



Mobile Programmatic Playbook

A comprehensive guide to Mobile Programmatic for digital buyers, sellers and publishers.

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This document has been developed by the IAB Mobile Programmatic Buying Working Group, part of the IAB's Mobile Marketing Center of Excellence.

About the IAB's Mobile Programmatic Buying Working Group: The Mobile Programmatic Working Group is a gathering of companies dedicated to helping the market understand the unique nuances and opportunities of the Mobile Programmatic landscape. This includes highlighting the differences of *Mobile* Programmatic and how buyers and sellers can be successful in this space. Discussion is non-technical and focuses on Mobile Programmatic business models and strategy. A full list of committee member companies can be found at:

http://www.iab.net/Mobile_Programmatic_Buying_Working_Group

About the IAB's Mobile Marketing Center of Excellence: The IAB Mobile Marketing Center of Excellence, an independently funded and staffed unit inside the IAB, is charged with driving the growth of the mobile marketing, advertising and media marketplace. The Mobile Center devotes resources to market and consumer research, mobile advertising case studies, executive training and education, supply chain standardization, creative showcases and best practice identification in the burgeoning field of mobile media and marketing. Our agenda focuses on building profitable revenue growth for companies engaged in mobile marketing, communications and advertising, and helping publishers, marketers and agency professionals understand and leverage interactive tools and technologies in order to reach and influence the consumer. More information can be found at: <http://www.iab.net/mobile>

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Overview

The Mobile Programmatic Playbook is the first IAB programmatic document which is mobile-specific in nature, covering all aspects of the mobile programmatic landscape. This piece is intended as an introduction to mobile programmatic buying and refers to other relevant documents where useful. The main focus for this paper is to bring particular attention to areas where programmatic buying in mobile environments differs from other programmatic environments (such as desktop, etc.).

Intended Audience

This guide is written for publishers, advertisers, agencies, marketers and third parties who have a general understanding of programmatic advertising, but wish to learn more about mobile-specific programmatic advertising. More specifically, this is written for anyone looking to learn more about the current state and evolution of the mobile programmatic market when planning for the future of their advertising, monetization, or service strategies.

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1. What is Programmatic?

Programmatic is the automated buying and selling of digital advertising inventory. Programmatic transactions can include many different types of technologies, including the most well known: real-time bidding (RTB). Below is a review of the types of markets enabled by programmatic advertising. For a more complete look at the definition of programmatic and programmatic markets, please refer to the IAB Programmatic Council's 2014 [series on programmatic](#) (IAB, 2014).

2. Review of Programmatic Markets

Programmatic is not merely a technology; it is better stated as a way of doing business through a suite of markets that give market participants options on how they'd like to buy and sell. In broad terms, there are four types of programmatic markets: Automated Guaranteed, Unreserved Fixed Rate, Invitation-Only Auction and Open Auction. While many are most familiar with the Open Auction functionality, direct marketplaces which operate programmatically can offer significant value to both buyer and seller.

There are three factors that delineate the nature of direct Programmatic Markets: (1) how the inventory is packaged; (2) whether workflow is applied to automate the sales or IO process; and (3) the extent of mutual guarantees between the publisher and buyer.

1. Inventory packaging: in the most general terms, inventory can be packaged in direct marketplaces in two different ways: by the publisher or by the buyer. The publisher can build sellable inventory packages and offer them to buyers; or buyers, aided by some type of interface that gives them access to publisher avails, can build custom packages.
2. Workflow: The "full" implementation of direct marketplaces operating programmatically includes the ability for the publisher and buyer to set aside inventory and negotiate and formalize the deal in a purely automated basis – essentially replacing the cumbersome IO process. However, publishers and buyers are still able to create and execute direct markets when the agreement is formed using the traditional IO process and executed programmatically. Workflow features and products vary among providers and there are initial efforts to put standards around workflow to simplify and accelerate the use of workflow going forward.
3. Guarantees: Programmatic Direct markets can, but do not need to, be underpinned by mutual guarantees between the publisher and buyer.
 - a. Guaranteed direct markets: known as automated guaranteed these are exclusive markets where the publisher guarantees the availability of designated inventory for the life of the deal, and the buyer guarantees a certain spend during that time (this may or may not include additional commitments of CPM and fill).

- b. Non-guaranteed, direct markets: known as Unreserved Fixed Rate and Invitation-Only Auctions, these markets operate like first-look opportunities where the buyer gains the value of the first-look but does not have a contractual obligation to buy. This first right of refusal can come at a price - likely a higher CPM. In these markets publishers reserve the right to sell the impression to other buyers (stripping out the Deal ID and any business rules specific to that buyer) if the impression is not bought during the first-look opportunity.

a. Automated Guaranteed (AKA Programmatic direct)

Automated Guaranteed is the 1:1 selling of reserved digital inventory at a fixed rate using programmatic technologies. This encompasses other common terms in the market such as programmatic – guaranteed, premium, direct and reserved.

Programmatic Direct markets enable publishers to sell specific designated inventory packages to media buyers including advertisers, agencies, and trading desks. Today, most Programmatic Direct markets take advantage of existing direct relationships between the publisher and advertisers and agencies; although Programmatic Direct markets can be set up between both existing and new buyers.

In the simplest terms, the publisher and buyer establish the terms of the deal and those terms are then formalized and implemented through a unique Deal ID between the publisher and buyer; where the Deal ID is appended to specific impressions so that only that buyer can target and buy the specified impressions. Again, the difference between Automated Guaranteed and Unreserved fixed rate being buyers are not contractually obligated to purchase inventory in the latter and publishers reserve the right to offer unsold inventory to other buyers at their discretion.

Programmatic Direct markets are still evolving and certainly there will be many different offerings in the markets with different configurations and names, but they will have the common foundation of applying the power of programmatic to direct relationships between the publisher and advertiser, agency, or trading desk.

b. Invitation-Only Auction (aka Private Auction)

Mobile private exchanges allow publishers to sell specific inventory to select buyers using business rules that may differ than when this inventory is sold on the open market. Here, publishers can give buyers a first-look advantage for inventory that the buyers value most. However, private exchanges can vary based on a number of factors: (1) the extent of exclusivity; (2) the nature of the transaction; and (3) if and how the publisher would sell unfilled impressions on the open market.

- 1. Exclusivity: a private exchange can be set up exclusively with few or with many buyers that the publisher selects.

2. Transaction: The Invitation-Only Auction functions as such— whether using a first-price or second-price auction – and is used for multi-buyer markets so that buyers can compete on an impression-by-impression basis.
3. Selling unfilled impressions: Similar to Unreserved Fixed Rate, publishers can reserve the right to sell unfilled impressions via Open Auction or otherwise. Typically, publishers will strip out some data so that the impression sold via Open Auction is further differentiated and usually seen as less valuable. In the same way, publishers can change the price floor or other business rules (e.g., ad quality rules) as the impressions flows down into the Open Auction. Changing the impression, price, and rules are options - not requirements.

Private exchanges are predominantly constructed by the publisher and offered to select buyers. However, in some cases, buyers can set up private exchanges (sometimes referred to as buy-side private exchanges) where they enable select publishers who provide common inventory (e.g. they all include lat/long with ID) to give the buyer a first-look at their inventory. In these markets, the exchange provider would establish unique ID's or tags to enable them to aggregate traffic from multiple publishers and offer them to the buyer. Again, these are less common, but certainly possible.

c. **Open Auction (AKA Open Exchange)**

The Open Exchange is the simplest form of a programmatic market, where multiple publishers and multiple buyers transact in real-time via auctions. The Open Exchange still allows each publisher to set floor prices, advertiser controls, and whether they want to apply a first-price or second-price auction, for each site or app.

3. Review of Programmatic Transactions

Ultimately, programmatic takes advantage of high-volume transaction technologies led by real-time bidding (RTB) technology. However, it is important to decouple “programmatic” from “RTB”: programmatic represents a suite of markets (above) which take advantage of technologies such as RTB auctions; but they also take advantage of buy transactions (for example, Programmatic Direct) and in the future, the ability to trade futures.

Overall, programmatic markets – Automated Guaranteed, Unreserved Fixed Rate, Invitation-Only Auction and Open Auction use different transaction types:

- > **Automated Guaranteed (AKA Programmatic Direct) and Unreserved Fixed Rate** is an exclusive market that uses a simple buy transaction to offer packages of inventory at a fixed rate. This is usually executed via a Deal ID or other unique key between buyer and seller.
- > **Invitation-Only Auction (AKA Private Auction)** use first- or second-price auctions enabled by RTB technologies.
- > **Open Auction (AKA Open Exchange)** uses RTB-enabled auctions; the majority of Open Exchanges use second-price auction as the core transaction type.

4. Programmatic Buying Considerations Unique to Mobile

Several aspects of mobile programmatic buying distinguish it from more generic, PC-oriented programmatic buying. This section will review mobile programmatic with regard to data, creative, inventory transparency, measurement, and viewability, all of which create distinct variations on the programmatic theme. Across all of these aspects, buyers and sellers in the mobile programmatic ecosystem should always be mindful of consumer choices regarding advertising notice and transparency in the mobile environment.

a. Data

Data has long been regarded as one of the most crucial pieces to a successful programmatic buying strategy. Each ad impression opportunity contains data which can be used by the buyer for targeting purposes, and in mobile buying much of this data is unique to the mobile environment, presenting new targeting, buying and optimization opportunities. For this reason, buyers should understand that not all desktop strategies will translate seamlessly to mobile, thus mobile buying strategies should be viewed from a new lens. It's also worth noting that data contained in the mobile ad opportunity can be derived from disparate sources, such as data drawn directly from the device operating system, user profile information pulled from an app or publisher's user registration, and additional inferred data that third parties in the supply chain may provide.

i. Device/tech level mobile data

Below are the unique data parameters that may be available as part of the bid request (ad impression opportunity) for mobile programmatic buyers:

- **Device Information:** make, model, OS, OS Version, connection type, device type, screen dimensions, pixel density, etc.
- **App Information:** App ID, App Name, App bundle, etc.
- **Geo Signals:** e.g. Lat/long coordinates derived from the device
- **Identifiers:** device user identifiers including IDFA and GAID (Mobile App Only), Android Ad ID
- **Ad Size:** 320x50, 300x250, 300x50, 300x600, etc. (full list available [here](#)) (IAB, 2013)
- **Technical creative information:** JavaScript supported, [MRAID](#) (IAB, 2011) compliant, etc.

An advertiser's ad can be customized for phone handset models, operating system and version, connection types, screen sizes, or any number of targeting parameters as a result of these mobile-centric data variables.

When formulating their programmatic strategy, sellers should understand that the more data they can offer to the buyer, the greater the odds that their inventory will be filled and monetized at higher rates. Additionally, unique first

party data is valued even higher in the programmatic marketplace. It also behooves publishers to offer the widest creative support possible (e.g. support JavaScript, embed the MRAID SDK, offer multiple unit sizes) as buyers benefit from leveraging the full range of what mobile has to offer.

ii. Contextual mobile data and signals

Mobile ad inventory comes primarily from two mobile environments: mobile web and mobile app (though there are also rich push notifications, which have been available in Android for some time and are now available in Apple devices as of iOS 8). These primary channels carry different default, and available, permission sets which affect their access to user and device attributes.

Examples of information that might typically only be available via app ad opportunities would be those heavily integrated into the operating system, such as barometric pressure (new to iOS 8 and iPhone 6), ambient light detection, or deep hooks into specific app engagements (such as the user performing a screenshot). The lack of availability to leverage this information and features in mobile web can limit creative functionality of ads outside of the app environment. There are also data/features native to mobile web that are not as readily available in the mobile app environment. For example, pulling the user's current location via the JavaScript geolocation APIs are available out of the box in the standard browser but have to be intentionally/explicitly enabled in the mobile app context.

iii. Mobile location data

One characteristic that is unique to mobile programmatic, over desktop, is the fact that the user's mobile device is constantly on her person and traversing the world with her. This means advertisers can leverage both real-time location and related context as well as derive the location-history of a device. In this context, location can be thought of as a proxy for a user's real-world activity, interests and intent. This data is also commonly used for optimizing creative messages, geo-fencing campaigns, and audience and place analytics.

Location data is derived in the mobile context in various ways. These include more direct means generated from the device operating system's Location Services APIs, to indirect collection from methods such as registration, address or IP to geolocation mapping. Additionally location, much like any other data, can be first party or third party derived, with the former being of higher value than the latter. For more granular information on location data, you can download the IAB's 2012 [Mobile Local Buyer's Guide](#) (IAB, 2012).

While location data source (GPS, WiFi, etc.) information can be appended by anyone leveraging the OpenRTB API – using the Geo Object; the market is beginning to request that supply-side partners and publishers identify the

source, recency and similar attributes of location information to ensure they're offering their advertising clients the most accurate data.

iv. Mobile audiences (behavioral targeting)

Mobile programmatic offers interesting opportunities for creating rich audience profiles based on methods analogous to typical online behavioral advertising scenarios. These can include capturing geo-historical patterns or aggregating app interests (i.e. user uses sports, game, and social networking apps).

Additionally mobile offers a new channel to target audiences identified in other channel contexts (offline, desktop, CRM systems, etc.) and overlay this data for richer mobile targeting. For example, marketers can target auto purchase intenders interested in a particular OEM's brand with special messaging when they're visiting competitive auto dealers. Marketers are increasingly interested in this type audience plus real-time context targeting and sellers who offer this ability to overly audience data will be able to generate greater yield – both on fill rates and eCPMs. Lastly, it's important for buyers and sellers to understand that overlaying such audience data over other attributes can have a limiting impact on the overall size of addressable audience. Thus, advertisers must always consider the need to balance targeting efficacy and scale efficiency.

v. Mobile identifiers

Across all digital platforms, unique identifiers are a tool used by both buyers and sellers to build audience profiles and help marketers get the right message to the right person at the right time. Due to the lack of cookie continuity in mobile programmatic, marketers and their technology partners must master new ways to build audience profiles without reliance on traditional desktop technologies. With the proliferation of cookie-replacement IDs and technologies, what marketers most desire is the ability to integrate disparate identifiers and attributes, combining them to create a master identifier across multiple screens, channels and platforms. More on identifiers can be found in the IAB's [Privacy and Tracking in a Post-Cookie World](#) whitepaper (IAB, 2014).

1. Deterministic v Probabilistic IDs

Deterministic identifiers represent unique IDs belonging to a user or device which do not change over time and are based on a single, known piece of identifiable information such as an email address, site login, hardware or device ID and, carrier-provided unique subscriber ID, or advertising IDs such as IDFA and Android Ad ID. It can be deterministically surmised, for example, that a user using Google ID "abcd" on Device 1 is the same user as using Google ID "abcd" on Device 2. An alternative example would be that a user seen in a bid request from App A is the same as the user seen in bid request for App B if the IDFA is the same in both requests.

Probabilistic identifiers are used in cases where deterministic IDs are not made available such as mobile web inventory sold by third parties who do not have access to user data, as well as some classes of publisher inventory. Probabilistic IDs are created by ingesting hundreds of data points and using statistical models to draw conclusions, resulting in a high confidence level for identifying users or devices. Probabilistic IDs are based on a combination of attributes unique to a device, within a certain confidence level - such as the IP Address, user agent, browser settings, language, etc. As an example, a probabilistic model could determine that two devices that consistently access the same websites at the same locations and browse those websites using similar viewing/scrolling behavior in fact belong to the same user. Similar statistical models can be used for identifying a device/user's home area, or that a user seen on a given browser in a mobile context is the same as a user seen on a native app in a mobile context. Inherently, accuracy with this method varies by vendor and methodology.

2. Using identifiers for retargeting

Retargeting or remarketing has long been one of desktop's most successful tactics, giving marketers the ability to show the most relevant messages and offers to users familiar with their brand who've shown previous interest in their offerings. For example, if a user has clicked on an ad for an app download campaign, but didn't complete the download, the advertiser can promote the same app to that user with a different creative to entice them to take action. Advertisers can also retarget users with ads that are similar to ones that a user has previously had high engagement with.

The above-mentioned identifiers make retargeting possible in the mobile programmatic environment. Location can also help to bring context to retargeting. For example, knowing a user has been at sports stadiums frequently within a short period adds context to what ads the user will show high engagement with. Alternatively, using a non-location-based example, an ecommerce retailer could retarget a user in the mobile context who failed to complete a purchase after adding an item to his shopping cart.

3. Cross-Screen/Cross-Platform

Identifying users across platforms, screens and devices provides an understanding of their behaviors on desktop, tablet, mobile and other connected devices. The value to advertisers is to have a consistent message across platforms, and to learn how their users consume content, transact and interact with ads based on each screen and device throughout the day. This knowledge can be used to optimize marketing strategies and offer more relevant products and services to users.

There are many ways that buyers and sellers achieve cross-platform targeting, you can see from the list below:

Deterministic methods: Publishers who require customers to log-in across devices and environments are able to provide marketers with a reliable means of matching customers in an increasingly fragmented world. Increasingly, many networks, exchanges and third party providers are also able to leverage anonymized identifiers based on this login data when creating campaigns that span platforms.

Probabilistic methods: Buyers and sellers can leverage licensed or proprietary probabilistic ID solutions (described above) and cross-device technologies to execute media campaigns through existing programmatic channels like SSP's, exchanges, or direct through a publisher.

Datalinks: The wide range of data provided by mobile and other connected platforms can also help buyers and sellers make inferences that enable cross-platform IDs to be created. For example, a popular use of location data is combining devices seen on one IP range or "home" location with home data, behavioral data and more to establish the devices as belonging to the same user or household.

b. Creative

In the mobile programmatic market there are four main types of ad units universally available: banners, interstitials, video units, and native units – both in-app and mobile web. Of these, banner ads are by far the most prevalent, accounting for approximately 70% of available impressions (Fiksu, 2014).

Despite the available volume of standard banners, many advertisers are starting to adopt programmatic buying of interstitial and native ads. Although these formats can be more expensive (as CPMs are usually higher) a 30 day Fiksu study from June 2014 shows these ads deliver a higher CTR, on average, than regular display ads (Fiksu, 2014). The Fiksu data shows that on average, across the ads they see:

- Interstitial ads convert at a rate 2x higher
- Interstitial ads have CTRs 1.5x higher
- Native ads convert at a rate 4x higher
- Native ads have CTRs 1.2x higher

Programmatic buying also increases ad format liquidity. Because RTB exchanges are essentially supply and demand platforms where prices rise and fall with purchasing behaviors, advertisers are able to bid on their perceived worth of the traffic instead of a pre-negotiated, arbitrary price. This second-price bidding benefits both publishers and

advertisers alike—the former increases revenue from selling more ad space, while the latter gains a more efficient way of disseminating ads at the best price point.

i. Native

The native advertising trend has had an impact on all digital media, but is perhaps moving the fastest in mobile. Inspired by the ability to harmonize messages within the user’s natural environment and activities, interest in native advertising has grown dramatically. In February 2014 [Business Insider reported](#) more than 65% of agencies and 55% of marketers plan to spend on mobile native advertising in the next six months (Smith, 2014).

In the mobile programmatic environment native ads are available via select publishers or open exchanges that consolidate the mobile app and mobile web native inventory of many publishers. Typically, mobile programmatic partners offering native as an ad format receive disparate assets from the advertiser (e.g. an icon, text, banner) and assemble these assets dynamically to match the look and feel of the publishers’ site. As a result, advertisers need not worry about blending in with the publisher, but rather the content of the creative itself.

Currently native ads have a limited volume, and to win them, advertisers have to bid aggressively. Despite this, demand remains high, and use of native ads is likely to grow within the next few years. For a more granular breakdown of native advertising, see the IAB’s 2013 [Native Advertising Playbook \(IAB, 2013\)](#).

1. In-feed (Open RTB 2.3)

The most popular native format for mobile, and mobile programmatic, is in-feed advertising. In-feed ads are those that appear within the user’s natural activity stream. This includes traditional ads, videos or branded/sponsored stories which appear within a publisher’s content feed.

ii. Video

The most demanded and successful creative formats will inevitably be where users spend the bulk of their time. Within the mobile category, video is becoming one of the strongest drivers of traffic. Many marketers have long preferred video as a high-impact branding vehicle for all platforms. Currently mobile video makes up more than 10% of all digital video (Kovach, 2013) viewing and mobile video advertising is projected to grow at a 71% CAGR through 2016 (eMarketer, 2013). Due to growth in video in the next five years, mobile video will likely make up a major piece of the mobile programmatic landscape.

Early movers in programmatic mobile video include desktop video supply-side and demand-side platforms that have expanded over time to include mobile video inventory, along with mobile-first video platforms. Since 2012, video ad

companies have been introducing capabilities to extend real-time programmatic buying across multiple platforms, making mobile video available to programmatic demand. Mobile video has been particularly for mobile app advertising, resulting in the rise of ad networks focused on in-app mobile video advertising. Some of these companies are beginning to leverage programmatic as a way to open up new channels of demand for their networks of app developers.

In the future mobile programmatic video buying will likely evolve along the following dimensions:

1. Native ads – As growth in mobile video continues, advertisers and publishers will look for more opportunities to buy and sell placements that are native to an app or site’s user experience. These types of ads could be placed within an app’s newsfeed or could take on a similar look-and-feel as the app or site itself.
2. Interactivity – Mobile devices and operating systems are continually introducing new features around user interaction. In time, programmatic mobile video will evolve to incorporate a number of these features to further enhance and customize the ad experience.
3. Upfront buying – To date, much of the programmatic activity in mobile video has been RTB-based. While this activity will continue to grow, there will also be an increase in non-RTB programmatic upfront buying. This will come as ad companies expand programmatic guaranteed solutions into mobile video.

c. Inventory transparency

Programmatic technology as a way to buy and sell mobile inventory is intended to create an efficient and fair value marketplace, enabling buyers to deliver the right messages while sustaining and driving value of the inventory for the seller. Just as in desktop, inventory transparency is a critical driving force behind creating an effective programmatic marketplace for mobile inventory and will enable scale and value for all parties in the space.

Programmatically buying mobile inventory directly in automated guaranteed or invitation-only marketplaces, where it is common for publishers to offer complete inventory transparency, can ensure an advertiser’s message is placed in a suitable environment and can also enable more complete ROI insights for campaign optimization. For campaigns focused on brand metrics, content and context are critical, thus some buyers place a higher premium on inventory transparency.

For buyers strictly interested in performance and DR metrics, audience, rather than content and context, is of utmost importance. This reduces the premium on supply

transparency for these buyers. Semi-transparency is therefore most common for performance and DR media placement, where buyers still have insights into aspects such as context, category or top-level domain while targeting their message in real time to their highest valued audiences.

For price efficiency, many mobile buyers find semi transparency optimal as they can maintain quality assurances through other means such as whitelists, blacklists, and other blocking tactics. In general there is an inverse relationship between inventory scale and the level of security that can be guaranteed for buyers. For example a blacklist approach, where buyers specify a list of suppliers that must be blocked, will enable maximum scale when buying programmatically, whereas a whitelist approach, which enables buyers the ability to specify what suppliers to include, can significantly impact scale. Where whitelists limit scale, it affords buyers more control over the supply and the ability to dictate where the media will specifically be placed.

From the seller's perspective, quality assurance is equally important as is maintaining the fair value of their mobile inventory. As such, advertiser blacklist and whitelist blocking methods can be similarly employed on the supply side to prevent price/competitor conflicts and ensure ad quality. For the supplier, a blacklist approach enables an efficient security system and drives liquidity at scale, two of the most crucial components in driving a successful seller's strategy. On the other hand, a white list approach works well when supply is scarce and specialized business rules must apply.

d. Measurement

Measurement of mobile programmatic media is different from desktop programmatic due to the absence of cookies. Desktop cookies, and the technological ecosystem that has developed over the past twenty years to distribute and extract data from those cookies, are the underpinning of the desktop programmatic measurement infrastructure.

To address the need for programmatic mobile measurement the industry developed two distinct solutions for the "cookie-less" mobile advertising environment.

- 1) Server postbacks were pioneered in the mobile app advertising space to enable app publishers to track clicks, installs, and post-install actions back to the network or media source where the apps were marketed. App publishers have the option of installing an SDK in their apps to facilitate the collection of install data, though advertisers can create server-to-server connections to enable data collection.
- 2) Identity-based targeting and measurement enabled by companies like Facebook, Google, and others that have extremely large installed bases. These systems provide measurement by correlating device IDs with the anonymous, aggregated, IDs of their logged-in users. While the correlation of device IDs with application IDs can provide a rich set of advertising targeting criteria, issues can still remain in terms of measuring the success of ad campaigns.

Both of these solutions are nascent relative to the infrastructure that has been developed around desktop cookies, though both can provide important insights to the measurement of mobile programmatic campaigns.

i. Typical KPIs

Mobile programmatic is typically measured based on the traditional desktop programmatic KPIs of impressions and clicks. However, mobile differs from desktop in the separation of two distinct environments on the device: mobile apps and mobile web.

1. Mobile App Advertising

Many publishers and brands have turned to mobile advertising networks to drive adoption of their apps. Historically these campaigns were chiefly offered on a cost-per-install basis. Today these campaigns have grown increasingly sophisticated in their complexity and definition of success. While cost-per-install campaigns remain the most common type of campaigns for apps, many app marketers have begun to measure success based on a campaign's ability to deliver app opens, in-app purchases, and varying types of app usage.

Some attribution companies enable mobile marketers to collect a wide range of data on user activities that happen after apps are downloaded such as in-app purchases, uploading of a credit card, or other app-usage metrics. These advanced usage metrics and data points are increasingly being used for real-time bidding. Advertisers can use data on which networks are delivering installs, opens, and events that drive monetization events. These data points can be combined with other 1st or 3rd party data points, or developed into look-alike models, for re-targeting or conquering campaigns. Through careful analysis marketers can achieve nearly the same level of visibility and transparency on their mobile campaigns which they've become accustomed to with desktop campaigns.

2. Mobile Web Advertising

Mobile web publishers initially launched their mobile web sites as adaptations of their online websites. Consequently, small banners, interstitials, and video have defined advertising on mobile web sites. These campaigns are typically measured by traditional desktop web metrics such as clicks or video views. Advertisers use their ad servers, in some cases these are specifically designed mobile ad servers, to track the success of their campaigns. These measures enable brands to approximate the engagement of their users by analyzing impression and

click levels. Marketers can also measure success by reviewing hits to their mobile web landing pages.

ii. Attribution

The most prominent models of attribution for mobile programmatic advertising leverage the types of actions and measurements inherent to the platform. Among those, the easiest and most widely used is last-click attribution modeling. This approach can often skew the results of media spend as it gives too much credit for bottom-of-the-funnel media tactics such as re-targeting, and too little credit for top-of-the-funnel media such as video.

Recognizing this issue, many are turning to multi-touch attribution models to properly assign credit for their digital media buys. This approach is powered by the availability of cross-platform identifiers and weights all of the digital media that a user may view or interact with in their purchase decision journey.

Due to the complexity of merging multiple sources of data many companies are turning to Data Management Platforms (DMPs). These technologies enable marketers to effectively merge disparate data sets to create holistic pictures of their campaigns. For example, a DMP can combine the data from a campaign that included desktop, mobile and other media.

e. Viewability

Viewability is a relatively new issue, but of increasing importance. Researchers estimate that more than half of online ads, particularly those served programmatically or through ad networks, are never seen at all by users. Viewability numbers for online video ads are similar with less than half of all video ads in view. Research specific to mobile ad viewability is still lacking, but it's incumbent on the mobile industry to address viewability concerns before they impact the growth of the medium.

Marketers, agencies, and publishers have been working with the Media Rating Council (MRC) and the IAB in a project called "Making Measurement Make Sense" (3MS) to establish viewable ad impression measurement guidelines. These guidelines set standards for when to count desktop display and video impressions as viewable.

For mobile web advertising the MRC and IAB have issued preliminary guidance that the same viewability standards for online should apply to mobile where possible. In 2015 the 3MS initiative will start to assess the technology for mobile ad viewability, with an eye to setting standards specific to mobile web and apps. We believe viewability will evolve to become a standardized part of all programmatic media buys. Marketers will be able to buy and optimize media across multiple dimensions of viewability, performance, audience, and monetization metrics.

5. A Land of Opportunity

Programmatic advertising is on the rise globally, and in many ways mobile is leading the charge. Publishers are becoming more knowledgeable on ways of integrating programmatic technologies within their existing salesforces and organizational structures and offering unique value to buyers. Agency and marketer adoption of, and comfort with, programmatic continues to increase as the market continues to develop the solutions that matter most to them such as the ability to target desired audiences, scale engaging creative experiences and measure the success of their efforts across channels. As programmatic technologies continue their ascent into the mainstream the mobile programmatic environment will continue to provide value for buyers, sellers and consumers alike.

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