



PROGRAMMATIC TRADING WHITE PAPER

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Introduction and Executive Summary

In a few short years, Programmatic Trading has emerged from the back rooms of digital networks to front and centre in the battle for customer engagement. In recent research¹ with WARC and AppNexus, IAB Europe polled more than 600 publishers, advertisers and agencies across the frontline of the advertising industry in Europe, and found that 89% of them believe that Programmatic will have a significant impact on digital advertising; 30% expect it to be dominant!

Yet, Programmatic Trading remains a confusing mix of three letter acronyms, a swarm of potential solutions and a lurking fear that it's going to put buyers and sellers out of a job. As a result, the same research showed that nearly half of all publishers and two thirds of marketers believe that they don't yet really understand programmatic, or how to capitalise upon it.

As a result, IAB Europe has asked member companies working in this area to contribute to this White Paper; with the goal of demystifying Programmatic Trading; correcting a few myths and looking at how and why it has grown so quickly and continues to do so.

In these discussions, it becomes clear that Programmatic Trading has a far wider reach than the original disruptive innovations around RTB (real time bidding). Today Programmatic Trading has extended its reach to four different advertising marketplaces:

1. **Performance Marketplace** - Automation of the CPC (cost per click) /CPA (cost per acquisition) publisher model that trades against specific advertiser objectives but leaves the seller in control of the means.
2. **RTB Marketplace** - Real time audience buying that ends the use of media as proxy for a consumer by enabling impression level targeting that puts the buyer in control.
3. **Deals Marketplace** - Transforming the slow and manual process of inventory discovery and deal negotiation by building collaboration on top of real time technology.

¹ Why and How Programmatic is Emerging as key to Real-Time Marketing Success, IAB Europe, AppNexus and WARC (June 2014) - <http://www.iabeurope.eu/news/new-research-appnexus-warc-and-iab-europe-identifies-drivers>

4. **Direct Marketplace** - Extending Programmatic thinking into the conventional digital buyer's RFP (request for proposal) process, ensuring better inventory discovery, packaging and faster decision making.

There remain many hurdles to be overcome as the technology itself matures and buyers and sellers acquire the skills to make the most of it. But make no mistake, Programmatic Trading is now a considerable part of the European digital advertising ecosystem and all indicators are that it is set to become more important in the coming years.

2 The Programmatic Trading Landscape is Changing

2.1 Where does Programmatic fit into the Media Landscape?

From London to Silicon Valley, at every RTB (real time bidding), ad tech or marketing conference, a resounding question is always “what is the definition of Programmatic?” “It is not real time bidding” is the most common response. Let’s take that a step further and say that it is also not a new type of media, a new format, device, tactic or audience insight nor is it an inventory source. Simply put – it is an automated process. This means an automated way for advertisers to buy media and an automated way for media owners to sell ad space.

All the same principles of success exist when executing marketing objectives through Programmatic means.

Marketing success is finding customers in the right place at the right time and at the right price, in line with customer acquisition costs and campaign objectives. Programmatic does not change this philosophy, it simply makes its delivery more effective than ever before by taking out the mundane and repetitive tasks that are involved in the buying process and freeing up more time for strategy and insight. It is clear people are still the ones designing the strategy, programming the technology, having the creative ideas, shaping placement and optimisation.

The power and widespread use of data sits firmly alongside the growth of Programmatic as advertisers are now able to manage and execute their strategy against huge data sets, in real time, something that would have previously taken tens of employees and thousands of Excel spreadsheet rows to execute. Everyone is talking about big data, however, it is what is done to the data that matters.

Another common misrepresentation of Programmatic is that it is a direct response tool, offering solutions only for remnant inventory and acquisition driven campaigns. If Programmatic is viewed as a process and not a media type, then branding objectives can also be fulfilled. Premium inventory sources, above the fold and rising star units, video formats and guaranteed buys can now all be executed programmatically.

As it improves the marketer’s ability to understand and respond to audience and campaign performance quicker than ever before, it is predicted that Programmatic media buying will drive the execution of plans across the entire media marketing mix.

The online industry is the driver of adoption due to the sheer scale of the online audience and the transparent and transactional nature of the industry. However,

mobile and connected TV Programmatic platforms are already gaining momentum as advertisers seek executional efficiencies across their entire marketing plans. TV, digital radio, outdoor and in-store (point of sale and CRM) sectors will follow in the next one to three years.

So, although Programmatic is not a new type of media within the digital ecosystem, it might just change the marketing world as we know it.

2.2 Differences between Programmatic and RTB

Programmatic Trading simplifies the buying and selling process bringing operational and pricing efficiency by digitally connecting the buyer and seller, enabling the Programmatic purchase of ad placements via trading platforms.

Programmatic differs from RTB in that Programmatic is the automation of digital media buying and RTB is a type of Programmatic buying. RTB is the auctioning of online digital space at the specific point in time it is viewed; effectively using data to intelligently target an audience of one. It's an open environment that initially capitalised on unsold or remnant inventory left over after a publisher's own directly-sold campaigns (sometimes called premium) have had the opportunity to serve.

Programmatic buying encompasses all inventory, both "direct" and "non-direct". Direct inventory can be packaged up in offerings via PMPs (private marketplaces); this grants the buyer access to unique and differentiated placements or data that is not available in its full transparency in the general RTB auction. This means that floor pricings within a PMP are, in most cases, considerably higher than that of RTB. There are many models of PMP, but today buyers bidding on a PMP will tend to use a deal ID in their DSP (demand-side platform) campaign targeting. A deal ID, which is a universal identifier/numeric keycode, allows the buyer to gain bid access to the specific inventory being offered.

Furthermore, some SSPs (sell-side platforms) offer additional tools to their publishers to allow for further expansion of their Programmatic offerings. Publishers can customise these tools to provide buyers with an easier transition to Programmatic buying, in the ability, to submit Programmatic proposals on selected inventory; prioritise their buyers; upload/submit/change creative in existing orders; adjust end dates and frequency capping and more (depending on the platform and the publisher's choice in settings).

Programmatic has emerged as a classically disruptive technology. In the early days of RTB, it was 'good enough' for buyers and sellers to use on low value inventory to achieve a new kind of audience buying that could be very specific and adjusted in real time. As the technology has matured, so it has moved up the value chain. Today's Programmatic solutions are applicable to all digital media and are beginning to find applications outside the sector. RTB remains a strong and vibrant part of the

industry, but the wider use of Programmatic has the potential to impact the media business more broadly.

These tools not only help create a more efficient marketplace for both buyers and sellers, but can also cut costs and time by minimising the lengthy media plan proposal-to-signoff process as well as operational procedures (see *section 3 for further information*).

With the shift of these additional media buys to Programmatic, sellers can optimise all of their direct and third party campaigns against RTB and PMPs, with algorithms that look at different variables (end date, price, and publisher set prioritisation) to serve the correct ad per impression. Buyers can adopt new ways of real time working that allow them a deeper understanding of campaign performance highlighting if campaigns are running behind and providing an opportunity to make the needed campaign optimisations necessary to reach campaign goals (end date extension, higher CPM (cost per thousand/ mille) price, adjustment of capping).

2.3 Programmatic Trading Landscape: Key Markets and Key Players

Programmatic Trading is evolving fast. As the “enabling technology” for buyers and sellers, it powers a complex ecosystem that reflects the differences in regional markets. As a result, there are considerable differences in the way that European markets are developing.

While RTB emerged in the US as the first phase of the Programmatic evolution, European markets are finding their own way. Indeed, rather than simply imitating the US, European businesses are innovating in how they apply the technology to meet the needs of their customers and partners.

While the Netherlands was an early adopter of RTB and as a result spawned global market players in the American mould; Germany, France and the UK are each showing a distinctly local flavour as Programmatic matures.



In the **Netherlands**, (see Appendix 8.1 for an overview of the Netherlands Digital Ecosystem), the combination of early adoption with the working cooperation of buyers and sellers has led to a rich Programmatic environment, with an openness and consistency towards innovation. In addition to an increase in

Programmatic Trading across multiple platforms (mobile, video, web, and most recently radio), the Dutch market has also taken great strides in the advancement of programmatic rich media/high impact formats. This is fuelled by both the multitude of rich media vendors and rich media exchanges, which offers buyers and sellers opportunities to Programmatically trade ad formats which were previously restricted to directly sold campaigns. The trading of these high impact formats results in both

increased campaign performance and brand awareness for buyers whilst bringing higher CPMs for sellers across their inventory making it a win-win for both sides.



The **UK** advertising market has traditionally been buyer led. Media is fragmented and the early adoption of Programmatic was centralised on Ad-Network optimisation and then DSPs. Over the last 18 months the major agency holding companies have rolled out their Programmatic capabilities and Programmatic volume has grown rapidly. Starting with RTB, the market has quickly integrated data to drive intelligent and targeted audience buying. By leveraging their unique market position, the major buyers have been instrumental in driving new inventory through Programmatic pipes, increasingly replicating offline relationships in the more efficient digital world. As a result, there is an increased focus on Programmatic premium or Programmatic direct, with greater collaboration between buyer and seller now being executed Programmatically. The likes of WPP and Omnicom have been instrumental in bringing early Brand spend into Programmatic as a result of this greater collaboration and are today driving mobile Programmatic through multi-screen campaigns.



In **France** (see appendix 8.2 for an overview of the French Digital Ecosystem), the buyer/seller dynamic is more balanced and it is the sellers that took the first Programmatic initiative with the likes of Orange Advertising and Hi-Media moving first into RTB. Once they showed success, the wider industry followed and, as in the UK, Programmatic is now moving quickly up the value chain. The formation of two publisher coalitions, Audience Square and La Place Media, gave the sell-side confidence to innovate. As a result, Programmatic penetration has grown faster in France than anywhere but the US, up 125% (YoY 2012/13) now 22% (in the first half of 2014) of all digital display (Observatory e-Pub study by SRI and PwC²). There is a vibrant Programmatic ecosystem in France, fuelled by the availability of a deep mathematical talent pool and venture capital investment spurred by the success of Criteo. With strong Government interest in Paris developing as a tech city, the signs for continued Programmatic success are strong; especially in mobile. While current mobile advertising is small; it's emerging at exactly the same time as Programmatic goes mainstream. The two will fuel each other making France a market to watch for all things mobile.



In **Germany** (see Appendix 8.3 for an overview of the German Digital Ecosystem), the sellers shape the market and both its consumers and advertisers are by nature more conservative. Thus the industry has watched and learned as others experiment with RTB and only chosen to act when a winning model for their

² Observatory e-Pub Study, SRI and PwC (July 2014) - <http://www.sri-france.org/2014/07/08/12eme-edition-de-lobservatoire-de-le-pub-du-sri-realise-par-pwc-en-partenariat-avec-ludecam/>

business has become clear. Today the German advertising industry has no doubts about the impact of RTA³ (real time advertising) where private marketplaces dominate the programmatic landscape. In 2013, the focus shifted from evaluation to execution and so leading sales houses such as Interactive and United Internet have today built programmatic capabilities across their businesses with a particular focus on bringing display and mobile together in multi-screen offerings that can be packaged and traded efficiently to attract Brand advertisers.

As Programmatic continues to evolve, European companies are now at the forefront of the global change (see Appendix 8.4 for an overview of the European Digital Ecosystem). From publishers driving premium inventory through Programmatic pipes to buyers structuring dynamic deals through newly collaborative platforms; it is a healthy and vibrant ecosystem that builds on the original idea of RTB and is making it work better, every day.

³ RTA (real time advertising) is the broader definition used in Germany for RTB and Programmatic activities

3 Operational Effectiveness and Programmatic Trading

3.1 Does Programmatic Trading require less HR?

Recent studies show that managing display ad campaigns can take up 28% of the budget in overheads⁴, compared to 2% for TV. This means for every €100 spent on display, €28 goes to handling the process such as negotiation with multiple sites, replanning, trafficking hundreds of ad tags and so on. Such inefficiencies have impeded the growth of the industry. So how will Programmatic Trading affect operational effectiveness?

Sales - Can a publisher's inventory be exploited in a more efficient way with Programmatic Trading and should the sales force be reduced as a result? The obvious initial thought is that Programmatic Trading cannibalises direct sales, and this is generally considered "a bad thing" by those involved. But when looking at the ad sale, and really looking at it, there are hours wasted on admin and operations. The actual selling, building a deal that is valuable to both parties is only a small part of the time. How powerful would that same sales team be if the execution of the deal was simpler and didn't have to be reset every week, or month, but was just dialled up and down to suit both parties. And how much more profitable would the operation be, if instead of selling only a small number of bespoke campaigns, that sales team was able to package and sell deals of infinite complexity without any additional overhead to deliver? Programmatic Trading is also helping publishers generate new revenue streams, especially on placements that have been difficult to monetise in the past. A growing number of publishers are generating revenue for international placements for instance, that would have been left un-sold back then. This is enabling publisher sales teams to concentrate on inventory where they are strongest and leave Programmatic to fill in the gap. The gross revenue of direct sold looks attractive, but from a profitability perspective the total picture can be surprisingly different. So Programmatic can cannibalise direct, but it only means reducing the sales team, if they can't adapt to the new opportunities they now see.

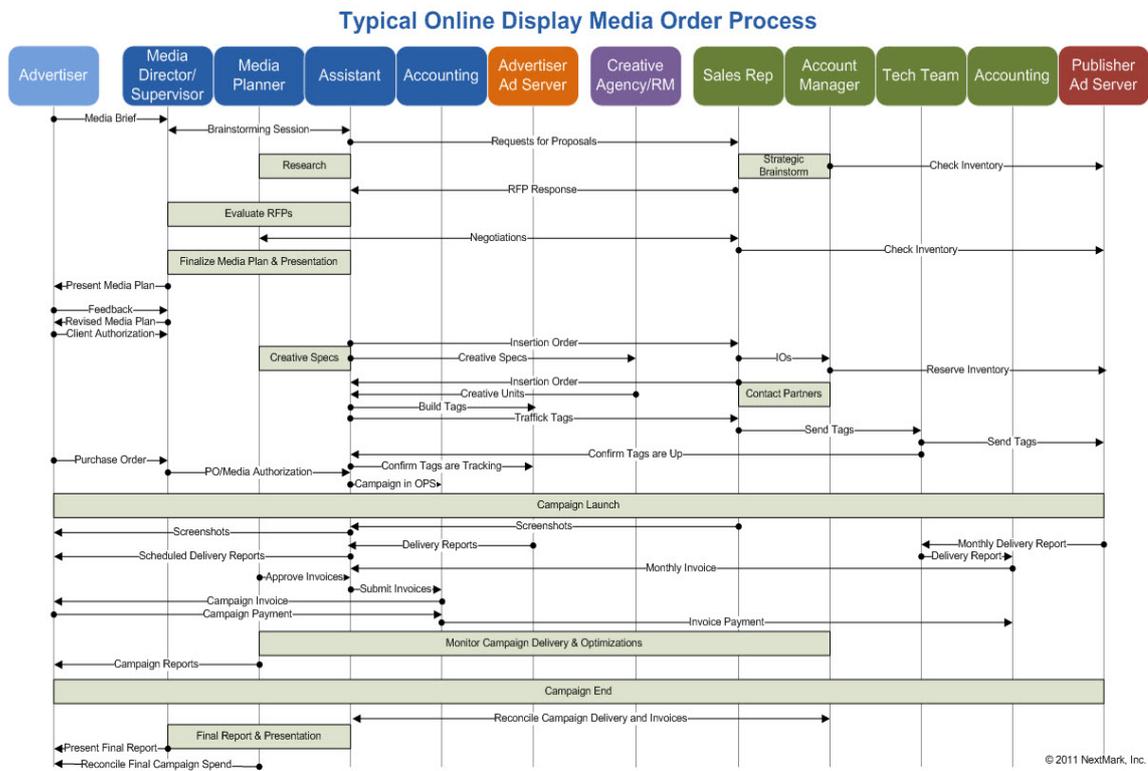
Interaction - Will there be more workload between buyers and sellers when Programmatic Trading is introduced? No, it should decrease. Agencies have a tremendous workload in planning a campaign and the workflow between buyer and seller is long and troublesome and there are major risks of errors in the handover from one step to the other in the process.

⁴ Google stats featured in Get Ready for the Coming Operationally-Driven Marketplace, admonsters.com - <http://www.admonsters.com/blog/get-ready-coming-operationally-driven-marketplace>

Ad Operations - Where the industry formerly spent more resources on the trafficking of campaigns, in the future ad ops will play a more important role in monitoring and data handling and new skill sets are required. It is commonly understood that ad ops staff are more comfortable with the automated trading environment than others.

Budgets can be spent very quickly in an automated environment unless there is close attention to the flow and details. Yield optimisation, pricing, analysing and understanding the automated structure will be where ad ops will move in the future. They will have the opportunity to deliver revenue and deeper insights to the business in areas that were traditionally managed by others.

A word of advice - finding the right people with the right skill-set can be difficult. Start educating your employees instead. There aren't that many people with Programmatic experience yet.



“Typical Online Display Media Order Process” – far from simple!

Source: NextMark (<http://www.nextmark.com/category/online-display-advertising/page/5/>)

3.2 How to move to Programmatic

When considering moving to programmatic publishers and agencies can apply the same methodology as with any other technology integration.

Understanding Inventory

It is important for publisher's considering using Programmatic Trading to address the following:

- How to get internal stakeholders on-board and make sure that they understand the reasons why a move to Programmatic Trading is being considered?
- What volume of inventory will be made available to Programmatic?
- What are the revenue expectations? It's important to have a target CPM (cost per thousand/ mille) in mind from the beginning. What are the largest territories by volume? eCPM (effective cost per mille⁵) will be higher for inventory in Germany than Brazil for instance.
- What placements will be made available to Programmatic? Some placements will achieve a higher fill rate and also a higher eCPM as demand varies by placement.
- Will using Programmatic conflict with direct sales channels and how will Programmatic inventory be differentiated from premium inventory?

Suggested Programmatic Strategy

As a publisher, consider if working with an ad exchange, SSP and/or network is preferable. In a rapidly growing industry there are a lot of suppliers competing for attention. Set some minimum feature benchmarks aligned to your business and then evaluate the platforms available; the market leader may offer the most revenue but not necessarily the best support, features or training. If you simply need to get into Programmatic quickly, the basis of the vendor selection will be different from those that are making a strategic investment in their future competitiveness. The former will look for a service driven supplier while the latter will dig deep into the technical advantages. Consider if the product roadmap is realistic for current and future needs. Cost, demand sources and ease of integration are also vital components to consider, as is the control and ease of campaign set-up.

As an agency buying Programmatic inventory consider how campaigns are delivered, the level of reporting and if the platform supports CPA (cost per acquisition), direct response and brand campaigns. Lastly, consider the suppliers business model. If some part of their business competes with your own they may understand you better, but over the long term this can be a considerable business risk.

⁵ Effective CPM is the seller's view of the revenue returned by their inventory mix on a cost per mille basis. This is calculated by dividing total earnings by total number of impressions and then multiplying up by 1000.

Floor Prices and Yield Optimisation

As a publisher, consideration should be given to floor prices and this should be differentiated from a target CPM. By differentiating the two, yield and fill rate can be maximised by the SSP (supply side platform). Some SSPs also support dynamic floor prices potentially allowing publishers to gain a greater yield from their inventory. Increasingly supply and demand platforms are supplementing their technology with yield teams to help grow publisher revenue and produce detailed forecasting. It is worth considering what service these teams will offer, and if a dedicated support team is available when switching to Programmatic as they will have advised many publishers and will often be able to offer valuable insight into how inventory can be structured to maximise revenue.

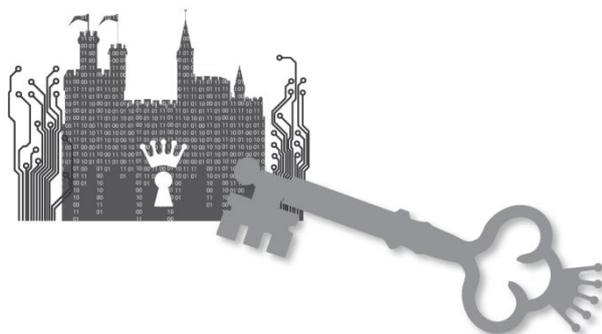
Whitelists and Blacklists

Publishers should consider if advertiser blacklists are important. A blacklist will allow publishers to block advertisers they do not want to appear on their site. A whitelist will allow publishers to specify which advertiser categories they are willing to allow.

4 Handling and Analysing Big Data – Gain Control of Data

4.1 The Keys to the Kingdom – Why is the Handling of Data Key?

Big Data may be all the rage in the news media industry these days, but where exactly do the opportunities lie and how do news media companies and advertisers leverage the potential of all this data?



There are reports that there is more data available than ever. In fact it was reported that 90%⁶ of the world's data had been generated during the past two years – which is great if you know how to use it.

Publishers may have historically been at the forefront of collecting data, thanks to their subscriber lists and frequent contact with readers. But since the evolution from print to digital (and more recently to mobile) the growing interactivity between publishers and advertisers with large audiences has meant that they are able to collect astonishing amounts of information about consumers, their habits, their needs, and their wants. An enviable position many would argue – but do most publishers agree?

Many publishers struggle to turn their data into insights and action and are therefore drowning in data rather than capitalising on it. It does not have to be this way.

“Big Data” is a common term used, where “big” stands for an interminable volume of data, a limitless velocity of the (real-time) data-streams, and an endless variety of consumer information. The amount of data researched and used for tracking behaviour, user intent, audience segmentation, content recommendation and interests gives publishers and advertisers a huge opportunity to predict, target, uplift and execute campaigns.

But where is the value added to the chain? What are the benefits for the consumer and advertiser?

⁶ IBM analyses featured in Does anyone really understand big data?, zdnet.com - <http://www.zdnet.com/does-anyone-really-understand-big-data-7000017271/>

Data is flowing in from a growing number of sources and consumer touch points. The data often remains locked within individual channels and functional silos within the value chain. This makes it difficult for publishers and advertisers to build a 360-degree consumer view and causes a shortage of deep insight and foresight that could be used for business advantage. Combining publisher data with advertiser and other third party data enables both the buy and sell-side to make a higher impact, delivering a better user experience and converting at a much higher rate.

A word of advice - before you start adding scores of scripts to your site, take one piece of advice - consumer trust is a critical factor that no publisher or advertiser can afford to overlook. Publishers with established and reliable brands are said to have a very trusted relationship with consumers, something to be coveted. In the crowded consumer data arena, trust can be a competitive advantage for the publishers that remain transparent with consumers, respecting their privacy. That's why initiatives like Your Online Choices⁷ are crucial to ensuring that users find online advertising and shopping trustworthy and non-intrusive. It is also why it is important that users are able to take control of their own data. The technology exists to help gather, analyse and act upon data, rather than risking any leaks into cyberspace. *Act responsibly with data.*

The large amounts of data no longer just create a quantitative change but a qualitative shift in terms of how we are able to utilise data. Data can be a strategic asset, but it can also be a major liability if misused. To be good guardians of personal data, you must understand how you manage and handle data. Remember that with great volumes of data comes great responsibility!

4.2 How to Gain Data, Who Owns the Data? How to Analyse and use the Data? In the context of online advertising, be it brand or performance, the term “data” is an incredibly broad one, but one that represents one of the most powerful USPs (unique selling point) of Digital Display within the broader plan. Data, “Big” or otherwise, has three primary uses:

- **Pre-campaign Planning** – reporting gleaned from previous activity, offline studies and research can be used to inform segmentation, targeting and performance benchmarking.
- **Segmentation and Optimisation** – data on a user collected via cookies provides an advertiser, network or trading desk with the power to optimise before a campaign has gone live, as well as on the fly during the course of the campaign.

⁷ <http://www.youronlinechoices.com/>

- **Post-campaign Analysis** – performance reporting post-campaign, particularly when a campaign has post-click and post-view windows that extend beyond the flight dates, provide the buyer the opportunity to compare the relative performance of individual publishers, segments and creative sizes.

All of the above are designed to create what is referred to as “actionable insight”, where the data informs real time decisions, segmenting, optimising and reporting on campaign performance in a manner that makes Digital stand out from all other traditional marketing channels.

First, Second and Third-Party Data

In a world in which the use of data is valued by the online marketing ecosystem, yet provokes questions, suspicion and perhaps derision from some consumers, the concept of data ownership is key. Ultimately it’s the advertisers, publishers and ad-tech professionals’ responsibility to educate internally and externally as to the proper use of data, and how to go about respecting users and fellow professionals with regards to who owns it.

Broadly, data as it speaks to segmentation and targeting can be broken down into first, second and third-party data:

- **First-Party Data** – whether an advertiser or publisher, this is fundamentally data that the data-collecting party creates and therefore owns. This largely takes the form of pixels placed on an advertiser or publisher’s site, and primarily used for retargeting/remarketing of previous site visitors who have yet to convert, or upselling existing customers. However, it can also take the form of CRM (customer relationship management) data, cross-platform traffic, logged in user data, and audience data taken from associated social channels. With the rise of phenomena such as Do Not Track and automatic blocking of third party cookies within the Apple browser Safari, the owners of first party data will hold a significant advantage over those who don’t.
- **Second Party Data** – a very interesting opportunity for strategic partnership within the online space, as it represents the sharing of first party data direct from the source, or shared via a DMP (data management platform). For example, a well-known publisher with significant scale may partner with a small, niche site on an exclusive basis sometimes in order to resell that audience, or use it for the purposes of optimisation. The exclusive nature of a deal, often done on a rev-share or flat fee “all you can eat” basis provide the second party data owner with a competitive advantage over others in their space.
- **Third-Party Data** – this refers to data collected by a third party that serves to inform a buyer’s knowledge of individual users. For example a popular travel comparison site may segment up users who have searched for flights to New

York, then allow a popular newspaper to target those users with advertising for transatlantic flight providers on their site. This kind of data is typically housed within popular DMPs or associated plugins to major demand- and supply-side platforms, and is therefore available to all and sundry. While it can provide a buyer with additional knowledge of an audience and scale, other buyers can also gain access to it.

Different types of data

Data for the purposes of segmentation of audiences and optimisation of media buying can be broken down into five main types. Using the example of an Airline:

- **Demographic** – often submitted during a sign up process, particularly with social networks, identifying a user by their actively declared age and gender provide the buyer with a very useful opportunity. If advertising alcohol products, one can exclude under 18s. If offering women’s clothes, a buyer can actively target women only, or exclude all users they know to be men.
- **Interest** – a user is a fan of photos of far off destinations, reads travel blogs and information sites.
- **Intent** – through behaviours such as searching, visiting particular sites or pages, a user has indicated that they are actively in the market for a flight, but perhaps has yet to declare a preferred destination or brand affinity.
- **Site Retargeting** – through the use of pixels on a homepage or landing page, identifying a user who has actively visited the airline’s website, but has yet to purchase a flight. This important last step of excluding recent visitors to a confirmation page separates this from the last type of targeting which is referred to as...
- **Existing Customer Upsell** – using pixels placed on a confirmation page, a buyer can recognise a user who has recently purchased a flight. Depending on the typical conversion window or regularity of purchase (intra-European vs long-haul for example) the pixels placed on the conversion page can be used to either upsell a recent converter to other goods and services. Beyond pixels on site, existing customer upsell or cross-sell can be performed via the use of CRM data, social data or email remarketing.

In terms of data collection, the primary methods through which the online ecosystem segments users can be categorised are as follows:

- The tracking of **site visits and on-site behaviour**
- **Explicit searches made**, either via first-party data collection from the big players such as Google, Yahoo! and Microsoft, or via in-bound searches, collected by additional parameters within site URLs e.g. `exampletravelsite.com/flights=?New+York`

- **Logged in user data**, typically matched to a user ID or email address. In a world in which only a handful of larger publishers collect logged-in user data at scale, and can harness historical data on a user that extends beyond cookie deletion or expiration windows, this type of data will prove immensely valuable.

All of the above data types can be very valuable to the proper segmentation of audiences before, during and after a campaign. However, targeting individual segments without combining them with others limits the potential the buyer has to deliver the optimal campaign. In the case of a toy retailer, a user may have visited their site, and can therefore enter the remarketing pool, but if they're under 18 they don't have power to purchase. If a Life Insurance provider is prospecting new customers, targeting a user who has searched for 'Life Insurance' seems like a smart move. However, without excluding any and all users who have recently visited a confirmation page may result in serving an ad to an existing customer who is unable to purchase again, which can be deemed as wasted ad spend.

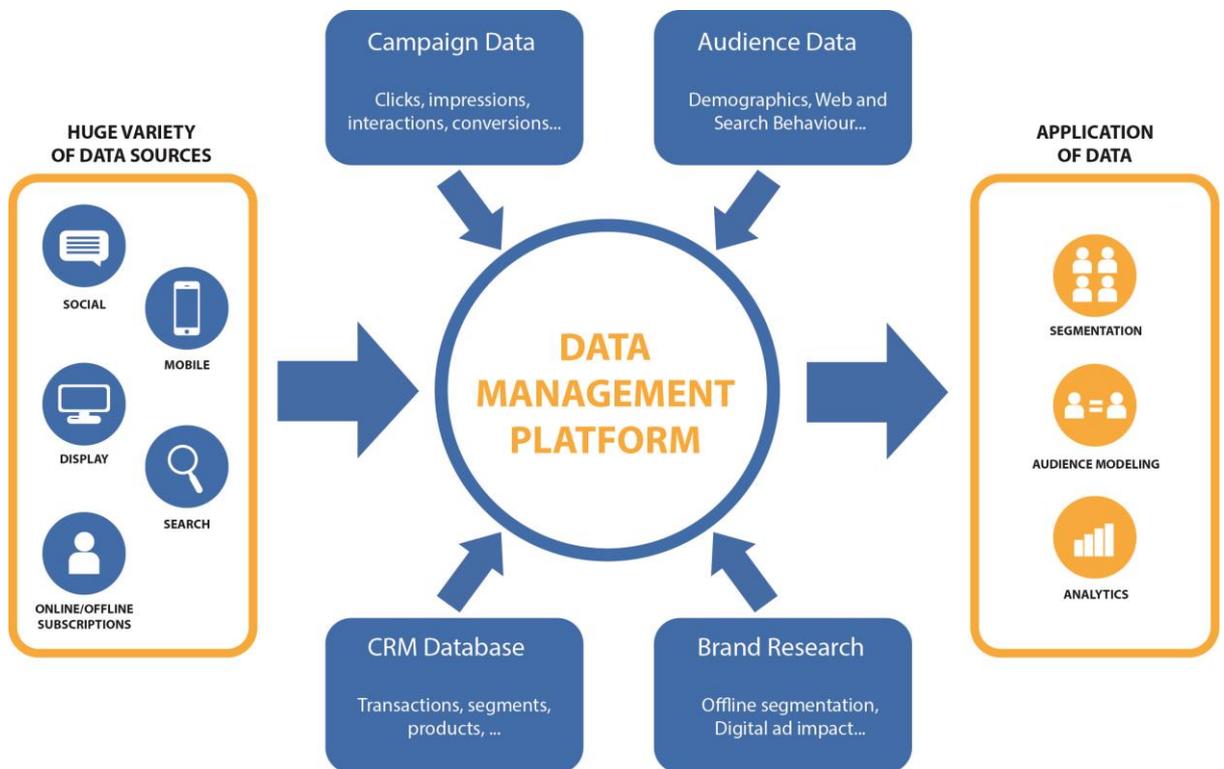
Data Management Platforms (DMPs) *(see graphic on following page)*

The exponential growth of data availability, usage and integration has led to powerful and intelligent DMPs gaining ever-greater importance for the digital marketing industry.

A DMP provides marketers with highly customisable targeting and analytics that can be leveraged for smarter media buying and campaign planning.

A DMP is built around five main features:

1. **Data Connectivity** - techniques to import anonymous data from a device's digital touch points and export this data to other delivery systems whether ad networks, exchanges, DSPs (demand side platforms) or other third parties
2. **Data Classification** - building specific unique audience profiles
3. **Data Analysis** - in-depth understanding of customer intent
4. **Scalability** - extracting data from all data touch points and analysing them simultaneously
5. **Timeliness** – enabling availability of data in less than 100 milliseconds to match the typical duration of an auction



A Data Management Platform

Source: Xaxis 2014

For publishers, a DMP provides a 360° degree view of their audience data assets. Armed with this data knowledge, publishers can segment their audiences to sell them more effectively.

In the Programmatic arena, DMPs enable automated real-time decision making, powering precise, targeted online advertising and greater cost efficiency. The latest developments in state-of-the-art DMPs provide real-time streaming and filtering of data and equally allow marketers to fine-tune their data strategy - extracting value directly from the data stream and only storing data ultimately needed.

The next step in DMPs for both advertisers and publishers is to aggregate data and create audiences based on brand-specific attribution and targeting models. In this scenario, pre-built segmentation and pre-defined reporting schemes are replaced by dynamic systems that continuously adapt based on new streams of data generated from a 'central hub'. This creates a more seamless integration between client, agency, and technology platform, allowing a direct transfer of knowledge from the analysts closest to the raw business data, to the operators controlling the Programmatic buying systems.

To make even bigger data actionable, new technologies built specifically for these tasks will be necessary. The next generation of buy and sell-side platforms are already under development, as are DMPs that will make decisions across an entire media buy even more efficient. They will feature intelligent application of data at the appropriate point in time and also include analytics that show connections between online metrics and offline sales in real-time.

In getting online and offline metrics and analytics more closely aligned, broader data application will emerge. Once initial data investments have been clearly substantiated, data management platforms will be able to drive cross-organisational use.

Data Exchanges

Data exchanges or marketplaces are typically independent software platforms or plugins to DSPs or DMPs that offer significant opportunity to both buying entities.

In this case, buying entities are agencies, advertisers, networks or creative optimisers, and sellers of data are typically publishers, aggregators, or offline data suppliers. There is also the instance in which a publisher looking to maximise yield within an SSP may use segments from a data exchange to better improve its channelling for the purposes of creating private marketplaces.

While the line between data exchanges and DMPs can often be somewhat blurry to the uninitiated, DMPs effectively act as an environment in which you can warehouse and monetise first party data, while a data exchange provides an environment for the analysis and acquisition of third party data. Data exchanges do not serve ads or own inventory, they purely act as a marketplace through which data can be used for the purposes of campaign optimisation.

Typically a data supplier submits segments for approval, which are then put through a vigorous vetting process before being made available to buyers within the exchange. From there, buying entities indicate which data segments they would like to buy, and how much they are willing to pay. Once agreement is made between the two parties, the segments are made available in the buying entity's DMP for use either in silo or in combination with their own first party data.

Data exchanges and marketplaces offer a fantastic opportunity for publishers and data aggregators to create additional revenue streams, along with benefitting from a deeper understanding of their audience and access to the broadest number of buyers possible. For ad networks, agencies and trading desks who may lack their own first party data and inventory, tapping in to data exchanges offers them an avenue into the third party data space to improve their prospecting and brand efforts, while adding further efficiencies to their lower-funnel retargeting activity.

4.3 Legal Implications

Whenever processing “Big Data”, the first step in that processing is the collection of the data. Such data might be provided by a third party or it might be collected directly from individuals.

Data provided by third parties

Where that data is collected from a third party, it is necessary to ensure that the data was lawfully obtained and may be processed for the intended purposes – in other words, does the company have the necessary permissions? If the collected data set includes personal data (being any information which relates to an identified or identifiable individual, directly or indirectly), then the collection and subsequent processing of that personal data is subject to the relevant national implementation of the Data Protection Directive (Directive 95/46/EC). Amongst other requirements, the Data Protection Directive requires that data subjects (the individuals to whom the personal data relates) be provided with notice of how their personal data is processed and that processing can only be carried out where the data subject has consented to the processing. It is necessary to fulfil a contract with the data subject or another one of the Article 7 criteria for lawful data processing to apply.

For example, suppose a company provided internet browsing statistics on their employees to a publisher and those statistics contain personal data. Unless the company had obtained the consent of its employees for both the disclosure of their personal data to the publisher and the subsequent data processing by the publisher, then the publisher’s use of the personal data will likely breach the relevant implementation of the Data Protection Directive and expose the publisher to an enforcement action from the competent data protection authority.

Data collected directly

Alternatively, suppose information is being collected directly from individuals. As above, where that information contains personal data, the relevant national implementation of the Data Protection Directive will need to be complied with.

However, even if the information does not contain personal data, the E-Privacy Directive (Directive 2002/58/EC as amended by Directive 2009/136/EC) requires a company to obtain consent before collecting or storing information on the terminal end equipment of a subscriber or user. Generally, this applies to using cookies, client side java script, personal identifiers on smart phones and other similar technologies to collect information on individuals as they browse the internet. For more information on the E-Privacy Directive and how to comply in your Member State, please visit the Your Online Choices website - <http://youronlinechoices.eu/>.

4.4 Transparency

Advertisers are spending more than ever before in digital and data-driven display advertising and as the industry develops there are many great opportunities for brands to build smarter and stronger relationships with their customers through big data.

However in order to do so advertisers require an end-to end, transparent view of their digital spend, the data driving it, and the overall performance that results from the combination of all these factors.

Big data in Programmatic advertising cannot be limited to just one type of data. In fact, closed-loop Programmatic buying requires systems that manage multiple types of data, including audience data, impression-level advertising data, and financial data. For advertisers to truly reap the benefits of all this data, however, they need more than just advanced technology systems, they also need transparency to turn the data to insight. Advertisers require transparency across multiple types of data, including:

- **Audience Data.** Audience data enables advertisers to better target and optimise their Programmatic campaigns. In order to fully leverage audience data, advertisers need to have transparency regarding why and how each data segment is defined as segment definitions may vary across different businesses. For instance, two automotive manufacturers may have very different definitions of a “luxury car shopper” based upon their own proprietary research. Additionally, advertisers should demand to know where their data is coming from, with whom it is being shared, and how different segments impact campaign performance relative to one another.
- **Impression Data.** Programmatic campaigns can often run across thousands, if not millions of sites. Advertisers want transparency regarding impression-level campaign data to ensure that their brands and customers are protected and that optimisation decisions are serving their goals, not those of sellers⁸. Advertisers can benefit greatly from domain-level visibility into where their ads are running, the viewability of these ads, and the protections placed on these ads against bot traffic. Additionally, advertisers should expect their Programmatic advertising system to enforce and report on frequency caps universally across all sites in a campaign.
- **Financial Data.** Transparency into financial data is key to understanding campaign ROI (return on investment) and informing smarter decisions for future campaigns. Advertisers need to be aware of exactly how much they are spending on the various elements that comprise a Programmatic campaign, including data, ad impressions, and technology. This should include a clear break down of all vendors involved in the campaign, costs associated with these vendors, and details into the pricing models of these vendors (CPM, %

⁸ All stakeholders on the sell side including the networks, SSPs, publishers etc.



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of media, arbitrage, etc.) how they are getting paid and what part of their budget is going towards CPM vs. fees and arbitrage.

By gaining more transparency into this financial data, advertisers can gain a better understanding of what is driving true ROI, and what isn't, for their Programmatic ad campaigns.

Technology plays a huge role in allowing advertisers to measure and be in control of their Programmatic data however it is vitally important that technology is used correctly – to provide transparency and clarity around all of the details we mentioned above. Technology should not be being used to hide this or obscure any element of advertisers' data.

5 Programmatic Trading in the Advertising Mix

5.1 Programmatic Trends Programmatic Trading is now in the mainstream of digital advertising, but is still experiencing substantial growth and change. In 2014, three key trends are emerging in the application of Programmatic Trading:

- **Adoption of Programmatic by Brand Advertisers.** In its earliest days, programmatic was used almost exclusively by direct response advertisers, often in service of CPC (cost per click) or CPA (cost per acquisition) campaigns. This has undoubtedly changed. As Programmatic has matured by offering more brand safety protections (including viewability metric/ measurement information and contextual targeting), better inventory access, and more targeting options, brand advertisers across industries like FMCG, automotive, and luxury goods have all adopted Programmatic. While these brand advertisers require different measurement methodologies for their advertising from those of their direct response counterparts, they achieve many of the same advantages through real time buying, including consistent targeting, universal frequency capping, and smarter impression-level pricing.
- **The Rising Importance of Programmatic Video.** A key driver of brand advertiser application of Programmatic has been the rising availability of online video advertising via ad exchanges, a natural consequence of the tremendous growth in overall online video advertising. In fact, SpotXchange and IHS Electronics & Media project that European programmatic video spending will reach €368.8m by 2015⁹. With this growth, more advertisers will plan their online video investments in conjunction with TV advertising and to experiment with “Programmatic” TV buying – whether via exchange-based video buys on connected TV applications or by using online data to inform more granular television targeting through services like Sky’s AdSmart. In all such applications, advertisers must continue to demand transparency and use buy-side tools to ensure they receive high-quality impressions, especially in-video where low-quality auto-play, non-viewable impressions are increasingly common.
- **New Forms of “Programmatic Premium” Buying.** Despite early reluctance, premium publishers have largely come to embrace Programmatic selling as a component of their sales mix. While many make inventory available via public exchanges, many publishers are exploring alternative “Programmatic

⁹ Video goes programmatic: Forecasting the European online video advertising landscape report, IHS Electronics & Media and SpotXchange - <http://www.spotxchange.com/blog/2013/09/10/video-goes-programmatic-forecasting-the-european-online-video-advertising-landscape/>

Premium” offerings as part of their offering mix. This term often encapsulates multiple types of buying, including most commonly “private exchanges” which typically promise advertisers preferential “first-look” access to inventory and the opportunity for pre-negotiated pricing terms. This buying method allows advertisers to apply their own data and control frequency much as they would for public exchange RTB (real time bidding) buys; however, advertisers must still carefully weigh the benefits of preferential inventory access (which often times is functionally the same as public exchange access) in return for whatever guarantees are demanded by the publisher.

5.2 Current State of Programmatic Trading for Rich Media, Mobile, Video, Social, New Trends, Challenges and Solutions and Private Exchanges

As Programmatic Trading expands in influence across the advertising ecosystem it is worth considering the impact it will have on the many of the current key drivers of digital growth.

The use of Programmatic Trading for mobile, video, rich media and social has lagged general desktop display, reflecting the comparative immaturity of these areas. However, there are signs that this is changing.

The shift to mobile by consumers is now well documented and widely understood, as is the fact that mobile advertising in the medium term has yet to reach its full potential; both in terms of levels of spend in relation to consumer attention and creativity of the advertising itself. Mobile is fast becoming an integral part of advertiser’s budgets and IAB Europe’s AdEx Benchmark 2013 ¹⁰report reveals that mobile now accounts for a double-digit proportion of total display ad spend at 11.8%.

Some of this complexity is driven by the multitude of technology platforms and the disparate nature of the mobile ecosystem. However, it can be argued that by putting mobile in its own silo and labelling it ‘different’, the industry missed the opportunity to scale.

In many markets, Programmatic Trading is now reaching critical mass; just as advertisers and publishers are prepared to tackle the mobile challenge with renewed vigour. Consumer shift makes it inevitable that scale will come to mobile; and by stripping out the complexity and creating the basis to extend real time campaigns to mobile from desktop or even TV, Programmatic is likely to be the catalyst to mobile breakthrough in a way that the uniquely mobile and silo campaigns were not. Resources that are currently invested in planning, buying and trafficking mobile campaigns will then be free to focus on how to make Programmatic mobile play to the strengths of each of the 9000 device types and apply a fresh level of creative

¹⁰ AdEx Benchmark 2013, IAB Europe and IHS Technology - <http://www.iabeurope.eu/news/adex-benchmark-2013-full-report-published>

thinking to making the platform work for more than app downloads and direct response.

Scale in mobile is also being driven by the migration of social media to a mobile first channel. With the majority of traffic now coming from devices other than a desktop or laptop; new monetisation models are driving a convergence between earned and paid media. This has significant implications for agencies and the brands they work with. The mobile consumer expects to connect in real time and is used to engaging with brands through owned and earned media in this way. Native advertising in the social feed is one way to reach the audience; but advertisers are unlikely to be satisfied with such a “walled-garden” for long, and so it is possible to see demand growing for paid media across the web to support real time interactions and user engagement – regardless of device and platform. That can only happen programmatically.

For rich media and video the picture is less clear, and it seems unlikely that formats like the IAB Europe Brand Builders¹¹ will quickly appear in the open performance and RTB marketplaces. However, just as with display and mobile, there is a significant opportunity for the efficiency and effectiveness of the advertising to improve if traded programmatically. Thus, these higher value placements are likely to be traded first through publisher-led private marketplaces and technology enabled deals.

¹¹ IAB Europe Brand Builders - http://www.iabeurope.eu/files/3713/9530/9256/IAB_Europe_Brand_Builders_Ad_Formats_Description_s.pdf

6

Conclusions and Recommendations

RTB (real time bidding) was a classical industry disruption in that it delivered a new way of buying and selling advertising that was effective in meeting the needs of a very specific market.

By broadening the offer of remnant inventory it drove revenue for publishers and by offering specific audience targeting it transformed the way advertisers think about digital media. But as the technology has matured, Programmatic Trading has become ever more capable. Today it is widely used in the performance and RTB marketplace, while making significant inroads to the bespoke deals done by buyers and sellers. It has been a commercial success for the entire ecosystem, which has encouraged rapid and increasing adoption. However, despite the fact that its progress has been significant there are some issues that need to be resolved.

Programmatic Trading is being hindered by a lack of technical and commercial understanding in the advertising community. In IAB Europe's research¹² with AppNexus and WARC, it was found that while the vast majority of media buyers are using Programmatic Trading almost a quarter do not have a good understanding of it. For marketers, that number is considerably higher at almost two thirds. And while it's true that marketers perhaps don't need to know the ins and outs of the way in which media is bought; their lack of understanding limits their ability to see how paid media complements other real time initiatives, how brands can be built at scale across mobile and social channels with clear and consistent feedback loops and how digital is now the most effective way to reach and engage specifically targeted audiences.

The research also shows significant levels of concern from publishers and advertisers alike that the buyer/seller relationship has become overly combative. This potential erosion of trust between all parties cannot be entirely offset by the efficiencies of Programmatic Trading. Instead, the technology needs to evolve to enable better inventory discovery, more collaborative deals and greater consistency in the metrics and measures used to define and realise success.

At IAB Europe, we are working with the industry to educate and inform about the impact of Programmatic Trading and are building the objective criteria and standards that will shape the industry for the next five years.

¹² Why and how programmatic is emerging as key to real-time marketing success, IAB Europe, AppNexus and WARC (June 2014) - <http://www.iabeurope.eu/news/new-research-appnexus-warc-and-iab-europe-identifies-drivers>

7

Glossary**Ad Exchanges***

Online, often highly automated auction-based marketplaces that facilitate the buying and selling of inventory across multiple parties ranging from advertisers, direct publishers, ad networks and Demand Side Platforms (DSP).

Blacklist

A list of blocked items, terms or URLs to be used against the delivery of an advertising campaign.

Data Management Platform (DMP)*

Platforms that allow advertisers, agencies, publishers and others to control their own first-party audience and campaign data, compare it to third-party audience data, and give the ability to make smarter media buying and campaign planning decisions via behavioural targeting or extending audiences via lookalike modeling. Advertisers and agencies generally utilise DMPs in order to buy more effectively while publishers typically utilise DMPs in order to segment their audiences and sell more effectively.

Demand Side Platform (DSP)

A technology platform with a bidding algorithm. Using a DSP, buyers (advertisers, trading desks, agency trading desks) are able to centralise their media buys with the programmatic purchase of digital inventory using a unified platform across various SSPs, ad exchanges, and ad networks. A DSP is designed to bid the optimal CPM for a particular impression in real time, incorporating the calculated value of the inventory against the campaign goal(s). A DSP works in the interest of a buyer. In many cases a DSP offers additional services such as centralized billing.

Pixel

A tracking or retargeting pixel is a small piece of code contained in a single clear pixel on a website or specific ad unit that drops a cookie on the user's browser. That cookie is used for tracking purposes.

Private Marketplace (PMP)

A unique set of biddable inventory (differentiated placements or data) that is not available in its full transparency in a general RTB auction. PMP inventory is packaged within a publisher's SSP and offered to selected buyers/bidders. A buyer can use a Deal Id (a universal identifier/numeric keycode) to gain access to and bid on the specific PMP inventory.

Programmatic

An automated process for advertisers to buy media and an automated process for media owners to sell ad inventory (including display, mobile and video).

Real-Time Bidding (RTB)*

RTB is a protocol that enables the valuation and bidding on individual impressions in real time. The buying takes place over online media exchanges – basically media marketplaces – which connect sellers (publishers) and buyers (advertisers).

Sell-Side Platform (SSP)

A technology platform that makes it possible to sell automated online media to different parties. Using an automated yield optimiser, the algorithms in an SSP ensure that the publisher receives the highest turnover per impression. An SSP is connected to multiple demand sources which include DSPs, ad exchanges and advertising networks. An SSP always works in the interest of a publisher. In many cases an SSP also offers additional services such as commercial agreements with ad exchanges and centralised billing.

Trading Desk*¹³

An agency branch trading entity known as the expert operators in their use of new technology. These entities can be independent or operate within an agency holding company. This group of people (known as traders) play the day-to-day campaign management role. Who uses: Agency holding companies, operating agencies, advertisers.

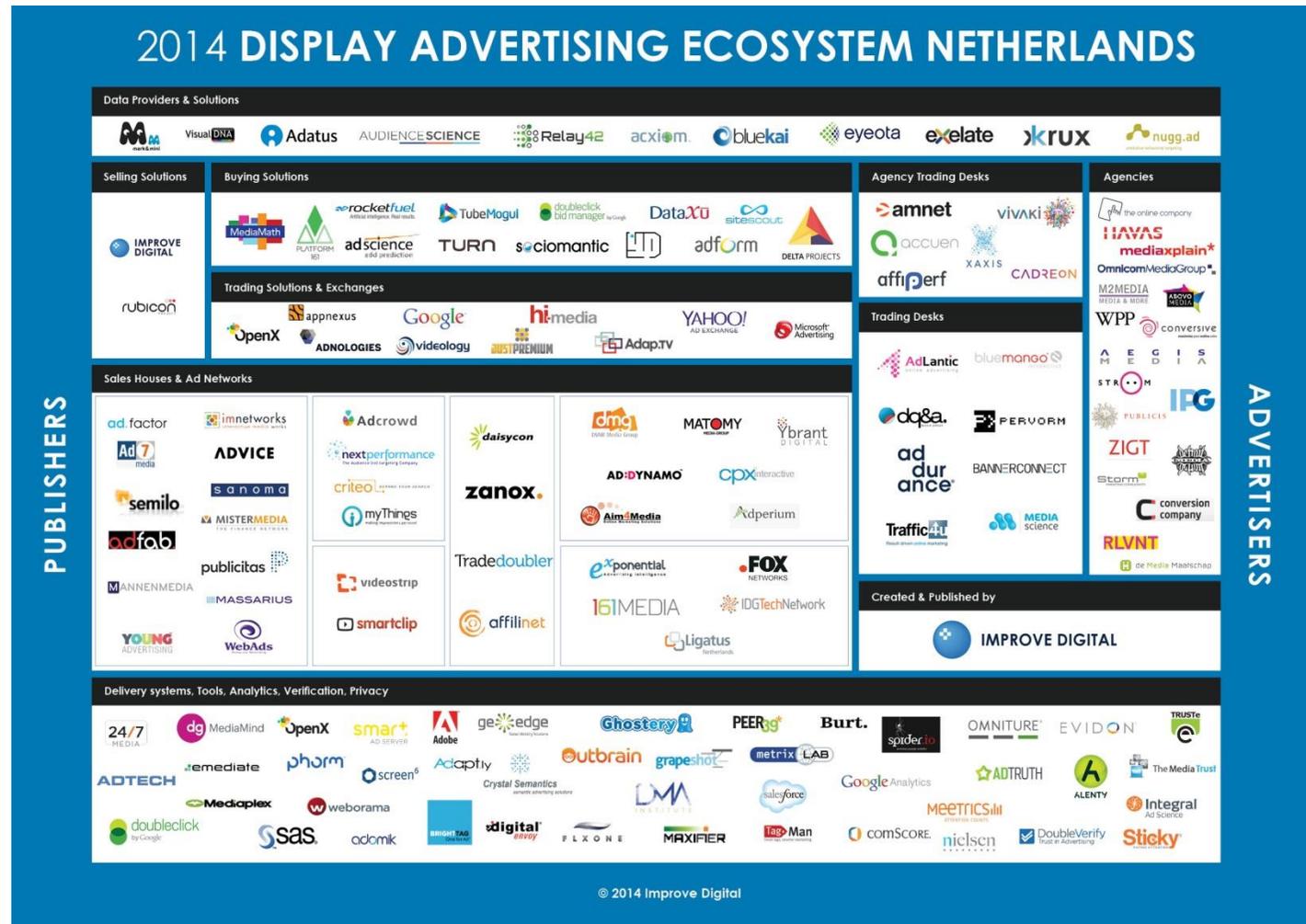
Whitelist

A list of approved items, terms or URLs to be used against the delivery of an advertising campaign.

¹³ Please note – terms marked with a * are from the IAB UK Jargon Buster - <http://www.iabuk.net/resources/jargon-buster>

8 Appendices

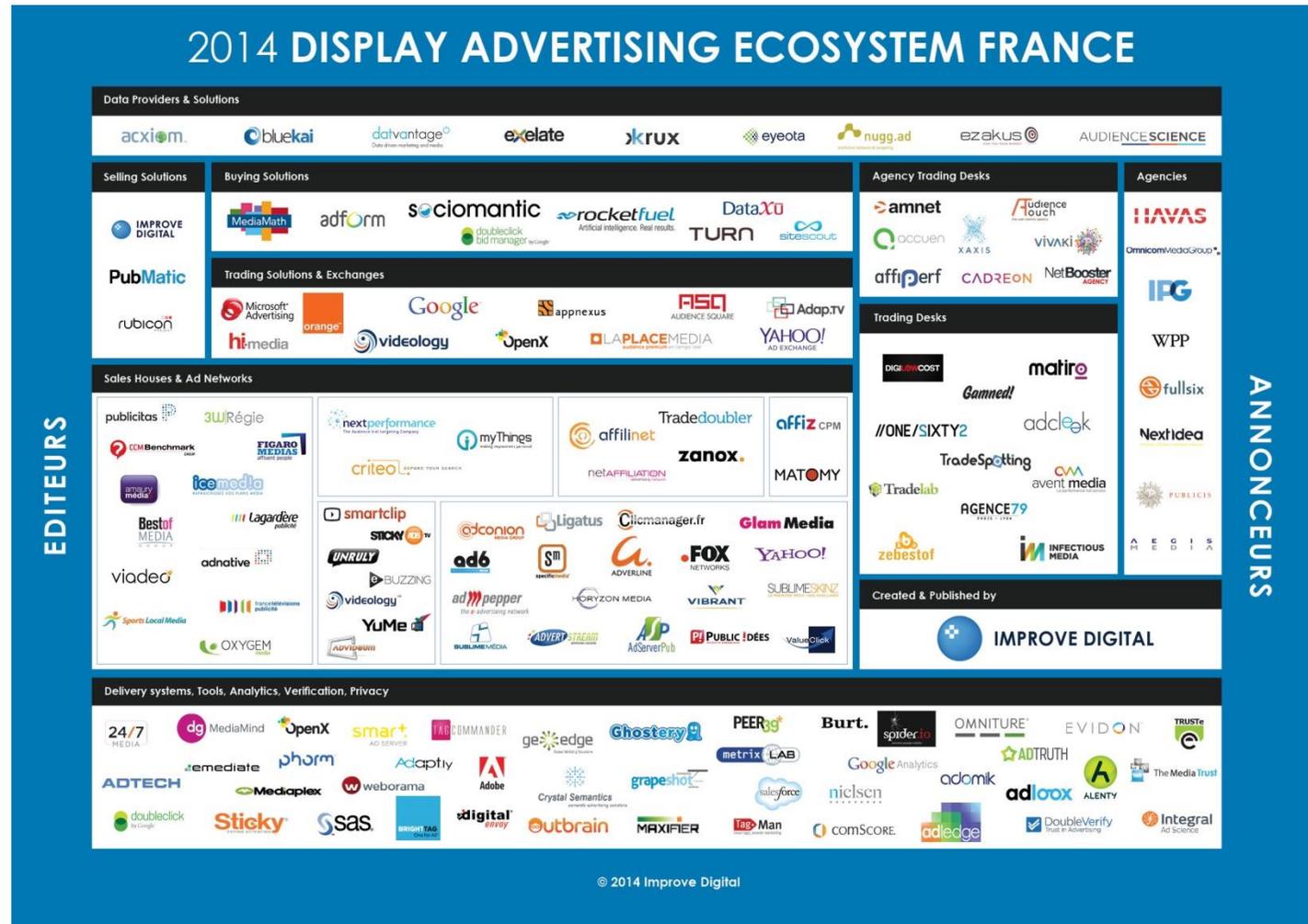
8.1 The Netherlands Display Ecosystem overview*



*Provided by Improve Digital - <http://www.improvedigital.com>

NB: these ecosystems are based on office locations and not operational locations

8.2 French Display Ecosystem overview*



*Provided by Improve Digital - <http://www.improvedigital.com>

NB: these ecosystems are based on office locations and not operational locations

8.3 German Display Advertising Ecosystem overview*

2014 DISPLAY ADVERTISING ECOSYSTEM DEUTSCHLAND

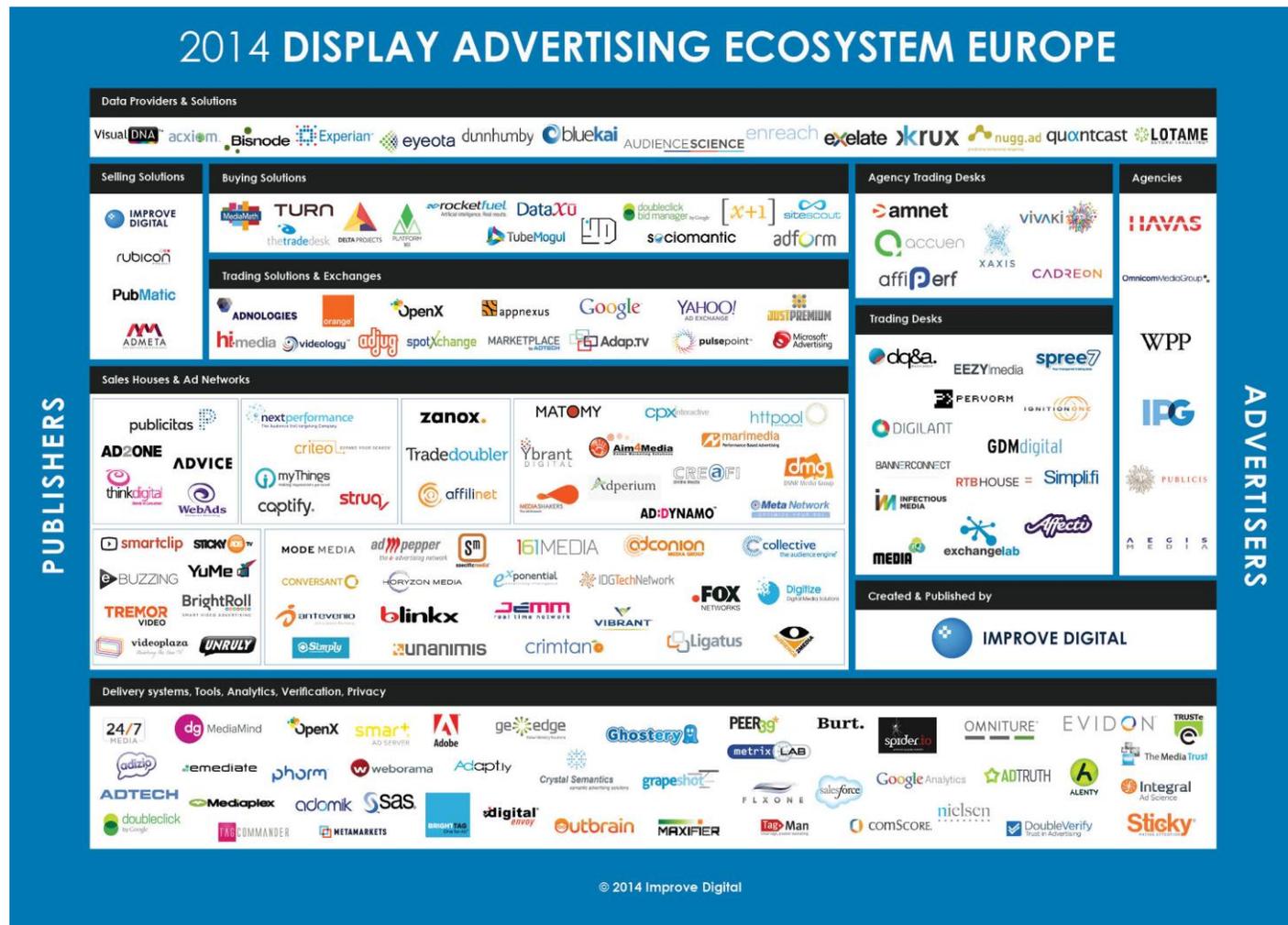
Data Providers & Solutions			
Selling Solutions	Buying Solutions	Agency Trading Desks	Agencies
Trading Solutions & Exchanges			
Sales Houses & Ad Networks			
Delivery systems, Tools, Analytics, Verification, Privacy			
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NB: these ecosystems are based on office locations and not operational locations

8.4 European Display Ecosystem overview*



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NB: these ecosystems are based on office locations and not operational locations



About IAB Europe

IAB Europe is the voice of digital business and the leading European-level industry association for the interactive advertising ecosystem. Its mission is to promote the development of this young and innovative sector by shaping the regulatory environment, investing in research & education, and developing and facilitating the uptake of business standards.

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