SOLVING THE AUDIENCE RECOGNITION CRISIS:
Achieving the Best of Both Worlds in Performance and Privacy

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☆ AdTruth
Clear Recognition

Losing Your Audience?

Executive Summary

The digital advertising industry is facing substantial challenges when it comes it recognizing and reaching highly targeted audiences efficiently and at scale. While there are more opportunities than ever to connect with consumers across a variety of devices, people's behavior, the regulatory environment and a rapidly evolving technology ecosystem all present challenges for existing audience recognition technologies.

This paper looks at the current state of audience recognition, details the available options for understanding and reaching those audiences, presents the strengths and weaknesses of the various approaches and introduces DeviceInsight™ from the AdTruth, division of 41st Parameter. DeviceInsight is the first audience recognition technology that addresses both the industry's need for performance and the growing demand for a pro-privacy approach.

The Current Landscape

If you had suggested to marketers or advertisers in 2002 that the ability to reach people would be turned upside down and inside out within a decade, they'd probably have looked at you as though you had two heads. But that's exactly what has happened. None of the systems that were put in place then – and which have supported the phenomenal growth of the Web – are up to the task of sustaining that growth into the future.

In 2002 the Web was still a homogeneous experience. A small pool of browsers on a few device types comprised the entire ecosystem. Sure, there were a tiny number of other connected devices – from game consoles to "not so smart" phones – but the numbers were small, the capabilities rudimentary and the value unknown. As a result, marketers weren't paying close attention and for five years that would continue to be a perfectly reasonable approach.

In June 2007, that thinking would begin to change.

With the introduction of the iPhone, digital marketers suddenly had a new platform at their disposal. They might not have recognized it's potential right away but everyone understood that the simple world of the Web as we knew it was in for a fundamental change. Fast-forward five years, and the reality and impact of that change are being seen and felt everywhere.

Individuals are connected like never before. All of us are taking advantage of the ripening fruits of the digital revolution. From smart phones that really are smart, to tablets that give us access to content in rich and satisfying ways, to smaller and faster portable computers, to a host of undreamed devices - people have access to a world of content and the ability to manage their daily tasks wherever they go.

This has created brave new opportunities for marketers to speak to people at the time and place most appropriate for their messages. Whole new disciplines have made it possible to reach people easily, efficiently and economically. The result is the now familiar alphabet soup of digital advertising: RTB, SSP, DSP, and DMP. All of them though are based on a single simple assumption: that somehow, advertisers know that the people they are targeting are the people they need to reach. Without this assumption, much of the free Web we are so used to would become a pay-to-play network. Unrecognized by most, the free Web has been built on the premise that targeted ads could be served to the readers of content – and keep the medium operational.

There have been a number of attempts to make the connection between an individual, an audience and an impression. These attempts have met with varying degrees of success or failure based on individuals' behaviors, the regulatory environment and the forward march of technology.

There are also a number of options available to marketers to recognize and reach their most important audiences, regardless of the platform they are using or the communication channel used. The following section looks at how cookies, so called "perma-cookies," device fingerprinting and AdTruth's DeviceInsight operate and perform on traditional computers and mobile devices. This isn't intended to be a thorough review of every technology but rather as a primer on what is available and how effective and compliant each approach is in the market.

Current Market Challenges

We've come a long way from a world dominated by the browser. Even when the original iPhone came out it relied on the browser as the center for content delivery. But now the explosion of apps and the expansion of device types mean that the number and variety of platforms will only increase in the future.

Even before the dramatic explosion in mobile advertising and the increased ability to target with data, privacy had already become a concern in the industry. In Europe, regulators have been thinking about – and now passing– new laws to control how data is collected and used. Here in the U.S. the FTC has sought to introduce new standards for privacy. In response to regulatory pressure, industry has tried to find solutions of its own – such as Do Not Track and AdChoices.

The first challenge is the public at large. In the early days they looked for ways to limit the advertising that reached them. This was often done with ad blockers and at first the intention was simply to improve page performance by reducing the amount of data that needed to be loaded. Over time, as bandwidth improved, that concern has evolved into privacy. Beyond ad blockers, consumers are turning to private browsing, regular clearing of their cookies and even surfing through proxies.

Mozilla Firefox's® Do Not Track™ Feature

The Current Options

Cookies and Ever-Cookies

Cookies are the old guard of audience identification. They've been around for nearly 20 years, but in that time they have grown stale, have been overused and no longer work as they once did. The idea is simple: install a small text file on a system and a Web server can identify it whenever that system returns to a site. In the world of first-party relationships – between a customer and Amazon for example – this makes sense. Returning customers are served pages related to past behaviors, purchases and preferences.

One of the challenges with cookies is that they have moved way beyond first-party relationships. Sites that may collect data on visitor behavior can sell that information to third-parties for marketing and targeting activities. Tracking cookies can be used to identify a user and their activities across multiple sites. While this can be a rich source of data it is also a source of many privacy concerns.

Another issue with cookies, as mentioned above, is the fact that many mobile devices simply do not store them well. While cookie files are typically very small, users may end up with hundreds of them on a device. Even with the ample storage of today's mobile devices, few support storing them beyond a specific session and automatically clear them when a mobile browser is closed.

Individuals have also learned to clear their cookies, either by deleting them manually or by telling their browser not to allow certain data to be set. In addition, a growing number of people are surfing the Web in "private mode" which does not store cookies. Below is an example of the cookie control preference panel for Google Chrome.
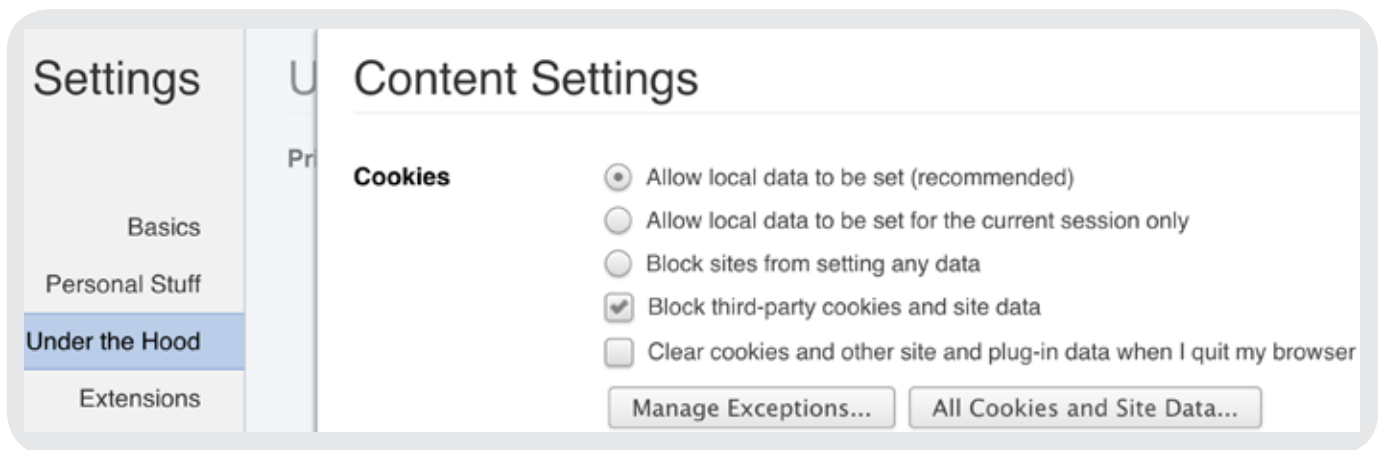
Another problem with cookies is their short shelf life. Between user behavior and surfing patterns, cookies tend to last only a few weeks at best.

Given the amount of control users have over cookies and the mobile limitations, some tracking and technology companies have resorted to permacookies or evercookies. There are many names for this but the approach is essentially the same – to hide the "cookies" on a user's system in a location neither the user nor the browser expects or is likely to find. Many view it as sneaky and surreptitious. It also has many of the inherent limitations of traditional cookies in terms of freshness of data and privacy concerns.

IP Address

Another older technology that is getting a new lease on life due to the challenge of identifying audiences is IP targeting. This approach uses the Internet Protocol (IP) address of a system to deliver targeted information. You can imagine this approach as being akin to targeting based on Zip Codes. General information on people living within a certain Zip Code is known – income, educational attainment, household size, etc.

By overlying IP address information – which is even more granular than Zip Codes – on top of what is known based on geographic location, a marketer can make certain assumptions and audience targeting decisions.

While this approach may seem fairly benign, it faces two challenges. The first is that it provides far less detailed audience data than other approaches. This is easy to understand: IP Targeting doesn't look at specific online behaviors, only real-world generalizations. The second is that it does not work with mobile devices for two reasons: as an individual moves from place to place their IP address may change and many mobile users will share the same IP address depending on the configuration of the proxy servers used to route their data.

While there are situations when targeting based on geo-location make sense, there are other times when it does not and IP targeting isn't able to make this type of distinction.

Device Recognition or "Fingerprinting"

Device recognition, also known as Device "Fingerprinting", collects data on a specific device, phone or tablet and creates a profile of the device that can be used for audience targeting purposes. This approach has certain advantages. It can work on any device; it is difficult for a user to remove or disable (they must either opt-out or enable Do Not Track on their browser); current regulatory approaches do not yet apply; and fingerprinting permits a rich user profile to be developed. However, the word "fingerprinting" is really a misnomer, as the technology is neither permanent nor 100% accurate.

Summary

Despite the range of user-tracking options described above, none are perfectly suited to the audience identification needs of today's digital marketer. Some approaches may work for certain situations, but all have real and serious limitations. At AdTruth we have taken a new, pro-privacy approach to audience identification that meets the needs of digital marketers, respects the reasonable privacy concerns of consumers and regulators and is capable of working with any device – now or in the future.

We call our approach DeviceInsight and the following section provides details on how it works and why it is both pro-privacy and "fair game" in a world that expects their content for free. This is important because at the end of the day, when users are asked "do you like to be served ads during your game?" most say "No." Yet, when you ask "are you willing to pay $1 to get the ad-free game?" most will say "No" again. A viable short term and long term alternative is badly needed.
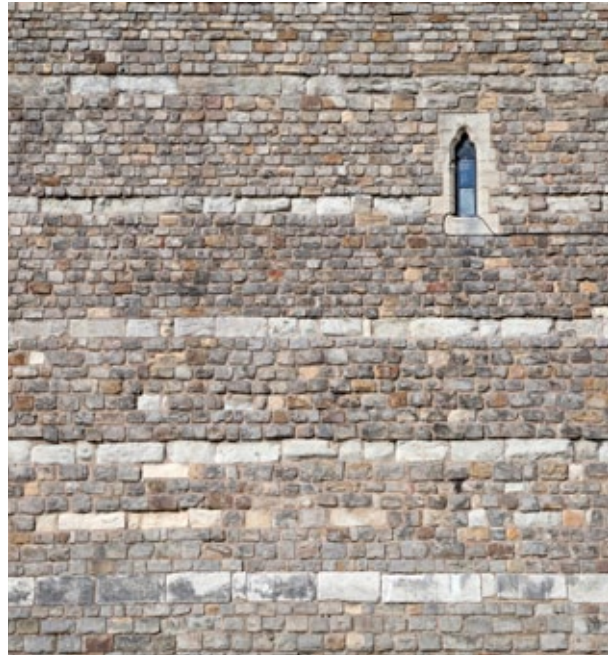
AdTruth's DeviceInsight History

Since 2004, AdTruth's parent company - 41st Parameter – has worked with the world's leading financial institutions, airlines and e-commerce retailers to help protect their customers and their businesses from fraud. We have done this through our unique ability to recognize a returning device. We realize that even if a user may enter the correct credentials, the device may not belong to the rightful owner.

The technology behind our approach is based on a wide range of "parameters" associated with every device we encounter. These parameters are based on open APIs, including but not limited to operating system, time, time zone, language, etc. What it does not include is any personally identifiable information (PII). Regulators and legal experts around the world have evaluated our approach and they have confirmed that the data we collect raises no privacy concerns.

About AdTruth

We have shared our expertise and insights on device recognition with the industry. AdTruth is founded on being a good citizen in the ecosystem and be at the vanguard of privacy-friendly device recognition – to support consumers, publishers and advertisers. To achieve our pro-privacy goal, we are:

- Active members of the W3C Tracking Protection Working Group

- Active members in the Mobile Marketing Association (MMA)

- Active members of the Internet Advertising Bureau (IAB)

- Recognized by Mozilla for our support of Do Not Track

- The first and only device recognition technology company certified by TRUSTe

Certification, memberships and industry accolades aside, our technology is based on a different model: it is probabilistic rather than deterministic. As people upgrade their devices and software their parameters change. This means that a device profile is not static or permanent, and over time it will reset itself. After that happens, the old profile is no longer effective for tracking and naturally provides the user more privacy.

This method doesn't rely on tricks or gimmicks to hide tracking tags or cookies on a system. In a nutshell, AdTruth's DeviceInsight technology obfuscates the consumer by design, as it is neither permanent nor deterministic.

Therefore, without any action by governments or consumers, AdTruth provides a **layer of privacy protection by design**. It's called fair-game tracking and it's an approach that balances the benefits of tracking to the digital media industry - across all devices, now and in the future - with respect for consumer privacy and choice. Again, if the Web is to remain a largely free and vital medium, the engine that fuels it must be given a path ahead.

How DeviceInsight Works

First, as mentioned above, DeviceInsight is probabilistic, which means it does not guarantee that the profile it generates is unique to a device. The technology gathers information on the many parameters of a device and lets the marketer know – with a high probability (typically greater than 90 percent on iOS and even higher on other platforms) – that the device is one that's been seen before and one that can be associated with a behavioral profile for targeting purposes. This approach can be used whether the device in question is a computer, smartphone, tablet, game console, a smart TV, or any device with a browser.

Second, DeviceInsight takes a privacy-by-design approach to protecting users. Because we understand that user behaviors and devices change over time – the DeviceInsight_ID evolves every 59.2 days on average on desktop devices. For the marketer this means they don't need to worry about their audience data become stale or outdated and for the consumer it means their information is rendered useless on a regular basis. In short, it provides performance and privacy-protection at the same time.

Third, DeviceInsight is installed on-premise for each of our customers. This is important for a number of reasons:

- From a performance perspective this saves precious milliseconds spent on server-to-server communication – which are critical in the world of online advertising.

- From a privacy perspective this means our customers can implement and control data protection or safe harbor laws that may be applicable to their specific jurisdiction.

- We are not aggregating and reselling user data to third parties. We believe our clients should own their data, control their data, and distribute it in a manner that respects their consumers and maximizes their ROI.

DeviceInsight respects user's privacy choices. Our API includes a flag called is DNT. Our customers can use this flag to respect consumer choice and remain compliant with relevant regulations. The same is true for approaches meant to limit data collection for online behavioral advertising (OBA). If a user has opted out, DeviceInsight provides all the options necessary to honor the user's choice. As future consumer choice technologies emerge, they will also be integrated and supported by DeviceInsight. This is a core value of AdTruth: championing consumer choice while supporting our clients' growth.

Click on the image or scan the QR code to see a demo of how DeviceInsight supports DNT.

Our pro-privacy approach is unique in the industry; and so is the performance we provide to publishers, advertisers and marketers. Where DeviceInsight really shines is in the world of mobile or other non-PC devices. Not only is the technology able to identify mobile users with a high probability, it is able to do so without relying on cookies or the UDID. Clients deploying DeviceInsight today will have massive competitive advantage, thanks to our privacy compliant and device agnostic approach to consumer tracking and targeting – today and in the future. As an example, AdTruth's DeviceInsight is able to solve the problem of a single user browsing the mobile Web and then using an app. This ability to recognize a device gives us the clearest and most accurate view of the user possible.

The Near Future

The need for audience recognition has never been greater. So much depends on the ability of advertisers to deliver their messages to the right people at the most opportune time. The ability to meet that need has never faced greater challenges – from consumer behavior to regulations to evolving technology.

The way ahead may not be clear but there are some things we can make out on the not-too-distant horizon. The importance of mobile will only continue to increase and we have yet to see the new types of internet-connected devices consumers will have access to in the upcoming years. That will likely lead to sensible programs to identify and support best practices in this area. As this occurs AdTruth will continue to take an active role in supporting these efforts through industry associations and organizations.

While privacy and performance are two of the key themes for our work thus far, we will increase our research to provide insights in the future. For example, understanding how identity longevity effects audience recognition and performance over time, the economic impact of DeviceInsight as compared with other approaches and, of course, the Holy Grail of audience recognition: a universal cross-channel ID that balances consumer protection with industry performance. AdTruth is committed to helping its customers understand and address the changing landscape of the digital advertising industry. Whether it's fair-game recognition, evolving regulations or new technology breakthroughs we will be there with insights and solutions that will matter and make a difference.

About the Authors

Ori Eisen, Founder and Chief Innovation Officer

Ori Eisen has spent the last fifteen years in the information technology industry, and is respected for his business knowledge and leadership. His background includes an in-depth application of innovative solutions for identifying any device and preventing business to consumer e-commerce fraud. Prior to launching AdTruth and 41st Parameter, Ori served as the Worldwide Fraud Director for American Express focusing on Internet, MOTO and counterfeit fraud. During his tenure with American Express, Ori championed the project to enhance the American Express authorization request to include Internet specific parameters. Ori has an extensive background in developing system infrastructure and implemented solutions, and he is highly regarded in the information and payment technologies industry as a noted leader and technology innovator. Based on this reputation Ori is often quoted by industry insiders, and receives numerous invitations to appear as a keynote speaker for industry events and conferences and currently serves on the Americas Advisory Board for the Merchant Risk Council. Ori holds a Bachelor of Science degree in business administration from Montclair State University.

James Lamberti, General Manager

James Lamberti, brings more than 19 years of experience to AdTruth, 41st Parameter's digital media division. He is well versed in all aspects of marketing and had extensive executive management experience gained at a number of successful ventures. Prior to AdTruth, James served as vice president of global marketing at InMobi – the largest and fastest growing independent mobile ad network. This experience provides him with unique insights into the evolving mobile ecosystem. While at InMobi, James led demand generation efforts that produced measurable success. In addition, he was responsible for establishing the company as a global marketing presence in the mobile ad space. Prior to InMobi, James' positions include senior vice president at comScore – one of the global leaders in understanding web usage – where he focused on analytics, tracking and privacy. He also has strong experience in consumer packaged goods due to his time as an executive with The Clorox Company. James graduated with Honors from Colby College with a BA in Economics.

To learn more about AdTruth, visit www.AdTruth.com

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