# UNDERSTANDING AD TECH



INTRODUCTION

## **EXECUTIVE SUMMARY**

Ad tech is one of the fastest-growing industries in the world.

From Silicon Valley startups and massive global agencies like WPP, to regional companies that connect advertisers to customers across Europe, Latin America and Asia – the ad tech industry fuels the global economy with billions of dollars worth of investment, employment and ad spend.

Ad tech is also one of the most complex – and thus, misunderstood – industries in the world.

If advertising is the "business or process of making advertisements," then ad tech (short for advertising technology) is the business or process of using technology to make advertising faster, easier and more effective. This business is driven by powerful algorithms and billions of data points, and while it may not be "rocket science," understanding how ad tech products and services work can be difficult to the uninitiated.

So you might think of this guide as an informal initiation into ad tech. Our goal is to help you understand this industry, so that you can confidently invest in it – whether that's giving your time as an employee, your resources as a financial backer, or even just your opinion as part of a conversation at a trade show or networking event.



### IN THIS GUIDE

- You'll learn why ad tech is important to the global economy
- Get some statistics on how the industry shapes up across different regions
- Cut through the jargon with some clear examples of the most common ad tech platforms, tools and processes
- Dive into the glossary at the back to get started on some basic terms and acronyms

So without further ado, let's dive head-first into Understanding Ad Tech.

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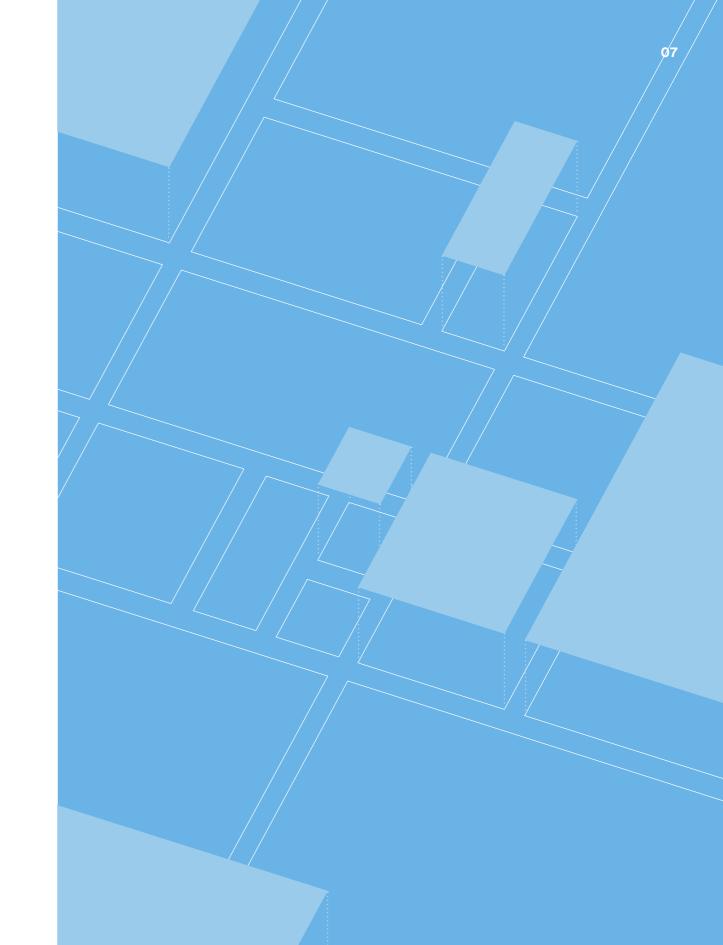
The Ad Tech Glossary

### What is Ad Tech?

Advertising is a marketplace. In every market, there are buyers and sellers. In small markets, each seller may sell only one item (be it fruit, textiles, or cars) and buyers can connect directly with them. But in larger markets, sellers may have multiple items, along with different sales people to help them sell specific things -- and there may also be other people involved in getting buyers to the market.

There are bus drivers who bring loads of passengers to the market, guides to help people translate currencies and languages, and even buyers who aggregate the needs of multiple other buyers so they can negotiate better prices.

Take this simple example, add lightning-fast computer calculations, hundreds of different ad units, devices and currencies, and couple that with billions of users around the world, and you get an understanding of the current ad tech marketplace.



### Automation for efficiency and scale

Up until the current decade, the business of advertising and its surrounding marketplace largely remained unchanged. From TV, to magazines, to radio, advertisers have looked for content that attracts their target consumers. In the 40s, it was soap operas on American radio stations. In the 70s it was glossy international magazines, and in the 80s it was provocative TV ads.

In each case, the process of buying and selling ads was the same (see Example 1 on the right). The advertiser picked up the phone, called an ad agency (or the publication directly), inquired about the rate for the ad space, and then faxed or otherwise delivered a physical order. The ad would then appear days, weeks or even months later.

What changed with the growth of the internet in the early 2000s was the physical nature of the ads themselves, as well as the means of payment. Instead of selling inches in a newspaper or 30-second spots on TV, publishers offered a more intangible currency: online attention.

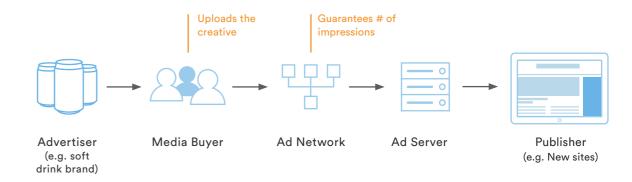
Measured in increments like clicks and the amount of time spent, digital publishers assigned value to their inventory (or the amount of ad space they had available) -- although the means of accounting, payment and reconciliation were still quite analog. The growth of "ad tech" was driven by a need for efficiency and scale in the realm of millions (and now billions) of online interactions.

Advertising is still a marketplace, powered by the relationship between advertisers and publishers of quality content, but digital advertising has become increasingly complex. Automated platforms now do much of the actual buying and selling (see Example 2 on the right). Ad tech intermediaries focused either on supporting publishers or advertisers provide tools and solutions to help them achieve their monetization and marketing goals, respectively.

Example 1
Print advertising deal



Example 2
Direct deal to run digital ad campaign (e.g. video ad) on a popular media site (desktop)



# Why Is Ad Tech Important?

So what makes the ad tech marketplace such a hotbed of investment activity and media focus? It's a crucial component of the global economy.

### Ad tech is now one of the leading growth industries worldwide

Economists may disagree about whether the global economy is stagnant, surging ahead, or in decline, but there's no question that there is tremendous financial growth in ad tech (and that covers advertiser spending, investor activity and employment worldwide).

### **US SPENDING**

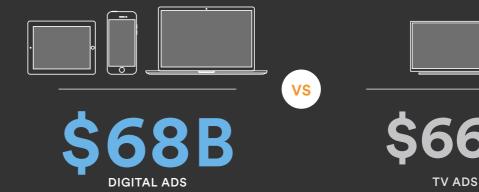
The US is one of the world's strongest advertising markets, particularly when it comes to digital. And in 2016, digital is poised to overtake TV for the first time, a huge milestone given that TV has been the dominant ad (and content) medium for decades.

The US digital ad market should reach \$68 billion this year, edging out TV at just \$66 billion<sup>1</sup>, and much of that growth is driven by programmatic or automated advertising platforms.

Source

<sup>1</sup> Magna Global

Digital ads vs. TV ad spending

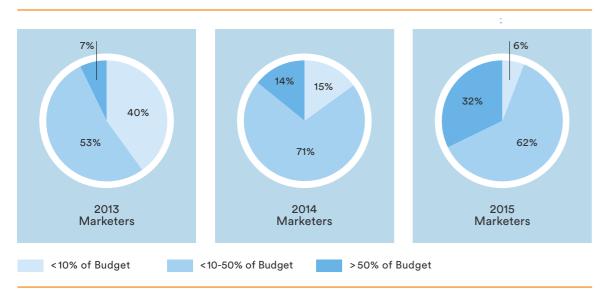


### PROGRAMMATIC INVESTMENTS INCREASE YEAR-OVER-YEAR

One important part of digital advertising is programmatic trading, in which case deals are initiated, executed and even reconciled by algorithms--often in real time. This segment demonstrates particularly high growth

For example, in 2013, just a small fraction (7 percent) of US advertisers spent more than half of their online advertising budgets programmatically. In just two years, that fraction grew to nearly 32 percent, meaning nearly a third of all US marketers used programmatic channels to buy their media in 2015<sup>2</sup>.

### Year-over-Year Investment in Programmatic Advertising



### **EMEA SPENDING**

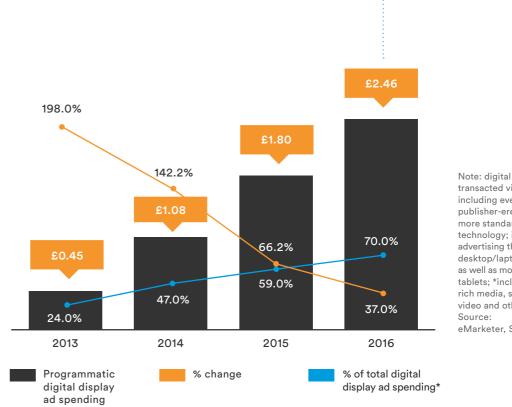
Meanwhile, despite the challenges stemming from the EU's strict data privacy laws, and the ongoing economic fluctuations within the broader regions of Eastern and Western Europe, industry analysts predict significant growth in ad tech. In the UK, for example, programmatic spending will top £2 billion this year, up 37 percent from 2015<sup>3</sup>.

### Sources

- <sup>2</sup> AdRol
- <sup>3</sup> eMarketer

### UK Programmatic Digital Display Ad Spending, 2013-2016

Billions of £, % change and % of total digital display ad spending\*



Note: digital display ads transacted via an API, including everything from publisher-erected APIs to more standardized RTB technology; includes advertising that appears on desktop/laptop computers as well as mobile phones and tablets; \*includes banners, rich media, sponsorship, video and other Source: eMarketer, Sep 2015

### PROGRAMMATIC VIDEO IS GROWING

And across Europe, media companies are expecting programmatic video to increasingly fuel their businesses. Programmatic video revenues will reach €109 million in France and €49 million in Germany, for example, up from €67 million and €31 million, respectively<sup>4</sup>.

### Programmatic Digital Video Net Ad Revenues in the EU, 2014-2020

Millions of € and % of total digital video net ad revenues

Year	2014	2015	2016	2017	2018	2019	2020
UK	€86	€135	€222	€280	€385	€492	€602
—% of total digital video net ad revenues	18.5%	22.8%	32.2%	37.2%	46.3%	53.8%	60.1%
France	€ 47	€ 67	€109	€154	€ 215	€297	€358
—% of total digital video net ad revenues	15.2%	18.6%	26.1%	32.5%	39.7%	49.3%	54.1%
Italy	€24	€38	€64	€109	€163	€209	€245
—% of total digital video net ad revenues	9.1%	12.3%	17.7%	27.1%	36.6%	42.9%	46.6%
Germany	€14	€31	€ 49	€74	€131	€186	€254
—% of total digital video net ad revenues	5.0%	9.3%	13.1%	17.4%	27.9%	35.8%	44.9%
Spain	€10	€15	€ 41	€ 57	€69	€82	€98
—% of total digital video net ad revenues	9.3%	11.5%	28.1%	34.1%	37.5%	41.8%	46.5%

Source: IHS, "Video advertising in Europe: The Road to Programmatic Ubiquity" commissioned by SpotX (formerly SpotXchange), Sep 9, 2015

### **APAC SPENDING**

While the APAC region often leads the world in technological innovation, advertisers and publishers in the region haven't yet adopted ad tech en masse. Language barriers and overall marketplace fragmentation also contribute to slower growth and investment from established ad tech leaders from other regions. Digital spending continues to soar, however, which makes the market ripe for the efficiency and scale that ad tech can provide in the long run.

Digital ad spending (a combination of online and mobile)
is forecast to reach nearly \$70 billion in APAC this year,
up 22 percent from 2015<sup>5</sup>.

### Sources

- <sup>4</sup> eMarketer
- <sup>5</sup> eMarketer

Digital Ad Spending in Asia-Pacific, by Country 2013-2018

Year	2013	2014	2015	2016	2017	2018	
Digital ad spending (billions)							
China*	\$16.34	\$23.70	\$30.81	\$39.44	\$48.51	\$57.24	
Japan	\$8.47	\$9.07	\$9.61	\$10.12	\$10.63	\$11.11	
Australia	\$3.83	\$4.52	\$5.02	\$5.51	\$5.95	\$6.37	
South Korea	\$2.18	\$2.51	\$2.83	\$3.17	\$3.49	\$3.87	
India	\$0.59	\$0.77	\$0.97	\$1.20	\$1.48	\$1.78	
Indonesia	\$0.27	\$0.53	\$0.95	\$1.61	\$2.66	\$3.99	
Other	\$4.08	\$5.50	\$6.65	\$8.33	\$10.01	\$12.05	
Asia-Pacific	\$35.76	\$46.59	\$56.84	\$69.38	\$82.73	\$96.40	

Note: Includes advertising that appears on desktop and laptop computers as well as mobile phones and tablets, and includes all the various formats of advertising on those platforms; excludes SMS, MMS and P2P messaging-based advertising; \*excludes Hong Kong; Source: eMarketer, Dec 2014

# Mobile keeps growing — and fueling much of that ad tech growth

Time spent in Mobile Apps and on TV

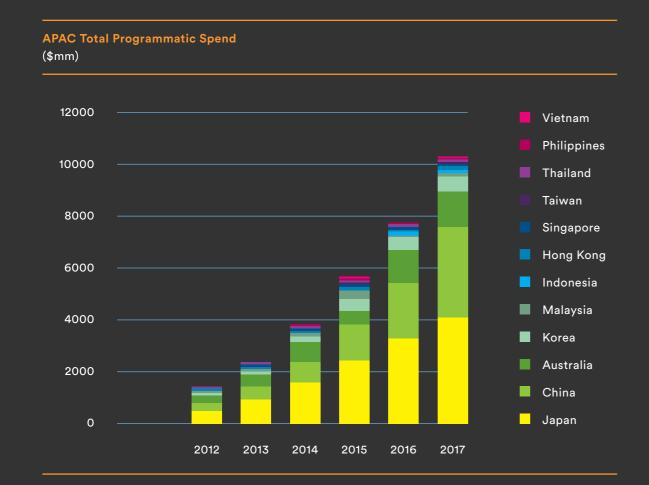
Once called the "third screen," mobile is now the first screen, and people are spending more time on mobile than in any other medium. And where people go, so do advertisers (and their hefty budgets).

### PROGRAMMATIC SPEND IS INCREASING

Meanwhile, Magna Global puts the market for programmatic spending in APAC at more than \$10 billion by 2017<sup>6</sup>.

### **TIME SPENT**

For example, 2015 was the first year that US consumers spent more time in apps than on what has previously been considered the world's game-changing medium<sup>7</sup>: TV.



# US Daily Average in Minutes 168 168 168 168 168 168 APPS Source: Flurry Analytics US Department of Labor Statistics

### **MOBILE VIDEO**

Meanwhile, mobile video is one of the fastest-growing mediums when it comes to content consumption. In the US, people watch an average of 39 minutes worth of mobile video per day, up from just 3 minutes in 20118.

### THE MOBILE APP MARKETPLACE

The mobile app marketplace is forecast to top the \$100 billion mark by 2020. Too far ahead? In just 2016, it's forecast to top \$50 billion, up 24 percent from 2015°.

### Sources

- <sup>6</sup> Magna Global
- <sup>7</sup> Flurry
- 8 eMarketer9 App Annie
- <sup>10</sup> eMarketer (f. page)

### Average time spent per day with digital video by US Adults, by Device, 2011-2015 hrs:mins

Year	2011	2012	2013	2014	2015
Digital video	0:21	0:36	0:50	1:03	1:16
– Mobile	0:03	0:09	0:21	0:30	0:39
– Tablet	0:01	0:04	0:13	0:18	0:22
- Smartphone	0:02	0:04	0:08	0:12	0:17
– Desktop/laptop	0:12	0:21	0:22	0:24	0:24
– Other connected devices	0:06	0:06	0:07	0:09	0:13

Note: ages 18+; time spent with each medium includes all time spent with that medium, regardless of multitasking; for example, 1 hour of multitasking on desktop/laptop while watching TV is counted as 1 hour for TV and 1 hour for desktop/laptop; \*includes game consoles, connected TVs or OTT devices; Source; eMarketer, Dec 2014





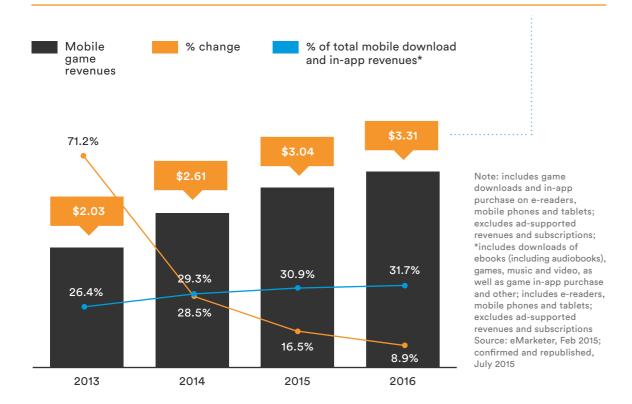
Source: App Annie (consumer spend on app stores)

### **MOBILE GAMES DOMINATE**

And when it comes to mobile apps, games dominate in terms of revenue and time spent. Analysts expect mobile game revenues to top \$3 billion this year<sup>10</sup>.

### US Mobile Game Revenues 2013 - 2016

Billions, % change and % of total mobile download and in-app revenues\*



### **FUELING THE GLOBAL ECONOMY**

What these disparate forecasts for ad spending, time spent and overall revenues show, is that the ad tech landscape is a fertile ground for investment and growth. But to fully understand why, we need to dig a bit deeper into how the technology serves the broader market.



# How It All Works

Ad tech companies sit between advertisers, who are trying to reach users on computers, smartphones and other devices, and the publishers and media companies that attract those people with content. These companies use data, algorithms and computer science to create, target and deliver ads with incredible speed and precision. Ad tech companies can loosely be defined based on whether they primarily serve advertisers (demand) or publishers (supply).

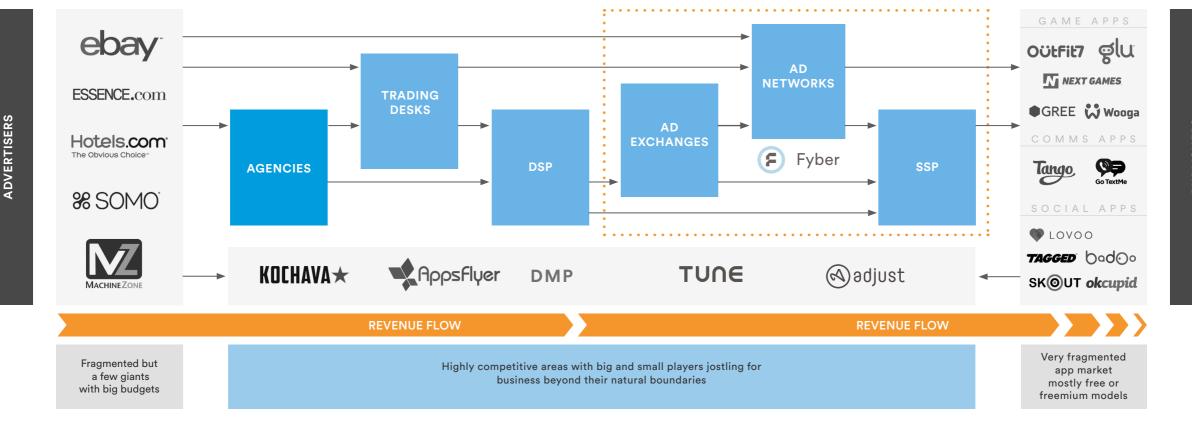
### FROM ADVERTISERS TO PUBLISHERS TO USERS

The diagram below shows a high-level overview of the types of companies that power the advertising technology marketplace.

Advertisers can include global Fortune 500 brands like consumer packaged goods (CPG) companies and beverage-makers like Coca-Cola, as well as e-commerce companies and retailers like eBay. Mobile app and game developers can be advertisers as well, particularly when they are trying to acquire new users for their apps.

Publishers can include major media companies like The Guardian and AOL/ Huffington Post, as well as smaller, independent news and entertainment sites. On mobile, the definition of publisher expands to include app developers of all types, including games, communication apps and social apps.

With programmatic advertising, the revenue flows from advertisers to publishers through automated means – replacing the phone calls, faxes and paper Insertion Orders (IOs) used to manage and track deals in the past.



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### **Advertiser Objectives**

Advertisers seek to get their messages in front of the right audience at the right time - at the best possible price. In some cases, the goal of a campaign is to drive awareness or improve the way their target audience "feels" about the brand. In other cases, they want to drive an actual purchase. Programmatic advertising gives advertisers access to audiences at scale, with precision targeting, tracking, as well as the ability to attribute whether a campaign was responsible for increasing a specific sale.

### WHO SUPPORTS THEM?

Media agencies purchase media on behalf of advertisers, Media agencies

with the goal of getting their messages in front of the

right audiences at the best possible price

**Trading desks** As an extension of media agencies, trading desks

purchase ads across multiple platforms programmatically

**DSPs** Independent platforms that aggregate demand

> from advertisers around the world, funnel it into an automated system and then make lightning-fast

bids on publisher inventory

**DMPs** Package user data from publishers to allow adverti-

sers (typically through DSPs) to target specific audi-

ence segments

Ad networks These companies aggregate inventory from a variety

of similar publishers to make it more scalable and

attractive to advertisers

### **BIGGEST CHALLENGES**

Fraud The growth of ad tech puts an increasing number

of companies between advertisers and publishers, and the complexity of the process has created new

opportunities for fraud

Mobile targeting & attribution

Despite the increase in time spent on mobile, targeting and attribution capabilities (particularly in-app) still

need to be developed to match advertiser

expectations on the desktop or TV

### **Publisher Objectives**

Publishers seek to earn revenue for the audiences they attract with their content, but only with advertising that doesn't compromise the user experience. While some publishers are heavily involved in the process of integrating, deploying and managing new ad platforms, others would prefer to allow a third-party partner (like an SSP) to manage the process for them. Programmatic advertising helps expose publishers' inventory to a wider variety of advertiser demand, and boosts the value of their audience by allowing targeting and segmentation.

### WHO SUPPORTS THEM?

**SSPs** Independent platforms that aggregate inventory from

> publishers around the world, funnel it into an automated system that exposes it to advertisers, with the goal of

delivering the highest yield to the publisher

**DMPs** These platforms package publisher audience data to

make it more attractive (and accessible) to advertisers

at scale

Ad networks Help smaller publishers earn revenue by bundling

their inventory to make it more scalable and attractive

to advertisers

### **BIGGEST CHALLENGES**

Demand

As digital advertising explodes, the number of sources fragmentation of advertiser demand - from agency trading desks, to ad networks, to e-commerce and social platforms

also grows

**Technical** integration hurdles

On both mobile and desktop, integrating all of the various ad units and tools for transacting programmatically can be labor and resource-intensive - and too many integrations can cause an app or site to

run slowly

Sub-par yield optimization

Because advertisers seek to buy inventory at the lowest price, transacting programmatically can sometimes lead to lower yield for publishers

### **BRINGING IT ALL TOGETHER**

Advertising technology companies exist to make this process of buying and selling digital inventory more lucrative (efficient) for both publishers and advertisers.

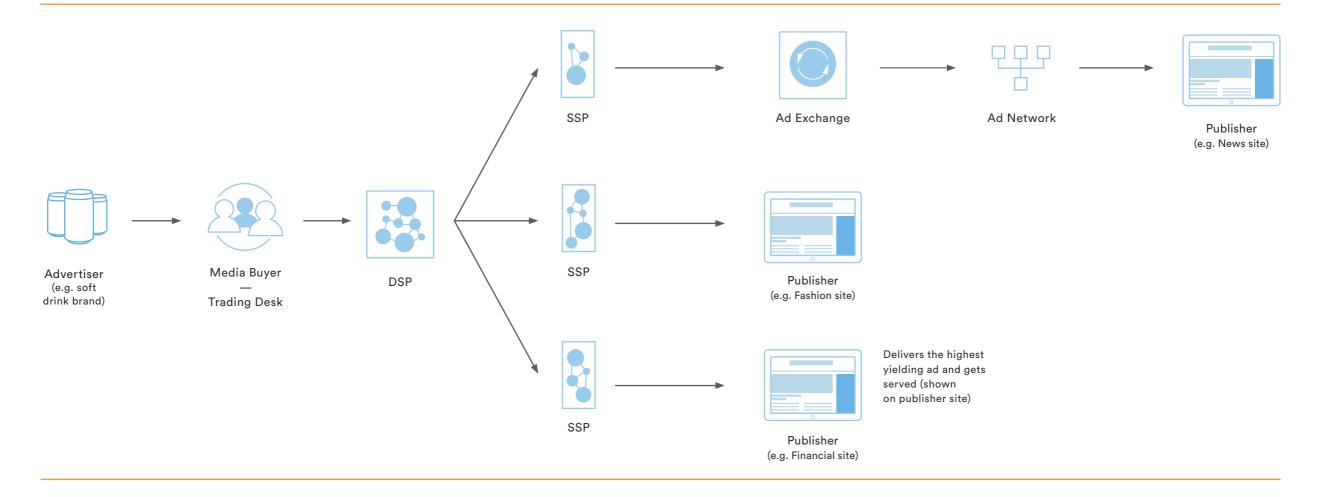
Automation can happen on both sides of the table, from buyer workflow tools that streamline the process of selecting and securing ad space across multiple websites and apps, to sell-side analytics that help publishers keep track of every impression delivered.

But when the conversation turns to "ad tech," the focus is typically on programmatic deals -- or ad campaigns that have been targeted and purchased via algorithms and trading platforms.

Programmatic deals include an element of competition, as at any given time multiple buyers are bidding on the same set of users (or impressions) on a given site. Publishers benefit from the competition because algorithms can also help select the highest bidder in real-time.

On the other end, there are always multiple sites or apps that may fulfill an advertisers' need for a specific audience. Programmatic deals give advertisers a combination of scale, reach and precision targeting, also with potential to reach their target user at the perfect time. Here's what that looks like in action:

Example 1
Programmatic deal (where the competition happens)



C H A P T E R 3 HOW IT ALL WORKS

### UNDERSTANDING RTB

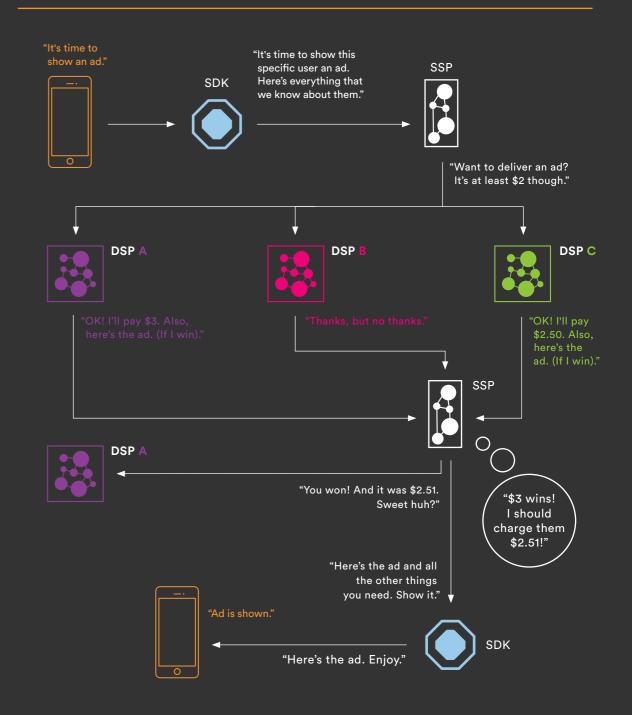
When advertising discussions shift to "programmatic" – typically, people are talking about the process of real-time bidding (or RTB). Although the technology behind "ad tech" extends far beyond just RTB, the process of giving advertisers the option of bidding on inventory in "real-time" has been the biggest driver of growth over the past five years.

What RTB means at a high level, is that at any given moment, multiple advertisers can bid on a single impression (or time a user visits a media property or app).

Take, for example, the moment in a mobile game where the player watches an ad in-between levels. At that moment, the ad provider powering monetization in the app (typically an SSP) runs an auction with all of the advertisers interested in that player. The advertisers make their bid, the SSP chooses the highest, and then the ad gets "served" to the player.

Both publishers and advertisers can set parameters for RTB – minimum prices and maximum bids, for example – as well as prioritize specific deals and inventory. This split-second process is illustrated in the chart to the left – albeit simplified.

Example 2
How real-time bidding (RTB) works



### O&O vs. Independent Ad Tech Platforms

Understanding the ad tech landscape also requires looking at how the various companies relate to one another. One of the primary factors to consider is whether an ad tech provider "owns and operates" alarge proportion of the audience within their ecosystem, or whether they're "independent."

O&O: Owned and operated (O&O) ad tech companies are massive

hybrids like Facebook, Google, Twitter, Yahoo and AOL/Verizon. They have formidable technology budgets, with billions of impressions available from their users across devices and countries.

These audiences are what make O&O platforms attractive to advertisers, because they have access to user data (such as Facebook users' interests and other behavior) that third-party platforms can't get.

Independent: Independent platforms like Fyber, Rubicon Project and The Trade Desk offer an alternative to the O&O approach. With the ability to either build or acquire new technology, as well as deep publisher and advertiser relationships, independent platforms don't rely on pre-existing scale to be successful. (Nor do they bear the financial burden of generating monetizable content).

Because independent platforms exist to serve publishers (or advertisers) first, their products are agnostic, aiming to deliver the best experience and financial benefit for their respective constituents. The choice, transparency and flexibility they offer are what make them a compelling alternative to the O&O market environment.

A significant opportunity: The O&O ad tech platforms command a considerable percentage of the overall ad market, but there's still substantial opportunity for independent companies. For example, mobile ad revenue in the U.S. is forecast to top \$50.4 billion in 2017. While O&O companies will account for 68 percent of that total, independent providers are projected to generate 32 percent – or at least \$16.5 billion<sup>11</sup>.

# Trends to watch

Now that you have some context on why ad tech matters, who the players are, and some of the technical aspects of a successful programmatic campaign, we turn forward for a glimpse at the trends that will define growth in advertising technology over the next few years.

### **CONTINUED CONSOLIDATION**

Aggregation for scale and diversity of technology: Scale is how independent players will compete with companies like Google and Facebook, so expect to see more deals that aggregate billions of users for advertisers.

A few specialized players will thrive: Expect to see new startups emerge that power native advertising, specialized creative for verticals like communication, and even mobile-specific products like messenger apps, emoji, etc.

Less VC investment & tougher public markets: As we've seen, the IPO market for advertising has settled down, and we expect this trend to continue as the players that have entered the public markets need to prove their value.

Andreas Bodczek
CEO, RNTS Media

"The mark of a successful company is being able to make the shift from one medium to the next. There will always be change, and we can definitely expect to see continued consolidation as 'cookie-cutter' ad tech platforms struggle to survive and get acquired. But there will be some companies that thrive and innovate, particularly when it comes to new ad formats and growth in emerging markets."

C H A P T E R 4 TRENDS TO WATCH

### **FOCUS ON ALL THINGS DATA**

Better mobile targeting: Despite the astronomical growth in mobile advertising, the lack of parity between the level of audience insights that advertisers get on desktop vs. mobile is still hindering some spend. Expect to see improvements in mobile targeting over the next one to two years.

Improved measurement & attribution: Beyond simple audience targeting, there is an increased focus on measuring how well campaigns have performed, and making sure that impressions served are actual users (vs. bots).

### Erwin Plomp VP, Fyber RTB

"Most programmatic inventory is bought through a DSP. But most DSPs aren't equipped to transact and target on a mobile ad ID basis (or a unique mobile device identifier such as Apple's IDFA or Google's Ad ID). That means there is limited visibility into the data behind the mobile app impressions, and being able to understand who they're reaching and when is something that big brand advertisers want.

As an industry we're working to solve this technical challenge, but generally, the level of audience data and targeting for mobile in-app is still nascent. With the huge mobile audience opportunity, it seems a natural path that this would be the next improvement that we could see happen."

### **GROWTH IN OPT-IN AD FORMATS**

A counter to ad-blocking: The rise of ad-blocking is forcing publishers and marketers to re-think the "traditional" model of interruptive advertising. Opt-in ad formats give users a choice in which marketing messages they see, while reminding them of the value-exchange inherent in the free publishing model. Currently implemented by mobile game developers en masse, we expect adoption by a wider variety of publishers in the next 18-24 months.

Adoption in developing countries: We also expect increased adoption of opt-in formats like rewarded video by mobile developers in emerging markets. This is because the majority of users in these regions don't make in-app purchases (IAP) or pay for apps. Lack of credit card penetration and general aversion to paying for mobile content makes opt-in and rewarded ad formats an attractive monetization option.

Janis Zech COO, Fyber

"Consumers have become accustomed to getting all the digital content they want for free, which contributes to a resistance to paying for apps and making in-app purchases (IAP) in many cases. There is also an increased, frustration with jarring ads that disrupt their reading, viewing, listening or playing experience. Together, these two factors have created a perfect storm for publishers – especially when it comes to mobile.

Opt-in and rewarded ad formats empower users, giving them the choice of how and when to engage with ads, in addition to making the use of adblockers less attractive. Mobile game developers know this, and I think we'll see increased interest from new categories of publishers, as well as more forward-thinking advertisers over the next few years."

5

### Glossary

So what is a DSP? What's an Ad Server? And how, exactly, do advertisers and publishers calculate eCPMs? This glossary offers simple definitions of the most common terms and acronyms used when describing advertising technology products and services.

Ad Exchange Platform for selling and buying online advertising

inventories, facilitating the buying process between demand (advertisers, media agencies, ad networks)

and supply (app developer, publisher)

Ad Impression Ad request is filled and an ad is delivered to the user,

generating an ad impression

Ad Network Connects advertisers to web sites that want to host

advertisements, aggregate ad space supply from publishers and match it with advertiser demand

Ad Request Whenever a user in an application reaches a point where

an ad could be shown, the app developer makes a so-called ad request, containing information about the placement and the user that will see the ad. The developer's SSP then sends this ad request to integrated ad networks and other demand partners that will then respond with one or more ads to show. If an ad is shown or "served" afterwards, the ad request is

considered "filled"

Ad Serving Technology used to place ads in apps; Lets publishers sell,

manage and deliver their ad inventory to demand sources

DMP (Data management platform) A warehouse used to store and

analyze data generated from ad campaigns, ad impressions etc.; Used by publishers, ad exchanges, ad networks etc.

for the use of ad targeting

DSP (Demand-side platform) Allows buyers of digital advertising to

manage their campaigns and run them automatically on multiple

ad exchanges through one interface

eCPM (Effective cost per mille); amount of revenue a developer

receives for 1,000 impressions; calculated based on the amount of ad revenue divided by the number of impressions times 1,000. The value is used to compare performance of different ad formats, ad campaigns, providers etc.

Freemium apps App can be installed and used free of charge, user charged for

premium content and additional functionality on a voluntary basis

Inventory Advertising inventory is the amount of ad space a publisher

has available to sell to an advertiser. Digital publishers sell inventory according to a variety of criteria, including per impression (i.e. CPMs) or predetermined actions such as video view (i.e. CPV or cost-per-view) or clicks (i.e. CPC or

cost-per-click)

MAU Monthly active user

Mediation Access to a large number of demand sources. An SSP's

mediation platform offers app developers integration, management and optimization of ad networks through

one single integration

Programmatic buying The use of software to buy and sell digital advertising, allowing

buyers and sellers to use complex delivery rules, targeting and optimization algorithms to serve the right ad for every request

Real-time bidding (RTB) Subcategory of programmatic buying; Practice of buying and

selling of ad space in real time, on a per-impression basis

SDK Software development kit; An SDK is a library of code that can

be added to a software project to make certain functionalities

available to the developer of that software project

SSP (Supply side platform) A supply side platform is a software

solution app developers can use to manage and optimize their monetization strategies. SSPs tap into many sources of advertising demand and give developers tools to manage

these demand sources centrally

Trading Desk Ad tech platform, geared towards advertisers and agencies,

facilitating the buying of digital advertising, often through

programmatic buying

