REAL-TIME BIDDING IN ONLINE ADVERTISING

THE DEATH OF THE MAD MEN

The big bang of online advertising is taking place right now

Just as the financial sector transitioned from trading via hand signals and slips of paper to automated buying and selling, Real-Time Bidding (RTB) is rapidly transforming the online advertising market, by enabling automated and transparent trading of display inventory, eyeball by eyeball.

Efficiency gains driving substantial market growth

Both buyers and sellers will ultimately benefit from efficiency gains and we expect as a result that online advertising will steal a greater share of the advertising pie than previously anticipated. Global RTB ad spend is expected to grow at over 50% per annum to over $20 billion in 2017.

On the cusp of the next market phase – the ramp-up to mass market adoption

Over $1.3 billion has been invested into RTB platforms with over half of this in the last two years. With the infrastructure now in place, we expect that online display sales via RTB could increase towards 50% of the market in the US over the next 5 years, with key Western European economies catching up quickly.

Europe currently lags behind the US but could benefit the most

Europe is a fragmented digital media market, but RTB enables advertisers to efficiently buy across publishers audiences in different geographies and languages. While US entrants are first movers in scalable tech platforms, we see a significant opportunity for customised technology, data analytics and service layers in Europe as the ‘one-size fits all’ platform technologies commoditise. We expect European RTB penetration rates will start to catch up with the US and that Western Europe could see RTB ad spend reach $4bn in 2017.

Data is king, but not all data is made equal

The availability of quality data is key on both sides of the market. Advertisers that can leverage their first party data will have an advantage over those reliant on third party data sources, whilst publishers that use data to better understand their audience will be able to maximise their yields.

Mobile and Video are key drivers of growth

Mobile RTB is exploding due to the rich data now being provided on users and significant investments in tracking technology. Video RTB is also growing rapidly and cross device campaigns will have a significant impact on the landscape as brand advertisers adopt RTB as a method of delivery.

Consolidation is coming

As RTB now ramps up to mass-market adoption, and increasingly well-funded RTB players jockey for position, we expect to see a wave of consolidation. M&A will be driven by the need for scale, customers, multi-channel capability, internationalisation and late entrants acquiring RTB expertise.
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INTRODUCTION

The ‘Big Bang’ of the advertising marketplace

The ‘big bang’ of the advertising marketplace is taking place right now in real-time bidding for online and mobile display inventory.

Real-time Bidding (or RTB) is an automated method of buying digital-display advertising in real-time via an auction between buyer and seller on an Ad Exchange for individual impressions eyeball-by-eyeball. Our report focuses on RTB and also address the wider programmatic buying market where trades can be automated but not necessarily in real-time or on an impression-by-impression basis.

Not that long ago the Square Mile and Wall Street transitioned from trading via hand signals and slips of paper to automated buying and selling. The online advertising market has undergone a similar transformation in recent years. Up until relatively recently, online advertising has been bought and sold in a surprisingly similar way to traditional media. The norm was for agreements in advance to acquire packages of ad inventory based on limited data about the actual audience that will see the ads. However, trading in online inventory via RTB is now becoming increasingly automated, liquid, transparent and efficient as RTB gains momentum in both web and mobile advertising.

RTB is driving huge efficiencies in the ad marketplace

With substantial advances in liquidity, as more publishers adopt RTB, and in the sophistication of ad-trading platforms, advertisers are gaining the ability to assess and reach their target audience far more effectively than ever before.

Real-time audience data including location, age, gender and so on, married to real-time pricing, provides greater transparency in the underlying market. Through impression-level real-time auctions, advertisers are coming closer than ever before to solving the conundrum of knowing what half of their advertising money is being wasted. By transitioning from manual media buying to automated or programmatic platforms, participants are also able to recognise significant cost efficiencies.

Benefits to both buyers and sellers can drive the overall market

Whilst there will initially be losers as well as winners, ultimately buyers and sellers of online advertising should both benefit from a more efficient marketplace.

The benefits to advertisers are widely recognised and Demand Side Platforms (or DSPs) have proliferated to drive this side of the marketplace. Publishers, in particular ‘premium’ publishers, have been more reluctant to accept RTB, but Sell Side Platforms (or SSPs) have helped overcome initial barriers and drive wider adoption. In our view these new online advertising models will further the transition from offline to online, with online stealing a greater share of the advertising pie than perhaps previously anticipated.

The ‘Rise of the Machines’

RTB has grown rapidly in a relatively short period of time. The landscape emerged in the early noughties as publishers increasingly moved audiences online and sought to monetise their digital inventory (or impressions) via display advertising. Initially this was all done manually by hard-coding ads onto the publisher’s sites and the whole landscape was slow, inefficient and difficult for advertisers to navigate.

With technological advances in ad serving, Ad Networks soon emerged to aggregate inventory from publishers and sell it on to advertisers. They would deliver ad impressions through a centralised Ad Server responding to a website once a page is called. However, advertisers would need to manually optimise and
rate the performance of their ads based on the responses they received. They had a limited understanding of the audiences they were accessing and, as a result, the success of their campaigns couldn’t be measured in a very reliable manner.

Ad Exchanges eventually emerged as tech-enabled marketplaces allowing the trading of ad impressions between buyers and sellers in real-time. The first large Ad Exchange was launched by RightMedia (now part of Yahoo) and matched buyers and sellers with a bid and ask much like you would on a stock exchange. DSPs emerged soon after, allowing advertisers to acquire this inventory in increasing scale and in real-time using programmatic bidding strategies.

Initially RTB was limited to lower quality inventory as premium publishers were mindful of potential erosion in CPMs (see The ‘Publisher’s Dilemma’). It wasn’t, however, until SSPs became widespread that publishers were able to actively manage their ad inventory and the market started to see significant growth. SSPs are now providing much needed inventory and liquidity to stimulate growth in the underlying market.

**Figure 1 – Evolution of RTB**

<table>
<thead>
<tr>
<th>Early Tech</th>
<th>Buy-side Growth</th>
<th>Supply-side Growth</th>
<th>Mainstream Adoption</th>
</tr>
</thead>
<tbody>
<tr>
<td>* Initial development of RTB technology through growth of Ad Exchanges</td>
<td>* Proliferation of DSPs as advertisers look to take advantage of technological advances</td>
<td>* Mass-market liquidity starting to be provided by SSPs</td>
<td>* RTB starts to ramp to mass-market adoption and multi-channel in Europe as well as US</td>
</tr>
<tr>
<td>* Development of initial DSPs to serve advertisers (e.g. [X+1], Turn)</td>
<td>* ‘Publisher’s Dilemma’ limits the availability of premium inventory</td>
<td>* Premium publishers adopt RTB and programmatic sell-side techniques as they seek to preserve and optimise yields</td>
<td>* Industry consolidation as multiple ad-tech platforms scale and late entrants to the market acquire capabilities</td>
</tr>
<tr>
<td><strong>2000-2006</strong></td>
<td><strong>2007-2010</strong></td>
<td><strong>2011-2013</strong></td>
<td><strong>Soon</strong></td>
</tr>
<tr>
<td></td>
<td>* SSPs emerging but RTB focused on non-premium inventory</td>
<td>* Initial growth in Direct Programmatic sales channels</td>
<td>* IPOs and exits for major DSPs, SSPs and tech providers</td>
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<tr>
<td></td>
<td></td>
<td>* Growth of new channels as mobile and video formats standardise</td>
<td>* Non-RTB ad networks and ad-tech intermediaries suffer from pricing pressure and lack of growth</td>
</tr>
<tr>
<td></td>
<td></td>
<td>* Initial growth in Direct Programmatic sales channels</td>
<td></td>
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<td></td>
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</tbody>
</table>

Source: GP Bullhound

The landscape has become increasingly sophisticated with significant growth in the number of DSPs and the increasing adoption of SSPs by mainstream publishers. Media trading has evolved towards RTB as advances in technology have allowed the matching of buyers and sellers in a matter of milliseconds, with billions of ads traded every day. RTB has rocketed in popularity as advertisers have sought to bypass the ‘black box’ of the Ad Networks, which have historically occupied a profitable niche in the value chain by arbitraging between buyer and seller in an inefficient market. Figure 2 illustrates the perceived value leakage historically due to the number of intermediaries between buyer and seller in the market.
Despite the disintermediation of some of the Ad Networks by RTB platforms forcing them to rethink their business models, the landscape remains bewilderingly complex with many intermediaries remaining between publishers and advertisers. Although there is more transparency in the system, many participants are still acting like Ad Networks and arbitraging between buyer and seller. We only see this as sustainable where real competitive advantage has been created and a clear ROI for advertiser and/or publisher is being demonstrated.

Figure 3 shows a basic summary of the RTB ecosystem and examples of some of the key players with the flow of advertising dollars running from left to right.

**Figure 2 – Value Leaking in the Display Advertising Market**

![Value Leaking in the Display Advertising Market](image)

**Figure 3 – The RTB Ecosystem, Illustrated With Selected Players**

![RTB Ecosystem Diagram](image)
The ‘Death of the Madmen’?
So will RTB cause the ‘Death of the Madmen’? Well it’s clear these developments are driving greater efficiency in the system at the expense of human-based interaction. Advertisers are increasingly relying on independent specialists (e.g. Infectious Media, YD), agency trading desks (e.g. Xaxis, Accuen) or even buying in their own talent to run programmatic buying strategies. There will always be a need for strategic thinking in the direct sales force but as the ecosystem becomes increasingly connected we anticipate that the majority of global online display advertising will eventually be traded programmatically with more than 50% via RTB.

We’re anticipating a step-change in the industry as more and more devices are connected to the mobile Internet and IP Connected TVs and outdoor displays deliver customised ad formats at the right time, to the right person in the right location. Mobile and video RTB are exploding as more inventory is pushed towards Ad Exchanges and increasing amounts of premium inventory are traded programmatically. We’re not quite there yet but the era of data-led marketing is dawning. Don Draper take note. The marketing geeks will inherit the earth.
TECHNOLOGY AND APPLICATIONS

How does RTB work?
The market for RTB is facilitated by a series of transactions which take place in fractions of a second between the time you click on a link to a website and when the page loads onscreen. Online users generate data about their browsing history and preferences which can be recorded using cookies and shared with third parties. This data can be used in isolation or combined with additional data (whether owned or bought) to determine whether an advertiser wants to target that user with an ad and how much they want to pay to do so. Where impressions are made available via an Ad Exchange, advertisers can place bids on these impressions based on specific criteria including not only cost, but, age, location, gender and so on. The highest bidder for an impression gets the placement so the quality and accuracy of data is key to ensuring the right price is paid.

It's all about the data
RTB enables marketers to apply algorithmic buying strategies in their purchasing decisions. Rather than accessing an audience en-masse via a publisher or network using large bulk ordering and broad targeting parameters, RTB technologies allow a buyer to pick and choose impressions as they come in. A key benefit of this is the ability to learn, optimise and change a campaign instantly through a programmatic buying strategy. A large portion of RTB spend is based around such strategies using proprietary first party data alongside data acquired from third parties or picked up from cookies.

Cookie monsters
Cookie data is intrinsically important to the RTB process. By using cookie IDs advertisers can find out if that user has recently been on the publisher’s site, how often and where they have visited. The cookie data can be combined with other information about the user from third party data sources (e.g. Experian, Callcredit) as well as with their own first party customer data allowing for highly targeted programmatic trading strategies. Advertisers can also match this with cookie data generated from recent campaigns so that, for example, they have an indication of whether that user has clicked on a particular advert in the past. As a result, Data Management Platforms (or DMPs) have emerged to help advertisers merge and manage data in large volumes in order to make better buying decisions. Publishers are also increasingly using third party data providers and DMPs to better understand the value of their inventory.

Not all data is created equal
Views diverge, but arguably the most valuable data to advertisers currently is their own first party customer data. For example, when targeting an audience with a particular campaign incorporating first party customer data will ensure you’re not targeting individuals that are already customers with offers that they already have and that existing customers can be targeted with offers that are relevant on past behaviour or buying patterns.

Cookie data declines rapidly in value, often in the space of a couple of days, as it becomes obsolete as soon as users refresh their browser history. Proprietary customer data is more valuable as it has a much longer effective shelf life than cookie data, which is based on media inventory that is burned through relatively quickly. There is then a raft of third party data available, some of which can be very valuable, but one issue is that the real value of much of this data is often not transparent until it has been applied at scale, tested and learned from.
Demand Side Platforms

DSPs allow advertisers to use data to target their desired audience more effectively using algorithms to optimise buying strategies and bid on the most relevant impressions, at the right time, in scale and across multiple devices, formats and properties. DSPs interface with inventory sources like Ad Exchanges to provide advertisers with the ability to run programmatic bid strategies.

There are three key characteristics of a DSP that determine its value to advertisers:

(i) **Usability** – all about the functionality and ease of use of the software user interface for the advertiser or agency;
(ii) **Reach** – the extent and breadth of access to media sources (whether desktop, mobile or video); and
(iii) **Data** – integration with data providers and applications that can assist with programmatic buying strategies.

We see DSPs as broadly split between two types: the first is a one-size-fits-all interface that is all about the scale and breadth of both media and data integrations. The other is a specialist DSP offering a customised interface with deep first party data integration for its clients. The former approach requires scale to succeed and is exemplified by large players such as Turn, MediaMath, and AppNexus that operate a ‘platform approach’ and are increasingly looking to offer an end-to-end solution across the stack. The specialist DSP approach involves building bespoke buying platforms to satisfy individual client or industry segment needs with a more significant managed service layer on top, and has been successfully championed by European players such as Infectious Media in the UK and YD in the Netherlands. The rationale is that not only does this allow valuable first party data to be fully utilised but the third party data integrations and tools provided can focus on specific data sets relevant for optimisation in certain industries (e.g. online travel). While arguably less scalable, this model has the benefit of significant integration and ‘stickiness’ with its clients.

The implication for the ‘platform approach’ is that DSPs that don’t achieve scale or offer technology across the stack will struggle to succeed due to increasing competition and the commoditisation of the technology over time. The DSP arena is becoming a relatively crowded space and this report lists more than eighteen significant players that are already operating in Europe (see Figure 15). The fragmented European market will ensure smaller localised platforms with local media sources and data integrations will be able to compete with the larger US entrants on local ground.

Figure 4 illustrates the dominance of the larger DSPs in the US market with the top three commanding 50%+ of the market. It also indicates how quickly things can change with a significant fluctuation in market share over the course of just two quarters.
Agency Trading Desks

The first agency trading desks emerged as Ad Exchanges became common place, providing access to inventory in greater scale and with greater transparency. The trading desks have reduced the inefficiencies in the complex and costly task of media planning and buying, by pooling consumer and media data at scale and using sophisticated analytics to execute more ‘informed’ trades.

The major global agencies (e.g. WPP, Publicis, Omnicom, Dentsu/Aegis, Interpublic) have all developed agency trading desks (Xaxis, Vivaki, Accuen, Amnet, Cadreon) to aggregate their RTB activities. Earlier this year, Maurice Levy, CEO at Publicis, highlighted the importance of economies of scale in media buying as a strong rationale for the proposed Publicis/Omnicom merger. If the ‘Publicom’ merger completes, the combined entity could represent up to 40% of digital media volumes (according to RECMA) which could provide a meaningful competitive advantage. However, some industry participants think that there is a potential conflict of interest as the global agencies act simultaneously as both buyers and sellers. Since the trading desks earn a margin on CPMs whilst the media agencies earn volume-based rebates, this has also led to concerns in some quarters over the pricing dynamic. Trading desks claim that such issues are more perception than reality.

Another interesting trend is that some very large advertisers have started to set up their own trading desks (e.g. P&G, Unilever) and are now competing with the agency trading desks for talent to build their own in-house RTB capabilities. The advantages for these ‘super advertisers’ are that they can keep their proprietary data confidential, reduce costs (which for large media campaigns can be significant) and take ownership of the media data produced via each campaign. While most advertisers will not want to invest in an in-house capability in a market moving so rapidly, the desire for retention and protection of proprietary data is a factor that could play into the hands of the independent trading desks and specialist DSPs with real expertise in data-driven buying. This could in turn provide a counterpoint to the power and scale of the big agency trading desks.

Source: Casale Media Index (2013)
While a number of larger US-based players are focusing on providing technology at an industrial scale there is likely to be real value created by specialist RTB service providers aiming to get the most out of the available technology for their clients. We expect to see strong growth for tech-enabled service providers that focus on customised data integrations and analytics to differentiate from one-size-fits-all tech providers.

The ‘Publisher’s Dilemma’

In contrast to the push from a fully data-enabled demand side keen to utilise the power of RTB, many publishers have initially been reluctant to release their inventory into the market for fear of declining CPMs. While publishers have been quick to use RTB to improve the yield on their tier 2/3 inventory, their concern in relation to tier one inventory has primarily been around erosion of CPMs and, particularly for premium publishers, brand safety from undesired advertisers buying inventory on their site.

Arguably, premium publishers have historically benefited from a less liquid and transparent market that allowed them to bundle and sell large chunks of their inventory at premium prices. One of the risks of impression-level buying is that buyers will ‘cherry-pick’ the best inventory and leave some audience as remnant that was hitherto sold as premium. As a result large swathes of inventory have been withheld from these markets, decreasing liquidity from some key media sources. This is now starting to change, thanks in part to the development of SSPs, Private Exchanges and Direct Programmatic Sales.

Sell Side Platforms

SSPs first emerged to help improve the ability of publisher’s to categorise, segment and sell their ad inventory via Ad Exchanges and maximise CPMs. SSPs provide software that analyses and categorises the publishers properties to better understand audience data and actively manage and optimise the yield on their ad inventory in an automated (or programmatic) way, just as DSPs do for advertiser buying strategies.

The key battleground today is over the source and analysis of data with ownership of rich audience data providing a significant advantage for publishers. Advertisers are willing to pay a premium for transparency and rich data as illustrated by Figure 5 which shows that inventory sold with cookie and third party data can command a premium of up to twice that sold without. This bodes well for data-rich sellers (e.g. Facebook) who control access to, and have a high degree of understanding of, their audiences.

**Figure 5 – Premium Paid For Transparency**

![Bar chart showing Winning bid price index](#)

<table>
<thead>
<tr>
<th>Data Type</th>
<th>Winning Bid Price Index</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cookie &amp; 3rd Party Data</td>
<td>100</td>
</tr>
<tr>
<td>Cookie &amp; No 3rd Party Data</td>
<td>78</td>
</tr>
<tr>
<td>No Cookie</td>
<td>51</td>
</tr>
</tbody>
</table>

Through algorithmic analysis of audience data, SSPs help publishers determine which channel their inventory should be sold through, whether it be actively through direct sales, via a private exchange or RTB exchange or passively through an Ad Network in order to optimise the yield of the portfolio (see Figure 6).

**Figure 6 – Marketplaces in the RTB ecosystem**

[Diagram showing marketplaces: Sponsorship Sales, Private Exchanges, Real-Time Bidding, Remnant Ad Network, Active Sales, Passive Sales, Above the Auction, Auction, Programmatic]

*Source: PubMatic (2011)*

**Private Exchanges**

Private Exchanges have played a key role in the publisher adoption of RTB as they enable publishers to sell their inventory programmatically but with a greater element of control over the marketplace. Private Exchanges (or Private Marketplaces) allow publishers to make a portion of their inventory available to a restricted set of advertisers and to set controls on pricing (e.g. pricing floors). By controlling these parameters and participants in the market, publishers can better protect pricing of their premium inventory and optimise yields.

As a result, the lines between direct and indirect sales are beginning to blur. The distinction is becoming less about premium inventory versus remnant inventory, and more about active selling versus passive selling.

IDC estimates that 1% of global premium ad revenue was traded in Private Exchanges in 2013. Figure 7 illustrates the slow initial growth of ‘Direct’ RTB sales in comparison to the more mature ‘Indirect’ sales market, with rapid growth expected over the next four years. The majority of growth in the market over the next four years will come from ‘Direct’ sales executed programmatically as the market matures and becomes more sophisticated.
Figure 7 – ‘Indirect’ vs ‘Direct’ RTB-Based Online Display Sales in Four Key Geographies ($m)

Source: IDC (2013), Excludes Mobile and Video RTB and includes US, UK, Germany and France

Figure 8 illustrates the emerging publisher models as they progress towards RTB adoption across all of their inventory. In phases four and five we see increasingly smart, multi-channel sales techniques as publishers increasingly adopt RTB technology and more multi-channel active management of their inventory.

Figure 8 – Publisher Adoption Cycle

Publisher RTB Maturation Spectrum

Phase 1: No active publisher participation
Phase 2: Publisher incorporates multiple RTB vendors into monetisation partner suite
Phase 3: Publisher consolidates vendor strategy and executes private deals and/or sales with arbitrary price floors
Phase 4: Publisher actively manages smart, variable price floors informed by data; managed by strategic team within publisher organisation
Phase 5: Publisher looks holistically at all sales channels and optimises yield across both direct and indirect/RTB sales channels

Emerging models

Current models

Source: Forrester 2011
A DYNAMIC GLOBAL MARKET

Global spend on online display advertising via RTB was estimated by IDC to be $2.7bn in 2012 and is now expected to grow at a 50% CAGR between 2012 and 2017. Global growth has been significant in the last three years averaging 159% per annum 2010-12. This is significantly above growth rates forecast in the global online display advertising market. This growth is principally being driven by three key areas:

- **Growth of online display** – Online display is forecast to grow at a CAGR of 19% 2012-17\(^1\) and RTB will ride this wave.
- **Online Mobile and Video** – Mobile and Video RTB ad spend are both forecast to grow at around or in excess of 100% p.a. over the next few years across the US, UK, France and Germany, as smartphone penetration rates continue to rise and 4G network speeds aid rapid video streaming. This will drive further RTB-traded inventory.
- **Publisher adoption** – Increasing adoption of programmatic selling by publishers via SSPs and Private Exchanges (see Figure 8).

**Figure 9 – Global RTB Display Advertising Market ($M)**

\(^1\) IDC (2013), includes Rich Media, Mobile and Video display
Figure 10 illustrates the global opportunity in online display, with a global market of $34bn in 2012 and $80bn by 2017. IDC forecast the $2.7bn of RTB-based ad spend in 2012 will increase to $21bn by 2017. In 2010, industry estimates\(^2\) suggested that around 65% of online ad spend was being retained by intermediaries between advertiser and publisher. If we assume the same percentage of RTB ad spend is retained as net revenue by RTB platforms and service providers then the market share for these players was around $1.8bn in 2012. If we estimate that the percentage retained by intermediaries will then decrease to 50% in 2017, as greater efficiencies are generated between publisher and advertiser, then consequently the market size for intermediaries would be approximately $10bn globally in 2017.

\(^2\) IAB (2010)
Key geographies in focus

**Figure 11 – US RTB Display Penetration Forecasts**

![Graph showing RTB display penetration forecasts for US from 2012 to 2017.](image)

*Source: eMarketer (Aug-13), IDC (2013)*

Forecast penetration rates can vary significantly between industry experts. IDC and eMarketer both estimate penetration of RTB as a percentage of overall display in the US to be 19% in 2013 but forecast 29% and 41% respectively in 2017. Magna Global recently forecast an RTB display penetration rate of 52% in 2017 for the US\(^3\), reflecting increasingly bullish views on the potential of RTB. If the current trend in publisher adoption continues we can foresee the UK reaching similar levels (i.e. 40-50%) over the next five years.

**Figure 12 – RTB Display Advertising by Geography ($bn)**

![Graph showing RTB display advertising by geography from 2010 to 2017.](image)

*Source: IDC (2013) Includes Online Display, Mobile and Video*

As the largest market worldwide, the US has the highest penetration rate for RTB, as a percentage of online display advertising. Higher growth rates in Western Europe and the Rest of World illustrated in Figure 12 indicate these markets are starting to catch up with the US. The UK is considered the leading geography for RTB in Europe, with the remainder of Europe also experiencing rapid growth rates and rising penetration.

\(^3\) Magna Global (2013)
With growth at over three times that of the overall online display market, European RTB penetration is forecast to increase dramatically over the next four years as the fragmented media landscape provides a long tail of inventory ripe for monetisation. The fragmented and disparate market of publishers and advertisers in Europe makes for substantial potential cost savings from consolidation onto public exchanges. RTB opens up the opportunity to buy inventory across multiple geographies and languages in real-time and for advertisers to target pan-European consumers based on relevance.
We see significant potential in Western Europe for further growth in RTB as publishers adopt RTB-enabled trading technologies from the US and drive more inventory into the system. We can see a potential ‘upside case’ for penetration rates in the UK, France and Germany where they start to catch up with those in the US and reach 30-40% in the next few years, as premium ‘direct’ sales take off and mobile and video RTB start to gain traction. This will likely be lead by the UK, which has already demonstrated its propensity to adopt advertising technologies and catch up and even overtake the US in digital penetration rates. The UK currently has the highest proportion of digital ad spend as a percentage of total ad spend in Europe\(^4\) (40% in 2012) and this is expected to reach 51% by 2017. France and Germany are expected to increase to 25% and 27% respectively over the same period (currently 18% and 20%) whilst digital ad spend as a share of total ad spend in the US is expected to increase from 25% to 31%. If we assume the RTB penetration rates under the ‘upside case’ as set out in Figure 14 below, then this would result in a Western European market totalling $4bn by 2017.

<table>
<thead>
<tr>
<th>IDC Forecasts</th>
<th>GPB Upside Case</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017 Penetration (%)</td>
<td>2017 Penetration (%)</td>
</tr>
<tr>
<td>UK</td>
<td>1.0</td>
</tr>
<tr>
<td>France</td>
<td>0.4</td>
</tr>
<tr>
<td>Germany</td>
<td>0.6</td>
</tr>
<tr>
<td>Rest of Western Europe</td>
<td>1.2</td>
</tr>
<tr>
<td>Western Europe</td>
<td>3.3</td>
</tr>
</tbody>
</table>


The UK is the largest market outside of the US and currently represents 38% of the Western European RTB. IDC forecast the UK RTB market to be worth $1bn by 2017 and 29% of UK display ad spend. The UK is well-suited to rapid adoption of RTB which is evident in both the number of players setting up in the UK (Figure 15) and market penetration second only to the US globally. Several large US players have been attracted by the size of the UK digital market and economy and additionally we are seeing the emergence of some innovative UK-born players such as Infectious Media, Switch and Grapeshot.

RTB penetration in Germany has lagged behind much of Western Europe with only 7% in 2012, primarily due to a legacy of independent direct sales houses. These sales houses have consolidated the number of buying points for advertisers making it is easier for publishers to sell direct to advertisers than in other European markets. As a result there is less of an incentive for publishers to sell off inventory via RTB. The German market is reaching an inflection point for RTB penetration with RTB-based spending anticipated to hit $157m in 2013 (an 82% increase on 2012) and a penetration rate of 12%.

France is also growing rapidly with RTB penetration up to 11% in 2013 from 7% in 2012\(^5\). Local publishers are staking their claim in the space with the collaborative joint ventures La Place Media which launched in May 2013 and Audience Square in 2012. The joint ventures provide sell-side services, acting as a form of

\(^4\) eMarketer (2013)
\(^5\) IDC (2013)
sales house plugging into the major exchanges and trading platforms. This could be considered a step in the right direction with regards to RTB adoption in France.

**Figure 15 – European RTB Map – Selected Players**

Figure 15 reflects the substantial presence of both home-grown and US RTB players in Europe with a concentration in the larger economies, particularly the attractive UK market.

We see Europe as a hotbed of activity in RTB and, although somewhat behind the US in terms of market size and adoption, there is potential for rapid expansion of RTB. With large-scale technology infrastructure for RTB already imported from the US, we expect to see European success stories come from the application of innovative additional technologies, predictive data analytics and specialised service providers that generate further optimisation and efficiencies for both buy and sell-side.
NEW MARKETS AND TECHNOLOGIES

Mobile: real-time location-based advertising

Mobile RTB is rapidly gaining traction in the US and is forecast to explode into Western Europe over the next few years. Smartphone penetration rates in the G5 economies are forecast to top 50%\(^6\) this year, driving an increasing amount of inventory on mobile devices and interest from advertisers in running mobile campaigns as a result. Smartphones and tablets are generating vast amounts of data about consumer behaviour which can be used to target an audience, and investment in new tracking technologies is enabling media campaigns to be executed across multiple devices and targeted in real-time.

**Figure 16 – US Mobile RTB Sales ($M)**

![Figure 16](image)

Source: IDC (2013)

It is estimated that location-based targeting through mobile is up to 2.3x more effective than the industry average click through rate (CTR)\(^7\). Mobile RTB is a huge opportunity, which is evident in forecast growth rates over the next few years of over 100% p.a. in the US and nearly 200% p.a. in Western Europe (from a smaller base), illustrated in Figure 16 and Figure 17 respectively.

**Figure 17 – Mobile RTB Sales in Three Key European Geographies ($M)**

![Figure 17](image)

Source: IDC (2013)

The market for mobile inventory is distinctly different from desktop. Cookies aren’t enabled in 90% of mobile devices so tracking users has been a problem for the industry. A number of tracking technologies

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6 Comscore (2013)  
7 Verve Mobile (2013)
have now emerged to provide a solution using device fingerprinting and in-app analytics (e.g. Drawbridge, HasOffers, Ad-X (acquired by Criteo) and Somo’s mobile ad-tech suite).

Most publishers have traditionally lacked scale in mobile inventory so have historically delegated sales to a mobile Ad Network to aggregate inventory and sell it on their behalf. This is almost a carbon copy of the online display market in the last decade where there wasn’t enough individual reach from publishers to justify a marketplace. However publishers are experiencing rapidly growing traffic on their properties, particularly from in-app browsing which is now driving a rapid move into mobile RTB.

The few companies that have the scale and cross-platform user base to be able to track across devices using login details (e.g. Facebook, Twitter and Apple) are also at a competitive advantage as their vast collection of rich audience data across channels drives higher CPMs, and therefore mobile ad revenues.

Facebook and Google top the US display advertising revenue charts and the FB-X (Facebook’s Ad Exchange) is becoming a de facto destination for sophisticated mobile RTB campaigns. The secret sauce is Facebook’s rich pool of social audience data combined with a mobile first understanding of audience monetisation which is evident in its explosive growth over just five quarters where mobile has gone from 14% to almost half of Facebook’s ad revenue illustrated in Figure 18.

**Figure 18 – Facebook Mobile Ad Revenue ($M)**

With circa 40% of tablet and smartphone users using their devices when watching television, the potential reach of the ‘second screen’ is vast. In the US During the last Super Bowl over 100 million people were estimated to have watched the half-time ads, with tens of millions checking their mobile devices providing a significant audience for targeted campaigns. We believe the convergence of mobile, locational and cross-device technologies with the digitisation of the TV and outdoor markets is one of the most exciting trends in the market.
Video advertising: the big prize for RTB

The online video display advertising market is also growing rapidly. Consumers are spending an increasing amount of time watching online video content, particularly on mobile devices. As a result, viewer impressions are growing rapidly along with the amount of advertising dollars spent on video ad inventory. Global online video advertising is expected to reach $3.6bn in 2013, growing at 26% p.a. from 2011 to 2017. Online video represents a big prize for RTB because it has the potential to unlock large brand advertising budgets into RTB. This is primarily because brands are attracted to rich media formats which provide a more engaging advertising experience. Video RTB will also be driven by advances in advertising technology and investment in the video RTB infrastructure.

Figure 19 – US Video RTB Growth ($bn)

RTB video advertising spend is greatest in the US, however Europe is expected to catch up, growing at 127% p.a. across UK/France/Germany in the next few years compared with the US at 88%.

Figure 20 – Video RTB Advertising Revenue for Some Key European Geographies ($m)

Advertisers are increasingly using programmatic trading to buy online video advertising but there is a reluctance for premium publishers to ‘play ball’. Buyers are seeking video advertising at real-time prices but, as with standard display formats, publishers are reluctant to allow buyers to ‘cherry-pick’ their inventory. As a result the market is bifurcating with a split into bid-based public marketplaces for non-premium inventory and private market places for premium inventory.

Forrester (2013)
Video adtech players (e.g. Liverail) have designed the infrastructure to publish inventory at scale and in real-time. As a result of these advances, advertisers are now able to reach a targeted, brand-receptive audience across a wide range of devices. This, combined with social media activity, means RTB can be used to target an engaged audience in real-time when they are interacting with brands.

Global TV advertising net revenue is forecast to hit $219bn by 2018\(^5\), and with such high budgets at stake, IP connected television could drive the potentially game-changing phenomenon of RTB TV advertising in due course. Why should you be served the same advert in your living room at half time during Manchester United vs Arsenal, as your neighbour in his?

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\(^5\) Digital TV Research (2013)
**CAPITAL INVESTMENT AND CONSOLIDATION**

**Investment into RTB**

With such a large market migrating to and being enabled by RTB technologies, it is no surprise to see significant capital inflows into the sector. We estimate over $1.3bn has been invested in RTB over the last ten years of which more than half has been invested in the last two years alone as the RTB market has started to gain critical mass and 2013 has seen the IPOs of Criteo and Rocket Fuel (raising a combined $367m).

**Figure 22 – Selected Fundraising in the RTB Space ($M)**

Venture and growth capital

DSPs have consistently attracted investment since 2008 with AppNexus ($75m), DataXu ($27m) and OpenX ($25m) ensuring 2013 is set to be a record year for VC funding. In contrast, SSPs have only begun to receive really substantial funding in more recent years, with 2012 a record year including a $45m raise by Pubmatic.
Only three SSPs have raised substantial (> $10m) capital in total compared with seven DSPs, which may explain why there is such competition on the demand side as mentioned earlier in this report. Independent Trading Desks have also gained traction with funders in recent years as investors see value in sectors outside the now hyper-competitive DSP space, closer to the advertiser data.

**Europe in focus**

Fundraising in the sector has been dominated by the US players, with significant sums raised to date. It is notable that over the last four years Europe has seen increased activity relative to the US in terms of volume of companies funded, up to 35% from 26% of fundraisings by volume (see Figure 24). This is due to a drop in the number of transactions in the US coinciding with an increase in European volumes, indicating a maturing of the funding market in the US, whilst Europe has been woken up by the arrival of well-funded US tech platforms driving wider spread RTB penetration. The average size of fundraising in the US has been two-and-a-half times that of Europe over the same period.

**Figure 24 – Selected Private Placements by Geography**

<table>
<thead>
<tr>
<th>AMOUNT RAISED</th>
<th>VOLUME OF RAISES</th>
</tr>
</thead>
<tbody>
<tr>
<td>2004-2009</td>
<td>2010-2013YTD</td>
</tr>
<tr>
<td>Europe</td>
<td>US</td>
</tr>
<tr>
<td>$7m</td>
<td>$16m</td>
</tr>
</tbody>
</table>

**Source**: GP Bullhound, Capital IQ, Crunchbase
Recent IPOs and potential candidates for the future

On top of substantial private capital inflows, there have been a number of IPOs in the Ad-Tech space in recent months. The recent IPOs of Criteo and Rocket Fuel have been well received as their scale, proprietary technology capabilities, and positioning in the disruptive and rapidly growing RTB market are seen as key competitive differentiators. Combined, they have raised $367m of capital in 2013 taking the total capital raised in 2013 to $538m in public and private markets combined.

**Figure 25 - Recent Ad-Tech IPOs**

<table>
<thead>
<tr>
<th>Company</th>
<th>Investors</th>
<th>Raised</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Criteo</td>
<td>Adams Street, Bessemer, Elaia, Fourvest, IDInvest, Index, SAP, SoftBank, YJ</td>
<td>Private: $66m IPO: $251m</td>
<td>Leading global retargeting platform</td>
</tr>
<tr>
<td>RocketFuel</td>
<td>Northgate, Summit, Cross Creek, Nokia Growth Fund, Labrador</td>
<td>Private: $77m IPO: $116m</td>
<td>Leading Demand Side Platform</td>
</tr>
</tbody>
</table>

Source: Capital IQ, Crunchbase, GP Bullhound

The warming of the IPO markets and recent success of Criteo and Rocket Fuel will have been watched with a keen eye by a spate of other adtech companies in the RTB ecosystem, who may be potential IPO candidates.

**Figure 26 – Potential Ad-Tech IPO Candidates**

<table>
<thead>
<tr>
<th>Candidate</th>
<th>Investors</th>
<th>Raised</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>AppNexus</td>
<td>First Round, Khosla, Kodak, Venrock, Microsoft, Tribeca, TCV</td>
<td>$140m</td>
<td>Real time ad exchange/deliver system</td>
</tr>
<tr>
<td>DataXu</td>
<td>Atlas Venture, Flybridge, Menlo Ventures, Thornvest Ventures</td>
<td>$45m</td>
<td>Real-time campaign management platform across mobile and video channels</td>
</tr>
<tr>
<td>Rubicon Project</td>
<td>Clearstone, IDG, Mayfield, Standford, Berkeley, Peacock, Fox</td>
<td>$50m</td>
<td>Sell side platform</td>
</tr>
<tr>
<td>BrightRoll</td>
<td>Trident, Scale, Adams Street, True ventures, Comerica Bank, KPG</td>
<td>$46m</td>
<td>Video ad network and demand side services</td>
</tr>
<tr>
<td>Collective</td>
<td>Accel, Samsung, Cox Media, Novia, Greycroft, Comerica Bank</td>
<td>$56m</td>
<td>Audience targeting and data/media management</td>
</tr>
<tr>
<td>PubMatic</td>
<td>DPJ, Helen, Nexus, August, SVB</td>
<td>$83m</td>
<td>Supply side platform helping publishers automated selling of inventory</td>
</tr>
<tr>
<td>MediaMath</td>
<td>European Founders, O2, Safeguard, SVB, SJF, Catalyst Investors</td>
<td>$24m</td>
<td>Large scale demand side platform</td>
</tr>
<tr>
<td>Turn</td>
<td>Norwest, Shasta, Trident, Focus</td>
<td>$61m</td>
<td>Large scale demand side platform</td>
</tr>
</tbody>
</table>

Source: Capital IQ, Crunchbase, GP Bullhound
M&A and consolidation in the sector

We see an oncoming wave of consolidation in the market which will help to drive a series of transactions over the next few years. With substantial growth in RTB ad spend still to come, a fragmented European market and the need for differentiated technologies and capabilities, we believe the market is ripe for consolidation, which will be a further key driver of scale and efficiency in the market.

Figure 27 – Selected M&A Volume in the RTB Space

M&A activity has picked up considerably in the space in the last three years as strategically important capabilities are acquired (e.g. Twitter’s recent acquisition of MoPub), or as a consolidation play with players such as Google, AOL and Yahoo looking to own the entire value chain.

Figure 28 - Google & Yahoo Showing a High Level of Activity

Yahoo and Google have been two of the most active acquirors in the sector in recent years and have been making a play to own large parts of the value chain given the strategic importance of advertising revenue to both.
Where next for M&A?

M&A activity has been fairly muted in Europe compared with the US. We see M&A activity picking up with a number of potential drivers of consolidation:

- **Scale** – as the technology commoditises, additional M&A will be required to leverage efficiencies from owning the full ‘stack’ of technologies and client data at scale.
- **Customers** – M&A could be driven by the acquisition of customer concentrations and proprietary technologies in individual verticals (e.g. ecommerce, online travel).
- **Multi-channel** – as the market matures and new high growth areas emerge (e.g. direct, mobile and video) larger acquirors may look to add to their cross-channel capabilities.
- **Internationalisation** – a key driver to penetrate new markets especially where the barriers to entry are high or scale is difficult to achieve organically.

**Figure 29 – Potential Strategic Acquirors in the AdTech Space**

Potential future acquirors include the following:

- **Internet Giants** – those heavily reliant on ad revenues will look to ensure they have the core competencies and technology stack in-house. The importance of RTB in mobile advertising was evident in Twitter’s recent acquisition of Mo-Pub (Sep-13). Google has made a big play on the space with its acquisitions of Doubleclick, Invite Media and Admeld ensuring it has coverage across the technology stack. We expect more from the likes of AOL, Microsoft, and Yahoo.

- **Global Agencies and Networks** – we expect the global agencies will look to ensure they are well positioned in the space and we see them as key potential acquirors. We also expect to see Ad Networks acquiring technology and skills as the pace of change in the sector continues unabated, exemplified by Millenial media’s acquisition of Jumptap (Aug-13).

- **Software providers** – M&A activity has been high in the CRM software space with Adobe’s acquisition of Neolane (Jun-13) and Salesforce’s acquisition of ExactTarget (Jun-13). These software providers may now look to integrate these platforms with RTB capabilities. The benefits to such organisations could be big, with a fully integrated RTB-enabled display advertising and CRM platform, providing a single dashboard for multiple advertising channels.

- **Consolidation of existing RTB players** – in a market with competing technology platforms we expect to see significant consolidation as business models evolve to compete. Early examples of this include Criteo’s acquisition of Ad-X (Jul-13), Rubicon Project’s acquisition of mobile capabilities in MobSmith (Mar-12), and DataXu’s acquisition of Mexad (Dec-11). We expect to see mergers and acquisitions of complementary technology capabilities and local customers driving internationalisation. Finally we see data players (e.g. Experian) as a further key category of acquirors as they seek to leverage their data assets and analytics capabilities across the landscape.
APPENDICES

SELECTED COMPANY PROFILES – DEMAND SIDE

**acoardantmedia**

HQ: New York  Founded: 2010
Investors: Privately Held

Rev: N/A  Raised: N/A  Employees: 50

- Independent media trading desk
- Display, video, mobile, social, email, in-stream audio and out-of-home channels
- Co-founded by digital agency execs Art Muldoon and Matt Greitzer

**adform**

HQ: Copenhagen  Founded: 2002
Investors: Via Venture Partners

Rev: €30m  Raised: N/A  Employees: 200

- Multiscreen DSP incorporating display ad serving, rich media, video, mobile, dynamic ads, personalised targeting, and real-time bidding through integrations with major inventory players

**appnexus**

Investors: First Round, Khosla, Kodiak, Venrock, Microsoft, Tribeca, Crossover

Rev: N/A  Raised: $141m  Employees: N/A

- Platform for buying real-time online advertising
- Offers a proprietary gateway to premier ad exchanges and ad inventory aggregators
- Completed $75m series D in May-13

**adxperience**

HQ: Paris  Founded: 2009
Investors: Privately Held

Rev: N/A  Raised: N/A  Employees: N/A

- Mobile media trading desk
- In-house bidding and optimisation system
- 95% of its activity outside of France

**Dataxu**

HQ: Boston  Founded: 2009
Investors: Atlas Venture, Flybridge, Menlo Ventures, Thomvest Ventures

Rev: N/A  Raised: $45.8m  Employees: N/A

- Real-time campaign management platform for digital advertising campaigns across online, mobile and video channels
- Combines automated media buying, optimization and analytics
- Raised $27m in Series C funding in Feb-13
- Acquired MexAd in Sep-12

**iTPS Group**

HQ: Sweden  Founded: 2002
Investors: ND

Rev: N/A  Raised: N/A  EBITDA: N/A  Employees: 55

- Efficiency-focused online advertising solutions with real-time planning, buying, optimisation and reporting.
- DSP and DMP technology solutions and a managed buy-side service

Source: GP Bullhound, eMarketer, Crunchbase, Capital IQ
**SELECTED COMPANY PROFILES (CONT.) – DEMAND SIDE**

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### exchangelab

- **HQ:** London  
- **Founded:** 2007  
- **Investors:** Privately Held  
- **Rev:** N/A  
- **Raised:** N/A  
- **Employees:** N/A

- Marketing intelligence and media trading company
- Produces market intelligence that identifies the strengths and weaknesses of each individual platform in market
- Benchmarks across both price and performance metrics

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### FLEX ONE

- **HQ:** Netherlands  
- **Founded:** 2012  
- **Investors:** Greenhouse Group  
- **Rev:** N/A  
- **Raised:** $900k  
- **EBITDA:** N/A  
- **Employees:** N/A

- Empowers real time advertising specialists with analytics and optimization technology to buy and sell ads more effectively
- Integrated with Doubleclick and AppNexus

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### Infectious Media

- **HQ:** London  
- **Founded:** 2007  
- **Investors:** -  
- **Rev:** N/A  
- **Raised:** N/A  
- **Employees:** 50

- Delivers customised real-time advertising campaigns for leading advertisers
- Combines analytics with proprietary targeting and optimisation tools to power real-time display advertising
- Customised DSP to maximise benefit of first party advertiser data

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### MediaQ

- **HQ:** London  
- **Founded:** 2010  
- **Investors:** Private individuals  
- **Rev:** N/A  
- **Raised:** N/A  
- **EBITDA:** N/A  
- **Employees:** 70

- Next generation performance trading specialist
- Empowers agency partners with predictive analytics in big data for online display inventory trading

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### MediaMetrix

- **HQ:** New York  
- **Founded:** 2007  
- **Investors:** European Founders, QED, Safeguard, SVB, SJF, Catalyst Investors  
- **Rev:** $50m  
- **Raised:** $24.4m  
- **Employees:** 125

- Offers cross-exchange advertising management services and technology
- Media buying service provides the technology, strategy, services and insights to trade effectively across the leading display advertising exchanges and supply sources on behalf of agencies
- Acquired Tap.Me in Dec-12

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### Metrigo

- **HQ:** Germany  
- **Founded:** 2012  
- **Investors:** ZANOX.de  
- **Rev:** N/A  
- **Raised:** N/A  
- **EBITDA:** N/A  
- **Employees:** N/A

- RTB buyside platform
- Allows advertisers to make impression-based marketing decisions
- Provides flexible and customised solutions for intelligent and highly-personalized digital marketing strategies

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*Source: GP Bullhound, eMarketer, Crunchbase, Capital IQ*
**rocketfuel**

- **HQ:** Memphis  
- **Founded:** 2007  
- **Investors:** Mohr (35%), Nokia (8%), Nothgate (6%), Public (28%)  
- **Rev:** $159.6m  
- **Raised:** $77m  
- **Employees:** 465

- Data-focused programmatic media buying platform
- Went public on Sep-13 and sold 4 million shares at a price of $29, raising a total of $116 million at a valuation of nearly $1 billion
- *Pre-IPO*

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**sociomantic**

- **HQ:** Berlin  
- **Founded:** 2009  
- **Investors:** -  
- **Rev:** N/A  
- **Raised:** N/A  
- **Employees:** N/A

- Develops RTB solutions for advertisers
- Platform that enables users to bid for individual user impressions in real-time auctions

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**StrikeAd**

- **HQ:** New York  
- **Founded:** 2010  
- **Investors:** eValue, DFJ Esprit, Karlin Ventures, SoftTech  
- **Rev:** N/A  
- **Raised:** $9.1m  
- **Employees:** 55

- Leading mobile DSP providing a single console through which users can run global mobile RTB campaigns
- Three Series A funding rounds since Jun-12 for a total raised of $9.1m

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**TURN**

- **HQ:** Redwood City  
- **Founded:** 2004  
- **Investors:** Greenspring Assoc, Norwest, Trident, Shasta, Focus Ventures  
- **Rev:** N/A  
- **Raised:** $57m  
- **Employees:** N/A

- Integrated, end-to-end platforms for data and media management
- Offers media expertise, client services and a geographically distributed infrastructure
- Raised $20m in Jan-12 in a round led by Greenspring Associates

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**X+1**

- **HQ:** New York  
- **Founded:** 1999  
- **Investors:** Echelon, Hudson, Blue Chip, WS, Waller/Sutton, Advanced, Intel  
- **Rev:** N/A  
- **Raised:** $39m  
- **Employees:** 60

- Data-driven multi-channel platform offering based on its Predictive Optimization Engine
- Raised $17m of debt from Ares capital in Apr-13
- Acquired UberTags in Feb-13 and WDA in Jul-13

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**AdxLab**

- **HQ:** Amsterdam  
- **Founded:** 2008  
- **Investors:** TOHARU Ventures, Partech Ventures, Active Venture Partners  
- **Rev:** N/A  
- **Raised:** $5.9m  
- **Employees:** 60

- DSP providing bespoke software allowing advertisers to optimise ads based on real-time insights into audience reach, acquisition price, revenue and conversion attribution

---

**Source:** GP Bullhound, eMarketer, Crunchbase, Capital IQ
### IMPROVE DIGITAL

**HQ:** Amsterdam  
**Founded:** 2008  
**Investors:** PubliGroupe (85%)  
**Rev:** N/A  
**Raised:** N/A  
**Employees:** 60  
- Provides a real-time advertising platform to the owners of digital media  
- Enables media owners to build, grow, manage, control, and optimize their own environment driving revenues  
- PubliGroupe acquired 85% stake in Oct-12

### LAPLACE MEDIA

**HQ:** Paris  
**Founded:** 2012  
**Investors:** Amaury Medias, FigaroMedias, Lagardère Publicité and TF1 Publicité  
**Rev:** N/A  
**Raised:** N/A  
**Employees:** N/A  
- SSP/Private Adexchange founded by four French media leaders  
- 120+ premium publishers' partnerships for a specific audience target  
- Partnership with Microsoft Advertising since Nov-12  
- Launched a mobile Adexchange in May-13

### mopup

**HQ:** San Francisco  
**Founded:** 2010  
**Investors:** Twitter (100%)  
**Rev:** N/A  
**Raised:** $18.5m  
**Employees:** 45  
- Operates as a mobile monetization platform, providing ad serving, optimization, and new ad experiences for mobile applications  
- Had over 250 active publishers in July 2011  
- Closed $18.5m series B round in Sep-12  
- Acquired by Twitter Sep-13 for $350m

### PubMatic

**HQ:** Redwood City  
**Founded:** 2006  
**Investors:** DPJ, Helion, Nexus, August, SVB  
**Rev:** N/A  
**Raised:** $63m  
**Employees:** 380  
- Helps publishers automate the process of evaluating and selling their advertising inventory  
- Real-time media selling platform for managing revenue and brand strategy  
- Raised $45m in Series D funding Jun-12

### rubicon

**HQ:** Los Angeles  
**Founded:** 1998  
**Investors:** Clearstone, IDG, Mayfield, Standford, Berkeley, Peacock, Fox  
**Rev:** N/A  
**Raised:** $51m  
**Employees:** 300+  
- The largest independent supply-side RTB trading platform for digital advertising used by more than 500 of the world’s premium publishers to transact with over 100,000 advertising brands globally  
- Acquisitions include SiteScout, Fox Audience Network and MobSmith

### Switch

**HQ:** Southampton  
**Founded:** 2008  
**Investors:** Privately Held  
**Rev:** N/A  
**Raised:** N/A  
**Employees:** 60  
- Digital advertising solutions for publishers  
- Single platform adserver, RTB and data driven optimisation  
- 2nd fastest growing UK tech company, (Sunday Times Hiscox TechTrack 100)  
- Innovation in partnership with Southampton University’s Web Science Faculty

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Source: GP Bullhound, eMarketer, Crunchbase, Capital IQ
SELECTED COMPANY PROFILES (CONT.) – AD EXCHANGES

**Admeta**

- **HQ**: Gothenburg
- **Founded**: 2002
- **Investors**: Chalmers Innovation AB, KL Ventures, Layline Partners
- **Rev**: N/A
- **Raised**: $5m
- **Employees**: 40
- Provides digital ad serving technology and services
- Services display, video, search and affiliate marketing
- Acquired by Google in Apr-07 for $3bn

**DoubleClick**

- **HQ**: New York
- **Founded**: 2005
- **Investors**: Google (100%)
- **Rev**: N/A
- **Raised**: N/A
- **Employees**: 1,541
- Provides digital ad serving technology and services
- Services display, video, search and affiliate marketing
- Acquired by Google in Apr-07 for $3bn

**OpenX**

- **HQ**: Pasadena
- **Founded**: 1998
- **Investors**: First, Index, Mangrove, Mitsu, Acoel, DAG, SAP, AOL, Cyber
- **Rev**: N/A
- **Raised**: $50m
- **Employees**: 305
- Independent provider of digital advertising technology that enables businesses to manage and maximize their ad revenue
- Comprehensive revenue generation platform by combining ad serving with a unique ad exchange
- Closed $25m Series E funding in May-11

**Facebook Exchange**

- **HQ**: Menlo
- **Founded**: 2012
- **Investors**: N/A
- **Rev**: N/A
- **Raised**: N/A
- **Employees**: N/A
- Allows marketers to use their own real-time consumer insight data to reach an audience on Facebook
- Advertisers and agencies use cookie-based targeting through DSPs to reach their audience on Facebook in real time

**PulsePoint**

- **HQ**: New York
- **Founded**: 2011
- **Investors**: DFJ, Gold Hill, Investor Growth Capital, New Atlantic, Updata
- **Rev**: N/A
- **Raised**: $3m
- **Employees**: 150
- Ad exchange and SSP providing a spectrum of services including data management, media mix optimisation, content distribution, and contextual ad exchange capabilities
- Formed in 2011, from a merger between Contextweb and Datran Media

**Right Media**

- **HQ**: New York
- **Founded**: 2003
- **Investors**: Yahoo! (100%)
- **Rev**: N/A
- **Raised**: $45m
- **Employees**: 134
- Digital advertising exchange platform
- Auction marketplace for buying and selling online inventory
- Connects digital advertising companies and provides an opportunity for these participants to reach their audiences on their own terms
- Acquired by Yahoo! in Apr-07 for $850m

*Source: GP Bullhound, eMarketer, Crunchbase, Capital IQ*
ADNOLOGIES
HQ: Hamburg  Founded: 2006
Investors: ViewPoint Capital Partners

Rev: N/A  Raised: $60m*  Employees: 700

- Provides a full stack of RTB-enabled technologies
- Functions and services include DSP, DMP, Ad Serving, Data Exchange, SSP, dynamic creative and dynamic video that fully integrate into the first end-to-end data-driven advertising platform

AUDIENCE SCIENCE
HQ: Bellevue  Founded: 2003
Investors: 19

Rev: N/A  Raised: $100m  Employees: 135

- Offers online behavioural targeting platforms and marketplace for the digital media industry
- Targets relevant audience for advertisers through its data-driven platform

Criteo
HQ: Paris  Founded: 2005
Investors: VCs (34%), Individuals (16%), Corporations (11%), Public (39%)

Rev: N/A  Raised: $2.45m  Employees: N/A

- Provides pay-per-click performance display advertising solutions in France and internationally
- Platform leverages large data sets to target relevant users in real time
- Went Public on Nasdaq in Oct-13
* Pre-IPO

IPONWEB
HQ: London  Founded: 2000
Investors: Privately Held

Rev: N/A  Raised: $37m  Employees: 17

- RTB infrastructure and technology provider
- Provides real time data analysis for targeting consumers through custom engineered, intelligent, scalable, media trading platforms
- Powers over 40 online ad platforms across the world

Grapeshot
HQ: London  Founded: 2003
Investors: Iris, Accel, I-ventures, Carmel

Rev: N/A  Raised: $2.45m  Employees: 700

- Contextual advertising tool for display media
- Uses probability algorithms to optimise the placement of content and advertisements online
- Helps publishers to create virtual channels specific to each advertiser’s contextual needs

Source: GP Bullhound, eMarketer, Crunchbase, Capital IQ
SELECTED COMPANY PROFILES (CONT.) – VIDEO AD EXCHANGES / AD SERVERS

Adap.tv

Investors: AOL (100%)

Rev: N/A  Raised: $48.5m
Employees: 205

- Online video advertising platform
- Provides buyers and sellers with automated tools to plan, buy and measure across linear TV and online video
- Acquired by AOL for $405m in Aug-13

BrightRoll

HQ: San Francisco  Founded: 2006
Investors: Trident, Scale, Adams Street, True ventures, Comerca Bank, KPG

Rev: N/A  Raised: $46m
Employees: 70

- Online video advertising platform
- Enables advertisers to execute digital video campaigns across a pool of web and mobile video inventory
- 100 million monthly unique viewers
- Raised $30m in Series C Funding in Nov-11

Collider Media

HQ: Austin  Founded: 2009
Investors: Videology (100%)

Rev: N/A  Raised: €2.88m
Employees: N/A

- Mobile marketing platform
- Provides media optimization services to publishers and advertising networks for enabling targeting on mobile devices
- Was acquired by Videology in Jun-12

LiveRail

HQ: San Francisco  Founded: 2008
Investors: Clearice Limited, Pond Ventures

Rev: N/A  Raised: $8.5m
Employees: 110

- Online video advertising platform
- The company’s platform provides solutions that range from RTB and on-boarding custom data to campaign management, analytics, and streamlined client billing
- Raised $4m in Series C funding in Jun-13

TubeMogul

HQ: Emeryville  Founded: 2006
Investors: NSV, Bee, Knight Bridge, Trinity, Foundation, Northgate, SingTel

Rev: N/A  Raised: $53.2m
Employees: N/A

- Online video ad buying platform
- Advertisers only pay when someone chooses to watch their video and they see which sites their ads ran on, how their ads performed and who watched them
- Raised $10m in Series C Funding in Jun-13

VideoCore

HQ: Baltimore  Founded: 2007
Investors: Boulder, New Enterprise, Valhalla, Comcast, Catalyst, Pinnacle

Rev: N/A  Raised: $134m
Employees: 180

- Online video advertising platform
- Predictive targeting product that improves advertisers’ ability to reach their intended audience
- Acquired ColliderMedia Jun-12 and LucidMedia Oct-12
- Raised $60m in May-13

Source: GP Bullhound, eMarketer, Crunchbase, Capital IQ
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Source: GP Bullhorn, Capital IQ, Company press releases, ND = Not Disclosed
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