more positive outcomes in both aligning and integrating such tools.

One successful way we see this done is by **splitting up role-specific criteria from platform-specific features**. Below are examples from customers that eventually chose AppsFlyer for their attribution and deep linking needs. First, the marketer came up with an assessment of all the campaigns she needed to run and the expected outcome. You can imagine that you might collect similar matrices for a product manager that is looking for links to drop into different activation flows, or from an engagement manager that is sending push and email, or from a data analyst who might need uninstall tracking.

Example attribution business requirements from an actual customer who purchased AppsFlyer. In this case, this was a User Acquisition marketer who was most interested in getting rich, real-time data about her campaigns. This was compiled with a few other business requirements documents from Product, Engineering and Compliance to ensure a holistic picture of what the organization needed. From there, this had to be reconciled with platform and feature capabilities available to each vendor.

Attribution Business Requirements

| Effort | Channel Type | Channel Name | Type | Detail | Placement | Business Requirement |
|------------------|-------------------|----------------------------|------------|--|------------------|---|
| Paid | PPC | AdWords | Text/Links | Google | Web, Mobile, App | Customer ID registration, by Keyword, Campaign, Ad groups, placements |
| Paid | Display | AdWords | Banner | GDN (Google Display Network) | Web, Mobile, App | AVS_UserID for registrants, by banner, Campaign, placements |
| Paid | YouTube Web & CPV | AdWords | Video | YouTube | Web, Mobile, App | AVS_UserID for registrants, by ad campaign |
| Paid | Facebook | FBAds Manager | Video | Facebook | Web, Mobile, App | AVS_UserID for registrants, by ad campaign, Ads, Ad sets |
| Paid | Display / Video | AudienceX, AudienceX Video | Banner | AudienceX Network | Web, Mobile, App | AVS_UserID for registrants, by banner, Campaign, placements |
| Paid | Ad Platform | InMobi, Quantcast etc. | Video | InMobi, Quantcast | Mobile, App | AVS_UserID for registrants, by ad, Campaign, placements |
| Paid | Twitter | Twitter Ads | Text/Links | Twitter | Web, Mobile, App | AVS_UserID for registrants, by post |
| Paid | Display | Paid Display | Banner | Display Partner (Taptica, Affle, AdPerio, AdAction etc.) | App | AVS_UserID for registrants, by banner, Campaign, placements |
| Organic "Free" | Email | Email | Text/Links | Email ESP (Ex: Harmony/Epsilon) | Web, Mobile | AVS_UserID for recipients, openers, clickers, by mailing name |
| Organic "Free" | PR | PR | Article | Turner + News websites | Web, Mobile | AVS_UserID for clickers who register, by website |
| Organic "Free" | Social | Social | Video/Post | Facebook | Web, Mobile, App | AVS_UserID for clickers that register or are registered, by post |
| Organic "Free" | Social | Social | Post | Twitter | Web, Mobile | AVS_UserID for clickers that register or are registered, by post |
| Organic "Free" | Social | Social | Video | YouTube | Web, Mobile | AVS_UserID for clickers that register or are registered, by post |
| Organic "Free" | Social | Social | Image | Instagram | Web, Mobile | AVS_UserID for clickers that register or are registered, by post |
| Organic "Free" | Social | Social | Image | Tumblr | Web, Mobile | AVS_UserID for clickers that register or are registered, by post |
| Organic "Free" | Blog | Blog | Article | Generic Website | Web, Mobile | AVS_UserID for clickers that register or are registered, by article |
| Organic and Paid | Various | Various | | Super Deluxe, Great Big Story, Go Watch It, etc. | Web, Mobile | AVS_UserID for clickers that register or are registered, by article |

An example subset of stack compatibility criteria.
It's crucial to assess the customizability of the integrations that matter most to you, ensuring that functionality is robust and streamlined from both a technical and user experience perspective.

Stack Compatibility Assessment

| Item | Description | AppsFlyer |
|--|---|-----------|
| Conversion Data Import | Supports input of conversion data from Data Aggregator tied by customer ID. | ✓ |
| Attribution Export | Ability to send raw attribution data to both mParticle and Segment. | ✓ |
| Ad-Hoc Webhooks and other API capabilities | Ability to send ad-hoc data to any endpoint. | |
| Audiences & User Segmentation Manager | Custom build audiences and segments can be stored for at least 30 days. | ✓ |

In addition to the features provided, it's equally important to **assess compatibility with other elements of your marketing technology stack**. Does the tool have official integrations with the other partners you are using or plan to use in the future? If certain integrations are missing, is the partner planning to fill those gaps in the future? How many integrations do they have? For certain tools such as attribution providers and CDPs, the total number of partner integrations they support can also indicate their potential to scale with your business.

Beyond assessing the needs and expected outcomes, **a feature comparison to other tools** should be conducted. Is there a fundamental platform integration or feature you need, that ladders into your expected outcomes? For example, if you wanted fraud protection, but one vendor didn't offer it, this would dramatically change your vendor selection and make the decision making process much more clear.

A sample product capability matrix. Sellers from each vendor will provide you with biased versions. We always recommend making your own and then scrutinizing it with product, engineering and other members of your team. Try to come up with a comprehensive picture of what the real differences between the tools will be and how those ladder into your business requirements and expected outcomes before you start assessing price.

Product Capabilities Matrix

| Feature | AppsFlyer | Competitor 1 | Competitor 2 | Competitor 3 |
|--|--|---|--|--|
| Facebook MMP | ✓ | ✓ | ✓ | *Kicked out of MMP Program. ✗ |
| Ad Integrations | Most major integrations. | Some integrations. | Most major integrations. | Most major integrations. |
| Integrated Partner (Data Sharing) | Most major integrations. (5,400) | Some integrations. | Most major integrations. | Most major integrations. |
| Dashboard | Customizable ✓ | * Not customizable. ✓ | ✓ | * Customizable. ✓ |
| Internal & Agency Permissioning | ✓ | ✗ | ✓ | ✓ |
| Links | *Supports short links * single URLs. | *Supports short links & single URLs. ✓ | *No short links / must use separate URLs per platform. ✗ | *No short links / must use separate URLs per platform. ✗ |
| Deferred Deep Linking | ✓ | ✓ | ✓ | ✓ |
| Uninstall Attribution | ✓ | ✗ | ✓ | ✓ |
| People-Based / Multi-Touch Attribution | ✓ | ✓ | ✓ | ✓ |
| Fraud Protection | ✓ | ✗ | ✓ | ✓ |
| Alert System | ✓ | ✗ | ✓ | ✓ |
| Audiences | ✓ | ✗ | ✗ | ✓ |
| mParticle Integration | *Supports data input, output and audience output from mParticle. ✓ | *Does not send attribution data via Feed. ✗ | ✓ | ✓ |
| Segment Integration | ✓ | ✓ | ✓ | ✓ |
| Data Export | *Push, Pull API to send raw data. "Data Locker" S3 buckets. ✓ | ✓ | ✓ | ✓ |
| Security Compliant | ✓ | ✓ | ✓ | ✓ |

As part of the feature comparison process, it's crucial to ensure that the features and integrations provided are **customizable and straightforward to use**. If they're not, your team will invariably become frustrated with the experience. If the UI is too complex, you may also end up using only a small subset of the many features that enticed you to consider the product in the first place. Early on in the evaluation process, usability can be checked with a few preliminary questions as well as your first impression of the product demo. Later as your consideration set narrows, you'll want to conduct a deeper review of documentation to check for usability and accessibility across every role in your organization.

Experience proves that while challenging upfront at large organizations, **seeking universal knowledge and buy-in from a capabilities and outcomes perspective can help ensure that the final solution really meets the mark and that the organization is satisfied.**



"When I start thinking about new partners or vendors, it's because they have something very innovative that we don't have today. Because we are in a large organization and some features of these tools can be found in other partners we have, if we decide to pursue a new partner, one of the attributes that I look for in that partner is whether they can customize things as much as possible for us. That's number one. Number two is level of support. Having a great customer and tech support team is very important to us, and that's one of the reasons we chose AppsFlyer."



Mariela Stescobich

VP Growth Marketing at FOX | AppsFlyer Customer

Don't Forget Vendors Are Collections of People

While the capability assessment covers a breadth of essential and relatively objective criteria, the importance of more subjective measures—namely **trust and support**—cannot be underestimated. At the surface level, trust can be discerned from a company's client list, case studies, and their reputation both within your organization and from external sources.

But trust can't be reduced to a simple checklist. It's surprising how often buyers forget that at the end of the day, companies are collections of people. This relates to the evaluation of customer support, as it captures both personal connections with the vendor and their level of commitment to supporting your success.

It's important to keep in mind that more features doesn't necessarily equate to more support. Ultimately, those features don't matter very much if you don't get the proper guidance on how to use them, or if you can't count on the support team to be there when something goes wrong. When it comes to evaluating support, you want to make sure that you not only get along with the people who you engage with at your chosen MarTech company, but also that they have SLAs that provide a certain level of support for your team.

This can also be deduced by the ratio of customer support personnel relative to other teams in the company. If the company has a low ratio of engineers and customer success managers relative to sales and marketing, that can be a flag to dig deeper into what really happens behind the scenes. As an additional validity check, case studies, testimonials and

logos of other well-standing companies who work with the chosen product can be a testament of that company's ability to service and scale with industry leaders.

When it comes to company size, there's a bit of a sliding scale for level of support. Small start-ups may lack a dedicated support team, but you may have more access to their product team and engineers. As these companies grow, their level of support grows as well. But if you're a very small company choosing an established enterprise or cloud solution, you should also be wary of getting lost in the weeds.

As Stescobich cautions, "If a tool is very well regarded and you can't afford it, just go with a smaller vendor or solution. It's better to be a small fish in a small pond than having to compete in the wild with a bunch of bigger fish. Pick the vendor that's going to give you the most attention and the most support."

Likewise, if you work at a mid-sized to large company, you may have more sway to influence the product roadmap of MarTech companies of any size. Having these discussions upfront is important to understand if they can customize the product solution to your needs. Even if they aren't able to make immediate product changes, understanding their commitment to growing with your team can make all the difference. This is what true partnerships look like.

Getting buy-in can cost businesses millions of dollars in work hours and take countless months. Getting the decision wrong is only half the battle; the other half is making sure that once the decision has been made, that every effort is taken to insure its success.

Customer Support

| Role | Responsibilities | AppsFlyer |
|--------------------------|--|-----------|
| Customer Success Manager | Business partnership manager throughout the duration of the Agreement. | ✓ |
| | Strategic consultant on the application of Vendor's use cases against Customer business goals. | ✓ |
| | Project management for prioritization and tracking of attribution & deep linking efforts. | ✓ |
| | Provides training and general support for Customer use of the platform. | ✓ |
| | Plan and conduct QBR. | ✓ |
| Solutions Architect | Assist with technical and InfoSec review during pre-sales cycle. | ✓ |
| | Lead the creation of a custom, strategic integration plan that meets customer's paid attribution, non-paid attribution, and deep linking requirements. | ✓ |
| | Provide technical and operational expertise on the technology and platform during the implementation phase and throughout the duration of the agreement. | ✓ |
| | Project manage the implementation process. | ✗ |
| | Provide strategic and technical guidance on advertisers, partners, and APIs tied to the platform, and on the execution of Customer use cases via the tool. | ✓ |
| | Provide strategic and technical guidance on advertisers, partners, and APIs tied to the platform, and on the execution of Customer use cases via the tool. | ✓ |
| | Train 3rd parties, agencies and other customer clients on how to use the platform. | ✓ |

This is where customer support, onboarding and partnership become so essential. The best marketers and decision makers treat these human aspects of the purchase decision as a reflection of an insurance policy and ongoing maintenance.

Just as with your car, you pay for an insurance policy to make sure that when a big issue comes up you are protected. Likewise, you pay for oil changes to your car along the way to keep the motor humming.

Integration and onboarding is like an upfront insurance policy. It ensures that your first experience driving that new car is successful. Customer support and professional services provide ongoing maintenance to ensure you are using the tool, that bugs and issues are being triaged, and that your initial investment is protected.

Don't neglect this vital element of the buy-in process—think carefully about the type of support model you need, and be willing to pay for it—especially if you're working with an established company that serves hundreds or thousands of customers (and on the flip side, embrace new technologies that offer it for free if you know you're signing up for a few bumpy months). The punchline here is that price and service should be give and take, not all take.

The Security & Privacy Review: What to Expect

While the evaluation of trust and support boils down to human elements—from reputation to personal connection and cultural alignment—**privacy and security compliance** will ultimately protect the humans who use your product, i.e. your customers. This is a critical and complex part of the evaluation process, and not one that should be taken lightly. [With GDPR regulations in Europe](#) and California's [CCPA](#) looming in the U.S., the stakes have never been higher.

One of the key problems for companies is that they often invest in their own systems but don't give the same level of attention to their vendors, thus [creating backdoors into their sensitive data without knowing it](#). Likewise, all too often, security is an afterthought—not a valuable and necessary prerequisite to choosing the right marketing tool.

The problem with this thinking is that first, security and privacy requirements are constantly changing and tightening. It is not enough to conduct a one-off InfoSec review process with a new vendor. Likewise, you don't want to find yourself in a position having checked the boxes on requirements and capabilities, only to find out at the very end that there's a security risk. By involving your security and privacy team early in the process and not at the end you will ensure:

- You don't waste time moving full steam ahead with a vendor that doesn't meet basic security requirements.
 - Your procurement and legal teams will be able to add any necessary security or privacy terms into your agreement with the vendor.
 - The vendor will have enough time to respond to and, where required, remedy any of your team's concerns.
-
- Your team has the time to perform the necessary due diligence. The privacy and security review will typically take between 1-2 weeks depending on the service and level of risk associated with the service, but in some cases it can take much longer.

As a marketer if we consider the above state of affairs, it should become clear that there are two things to care about with respect to data privacy:

1. Is the data I'm collecting and using protected—from a regulatory and compliance perspective? I.e. am I following the law in allowing users to access data I collect about them and to modify, delete or move it?
2. Is the data I'm using from my consumers protected from a security perspective?

The good news is that solving for regulatory and compliance concerns has never been easier. Marketing tools are offering out-of-the-box capabilities that make it easy to comply with GDPR laws, such as the [Open GDPR framework](#) supported by AppsFlyer, Braze and other leading marketing tools.

So what exactly is a privacy & security review process, and what does it entail? Loosely, when any 3rd party application is bought or installed into a company, it comes with an assessment of the software and its associated risks. This assessment is the security process and can include very divergent elements.

For example, a security assessment might seek to understand the APIs, what security authorizations they use, whether they transmit data securely (over TLS 1.1 or https/ssl). They also might seek not only to understand how they transmit data, but why, and what protocols are in place to limit or manage











the possibility of risk. This could mean understanding and documenting the human controls in the tool's UI—is there single sign-on, so that when a bad actor leaves the company, they don't have access to private user data? Are there privacy permissions? Do companies have the ability to limit access to junior employees, and extend or grant access to their most seasoned and trusted ones? All of these questions can be part of the security review process.

The Privacy & Security Review: How to Prepare

The first step is to align on the necessary questions to ask from your security team. While there may be certain generic questions that apply to everyone, more often than not, your team will need to tailor questions towards the particular service being received. We've provided a full list of thought starter questions in the appendix, but a few examples of generic questions include:

- A description of the service (understanding the service is imperative to know what additional questions need to be asked)
- Will any company data be received by the vendor?
- If the vendor will receive data, what type of data (e.g. personal data, sensitive data, financial data etc.)
- How does the vendor receive such data (collection technologies, voluntary submission etc.)?
- Will the vendor have access to the company's network?
- Where is data stored and processed?

- Who needs access to the data in order to provide the service?
- What security and privacy certifications or standards does the vendor meet (ISO, SOC2 etc.) (and a copy should be provided)

| Compliance | AppsFlyer | Competitor 1 | Competitor 2 | Competitor 1 |
|---|---|---|---|---|
|  SSAE16 SOC2 |  |  |  |  |
|  TRUSTe |  |  |  |  |
|  ePrivacy |  |  |  |  |
|  ISO27001 |  |  |  |  |
|  ISO27001 |  |  |  |  |
|  ISO27001 |  |  |  |  |
|  ISO27001 |  |  |  |  |
|  CSA STAR |  |  |  |  |
|  US-EU Privacy Shield |  |  |  |  |
|  US-Swiss Privacy Shield |  |  |  |  |

An example rubric of security certification compliance

After answers to the initial set of questions is received, the security and privacy team should assess whether an expanded due diligence questionnaire is required. Such questions would more deeply scrutinize the organization's security and privacy controls and may include issues such as:

- Access controls within the organization
- Segregation of duties
- Disaster recovery
- Password controls
- Encryption capabilities
- Antivirus, Firewall and Malware implementations
Intrusion prevention and detection capabilities as well as data loss prevention
- Logical and Physical data separation
- Server hardening
- Vulnerability and patch management and remediation
- Data Breach notification processes
- Support of data subject rights such as erasure and access

Good vendors should meet all the security requirements and there may be dialogue that converts into aspects of your legal contract. Approach this situation collaboratively and you'll likely get through it more quickly and safely, avoiding a big headline or an equally big fine.

Building a Business Case

After a full assessment of (1) product features, (2) stack compatibility, (3) trust and support and (4) privacy and security against your goals and criteria, the last step is to weigh all of these factors and decide upon the right partner and package for your business. This will ultimately ladder into your strategy for building a business case and gaining final approval.

While there isn't an exact formula for getting buy-in, in almost every scenario, a compelling business case is reliant on both the quality of the argument and the strength of your communication and relationships with key stakeholders.

Establish relationships with key stakeholders and influencers.

One common pitfall we've seen is the failure to involve inter-departmental stakeholders early on in the evaluation process. If a marketing manager is convinced that a certain tool will increase their efficiency, but their engineering team doesn't think the benefits outweigh the cost of their time to integrate the tool, it can be extremely challenging to sell this through.

How can you get around this? Establish relationships with key stakeholders, whether that be someone on the R&D team or someone who has a closer connection with engineering, such as product or data science. These relationships can also guide you through the process of vetting new partners with confidence.

As Shaan Rupani, Director of Growth Marketing at fair.com, joked during our customer interview, "We lean heavily on our Head of Analytics in the evaluation of new tools because all the components of our stack rely on data hygiene, and he's the designated Data Hygiene Czar. Our collaboration de-risks shitty data causing bad decisions."

As another example, the FOX marketing team explained that there is a core unit that makes decisions for all stack tools, with members from technology, video, product and marketing. As every organization is unique, you'll want to understand what existing processes are in place for approving new tools before you begin the evaluation process.

Ultimately, building relationships with department leads and influencers who will support your case as you approach upper management will be crucial for final approval. Consider who is important to involve early on, and who to involve later as you finalize your case.

“

“First we start with an audit. Then we try to understand how much money the solution will save us compared to how long the integration will take to implement, which engineers can implement it and what the QA process will look like. From there, we document a business case of the savings, impact and resources.”

”



Mariela Stescobich

VP Growth Marketing at FOX | AppsFlyer Customer

Quantify the value of the tool to prove the ROI is worth the cost.

Establishing key relationships is only half the battle. You'll also have to think about how best to present your case to each intermediary, as well as upper management.

In some cases, getting approval may be a relatively easy and straightforward decision. For example, Amy Nelson, Digital Marketing Director at Takl, recalls that there was wide agreement among the marketing team that they needed to implement AppsFlyer as one of the first tools in their stack. They didn't need to formally justify their case or ask the tech team for their opinion, as they realized that attribution would be a mission-critical tool for marketing operations.

However in many cases, the decision to implement a new tool may be more disruptive. For teams with larger or more established stacks, it may be challenging to justify the cost and necessity of adding something new. In this case, you may need to take a more formal and quantifiable approach that proves the value of the tool in question is worth the cost, both in terms of budget and human capital (development resources, migration, onboarding, etc.).

For example, Chris Winn, Director of Digital Acquisition at Slice, recalls the challenges of convincing the team that they needed a solution for cross-channel, multi-touch measurement. Up until recently, Slice had been focusing nearly all of its marketing dollars on branded search, with no investment in prospecting or remarketing. Winn's challenge was not so much in convincing the team that it made sense to expand beyond branded search, but rather, how to justify the cost of doing so and how to quantify the value that the new technology and tactics would provide. Ultimately, Winn overcame this challenge by forecasting the ROI in the context of industry and company growth trends.

“

“I built my case by arguing that the current growth of my company will slow down by X in the next Y months, unless we make these investments. Testing this will allow us to increase our marketing spend by 40% in the back half of the year. Here’s the technology tax and estimated return on investment, assuming it will be less efficient than what we’re currently doing. But here is how much I expect that to improve over time, and here’s what we can learn from this. The entire industry is making the same investments, and we should be expected to go this direction as well if we want to continue to grow.”

”

**Christopher Winn**

Director of Digital Acquisition at Slice | AppsFlyer Customer

While Winn's explanation is logical for a C-level audience, it's not difficult to imagine how you might customize your argument for other inter-departmental stakeholders according to what matters most to their day-to-day.

For more inspiration on how to build a solid business case, check out the appendix for a comprehensive list of questions for MarTech evaluation and buy-in.

Concluding Thoughts

Through the course of this guide, we've shared a wealth of knowledge on how to lay the foundations for building a mobile-first marketing tech stack, from definitions to use cases, strategy and evaluation criteria.

In closing, here is a quick summary of key learnings:

- Marketing technology can be instrumental in enabling efficiency, efficacy, and scalability, but it can also be a hindrance if your stack is not thoughtfully designed.
- Before you start evaluating new partners, map your goals for marketing growth as well as the processes and measurement infrastructure that will help you achieve those goals.
- Order of integration matters, to ensure you tackle your “must-have” needs before your “nice-to-haves.” Understand the best-in-breed tool hierarchy and plan accordingly:
 - Attribution and marketing automation are essential to orchestrate customer engagement, deep linking and attribution from your paid and owned campaigns.
 - Paid product analytics tools are the next logical step to up your game, facilitating custom onboarding flows, UX testing, cohort analysis, and advanced audience segmentation that can be ported to other stack tools.
 - Consider integrating a CDP if you have plans to add two or more tools to your stack in the next year—while not strictly essential, a CDP will save you time in integrating new tools, ensuring in-app event mapping is up-to-date and streamlining the process for transferring real-time data flows across your stack.
- Marketing cloud technology can be helpful for marketers with heavy presence across web and offline channels, but they also come at great cost. Think carefully about which marketing cloud products make sense for your goals (if any) and which solutions are better filled by best-in-breed partner tools.
- When evaluating a new MarTech tool, use the tips in this guide to align your goals, questions and assessment rubric before you start meeting with partners.
 - In the process of evaluating key features, stack compatibility, support, proof of concept, privacy & security, and pricing, lean on your colleagues for support to ensure you've aligned with key stakeholders before you reach a final decision.
 - Understand what matters most to members of each internal department when building your business case. A more formal presentation of goals, criteria and cost benefit analysis will be helpful for getting C-level buy-in, whereas a presentation of how the tool will enable product growth and/or UX flows may be more helpful for convincing product managers and/or engineers.

Think of this as a starting point—our hope is that this guide has given you the tools to understand the MarTech landscape, make better decisions, unlock new use cases, and serve as a virtual assistant along your journey to building a best-in-breed marketing tech stack.

Appendix:

RFP Questions for MarTech Evaluation

Sample Questions for Capability Assessment

To help you stay grounded as you navigate the buy-in process, below is a comprehensive list of questions that are relevant to the evaluation of any new MarTech tool:

- What are the capabilities you're solving for? What capabilities matter most to you?
- Define requirements vs capabilities. Do you know the difference between your "must-haves" vs. "nice-to-haves"? Have you assessed the priority of each?
- Have you been thorough in seeking input on requirements from throughout your organization?
- After this initial assessment, have you sought and acquired buy in from other key stakeholders?
- Have you socialized your idea, the plan and the possible vendors?
- Have you requested participation from other key stakeholders as a way to manage buy in?
- How large, complicated, and possibly demanding is your team? Be thoughtful when mapping this to the level of support you need.
- What level of 24 hour service does your engineering team require?
- Do you need a full RFP, or do you need a vendor selection workbook?
- Does price change with additional annual commitment?
- Does price change if you offer to let them use your logo, or sign up for key marketing items on their behalf, such as a blog, a quote, or an appearance at a conference?
- How does the vendor charge? Monthly Active Users (MAU)? Event based? Session Based? For MAU based, do you have levers to control MAU, based on certain completed activities or events?
- Have you modeled how the price impacts the business bottom line? Tie price to cost reduction or (better yet) revenue increase or return on investment.
- Have there been any reported security incidents with vendors you're looking at? Why? Make sure to have answers to this before recommending a tool.
- What case studies are available for you to include in your business case?
- Have you identified the possible hurdles or roadblocks to your success?

Sample Privacy & Security Questions

The following questions can be used as inspiration for your privacy & security workbook. Please consult with your InfoSec team to finalize your questionnaire and customize it for the partner in question:

Diagrams / Data Flow

- Please attach all relevant network diagrams, data-flow charts and integration points with the customer systems.
- Describe how data is transferred between the customer and your platform, what configuration will need to be set on each system, etc.

Generic Security Overview

- Is the network based on a 3-tier structure? Is the internal network separated from the DMZ, and the DMZ is separated from the external network? How the separation is being enforced?
- What network security devices, such as firewalls and IDS/IPS are in use to protect critical systems and sensitive data?
- Are log files available for (1) security devices (2) System Host Protection System, and (3) Virtual Private Networks?
- Are all firewalls rules being reviewed on a regular basis?
- Are all platforms hardened? According to which best practices standards?
- Describe the (1) network, (2) infra and (3) application change control procedures implementation.

- Describe your patch management process (for network, application and databases - hardware & software). What is the length of time between patch availability and implementation?
- Are all servers and software at the current patch levels and fully supported?
- Where customer's data is retained? Is the data stored on laptops, mobile devices or removable media?
- How customer's data is protected based on its sensitivity/ classification? Please describe all controls that are in place for protecting customer's confidentiality data.
- How do you prevent data leakage, and co-mingling of customer's data with other customers?
- Explain the (1) access control management (is it role based model?) and (2) how are access to data policies enforced (in all relevant layers, platforms, network devices etc.).
- What type of strong 2 factor authentication mechanisms is in place for systems processing customer's data?
- Does the application support SSO flow based on the standard of SAML 2.0 or equivalent?
- How many users, from which type have potential access to systems that process/ store customer's data. Please also refer to risk scenarios of direct access to customer data on the DB level

- Do any vendor/ 3rd party have access to customer's data?
- What monitoring capabilities are implemented to identify access to customer's data and servers that contain customer data?
- What encryption mechanisms are in place both for data in transit and data at rest?
- How is data encrypted at rest; (1) which keys are in use, (2) Where and how encryption keys are stored, (3) who can access them, (4) Is it possible to replace keys? (5) Which procedures are in place to support dual control and split knowledge?
- How long will customer's data be retained? What options exist to destroy/ purge sensitive data at the end of the engagement?
- Have you undergone a vulnerability assessment or penetration test of the environment processing customer's data in the past 6 months? Please provide a 3rd party penetration test with no high or medium findings.
- Describe your security code review and secure development lifecycle.
- Do the production environment is physically and logically separated from development and test environments? Will customer's data be in use in the development/ test environment?
- Describe your password policy for systems that will be hosting customer's data, or will allow access to systems that

store/ process customer's data (e.g. OS password policy, DB password policy, application, etc.).

- Are all passwords encrypted using an industry best practice standard encryption algorithm?
- Provide a detailed description of the user management processes and operations; this includes both (1) the internal user management practices and (2) the customer's user account management capabilities and features. Indicate who approves access requests and which controls are in place in order to enforce the policy.
- Explain how least privileges and need to know concepts are implemented.
- Explain periodically processes for user (internal users and customer's users) access review and other processes to ensure user privileges correspond to job requirements. Explain the user termination procedures and timelines.
- Describe the audit trail and logging capabilities - how can user access be tracked to an individual user or device, both infra level (including DB) and application level are required, for (1) customer's users, and for (2) your own staff/ contractors.
- How do you protect the audit trails? Are audit trails sent to a centralized server?
- Can audit trails be extracted to the customer? Do you have SIEM integration?

- Do you have a policy and procedure for log review? If so, please describe.
- Please describe in detail the physical security controls in place to protect the environment processing/ storing customer's data.
- Please attach your Information Security Policy and list of security policies that were formally approved by senior management.
- Explain (1) how and (2) at what frequency Information Security Policy is communicated to staff. Is annual security awareness training is in place to all employees?
- Is there an Information Security Group/Steering Committee?
- Describe law, regulations and formal standards that your company complies with (such as: SOCII, SSAE16, ISO27001 etc.).
- Describe audit processes that your company complies with.
- If the company is SaaS or Cloud technology provider, describe how your service complies with the Cloud Security Alliance matrix (<https://cloudsecurityalliance.org/research/ccm/>)?
- Are mission critical systems redundant? What backup methods are utilized? Are backups taken of all systems that stores customer data?
- Do you have a Business Continuity Plan? When it was last approved and tested?
- What kind of background checks are performed prior to employment? Do all employees undergo these background checks?
- Describe your security incident response. Please include forensic capabilities and policies and process for monitoring and notification.
- What notification and escalation processes exist in case of security incident? Is there a process to notify the customer about incidents that affect customer business or data?
- Please describe your (1) detection (2) prevention (3) mitigation process for DDoS attack.

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