

When Device Recognition and Programmatic Buying Intersect

A Mobile World Where Everyone Wins

Mobile presents a major challenge to marketers: how to recognize and reach audiences programmatically, at scale, with support for sophisticated targeting and measurement models – while still adhering to consumer privacy best practices. This paper describes how mobile RTB – enabled by a new approach to device identification – meet this challenge.



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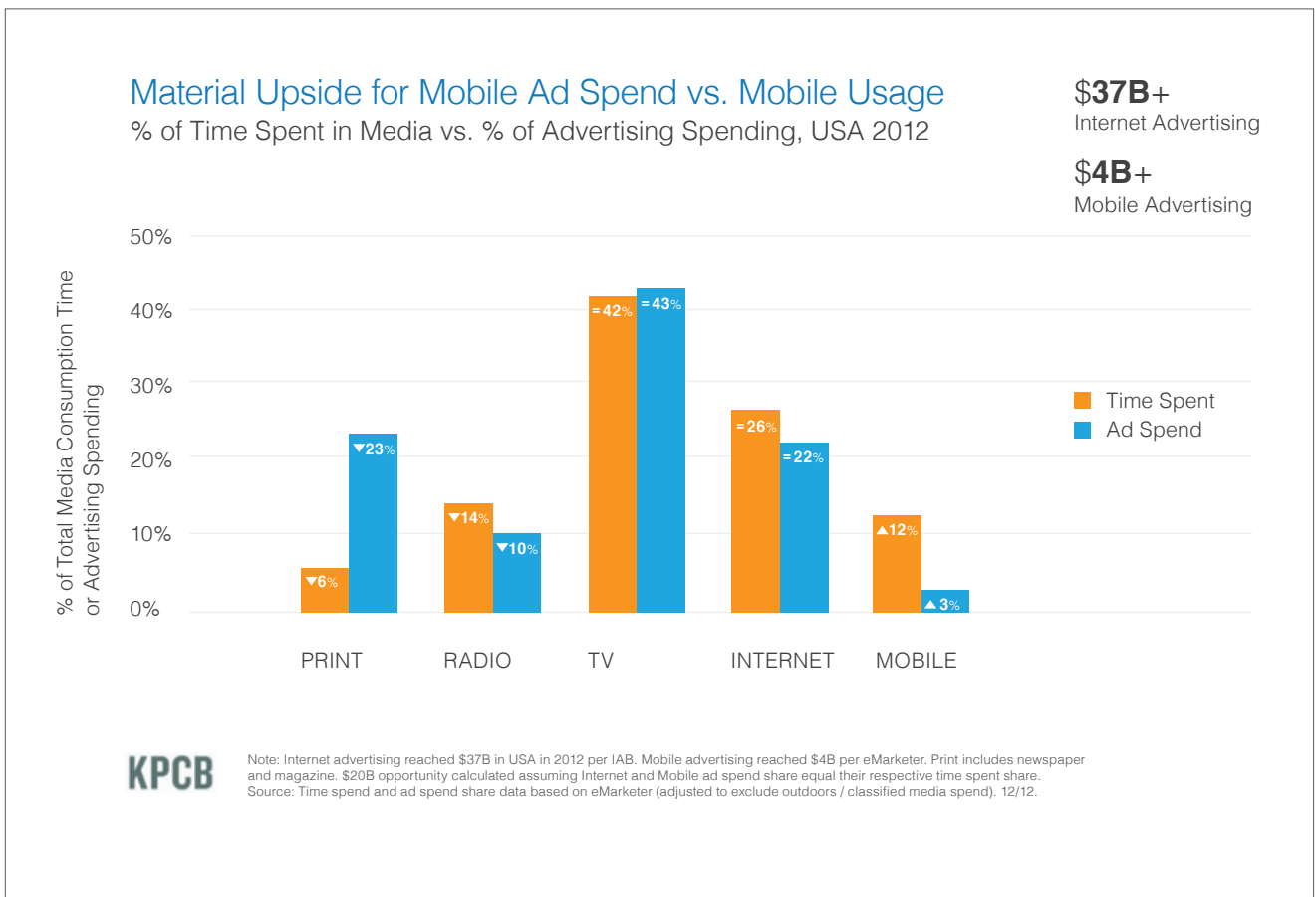
Table of Contents

About this Paper	2
Executive Summary	2
The Challenge	4
The Solution	5
How It Works	6
Case Study: AdTruth and OpenX	6
The Path Ahead	8

Executive Summary

The explosive growth of mobile continues to attract and confound marketers. The mobile ecosystem provides global reach, ample inventory, more creative options (including gamification, social media, rich media and more) and rich data assets (including location based information and new contextual knowledge). The nature of mobile can make the ad experience better, more memorable and more effective.

At this point however, there is a huge gap between the time consumers spend with their mobile devices and the amount marketers are willing to invest. According to Mary Meeker's [KPCB Internet Trends Report 2013](#), US consumers are spending 12 percent of their media time on mobile devices, but these same devices receive only 3 percent of advertising spend.



While a gap between time and ad spend is expected in any new channel, what makes mobile unique is the size of the gap and the fact that mobile is the only media category seeing growth in consumer usage.

According to Meeker, if spending reaches the level of time spent, mobile represents a \$12B opportunity in the US alone. For marketers to make the most of mobile they need to deal with a number of challenges – issues of addressability, attribution, ad format, and more. Mobile must also provide the key capabilities marketers have come to rely on in the online world:

- **Conversion tracking** – the ability to identify the path that led a consumer to take an action
- **Frequency capping** – the ability to limit the number of impressions seen by a customer or prospect
- **Audience targeting** – the ability define and reach audiences based on specific parameters
- **Retargeting** – the ability to reach audiences with messages based on past interactions

Providing these capabilities depends on solving the most pressing of the challenges marketers face: how

to recognize and reach audiences programmatically, at scale, with support for all the sophisticated buying and measurement models they expect while still managing the critical issue of consumer privacy.

This paper, written jointly by AdTruth and OpenX, describes how mobile RTB – enabled by a new approach to device identification – can address these challenges.

The requirements for success include:

- Privacy-friendly universal identification
- Efficient programmatic buying leveraging audience targeting data
- Deep analytics
- Easy implementation, use, and management

OpenX and AdTruth provide an excellent case study on how device recognition and RTB can make mobile a high performance channel for marketers to connect with customers and prospects. Audience recognition and RTB can turn mobile's potential into real benefits for advertisers, publishers, and consumers.

DETERMINISTIC VS. PROBABILISTIC

The terms *deterministic* and *probabilistic* appear throughout this white paper so a brief definition and description of each may be helpful.

Deterministic identification, which include cookies, Android IDs, IFAs, MAC addresses and other similar approaches, is based on a certain and persistent recognition of a specific device. This often means leaving a piece of code on the device, or collecting and storing a unique piece of information associated with the device.

Deterministic identification allows marketers to know with certainty that they are reaching their intended audience.

There are challenges to deterministic identifiers – particularly on mobile devices. First, cookies – the standard identifier for online advertising – simply are not stored on many mobile devices. Likewise, Local Stored Objects (essentially Flash cookies) are also ineffective on iOS and Android devices, which do not support Flash.

Finally, deterministic models raise privacy concerns because of the permanent connection they make between a device and a user.

Probabilistic identification, which includes the type of recognition provided by AdTruth, creates a device profile based on a large number of common parameters such as device type, OS version, time zone and system language. This profile allows marketers to target their messages with a high probability they will reach the intended audience. In most cases, this probability is greater than 80 percent, which is more than sufficient for marketing use cases.

Probabilistic identifiers are immune to many of the challenges facing deterministic ones. First, they leave no cookies, code or other residue on a user's device. Second, they collect no personally identifiable information (PII) or device-specific identifiers. Third, they function equally well on any device and in any use case (using an app or browsing the mobile Web).

The probabilistic model provides marketers with what they need to recognize and reach customers and prospects without running afoul of privacy concerns. For these reasons, probabilistic identification is ideally suited to the evolving needs of marketers.

The Challenge

We know there are billions of devices out there. We know each of those devices is in the hands of a person who is the customer or prospect of a marketer. We know these marketers want to be able to use programmatic models to discover, understand and engage their customers. Unfortunately, the ability to recognize this vast mobile audience at scale has been limited. In fact, based on a survey of mobile marketers conducted by the Mobile Marketing Association, [48 percent](#) of respondents cited tracking and measurement as their greatest concern when it comes to mobile advertising.

While traditional online advertising has been fueled by deterministic device identification – like cookies, Android IDs and IFA – this approach is not a solution for the mobile market. The mobile market as we know it is only six years old (hard to believe, isn't it) and we've already seen so much change and turmoil. UDID has come and gone, Android IDs face fragmentation issues, and overlap occurs when a

single device is recognized multiple times depending on the use case. And to top it all off, cookies themselves will be out of the picture entirely within the next five years according to Paul Cimino, VP & GM of the Brilig Digital Data Solutions division of Merkle. This will present *all* marketers with some very big challenges:

- **Lack of audience recognition.** This is driven by a combination of technical problems (e.g. cookies and LSOs don't work), privacy concerns around the use of deterministic IDs, and the control of these deterministic IDs by third parties.
- **Lack of efficiency.** There is no single way to easily buy advertising across desktop and mobile. There is massive fragmentation of device identification leading to data loss, more privacy concerns, and operational pain. All of this means costs go up, ROI goes down, and advertisers face threats to their reputations.

- **Privacy Problems.** Knowing a device uniquely opens the door to data leakage and growing mistrust from consumers, etc.

Without deterministic device identification, marketers may wonder how they can buy and measure the reach and effectiveness of mobile, how they can justify moving budget to mobile from other channels

or how they can apply their valuable customer data without ceding control of it to any third-parties.

These are all important issues. Fortunately, there are answers. By taking a probabilistic approach to device identification, advertisers and publishers can set the standard for audience engagement.

“ Running one of the worlds largest ad exchanges, we recognized that buyers needed a more effective approach to target their audiences on mobile, and publishers needed a smarter way to accurately price their inventory. ”

— Jason Fairchild, CRO, OpenX

The Solution

Necessity is the mother of invention and that's certainly the case when it comes to audience recognition for programmatic mobile marketing. Since this issue was recognized in the late 2000s, innovative thinkers from across the industry have been working on potential solutions. Different approaches have been tried and tested and we are now seeing the industry settle into a broadly accepted solution:

[probabilistic audience recognition](#).

The key criteria for this solution are universality, RTB-level performance and privacy-by-design.

- Universality means the ability to work at scale across all geographies, all devices (not just mobile), and in all use cases (including the ability to recognize the same audience members, whether they are using apps or browsing the mobile Web).

- RTB-level performance means the ability to apply audience intelligence to billions of impressions at millisecond speeds, gather data that can be used to improve campaign performance, deliver the fullest range of creative execution and provide real ROI for mobile marketers.
- Privacy by design means providing these capabilities while supporting consumer privacy and respecting user signals when it comes to Do Not Track or other settings. It also means allowing marketers to have full control over their customer data without ceding it to a third-party.

Probabilistic audience recognition fuels mobile programmatic and gives marketers the tools and controls they expect and need for reach, behavioral targeting and frequency management.

Here's How It Works:

When someone visits a website, information about their device is collected. The information includes the make and model of the device, the operating system and version in use, the system time zone, language and other non-sensitive data.

These anonymous parameters are used to create a unique probabilistic device identifier. This identifier

is then "hashed" to anonymize the device. This hashed identifier is stored on the marketer's server.

When a device visits a site for a second time, data is again collected. If the information matches a stored profile, ads are displayed based on the past behavior associated with that profile.

“ The notion of a universal device recognition technology built into the RTB layer is nirvana for advertisers and publishers alike. It's a crucial step forward for us as an industry and puts us on the right path near term and longer term as well. ”

— James Lamberti, GM+VP of AdTruth

Case Study: AdTruth and OpenX

AdTruth and OpenX are coming together to provide mobile programmatic (buying mobile ad inventory on an ad exchange) powered by probabilistic device recognition.

OpenX runs one of the largest ad exchanges in the world, with more than 125 billion monthly ad transactions and 12 billion daily bids from buyers. It attracts top publishers (58% of the comScore 100 publishers) and top buyers (96% of the *AdAge* 100 leading brand advertisers).

OpenX recognized that they needed a more effective approach to help ad buyers target customers and for publishers to accurately price their inventory. Existing

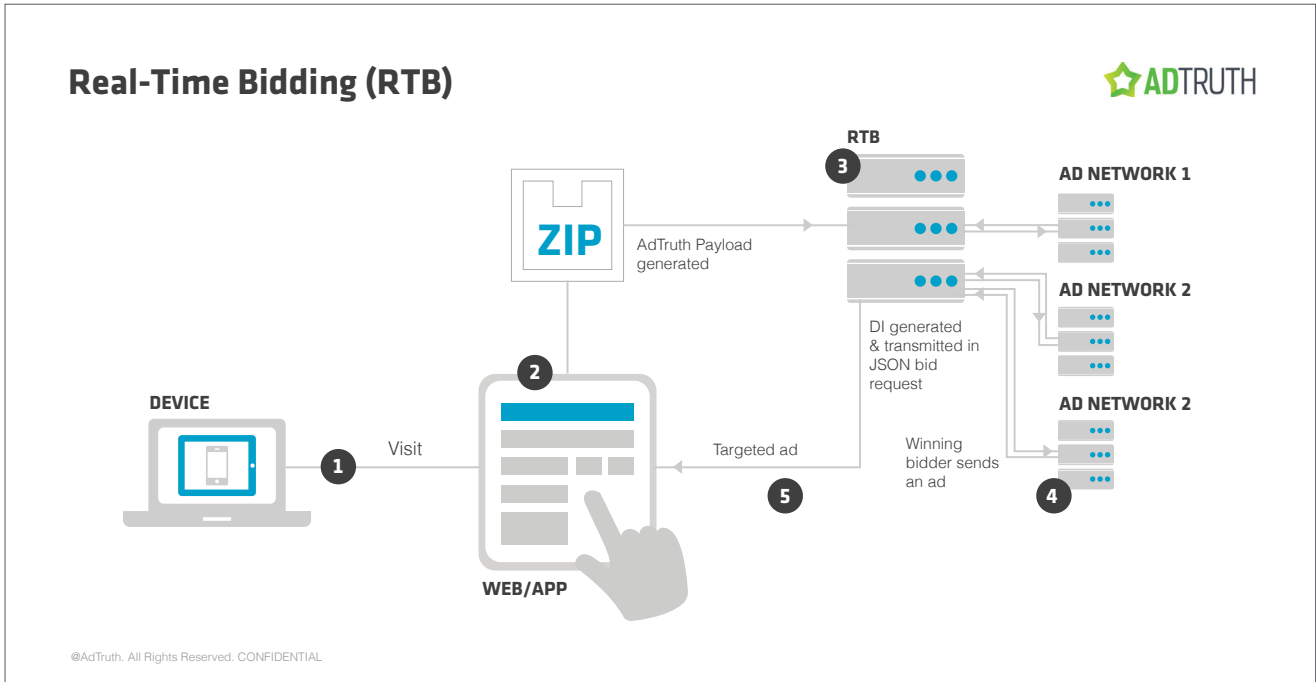
approaches to device identification either weren't fast enough for RTB, weren't effective enough to recognize users in multiple use cases or weren't as privacy compliant as OpenX wanted. With AdTruth's probabilistic approach, OpenX is providing all the performance benefits its clients have come to rely on in the dynamic mobile market.

The following graphics illustrate how AdTruth and the OpenX Market RTB Exchange Platform are working together to provide marketers with the information and capabilities they need to make mobile programmatic an effective and high value marketing channel.

How AdTruth's 'probabilistic identification' integrates with OpenX's Ad Exchange

The following graphic illustrates how AdTruth and the OpenX Ad Exchange are working together to provide marketers with the information and

capabilities they need to make mobile programmatic an effective marketing channel.



STEP 1

Device visits a website or app

STEP 2

JavaScript triggered on website by a click, impression or pixel generates the AdTruth payload which is then sent to OpenX's RTB exchange.

STEP 3

Unique DeviceInsight™ ID is generated in JSON format at the RTB layer and OpenX provides this with the bid request

STEP 4

The winning bidder recognizes the unique ID and sends a targeted ad back to OpenX RTB layer

STEP 5

A targeted ad is displayed on the device

For advertisers, mobile programmatic offers the ability to reach the growing number of mobile customers and prospects as part of their integrated marketing efforts. AdTruth's universal approach – married to OpenX's proven platform – means advertisers can audience target, frequency cap, retarget, and track conversions regardless of

device or use case.

For publishers, the programmatic model offered by OpenX and supported by AdTruth provides an open market for them to make their inventory available at a fair market price.

The Path Ahead

Marketers can now take advantage of the rapidly growing mobile channel with the same controls and confidence they have with traditional digital advertising. And publishers can make inventory available knowing it will be sold at a fair market price.

Marketers and publishers need to keep the following principles in mind as they recognize, reach and engage their audiences:

- Customers and prospects are connected with their devices so device identification is critical to success
- Device identification must meet the unique needs of mobile (multiple use cases, the importance of privacy, programmatic performance, etc.)

- Audiences must be able to be bought and sold programmatically
- The same rules and standards used in online advertising must be fully supported in the mobile channel
- A fair price for inventory – regardless of the channel – must be determined and supported through RTB

While mobile is a big opportunity for marketers, it presents challenges. Partnerships like the one between OpenX and AdTruth are simplifying the complexity and providing the infrastructure marketers need to reach their target audiences efficiently.