

# *IAB Programmatic Revenue Report 2014 Results*

*An industry study  
conducted by PwC and  
sponsored by the  
Interactive  
Advertising Bureau  
(IAB)*

July 2015

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# *Acknowledgements*

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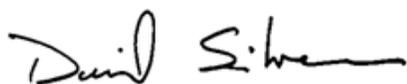
# Preface

## **About the IAB programmatic advertising study**

Over the last several years, publishers and advertisers have continued to adopt programmatic buying and selling of digital inventory into their media strategies; however, within the complex programmatic ecosystem there has been a lack of consensus around the definition of programmatic and its associated types and formats and the size of the programmatic market in comparison with the overall internet advertising market. This study, commissioned by the IAB, seeks to estimate revenue associated with programmatic selling and buying of advertising and establish a benchmark for measuring the growth of programmatic.

Working together with the IAB, PwC has been reporting internet advertising revenue estimates since 1996. These estimates are considered to be an accurate measurement of internet/mobile advertising revenues because much of the compiled data is supplied directly from the companies selling advertising online. This study builds upon PwC's history of estimating internet advertising revenues and further provides a new focused look into the programmatic segment of internet advertising.

The study was conducted independently by PwC on behalf of the IAB. PwC does not audit the information that is provided to us and provides no opinion or other forms of assurance with respect to the report's findings.



David Silverman  
PwC

## **Study methodology**

This study used three core methods to derive estimated programmatic revenues which include the following: 1) quantitative survey results administered in the 4<sup>th</sup> quarter of 2014 2) publicly available corporate and industry data and 3) in depth interviews with senior executives involved with selling and buying digital advertising programmatically. The quantitative survey was distributed to leading industry players, including ad tech vendors, web publishers, ad networks, mobile providers and other online media companies that generated revenue from programmatic. Extensive qualitative interviews were conducted between August 2014 and March 2015 with senior executives at leading agencies, publishers and ad tech companies in the programmatic landscape. Altogether 46 companies participated in the study through survey or interview. To maintain the confidentiality of participating companies, interviews and survey data collected remain in strict confidence of PwC and only aggregate data is released.

Programmatic revenue, as referred to in this report, included revenues associated with non-search internet / mobile ads that were bought or sold through a programmatic channel including revenues that were derived from both publishers and ad tech companies. To achieve accuracy in estimates, revenues associated with traffic acquisition were excluded to avoid double counting of revenues.

Throughout the course of this study we found pockets of definitional misalignment across the programmatic ecosystem. As a result, some participants were unable to provide us with a breakout of programmatic revenues beyond aggregates in the categories requested. This was due in part from companies not being able to align and report revenues segmented by our requested programmatic types and/or formats for this study.

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Additionally, we found occurrences where companies played multiple roles within the programmatic ecosystem. For instance, some companies operated as both a publisher and as an ad tech provider adding an additional layer of complexity when estimating programmatic revenues.

As a result of the limitations in certain survey respondents' ability to provide requested data breakouts, estimates were made based on publicly available information or through information that was derived from other sources. When reliable alternative sources were not available, we did not provide deeper disaggregation of breakouts.

This report is representative of the 2014 programmatic landscape and does not address more recent programmatic developments such as the decentralization of agency trading desks (ATDs) or native programmatic.

# *Executive summary*

## *Key trends underlying 2014 results*

**Programmatic revenues totaled \$10.1 billion in 2014 comprising approximately 20% of total internet advertising revenues (\$49.5 billion)<sup>1</sup>, inclusive of mobile and comprised a majority of display related revenues.<sup>2</sup>**

Programmatic revenues made up approximately 52% of display related advertising (\$19.6 billion) in 2014<sup>1</sup>, while non-programmatic display related revenues comprised the remaining 48%.

**The majority of programmatic inventory was bought and sold through Open Auctions, but as this study will examine, we expect a shift to Other types (i.e. Private Auction, Unreserved Fixed Rate or Automated Guaranteed) in the next few years.**

Open Auctions made up approximately 70% of the programmatic revenue in 2014, but we foresee a shift to other types as advertisers and premium publishers see a strategic shift to buy and sell inventory within the Other types.

**Programmatic revenues from ad tech outweighed those from publishers in 2014.**

Ad tech accounted for approximately 55% of programmatic revenues, while publishers accounted for approximately 45% of programmatic revenues in 2014.

**Display banner ads were the predominant format for programmatic in 2014, but other formats are likely to increase in the near future.**

Display banner ads made up approximately 80% of programmatic revenues in 2014, but we expect more advertisers and publishers will shift their budgets and inventory toward mobile and video formats over time.

**Programmatic buying and selling are moving forward; however, sizing the programmatic industry will continue to be a challenge until standardization and increased transparency become more apparent.**

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<sup>1</sup> IAB/PwC Internet Ad Revenue Report, FY 2014. April 22, 2015

<sup>2</sup> Display related advertising includes banner ads, digital video, rich media and sponsorship on desktop and mobile devices

# 2014 programmatic environment

## **Background**

The rise of programmatic advertising has garnered significant attention in recent years; however, there have been varying definitions and wide differences in the estimates of the overall market size. Some have described programmatic as the future of advertising with a unique ability to improve relevancy, create efficiencies and drive improved profitability. Others have described it as a race to the bottom.

Ad buyers are demanding programmatic to increase their access to a broader range of inventory and deeper data, which will enable improved targeting and relevancy, resulting in greater response and /or improved ad campaign results. Programmatic tools will also enable the ad buyers to adjust ad campaigns on a real time basis and with increased buying efficiencies.

Publishers are interested in expanding programmatic selling in an effort to keep up with the buyers who are seeking programmatic opportunities. Furthermore, publishers are seeking greater operational efficiencies and expanded access to targeting data with the goal of improved pricing and higher ROIs through more relevant advertisements to the end user.

Despite these demands from both buyers and sellers, there are many questions around the continued growth of programmatic advertising. We consistently heard among the companies we spoke with that there is a lack of quality premium inventory currently available through programmatic channels, specifically with video. Initiatives around Automated Guaranteed (i.e. fixed prices and reserved inventory) and Invitation Only Auctions (i.e. unreserved inventory and auction pricing) are attempting to address this, but have not yet gained widespread attraction. We also heard concerns over the lack of transparency in the marketplace with respect to viewable and fraudulent transactions. This is further compounded by fragmentation in the industry. Because there are so many programmatic platforms and technologies offering a wide range of solutions from a fully integrated stack to niche mobile or video specific solutions, there is an increased number of touch points in which transparency can be obscured. Fragmentation has also resulted in increased costs to the ad buyer with each touch point extracting a fee for the value added service being provided.

Regardless of these challenges, one thing was abundantly clear in our discussions with the industry participants – programmatic will likely continue its significant growth as more and more ads will be bought and sold through programmatic channels.

## **Defining programmatic**

For the purpose of this study, programmatic was defined, but not universally accepted, as “machine based buying and selling of digital media including auction based methods like RTB and private marketplaces as well as the automation of direct sales, sometimes called programmatic direct.” We will further discuss this definition later in the report within the *Programmatic definitions & types* section.

# Defining the 2014 programmatic ecosystem

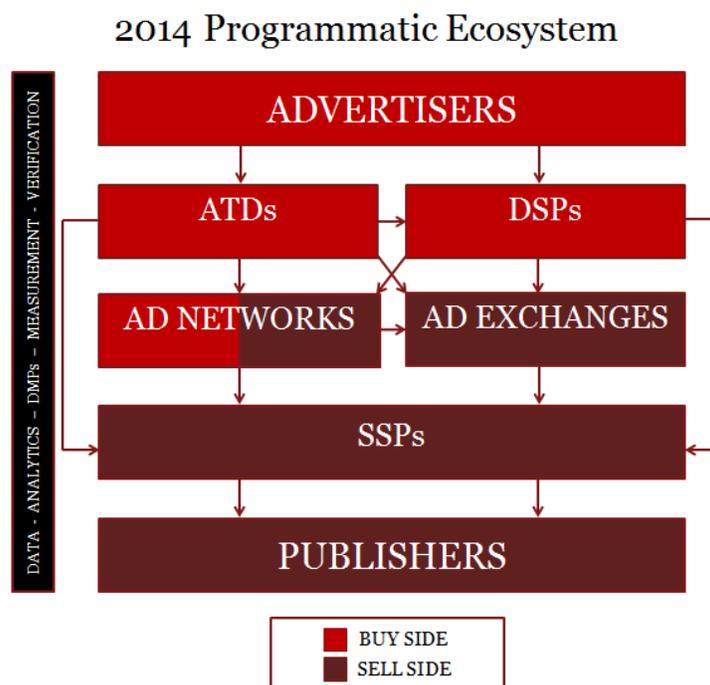
## Programmatic buying ecosystem

The programmatic ecosystem is extremely complex and navigating it is difficult even for the most seasoned programmatic veteran. Understanding the players that contribute to programmatic revenues is an essential step in sizing industry-wide programmatic revenues. In the programmatic world, the path from advertiser to publisher varies with multiple ad tech intermediaries along the way. To provide a thorough measurement of programmatic advertising revenues, we gauged revenues across the programmatic buying and selling ecosystem.

The programmatic ecosystem is made up of several technology components from the *buy side* and *sell side*. The buy side is comprised of the advertisers, agency trading desks (ATDs) and demand side platforms (DSPs). The sell side is comprised of ad exchanges, supply side platforms (SSPs), publishers and ad networks, although ad networks can fall on both sides of the ecosystem. Overlaid across the buy side and sell side is the data, analytics, measurement and verification tools along with data management platforms (DMPs). These ad tech components make up the programmatic ecosystem.

## 2014 programmatic ecosystem: through the lens of an advertiser

Looking at the programmatic ecosystem through the lens of an advertiser, there are several different paths an advertiser's dollar could take to reach the publisher. Below is a simplified process flow to illustrate the potential paths the advertiser's dollar could take, represented by arrows, to reach the publishers within the 2014 programmatic landscape. This illustrated landscape does not factor in the complexity brought upon by the proliferation of mobile and video specific solutions.



## The life of a programmatic RTB ad impression

While marketers may spend hours, days, weeks or months planning their ad campaigns, the life span of a programmatic RTB impression is only a fraction of a second. To help conceptualize the interactions a programmatic RTB impression takes throughout the ecosystem, we have outlined the process below.

### The Life of a Programmatic RTB Ad Impression in a Fraction of a Second



# *Making sense of the 2014 programmatic players*

## *Buy side ecosystem*

### *Advertisers*

Advertisers sit on the buy side and are responsible for purchasing digital ad impressions or digital inventory ultimately made available from publishers.<sup>3</sup>

### *Trading Desks / Agency Trading Desks (ATDs)*

Trading desks, known for their programmatic trading expertise, play the day-to-day campaign management role.<sup>4</sup> These trading entities can be independent or operate within an agency holding company.

ATDs are the trading arm (or trading entity) of agencies or holding companies. During 2014 this was the most common form of trading desks. ATDs, while leveraging their buying technology, can purchase programmatic digital inventory on ad networks, ad exchanges and SSPs. ATDs often charge a percentage of media spend averaging 5-15%.<sup>5</sup>

### *Demand Side Platforms (DSPs)*

A demand side platform (DSP), also called “buy side optimizer” and “buy side platform” is a technology platform that provides centralized and aggregated media buying from multiple sources including real time bidding capabilities of these sources.<sup>3</sup>

Leveraging a DSP gives marketers, advertisers and/or agencies greater access to programmatic digital inventory made available through ad networks, ad exchanges or SSPs. DSPs typically charge based off a percentage of media transacted model. DSP fees can range from 6-25%<sup>5</sup> of media spend depending on the level of managed services associated with the agreement.

## *Hybrid ecosystem*

### *Ad Networks*

Ad networks provide an outsourced sales capability for publishers and a means to aggregate inventory and audiences from numerous sources in a single buying opportunity for media buyers. Ad networks may provide specific technologies to enhance value to both publishers and advertisers, including unique targeting capabilities, creative generation and optimization.<sup>3</sup>

Historically, ad networks sold their aggregated, packaged inventory and audiences in bulks of impressions. With the rise of programmatic, ad networks began buying and selling some of their inventory at the individual impression level as opposed to bulks of impressions.

<sup>3</sup> IAB UK - Jargon Buster. Accessed May 1, 2015

<sup>4</sup> IAB Wiki – Glossary of Interactive Advertising Terms. Accessed May 1, 2015

<sup>5</sup> Ranges derived from a mix of industry sources, which were not a part of our survey, and validated through interviews

Ad networks can sit on the buy side as they can purchase programmatic digital inventory through ad exchanges or other ad networks by leveraging DSPs. Ad networks can also be on the sell side as they offer up their inventory through private market places. Ad networks typically add 30%-50% value-add mark-up fees with a few networks charging greater than 50%.<sup>6</sup>

## ***Sell side ecosystem***

### ***Publishers***

Publishers sit on the sell side and are the end seller of the digital ad impression or digital inventory.<sup>7</sup>

### ***Ad exchanges***

Online ad exchanges are auction-based marketplaces that facilitate the buying and selling of inventory across multiple parties.<sup>7</sup> Ad exchanges typically sell their inventory to DSPs, ATDs (who either license or build an in-house DSP), ad networks, and to other exchanges. Ad exchanges generate revenue from a percentage of media revenue transacted basis ranging from 7%-20%.<sup>6</sup>

Ad exchanges give buyers access to more digital inventory in real-time, more control of ad pricing at the impression level and other benefits. Similarly, ad exchanges give sellers the ability to make their inventory available to more advertisers in real-time, simplify reporting within a single view when leveraging a single ad exchange and more.

### ***Supply Side Platforms (SSPs)***

A sell side platform (SSP), which may also be referred to as a “sell side optimizer”, “inventory aggregator” and/or a “yield optimizer”, is a technology platform that provides outsourced media selling and ad impression inventory. An SSP does not provide services for advertisers.<sup>7</sup> SSPs help publishers yield the highest price for their unsold inventory in a programmatic environment including real-time bidding.

SSPs sell digital inventory on behalf of the publisher through DSPs, ad exchanges or ad networks. SSPs generally price based off a percentage of media revenue transacted through their platform. The percentage charged is typically 10-20%.<sup>6</sup>

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<sup>6</sup> Ranges derived from a mix of industry sources, which were not a part of our survey, and validated through interviews

<sup>7</sup> IAB UK - Jargon Buster. Accessed May 1, 2015

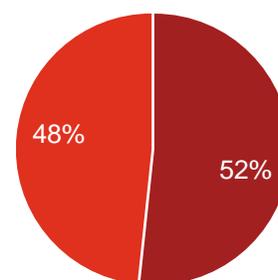
# Programmatic advertising revenue

## Programmatic revenues totaled \$10.1 billion in 2014

Total programmatic revenues in the United States reached \$10.1 billion in 2014, comprising approximately 52% of total 2014 display related advertising (\$19.6 billion) and approximately 20% of 2014 total internet advertising revenues (\$49.5 billion).<sup>8</sup>

In our first year of recording programmatic revenues, we found that programmatic driven advertising revenues surpassed non-programmatic display related revenues.

**Programmatic as a % of Display Related\* Advertising Revenues - 2014**



■ Programmatic ■ Non-Programmatic

Source: IAB Programmatic Advertising Study, IAB/PwC Internet Ad Revenue Report, FY 2014

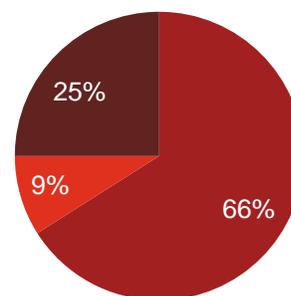
\*Display related advertising includes banner ads, digital video, rich media and sponsorship on desktop and mobile devices.

## Top 10 companies command 66% of programmatic revenues in 2014

When analyzing total programmatic revenues (inclusive of both publishers and ad tech companies), we found that online programmatic advertising revenues were concentrated with the ten (10) leading companies, which accounted for 66% of total programmatic revenues in 2014.

Companies ranked in the top 25 accounted for approximately 75% of total programmatic revenues. Remaining companies accounted for 25% of total revenues.

**% Share of Total Revenues – by Company Rank**



■ 1-10 ■ 11-25 ■ 26+

Source: IAB Programmatic Advertising Study

<sup>8</sup> IAB/PwC Internet Ad Revenue Report, FY 2014. April 22, 2015

# Programmatic definitions & types

## An overview of programmatic types

For the purpose of this study, we defined programmatic into the following four types:

### Open Auction

- Unreserved Inventory
- Auction Pricing
- One – All Participation

### Invitation-Only Auction

- Unreserved Inventory
- Auction Pricing
- One-Few Participation

### Unreserved Fixed Rate

- Unreserved Inventory
- Fixed Pricing
- One-One Participation

### Automated Guaranteed

- Reserved Inventory
- Fixed Pricing
- One-One Participation

## Programmatic is not universally defined

Over the course of this study, we found that there were differences within the market as to a universal definition of programmatic.

Programmatic, as defined in our study, is the “machine based buying and selling of digital media including auction based methods like RTB and private marketplaces as well as the automation of direct sales, sometimes called programmatic direct.”

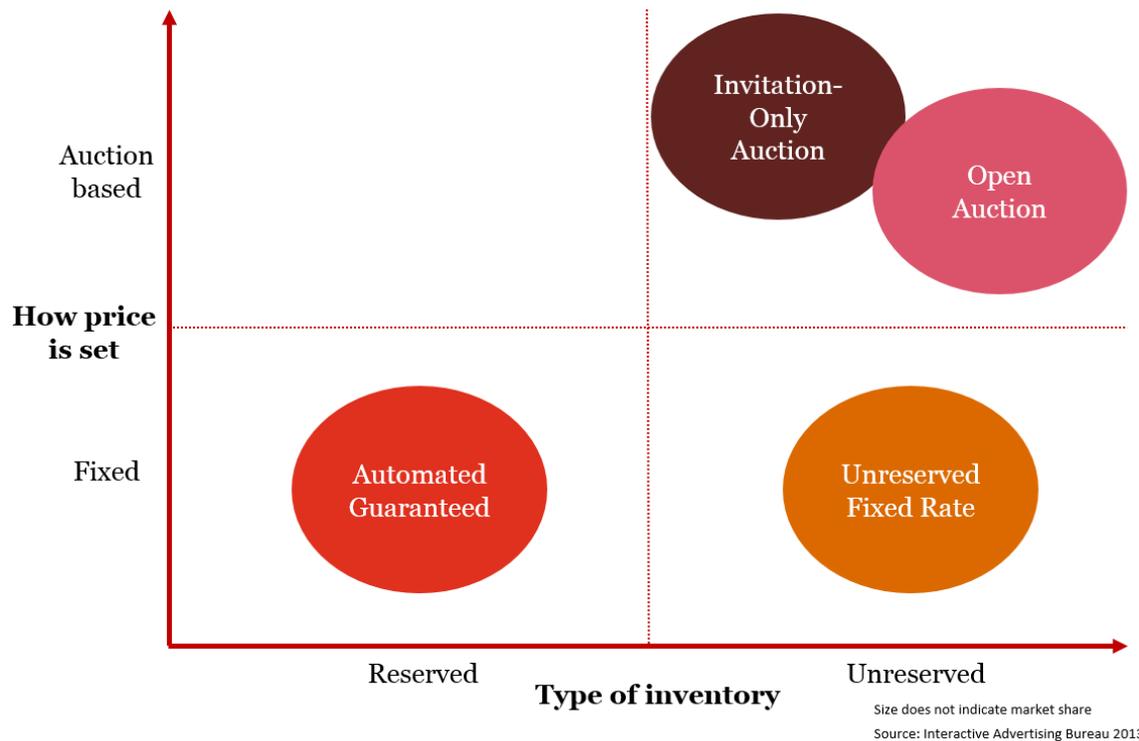
There was significant disparity within the industry on what participants considered to be programmatic. There was a consensus on Open Auction;

*Programmatic is the “machine based buying and selling of digital media including auction based methods like RTB and private marketplaces as well as automation of direct sales, sometimes called programmatic direct.”*

however, there were inconsistencies with respect to inventory that was either unreserved with a fixed price (Unreserved Fixed Rate) or reserved inventory with a fixed price (Automated Guaranteed) as some participants viewed these types as non-programmatic buying methods. One leading exchange indicated that their logic behind the disagreement was with the notion that programmatic promises a “harder working dollar.” Buy side and sell side algorithms should work to yield the highest CPM price for the publishers and find the “best” impression with the right price and audience for the buyer resulting in a harder working dollar. If the price and quantity is fixed, this hypothetical, ‘harder working dollar’ scenario could no longer exist.

This definitional disagreement also bled over into defining and reporting on programmatic types. As the term “programmatic” was not universally defined, the four programmatic types (illustrated on page 14) as we defined them (Open Auction, Invitation-Only Auction, Unreserved Fixed Rate, and Automated Guaranteed) were also not universally agreed upon during our interviews. Several survey participants mentioned their back end reporting systems were unable to break out their reporting by these four types. Due to these definitional and reporting constraints, this report only categorizes programmatic into two types: **Open Auction** and **Other (i.e. Invitation-Only, Unreserved Fixed Rate and Automated Guaranteed)**.

## Illustrating the Four Programmatic Types

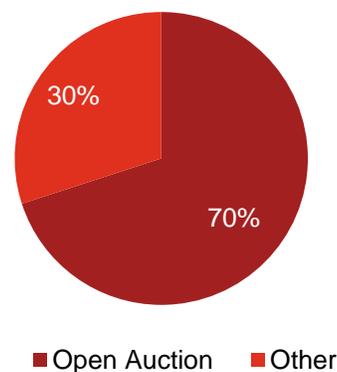


### **Open Auction accounted for approximately 70% of programmatic revenues**

We heard consistently among the companies we spoke with or who submitted revenue figures that the majority of programmatic activity in 2014 was transacted through Open Auctions.

Based on our study findings, we estimate Open Auction accounted for approximately 70% of programmatic revenues in 2014, while the Other category, comprised of Invitation-Only Auction, Unreserved Fixed Rate and Automated Guaranteed, made up approximately 30%. Differences in how companies report non-Open Auction programmatic revenues created challenges in accurately estimating the other categories. However, our survey findings would lead us to believe that no individual category within Other made up a significant portion.

**Programmatic Types – 2014**



Source: IAB Programmatic Advertising Study

### **Future state: strategic shift from Open Auction to Other**

While Open Auction made up the majority of programmatic revenues in 2014, based on our findings, we expect the Other category to gain more traction in the coming years. A leading ad tech platform executive told us that they see

that private marketplaces are becoming much more prevalent. We believe this shift is due to an increase in demand on the buy side for increased transparency (i.e. reporting, targeting and features), brand safeguarding, along with a desire from ad buyers to ensure reserved and quality inventory.

We also expect an increase in supply from the sell-side as more premium inventory is made available programmatically. A premium publisher said “we are moving away from Open Exchanges and shifting inventory to Private Exchanges” as there is better pricing (i.e. enacting price floors for optimal yield) and inventory access control. As publishers gain more control and realize greater yields within the private marketplaces, we expect there will be a greater shift from Open Auction to Other types.

*“Automated Guaranteed is seen as a ‘shiny object with huge opportunity’....”*

We found that Automated Guaranteed was the least mature programmatic type in 2014, but we foresee it growing in the near future. This statement is supported and echoed by a leading exchange that stated “Automated Guaranteed is seen as a ‘shiny object with huge opportunity’ because of its lack of market saturation.”

We expect Automated Guaranteed buying and selling to be a push for the Other type segment in the coming years for several reasons. One, more publishers will shift to Automated Guaranteed as revenue forecasting would be more predictable than with unreserved, auction-based inventory. And secondly, publishers also see added value moving away from Open Auctions as premium inventory can be reserved with a better assurance of quality and price for the buyers, which protects the commoditization of price. As these benefits are realized, we expect there will be a greater shift from Open Auctions to Automated Guaranteed.

# Programmatic revenue mix

## How ad tech plays a role within programmatic

Understanding the programmatic revenue flow from advertiser to publisher is an important component in sizing the overall programmatic market.

We consistently heard throughout our conversations with industry executives that programmatic ad tech fees are substantial – generally close to 50% or more. These ad tech fees were often referred to as the “ad tech tax” in our conversations. Ad tech tax in this context refers to the fees imposed on buyers and sellers for leveraging ad tech technology, and/or value adds from ATDs, DSPs, SSPs, ad servers and ad networks. In many instances, these fees get compounded as fees from one supplier get added to the costs of the next supplier in the programmatic value chain.

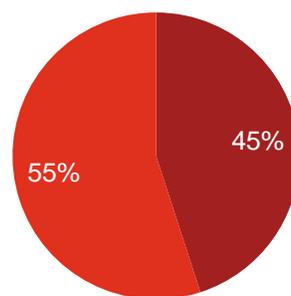
The ad tech fees imposed on buyers and sellers is not consistent, but rather can vary greatly depending on how programmatic inventory is bought and sold and the level of managed services being requested. For example, an advertiser that uses a DSP to buy programmatic inventory on an ad exchange, which receives its inventory direct from the publisher, may have less ad tech costs in comparison to an advertiser who hired an agency that uses an ATD, who then licensed a DSP to buy the same inventory. Depending on the total mix of suppliers utilized throughout the buying process – ATDs, ad networks, DSPs, etc. – the amount of ad tech fees can increase substantially.

## Ad tech programmatic revenues outweigh publisher revenues

For this study, we looked at the amount of revenues that were getting to the end publisher versus the industry players prior to the publisher. We refer to this as “ad tech” revenues vs. publisher revenues.

From our findings, we estimate ad tech revenues represented approximately 55% of the programmatic revenue pie in 2014 and approximately 45% of programmatic revenues ultimately found its way to the publishers.

**Publisher vs. Ad Tech Programmatic Revenues - 2014**



■ Publisher ■ Ad Tech

Source: IAB Programmatic Advertising Study

# 2014 programmatic ad formats

## 2014 programmatic revenues were predominately display banner ads

From our findings, a large majority of programmatic revenues came from display banner ads in 2014. We estimate approximately 80% of programmatic revenues in 2014 were from banner ads.

With an overabundance of display inventory, leveraging programmatic selling provides publishers an ability to monetize unsold ad space – making display the logical format to lead the charge in programmatic.

*Approximately 80% of programmatic revenues in 2014 were from display banner ads.*

As we see programmatic advertising continue to expand, leading industry players suggest that high growth formats, such as mobile and video, will need to overcome certain challenges to gain greater traction within programmatic.

## Mobile programmatic

There are varying industry estimates to the degree in which mobile ad revenues are programmatically driven, with some reports indicating that there is a high degree of programmatic buying in mobile. In our survey and discussions we found that this wasn't necessarily the case.

While growing, mobile programmatic adoption is behind that of programmatic desktop. Challenges in the ability to effectively track and target audiences across devices have hindered mobile adoption of programmatic. Social platforms are an exception to this as they have access to their customers' logged-in data. By leveraging logged-in data, social platforms can more accurately target across devices. Because of this advantage, we saw a much higher adoption rate for mobile programmatic within social than within non-social categories.

Another challenge that burdens the adoption of mobile programmatic is in the natural data and targeting disconnect that occurs across mobile web, mobile applications (Apps) and desktop. For example, behavioral data that is available in Apps may not be available outside of those Apps.<sup>9</sup> As a result, mobile programmatic buying strategies may not always translate seamlessly outside of mobile or even between in Apps versus mobile web.

Solutions that bridge the audience gap across devices may also bring about the potential of unlocking the disparate signals, bringing them together to create a stronger audience profile and ultimately an enhanced ability to programmatically target relevant ads based on user behavior and location regardless of device.

Although mobile programmatic does face hurdles, it is a growing force of programmatic. Across the industry there have been mergers and acquisitions by some of the largest ad sellers and platforms in an effort to increase mobile capabilities, thus further demonstrating the belief that mobile programmatic is a critical component to growth.

We expect to see mobile programmatic grow as the challenges brought about from cross device targeting and data gaps are addressed and as we continue to see internet advertising revenues shift to mobile.

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<sup>9</sup> IAB - Mobile Programmatic Playbook. Accessed May 1, 2015

## *The case for premium programmatic video*

Like mobile, we found that the adoption of programmatic digital video lagged behind that of display banner ads in 2014 although for a different reason. From our study, we heard that the adoption of programmatic video in 2014 was hindered partly due to the scarcity of available premium video inventory. As eyeballs have shifted away from traditional TV viewing to newer forms of video consumption, including online and mobile devices, brands want to connect with their audiences at the right time and right place. For video that often means through premium publisher inventory, but it is often not available for advertisers via programmatic channels.

*Securing premium programmatic video inventory has been a challenge for advertisers.*

Through our discussions, we repeatedly heard that premium video inventory is selling out through traditional digital direct sales channels. As a result of this demand, premium video publishers are able to sell their inventory directly and can negotiate deals with advertisers at a premium price. Inventory that goes unsold (remnant) on premium video publishers, which is often less valuable, is then pushed to the programmatic channels.

While multiple industry executives told us in our interviews that premium programmatic video inventory is limited, they expect growth in this area. We suspect that until there is significant growth in premium inventory, the projected growth will likely come from Invitation-Only Auctions and through Automated Guaranteed buys where publishers can better manage pricing on their existing premium inventory.

With major players investing in programmatic video capabilities and premium inventory partnerships, along with the significant increase in video views within social sites, we will likely see the projected growth come to fruition.

# Driving programmatic forward

There is no doubt that programmatic buying and selling is going to continue to grow, but the industry will need to overcome the obstacles that were prevalent in 2014 to reach its full potential.

As we reached the end of our study, we found ourselves asking two questions: *how do we get a better sense of the size of programmatic revenues going forward* and *what changes are needed to push programmatic industry adoption?*

## How to better size programmatic revenues moving forward

To provide a more exhaustive breakdown of programmatic revenues across types, formats and industries, we believe the following changes are needed in the industry:

- 1. Standardization & adoption of programmatic definitions:** We've discussed in this study that the current programmatic landscape is complex and is a common source of confusion among those on both the buy and sell side. The outcome of our study has confirmed that there is not a universally adopted definition of

*The absence of a universally adopted definition of programmatic hinders a more robust sizing of programmatic revenues.*

programmatic, nor is there standardization of programmatic types. As a result of the prominence in variations of what programmatic is and is not, it is difficult to obtain uniform revenues across breakouts. It is possible that companies participating in programmatic advertising may be under or over reporting programmatic revenues at an aggregate and breakout level. For

example, what one company may consider Automated Guaranteed, another may consider as non-programmatic revenue. A universal definition of programmatic and industry-wide adoption needs to occur to be able to accurately size the programmatic landscape. In particular, the industry needs to have uniform agreement around non-Open Auction programmatic types. Throughout our study we found the largest discrepancies across companies in these categories substantiating the notion of industry misalignment.

- 2. Increased dollar transparency:** With our estimate of approximately 45% of programmatic revenues reaching publishers, understanding where dollars are distributed across the ad-stack from advertiser to publisher can be quite disorienting in the current programmatic landscape. How does that opaqueness impact advertiser net pricing and advertising revenues relative to the value add of the ad stack? Are the added costs of programmatic buying and selling resulting in stronger overall revenues than traditional direct sales?

## Growing industry adoption of programmatic

In 2014, programmatic revenues exceeded that of non-programmatic display related revenues, but only slightly. With the notion that programmatic promises greater efficiency in the ad process, increased audience targeting, improved profitability and the significant prospect of programmatic growth in both mobile and video, programmatic should be poised to take off. So what has been holding it back? How do we push forward?

- 1. Reduce confusion:** Programmatic is today's flavor of the month, driving many participants on both the buy and sell side to go programmatic without fully understanding the landscape and determining which type of programmatic is right for their business.

As the rush to programmatic continues and more and more companies enter the market, confusion will likely only increase. As market complexities increase, will advertisers continue to push towards programmatic if they don't thoroughly understand where to invest and more importantly the incremental value of that investment?

A unified understanding of programmatic will provide greater clarity for both buyers and sellers. Beyond reducing confusion in definition, simplification of the landscape will play a role as buyers and sellers both desire greater transparency and understanding of the landscape.

- 2. Increase advertiser trust:** Buyers of programmatic want to know where their ads are being placed and if those ads are being viewed by their targeted audience. It comes back to the adage: Right People, Right Place and Right Time. In its current state, the Open Auction market is perceived as a big black box for advertisers, and demand from advertisers for greater control over brand safety, ad verification and performance measurement will require better solutions. Enhancements to, and the standardization of viewability metrics are necessary to improve the perception of programmatic.

*The programmatic landscape needs to become more transparent to secure advertiser trust.*

As the standardization of viewable impressions continues to be debated, major players are starting to add viewability metrics to reporting and other programmatic players are beginning to offer “Money Back Guarantees” to alleviate viewability concerns within the market. While capabilities to optimize viewability are emerging, they are not yet mature enough to be leveraged as a transaction method.

Viewability concerns are not the only elephant in the room when it comes to sanitizing the validity of digital inventory. Bot traffic and other fraudulent activities pertaining to non-human interaction with digital inventory is widespread. Detecting and reporting on ad fraud within the programmatic ecosystem is a significant concern for advertisers. Programmatic supply sources need to make fighting ad fraud a priority, taking action by increasing transparency and improving fraud detection (inclusion and policing) to help alleviate advertiser concerns.

Advertisers want to be reassured that the dollars they are spending programmatically are actually driving increased results, reaching their targeted audiences, and that Brand quality is upheld.

- 3. Increase quantity of premium inventory:** The Open Auction market allows for publishers to monetize excess inventory, but it can't be a rush to the bottom. Buyers want quality, premium inventory, particularly for video. As the demand for premium programmatic inventory increases, publishers will need to adapt and find ways to sell premium inventory programmatically through Other (non-Open Auction) types. Publishers need to identify the organizational operating models necessary to grow revenues as they shift away from traditional direct sales channels to meet demand.

*Publishers need to meet the demand for premium programmatic inventory.*

- 4. Advance cross device targeting capabilities:** As mobile advertising and revenues continues to grow, finding solutions to increase mobile adoption of programmatic will be paramount for overall growth. As personalization and audience targeting become greater influencers of marketing activity, mobile advertisers and technology players will need to find new ways to target and measure audiences across devices that are not dependent on a user cookie. At the same time, advertisers need to be mindful of the concerns around user privacy and data collection.
- 5. Enhance the quality and value of programmatic selling:** As the buying and selling of ads becomes automated, it will be critical to make sure that programmatic expands the volume of quality inventory by efficiently connecting premium inventory to advertisers with premium brands. The shift to these Other categories may be the way to enhance the value delivered to advertisers in programmatic. Although we predict a greater role for these Other categories, the abundance of display inventory and the continuing increase in mobile inventory will likely provide increased usage of Open Auction as this currently remains the most cost effective way to monetize excess inventory.
- 6. Adaptability of publisher operations:** Buyers have been driving the demand for programmatic while many publishers have been left on the reactionary end. Publishers recognize the impact of programmatic but

*Monetizing inventory cannot come at the cost of the quality of ad inventory in the shift to programmatic.*

many have not yet identified their strategic approach to making it work. Publishers will need to identify new value propositions that can help differentiate their offerings, provide greater availability of programmatic inventory (quantity, format, quality) and re-envision ad sales operations.

7. **Consolidation within the programmatic ecosystem:** With the fragmented ecosystem adding to the lack of transparency, many believe the system is ripe for consolidation. While there have been significant acquisitions over the past few years, the pace of new company development seems to outpace the consolidation. Furthermore, some of the major players that are leading the consolidation also happen to be significant providers of content, which could lead to increased conflicts of interest. The growth and consolidation of platforms that are independent of the buyers and sellers may be critical to maintain fair and competitive pricing.

Programmatic has become a strong contributor to internet advertising revenue. The potential for growth is clear, but demystifying the programmatic landscape is critical to reach this potential.

# Appendix

## Definitions of programmatic types

1. **Automated Guaranteed** – This type of transaction most closely mirrors a traditional digital direct sale. The deal is negotiated directly between buyer and seller, the inventory and pricing are guaranteed, and the campaign runs at the same priority as other direct deals in the ad server. The programmatic element of the transaction that differentiates it from a traditional direct sale is the automation of the RFP and campaign trafficking process. Negotiation through to fulfilment can be, should the publisher desire, completed within the technology platform providing the automated reserve functionality.
2. **Unreserved Fixed Rate** – This auction type is very similar to an Open Auction except a publisher restricts participation to select buyers/advertisers via Whitelist/Blocklist. A publisher may choose to not participate in an Open Auction and only run an Invitation-Only Auction. It is important to note that an Invitation-Only Auction is an auction and buyers will be expected to bid on inventory. A publisher may choose to expose different information such as transparency or data, through the use of Deal IDs or Line Items to add value to this select group of buyers while participating in this tactic.
3. **Invitation-Only Auction** – This auction type is very similar to an Open Auction except a publisher restricts participation to select buyers/advertisers via Whitelist/Blocklist. A publisher may choose to not participate in an Open Auction and only run an Invitation-Only Auction. It is important to note that an Invitation-Only Auction is an auction and buyers will be expected to bid on inventory. A publisher may choose to expose different information such as transparency or data, through the use of Deal IDs or Line Items to add value to this select group of buyers while participating in this tactic.
4. **Open Auction** – An Open Auction is the Wild West of auctions. A publisher will generally allow any and all buyers to participate in accessing their inventory through this tactic. Usually there is no direct relationship with the buyer. Publishers may choose to use Blocklists and floor pricing to prevent advertisers from gaining access. On the advertiser side they are often unaware of what publisher they are buying on. DSP's usually present a list of exchanges/SSPs to the buyer that they automatically opt into. Buyers may not know or care that they are buying a publisher's inventory. Because of this, publishers can participate in the Open Auction on a blind basis

The following table summarizes these four types and might help to drive commonality of terms.

Programmatic type	Type of inventory <sup>1</sup>	Pricing <sup>2</sup>	Participation	Other terms used in market	Other considerations
<b>Automated Guaranteed</b>	<ul style="list-style-type: none"> <li>Reserved</li> </ul>	<ul style="list-style-type: none"> <li>Fixed</li> </ul>	<ul style="list-style-type: none"> <li>One-One</li> </ul>	<ul style="list-style-type: none"> <li>Programmatic guaranteed</li> <li>Programmatic premium</li> <li>Programmatic direct</li> <li>Programmatic reserved</li> </ul>	<ul style="list-style-type: none"> <li>Prioritization in the ad server</li> <li>Deal ID</li> <li>Data usage</li> <li>Transparency to buyer</li> </ul>
<b>Unreserved Fixed Rate</b>	<ul style="list-style-type: none"> <li>Unreserved</li> </ul>	<ul style="list-style-type: none"> <li>Fixed</li> </ul>	<ul style="list-style-type: none"> <li>One-One</li> </ul>	<ul style="list-style-type: none"> <li>Preferred deals</li> <li>Private access</li> <li>First right of refusal</li> </ul>	<ul style="list-style-type: none"> <li>Price floors</li> </ul>
<b>Invitation-Only Auction</b>	<ul style="list-style-type: none"> <li>Unreserved</li> </ul>	<ul style="list-style-type: none"> <li>Auction</li> </ul>	<ul style="list-style-type: none"> <li>One-Few</li> </ul>	<ul style="list-style-type: none"> <li>Private marketplace</li> <li>Private auction</li> <li>Closed auction</li> <li>Private access</li> </ul>	
<b>Open Auction</b>	<ul style="list-style-type: none"> <li>Unreserved</li> </ul>	<ul style="list-style-type: none"> <li>Auction</li> </ul>	<ul style="list-style-type: none"> <li>One-All</li> </ul>	<ul style="list-style-type: none"> <li>Real-time bidding(RTB)</li> <li>Open exchange</li> <li>Open marketplace</li> </ul>	

<sup>1</sup> Reserved Inventory is advertising space on a publisher's site that is put aside for a specific advertiser for an agreed price.

<sup>2</sup> Fixed Price is any arrangement where the buyer & seller agree on a flat price that the buyer pays rather than the highest bidder in an auction environment. Programmatic Overview| IAB. Accessed May 1, 2015

## Definitions of advertising formats

<b>Banner Advertising</b>	Advertiser pays an online company for space on one or more of the online company's pages to display a static or linked banner or logo.
<b>Sponsorship</b>	<p>Advertiser pays for custom content and/or experiences, which may or may not include ad elements such as display advertising, brand logos, advertorial, or pre-roll video. Sponsorships fall into several categories:</p> <ul style="list-style-type: none"> <li>• Spotlights are custom-built pages incorporating an advertiser's brand and housing a collection of content usually around a theme</li> <li>• Advergaming can range from an advertiser buying all the ad units around a game or a "sponsored by" link to creating a custom branded game experience</li> <li>• Content &amp; Section Sponsorship is when an advertiser exclusively sponsors a particular section of the site or email (usually existing content) re-skinned with the advertiser's branding</li> <li>• Sweepstakes &amp; Contests can range from branded sweepstakes on the site to a full-fledged branded contest with submissions and judging</li> </ul>
<b>Search</b>	<p>Fees advertisers pay online companies to list and/or link their company site domain name to a specific search word or phrase (includes paid search revenues). Search categories include:</p> <ul style="list-style-type: none"> <li>• Paid listings – payments made for clicks on text links that appear at the top or side of search results for specific keywords. The more a marketer pays, the higher the position it gets. Marketers only pay when a user clicks on the text link.</li> <li>• Contextual search – payments made for clicks on text links that appear in an article based on the context of the content, instead of a user-submitted keyword. Payment only occurs when the link is clicked.</li> <li>• Paid inclusion – payments made to guarantee that a marketer's URL is indexed by a search engine (i.e. advertiser isn't paid only for clicks, as in paid listings).</li> <li>• Site optimization – payments made to optimize a site in order to improve the site's ranking in search engine results pages (SERPs). (For example, site owner pays a company to tweak the site architecture and code, so that search engine algorithms will better index each page of the site).</li> </ul>
<b>Lead Generation</b>	Fees paid by advertisers to online companies that refer qualified potential customers (e.g., auto dealers which pay a fee in exchange for receiving a qualified purchase inquiry online) or provide consumer information (demographic, contact, behavioral) where the consumer opts in to being contacted by a marketer (email, postal, telephone, fax). These processes are priced on a performance basis (e.g., cost-per-action, -lead or -inquiry), and can include user applications (e.g., for a credit card), surveys, contests (e.g., sweepstakes) or registrations.
<b>Classifieds and Auctions</b>	Fees paid to advertisers by online companies to list specific products or services (e.g., online job boards and employment listings, real estate listings, automotive listings, auction-based listings, yellow pages).

## Definitions of advertising formats (cont.)

<b>Rich Media</b>	<p>Display-related ads that integrate some component of streaming interactivity. Rich media ads often include flash or java script, but not content, and can allow users to view and interact with products or services (e.g., scrolling or clicking within the ad opens a multimedia product description, expansion, animation, video or a “virtual test-drive” within the ad).</p> <p>All IAB Rising Stars ad formats are considered Rich Media. Video commercials that appear in video players are considered Digital Video Ads, not Rich Media.</p> <p>“Interstitials” have been consolidated within the rich media category and represent full- or partial-page text and image server-push advertisements which appear in the transition between two pages of content. Forms of interstitials can include a variation of the following terms:</p> <ul style="list-style-type: none"> <li>• Splash screens – a preliminary page that precedes the regular home page of a website that usually promotes a particular site feature or provides advertising. A splash page is timed to move onto the home page after a short period of time.</li> <li>• Pop-up ads and pop-under ads – an advertisement that appear in a separate window which automatically loads over an existing content window, without an associated banner.</li> <li>• Daughter windows – an advertisement that runs in a separate window associated with a concurrently displayed banner. The content and banner are typically displayed first, followed by the daughter window.</li> </ul> <p>Superstitials – ads that are distinct from interstitials because of the much higher ad quality, and that they play instantly (ads are fully downloaded before they are displayed).</p>
<b>Digital Video Advertising</b>	<p>Advertising that appears before, during or after digital video content in a video player (i.e. pre-roll, mid-roll, post-roll video ads). Digital Video Ads include TV commercials online and can appear in streaming content or in downloadable video. Display-related ads on a page (that are not in a player) that contain video are categorized as rich media ads.</p> <p>Video Overlays are also categorized as Digital Video Advertising. Video overlays include small ads that appear on top of digital video content. They can appear to be display, video, rich media, text or another ad format but are contained within the video player.</p>
<b>Mobile Advertising</b>	<p>Advertising tailored to and delivered through wireless mobile devices such as smartphones, feature phones (e.g. lower-end mobile phones capable of accessing mobile content), and media tablets. Typically taking the form of static or rich media display ads, text messaging ads, search ads, or audio/video spots, such advertising generally appears within mobile websites (e.g. websites optimized for viewing on mobile devices), mobile apps, text messaging services (i.e. SMS, MMS) or within mobile search results (i.e., 411 listings, directories, mobile-optimized search engines).</p> <p>Mobile advertising formats include: Search, Display (banner ads, digital video, digital audio, sponsorships, and rich media), and Other advertising served to mobile devices.</p>
<b>Social Media Advertising</b>	<p>Advertising delivered on social platforms, including social networking and social gaming websites and apps, across all device types, including desktop, laptop, smartphone and tablet.</p>

## *Survey scope and methodology*

### *Survey scope*

The Interactive Advertising Bureau (IAB) retained PwC to produce an independent report that sizes the overall market, help standardize definitions and start measuring the growth for programmatic advertising revenue in order to share these study findings with the industry. The "IAB programmatic advertising study" is part of an ongoing IAB mission to provide an accurate barometer of internet advertising growth.

Key aspects of the survey include:

- Obtaining historical data directly from companies generating programmatic advertising revenues;
- Making the survey as inclusive as possible, encompassing all forms of internet/online/mobile advertising, including websites, consumer online services, ad networks and mobile devices; and
- Maintaining a confidential process, releasing only aggregate data.

### *Methodology*

To develop an estimate of programmatic revenue, PwC performs the following:

- Compile a database of industry participants selling internet/online and mobile programmatic advertising revenues.
- Conduct interviews with leading companies that buy and sell programmatic inventory and request quantitative estimates.
- Distribute a quantitative survey with leading industry players, including web publishers, ad networks, mobile providers and other online media companies that generate revenue from programmatic.
- Request and compile several specific data items, including breakouts by the various types of programmatic, formats and devices.
- Exclude revenues associated with traffic acquisition to avoid double counting.
- Identify non-participating companies and apply a conservative revenue estimate based on available public sources and information obtained from our interviews.
- Analyze the findings; identify and report key trends.

## About the Interactive Advertising Bureau

The Interactive Advertising Bureau (IAB) empowers the media and marketing industries to thrive in the digital economy. It is comprised of more than 650 leading media and technology companies that are responsible for selling, distributing and optimizing digital advertising and marketing. Together, they account for 86 percent of online advertising in the United States. Working with its member companies, the IAB evaluates and recommends standards and practices and fields critical research on interactive advertising. The organization is committed to professional development, elevating the knowledge, skills, and expertise of individuals across the digital marketing industry. The IAB also educates marketers, agencies, media companies and the wider business community about the value of interactive advertising. Founded in 1996, the IAB is headquartered in New York City.

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PwC's New Media Group was the first practice of its kind at a Big Four firm. Currently located in New York, Los Angeles, Boston, Seattle, and the Bay Area, our New Media Group includes accounting, tax, and consulting professionals who have broad and deep experience in the three areas that converge to form new media: advanced telecommunications, enabling software, and content development/distribution.

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For more information about our New Media Group, contact one of the following PwC professionals:

New York

**David Silverman**

Partner, Assurance Services

646.471.5421

[david.silverman@us.pwc.com](mailto:david.silverman@us.pwc.com)

New York

**Russ Sapienza**

Principal, Advisory Services

646.471.1517

[russell.j.sapienza@us.pwc.com](mailto:russell.j.sapienza@us.pwc.com)

Hallandale Beach

**Stephanie Faskow**

Manager, Advisory Services

954.604.1968

[stephanie.faskow@us.pwc.com](mailto:stephanie.faskow@us.pwc.com)

Boston

**Vic Petri**

Partner, Assurance Services

617.478.1698

[victor.petri@us.pwc.com](mailto:victor.petri@us.pwc.com)

San Jose

**Mike Pearl**

Principal, Assurance Services

408.817.3801

[michael.pearl@us.pwc.com](mailto:michael.pearl@us.pwc.com)

Seattle

**Suzanne Faulkner**

Principal, Assurance Services

206.398.3550

[suzanne.faulkner@us.pwc.com](mailto:suzanne.faulkner@us.pwc.com)

*[www.pwc.com/e&m](http://www.pwc.com/e&m)*

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