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State of supply quality in mobile programmatic

How fraud, viewability, and ad blocking impact the mobile advertising ecosystem

Executive summary

Supply quality is one of the most important aspects of any mobile ad campaign. Buyers care deeply about a broad range of issues that affect supply quality. Three particular components that affect supply quality have recently taken center-stage in mobile advertising: fraud, viewability, and ad blocking. While these issues aren't new to digital advertising, they are a new focus for mobile — particularly because they manifest in mobile differently than other digital advertising supply sources.

This white paper series seeks to explain how fraud, viewability, and ad blocking are impacting the mobile advertising ecosystem today so that marketers have the information they need to be successful. Additionally, we focus on the variations in how these issues impact mobile web versus mobile in-app supply.

It's key for buyers to understand these issues in depth in order to optimize the effectiveness and efficiency of the ad dollars they are spending. And it's important for players in the industry to work together in addressing these issues to maximize the value of mobile advertising for everyone involved.

Part I

The state of fraud in mobile programmatic

In the first part of this series, we focus on how fraud impacts the mobile advertising ecosystem.

The basics

Integral Ad Science defines fraud as "the deliberate practice of attempting to serve ads that have no potential to be viewed by a human user" [1].

Forrester defines fraud in digital advertising as "characterized by reaping financial rewards through deployment of technologies that mislead advertisers on where their ads are running and/or who or what is clicking and interacting with those ads" [2].

Ultimately, fraud impacts digital advertising when bad actors develop methods and technology to gain monetary benefit from the ad industry without providing any value
in return. Fraud affects every pocket of the ad industry — and as mobile advertising continues to grow, industry leaders must leverage learnings from desktop and be proactive in mitigating the challenges that arise.

The various types of fraud on mobile today

A Forrester study defines types of mobile fraud as "bad traffic, spoofing, phantom apps, in-app ad stacking, mobile emulators, location manipulation, and redirects to drive downloads." Forrester provides strong definitions for each of these in their 2015 report "Fraud And Fat Fingers Distort The Mobile Advertising Landscape" [2].

Forensiq, White Ops, and Moat are a few companies in the industry focused on developing fraud detection technologies that focus on a variety of issues, inclusive of Forrester's list, which range from mobile device hijacking to bot fraud to non-human traffic (NHT). Ultimately, what's most important, however, is that these technologies ensure that an advertiser can reach a real person with an impression that's able to be seen. It's pivotal for industry leaders to be vigilant and work together in addressing these issues.

" **What makes fraud detection so complex is that fraudsters are continuously trying to find new methodologies to beat detection, as well as new avenues to perpetrate fraud. Working with with key industry players and a team that's obsessed with data-driven learning and innovation are key to staying one step ahead of the bad actors.** "

Amit Joshi, Director of Product & Data Science at Forensiq

The reality is that fraud is constantly evolving. As existing fraud techniques are detected and addressed, bad actors work to come up with new methods. The result is that the industry must always be proactive in addressing fraud across a broad array of existing and emerging tactics.

![mopub logo]

How fraud impacts mobile advertisers and publishers.

Overall, fraud causes wasted budgets from advertisers. Across all of digital advertising, the Association of National Advertisers (ANA) predicts that advertisers will lose $7.2 billion to bots in 2016 [3].

In an interview with Adweek, Michael Tiffany, CEO of White Ops, cites that fraud is worst wherever marketers grow their spending faster than the real supply. Many experts point to video supply as a medium that is at high risk for a couple of reasons. First, fraudsters follow money — and since video has the highest CPMs, it can expect the greatest impact. Further, Tiffany goes on to explain "dollars shifted to video much faster than the rate at which consumers increased their viewing of ad-supported video" [4]. With spend growing faster than supply in a high-revenue medium, it became an opportunity where fraud could make gains. Publishers, buyers, and the entire ecosystem must be vigilant to counteract the impact of fraud.

> **At every opportunity we work with our partners to monitor and block fraudulent impressions and we also rely on our publishers to ensure quality of inventory remains high. Combating different types of ad fraud requires us all to adopt strict policies across the digital industry.**

Edward Lyon, Programmatic Account Director at Essence

The future of mobile ad fraud

Everyone across the digital advertising ecosystem must focus on solving the problem together. The more vigilance taken by all companies involved, along with better tools for tracking and transparency, the industry will better identify issues and continue to come up with solutions. Tiffany points specifically to vigilance: "When the smartest bad guys figure out how to fool you, they don't tell you you're beaten. What you see instead looks like victory: fraud numbers are going down! This is a game where losing can actually look like winning. So the top action item is to reject complacency" [4].

> **Mobile programmatic is an amazing growth area for brands. Any time we can dramatically reduce fear and risk from the system, it benefits our clients and the industry as a whole.**

Krish Sailam, Director of Product Management at Cadreon

[1] Ad Fraud | Integral Ad Science. (n.d.). Retrieved June 07, 2016, from http://integralads.com/data-metrics/ad-fraud/
[2] Bidel, S., Paderni, L. S., & Egelman, W. (n.d.). Fraud And Fat Fingers Distort The Mobile Advertising Landscape (Rep.). Forrester.
[3] The Bot Baseline: Fraud in Digital Advertising. (n.d.). Retrieved June 07, 2016, from http://www.ana.net/content/show/id/botfraud-2016
[4] Bürgi, M. (2016, February 21). What's Being Done to Rein In $7 Billion in Ad Fraud. Retrieved June 07, 2016, from http://www.adweek.com/news/advertising-branding/whats-being-done-rein-7-billion-ad-fraud-169743

Part II
The state of viewability in mobile programmatic

In the second part of this series, we focus on how viewability impacts the mobile advertising ecosystem.

The basics

Viewability is defined by the Media Ratings Council (MRC) as "the opportunity to see" an ad. We can think of this concept as analogous to the billboard model. When a marketer places an ad on a billboard, anyone who drives by the billboard has "the opportunity to see" the ad. Likewise, the marketer can drive by, see the billboard, and confirm the ad has been placed.

When applying the same concept to digital, measuring the viewability of an in-app ad is the equivalent to the marketer being able to validate that consumers have had the opportunity to see their billboard by driving by. Because of the way digital advertising is served and measured to date, it's actually possible to serve unseen impressions. And since the mobile marketer can't see every single ad impression placed, viewability measurement for the marketer becomes critical.

The evolution of view ability measurement

By way of background, viewability measurement in desktop developed largely as a result of ads that appeared below-the-fold and with the emergence of non-human traffic. In June 2014, the MRC originally published Viewable Ad Impression Measurement Guidelines for desktop browser-based advertising (updated August 2015), stating that for viewable ad impressions to be counted, 50% of ad pixels must be in view for at least one continuous second for display formats, and for at least two continuous seconds
for video formats [1]. Marketers began to require third-party verified measurement to confirm that their desktop campaigns were in compliance with the MRC guidelines. Vendors, including Integral Ad Science, Moat, DoubleVerify, and comScore, were subsequently accredited by the MRC to provide desktop viewability measurement.

How viewability impacts mobile advertisers and publishers

Viewability has increasingly gained importance for both advertisers and publishers on mobile. For advertisers, it's critical because their ads can't make an impact if no one can see them. Especially as brand advertisers continue to shift budgets to mobile programmatic, they want the same viewability measurement they have come to expect on desktop [2].

> " **At Xaxis, we fundamentally believe in delivering our proprietary audience segmentation to humans who can see, and engage with our clients' ads on any addressable screen. Mobile is a powerful channel that delivers a viewable environment often with tremendous results, but mobile verification is still nascent, thus Xaxis supports the industry's governing bodies' efforts to bring uniform measurement and accountability to mobile formats.** "

Sarah Warner, VP Investment and Partnerships at Xaxis North America

Cadreon's Viewability study for desktop display highlights how viewability is strongly related to ad effectiveness across supply sources: "While the MRC standard is not a magical threshold for ad effectiveness, viewability is highly related to ad effectiveness. As viewability increases, so does consumer attention and ad recall" [3].

On the supply side, many publishers know they need to ensure their ad placements are viewable so they can drive results for advertisers. It behooves publishers to maximize their viewable inventory to position themselves for success with buyers along this trend long term. Not only will viewability metrics be important, but viewable inventory will inherently perform better for advertisers.

The current state of viewability on mobile

Quite simply: it's evolving. There are three primary issues that need to be solved for mobile viewability and measurement to mature and become useful for the industry at large.

1 **Mobile viewability guidelines are still being determined by the MRC**
MRC viewability guidelines are not yet finalized for mobile advertising. In May 2015, the MRC published interim guidelines for mobile viewability, which align with the existing desktop standards [4]. It also assembled its Mobile Viewability Working Group to establish the viewable impression guidelines that will reflect mobile's unique environment. Along with other industry leaders, MoPub is a member of the working group, and collectively provides feedback and data directly to the MRC for guideline development.

2 **Viewability vendors are still working to scale technology that meets industry needs**
In addition to preparing for forthcoming standards, viewability vendors are working to accommodate the needs of publishers and buyers while servicing a diverse set of ad formats. Many solutions are still being accredited by the MRC and are not yet enabled on mobile supply at scale. Moat is currently the first and only MRC accredited company to measure mobile, web and in-app. Not all vendors' technology is created equally either, and already, there is variance in how well vendors are able to accommodate viewability on mobile.

3 **Viewability technology must be adopted at scale across supply sources**
In addition to vendor accreditation, mobile in-app viewability requires SDK technology to be adopted by publishers — a task requiring more effort and orchestration than simple tags applied in desktop. As guidelines and vendors continue to push forward, it will be critical for buyers to see this technology adopted at scale by publishers and supply sources.

> " No matter the channel, ads must be viewable to create value for marketers. It's pivotal for industry leaders across the ecosystem to work together to create that value. To succeed in measuring viewability across all mobile in-app supply, it takes collaboration between leading measurement providers like Integral, industry organizations, and in-app supply sources. "

Harmon Lyons, VP of Business Development at Integral Ad Science

How viewability differs between mobile websites and mobile apps

Until standards and technology have progressed to provide measurement on mobile at scale, advertisers should consider the anatomy of ad formats across mobile web and mobile in-app. There are key differences between the mobile app and mobile web experience, leading to significant differences in viewability.

Addictive Mobility notes, "for mobile web, viewability fails most frequently due to fast scrolling which pass by above-the-fold placements and ads that are slow to load. Chartbeat's 2015 Spring Quarterly estimates that in mobile web, only 27% of the ads in their sample were considered viewable. In-app ad viewability figures reveal a different story. In contrast, most in-app ad units are either sticky to the bottom of the app screen or take over the screen, in the case of an interstitial" [5]. In general, advertisers can be more confident in mobile app inventory being viewable than in mobile web supply.

Mobile app ad display

Mobile web ad display

What's next for viewability?

While standardization and measurement at scale remain a challenge, the MRC is highly focused on the issue at hand — calling 2016 "the year of mobile viewability" according to AdExchanger [6]. They are considering many diverse aspects of viewability on mobile, from the differences of a person's cognitive experience on mobile vs. desktop to the additional ad load time that could be incurred by requisite viewability solutions.

> " It's about understanding how the mobile experience differs for consumers. There are numerous ways to look at mobile viewability performance, including in view time, screen real estate, and audibility for video, all of which are part of the longer conversation about how consumers see and pay attention to mobile ads. "

Jonah Goodhart, CEO and Co-Founder of Moat

As industry leaders work to integrate technology, we can expect to see the first large-scale sets of in-app inventory enabled for measurement later this year.

[1] MRC Viewable Ad Impression Measurement Guidelines (Desktop) [PDF]. (2015, August 18). Media Rating Council, Inc. in collaboration with IAB Emerging Innovations Task Force.
[2] Cunning, J. (2016, February 18). Global Mobile Programmatic Trends Report: Premium is the next phase of mobile programmatic [Web log post]. Retrieved from http://www.mopub.com/2016/02/18/global-mobile-programmatic-trends-report-premium-is-the-next-phase-of-mobile-programmatic/
[3] Putting Science Behind The Standards: A Scientific Study Of Viewability And Ad Effectiveness [Scholarly project]. (2016, February). Retrieved from http://www.cadreon.com/wp-content/uploads/2016/02/Viewability_WhitePaper.pdf
[4] Gunzerath, D. (2015, May 4). MRC Interim Guidance on Mobile Viewable Impression Measurement [PDF]. New York: Media Rating Council, Inc.
[5] Mobile Viewability – Is in-app inflating the numbers? [Web log post]. (2015, June 25). Retrieved from https://addictivemobility.com/mobile-viewability-is-in-app-inflating-the-numbers/
[6] Schiff, A. (2016, January 15). MRC: 2016 Will Be The Year Of Mobile (Viewability) | AdExchanger. Retrieved June 07, 2016, from http://adexchanger.com/ad-exchange-news/mrc-2016-will-year-mobile-viewability/

Part III
## The state of ad blocking in mobile programmatic

In the third part of this series, we focus on how ad blocking impacts the mobile advertising ecosystem.

The basics

Simply put, ad blockers allow people to view ad-supported content while removing the ads from the experience. Ad blocking is a growing concern for advertisers and publishers alike — since products have developed that enable consumers to block ads on publishers' ad-supported mobile websites.

Ad blockers are applications (like plugins or browser extensions) that remove or alter advertising content on a mobile webpage.

With ad blocker
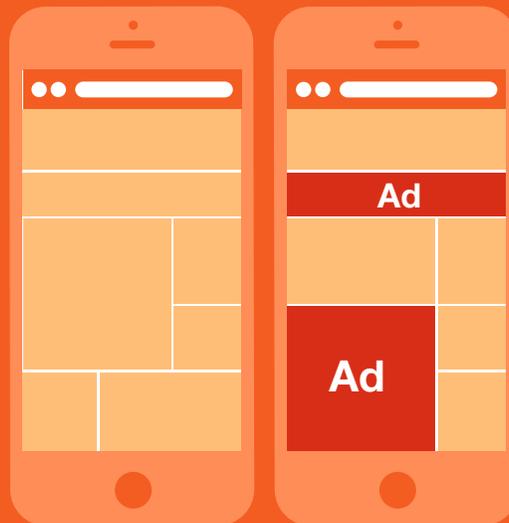
Without ad blocker

How ad blockers impact mobile web advertisers and publishers

Ad blockers impact the advertising and publishing ecosystem because, when in use, they prevent publishers from monetizing their content and prevent advertisers from reaching their audience.

Ad blocking has grown in adoption and has even been supported by leading mobile operating systems. Why? Mike Shields of The Wall Street Journal gives one possible explanation: "The business of [serving] digital ads is bloated and slow" [1]. Content in web browsers takes an increasingly long time to load thanks in part to the egregious toll taken by ad load times, trackers, and the myriad technologies used to enable ads to be transacted and tracked. As a result, web browsers like Safari for iPhone and the Samsung mobile web browser now allow third party applications to block ads that, in some cases, would otherwise impact the mobile web browsing experience.

It's increasingly important for the value exchange of content for ads to be clear for consumers. Publishers rely on advertising revenue in order to make their content freely accessible to people who consume this content.

Ad blocking apps have risen to prominence in many ways because consumers and ad blocking app creators have fought back against poor user experiences often found on mobile websites. In the mobile app ecosystem, the value exchange has not yet reached the same imbalance. And the ad blocking phenomenon overall should be a wakeup call to the entire publishing and advertising ecosystem that consumers require a smooth user experience for the appropriate value exchange to remain in tact.

The state of ad blocking apps and how it differs between mobile websites and mobile apps

Last September, Apple released its iOS 9 software, which enabled "content-blocking Safari extensions." This allowed third party developers to create new iOS apps — providing consumers the ability to block ads they would otherwise see on ad-supported mobile websites on Safari. In a matter of days, ad blocking apps Peace and Crystal had surged to the #1 and #2 spots in the top paid apps chart for the Apple App Store [2].

In February 2016, Samsung followed [3] and released a new Content Blocker extension API, which quite similarly allowed 3rd party developers to create apps that allow consumers to block ads on ad-supported websites viewed in the Samsung mobile web browser. New apps like Crystal and Adblock Fast were quick to take advantage of this functionality and release to consumers.

While ad blocking apps quickly became prevalent for blocking ads on mobile web, the trend did not follow suit on mobile apps. Companies like Been Choice attempted to promote functionality to enable ad blocking in mobile apps, but Apple removed these from the app store because of concerns that they could compromise security [4]. Ad blocking apps, for now, are not a material issue for mobile apps. Not only is there a lack of technology capable of blocking in-app ads in mobile apps, but the reality is that the user experience hasn't created heavy consumer demand for an ad blocking solution like it has in mobile web. Thanks to faster ad load times and generally less disruptive ad formats, ad blocking apps are not a deterrent of ad supply in mobile apps today.

Ad blocking through wireless carriers

One major topic of debate at Mobile World Congress in Barcelona in February 2016 was the introduction of ad blocking through wireless carriers. UK carrier Three has collaborated with ad blocking company Shine to enable ad blocking across its network. Three maintains their goal "is to give customers more control, choice and greater transparency over what they receive" [5].

While this new technology — which has yet to be released — would also be able to block ads in apps, there are several reasons why it will likely not widely impact mobile ad supply. The Economist writes:

> "More than half the time, smartphone users connect to the internet using Wi-Fi, so they will still get ads even if their mobile operator blocks them. What is more, the fastest-growing sort of mobile advertising is "native", meaning indistinguishable from other types of content, and sometimes even encrypted. That makes network-based blocking hard, if not impossible. Then there are legal and commercial hurdles. Three is planning to let subscribers opt into its ad-blocking service, which is based on technology developed by Shine, an Israeli startup. But that may still run afoul of "network neutrality" rules, which require that all sorts of online traffic, including ads, should be treated equally. To be on the safe side, the service is likely to be offered directly through Shine. Three has given itself a few months to figure it all out. Other carriers are likely to wait and see how Three's ad-blocking efforts fare" [6].

The future of ad blocking

The vision of the Interactive Advertising Bureau (IAB) will likely play a big part in shaping the future of ad blocking. As reported by the Wall Street Journal, "The IAB is examining this issue as part of an initiative announced last year called LEAN (Light, Encrypted, Ad choice supported, Non-invasive ads). It hopes to establish a set of standards and guidelines for streamlining ads. Alanna Gombert, deputy general manager of the IAB Tech Lab, said that the movement is still in its research and experimentation stage" [1].

While the future of ad blocking is yet to be seen, one thing is clear: the user experience for viewing content on mobile websites has become deteriorated by oversized, tracking-laden digital ad files that take too long to load. To progress as an industry, the value exchange of content for ads needs to be clear and acceptable to all parties involved.

[1] Shields, M. (2016, March 28). Here's How Oversized Web Ads Are Encouraging Ad Blocking. The Wall Street Journal. Retrieved from http://www.wsj.com/articles/heres-how-oversized-web-ads-are-encouraging-ad-blocking-1459159200
[2] Toor, A. (2015, September 18). Ad blockers surge to the top of Apple's app charts. Retrieved June 07, 2016, from http://www.theverge.com/2015/9/18/9351267/ad-blockers-top-iphone-chart-downloads
[3] Perez, S. (2016, February 01). Following Apple's Move, Samsung Rolls Out Ad Blocking To Android Devices. Retrieved June 07, 2016, from http://techcrunch.com/2016/02/01/following-apples-move-samsung-rolls-out-ad-blocking-to-android-devices/
[4] Dent, S. (2015, October 9). Apple pulls ad-blocking apps that can 'compromise' security. Retrieved from http://www.engadget.com/2015/10/09/apple-pulls-ad-blocking-ads-that-can-compromise-security/
[5] Three Group to tackle excessive and irrelevant mobile ads. (2016). Retrieved June 07, 2016, from http://www.threemediacentre.co.uk/news/2016/shine-announcement.aspx
[6] Shine, but not rise. (2016, March 26). Retrieved June 07, 2016, from http://www.economist.com/news/business/21695390-ad-blocking-may-not-quickly-spread-smartphones-shine-not-rise

Conclusion

Ad blocking, viewability, and fraud are all vital topics within the entire advertising ecosystem. It's important to understand what they are, how they impact mobile advertising, and how they are characterized across various types of supply. In each case, education and transparency around the details of each topic are paramount to the industry making progress, as well as for businesses to manage their programmatic advertising in the present.

Ad blocking, while potentially a moving target, is currently centered upon impressions on ad-supported mobile websites — where applications have grown in consumer adoption to facilitate these blocks. The future of ad blocking may very well be guided forward thanks to the IAB's LEAN principles around improving mobile advertising by diminishing the negative user experience caused by bloated ad file sizes. Perhaps thanks to the smaller ad file sizes that currently exist across most mobile in-app advertising, mobile in-app supply is unaffected by ad blocking apps today.

Viewability will evolve quickly as the MRC solidifies mobile viewability standards, as vendors become accredited for measurement, and as measurement becomes available at scale across supply sources. Until standards and technology can provide measurement at scale, advertisers should consider how the anatomy of mobile in-app ads differ from mobile web ads when addressing viewability.

Like ad blocking and viewability, fraud is a continuously evolving issue impacting supply quality. Publishers, buyers, and the entire ecosystem must be vigilant to counteract the impact of fraud.

MoPub has a holistic and proactive approach to ensuring high quality supply is transacted on our exchange. We treat each of these aspects with rigor, thoughtfulness, and high standards. And we're determined to provide the transparency and quality needed to continue growing the leading mobile in-app ad exchange in the industry.

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