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WHITE PAPER

Real-Time Bidding in the United States and Worldwide, 2011–2016

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IDC OPINION

Display advertising spending based on real-time bidding (RTB) continues to grow rapidly both in the United States and worldwide. RTB spending expands faster than any other segment of the digital advertising industry including hot areas such as mobile, video, or social advertising. This is due to the financial benefits brought upon by RTB's integration, automation, and optimization of the display ad value chain: publishers save money and increase inventory yield, agencies increase their return on advertising spend (ROAS), and both improve profitability. In addition:

- Worldwide RTB-based spending will grow from $1.4 billion in 2011 to $13.9 billion in 2016 (a compound annual growth rate [CAGR] of 59.2%). RTB's share of total display advertising spending will grow from 5% to 20% during the same time; RTB's share of indirect display ad sales will grow from 14% to 58%.
- The United States will remain the most advanced market. RTB spending will grow from $1.1 billion in 2011 to $8.9 billion in 2016 at a CAGR of 53%. The market share of RTB-based spending of all display ad spending will grow from 10% in 2011 to 27% in 2016; RTB's share of all indirect spending will grow from 28% to 78%.
- RTB-based sales in Western Europe (WE) will grow from $227 million in 2011 to $2.5 billion in 2016, at a combined CAGR of 62%. The market share of RTB of display advertising spending at large will grow from 3% to 19%; RTB's share of indirect sales will expand from 8% to 52%.
- Japan has caught up to most WE markets. Total RTB spending in Japan will grow from $47 million in 2011 to $1.1 billion in 2016. RTB's market share of total display advertising spending will increase from 2% to 24%, and RTB's share of indirect sales will grow from 6% to 68%.
- The primary source of growth are RTB-based indirect ad sales. In the United States, the majority of indirect sales will be RTB based by the end of 2013, with the United Kingdom, France, Germany, and Japan following soon thereafter.
- Further growth will come from RTB-based mobile ad sales and premium inventory sales. The latter will first be transacted through private marketplaces as they are a no-risk way for publishers to gain RTB experience, and later, premium inventory will increasingly be exposed to public RTB platforms. IDC predicts that eventually, almost all premium inventory will be sold programmatically because of the strong financial incentives to switch to RTB.

METHODOLOGY

This white paper estimates past and current spending on RTB-based display advertising and forecasts spending until the year 2016 for the United States, Canada, Germany, France, the United Kingdom, the rest of Western Europe, Central and Eastern Europe (CEE), the Middle East and Africa (MEA), Japan, China, the rest of the Asia/Pacific region, and Latin America (LA). It breaks down total revenue into RTB-based spending on indirectly sold display advertising, premium display advertising (sold through private marketplaces), and mobile display advertising. It is an update to last year's research document *Real-Time Bidding in the United States and Western Europe, 2010–2015* (IDC #230785, October 2011).

Information in this document has been sourced from:

- Interviews with 22 online advertising industry executives in the United States, the United Kingdom, Germany, France, Japan, China, and India. (Interview participants represented major publishers, ad exchanges, demand-side platforms (DSPs), supply-side platforms (SSPs), ad networks, and trading desks/advertising agencies.)
- Existing IDC research
- Other publicly available information

The model that generated the RTB data in this document employed the following methodology:

- The model assumes total RTB spending is made up of three sources:
    - RTB-based indirect sales of online display ad inventory
    - RTB-based direct sales of online ad display ad inventory
    - RTB-based indirect sales of mobile display ad inventory (assuming that for the foreseeable future, there will be no RTB-based direct sales)
- *Indirect RTB sales* were established as follows:
    - First, the model established total display advertising spending based on IDC's *Worldwide New Media Market Model, 1H12: Worldwide and U.S. Data* (IDC #237128, September 2012). The New Media Market Model (NMMM) provides historical numbers for the years 2009–2011 and a forecast for 2012–2016.
    - Second, the model estimated total indirect sales as a stable share of total display advertising spend. That share (between 30% and 40% depending on the market) was based on previous IDC research and on interviews with industry executives as well as publicly available sources.

- Third, because RTB-based trading can only take place on an advertising exchange platform, the model calculated the amount of indirect sales that is being transacted through ad exchanges. For the years 2009–2011, this volume was calculated by estimating the revenue of the major ad exchanges in each market based on interviews with advertising industry executives. For the forecast years, the share of ad exchange–based indirect sales was grown to follow a natural growth curve within that segment. The general developmental level of the consumer Internet in each market was taken into account, as well as local cultural factors affecting the speed of growth.

- Fourth, the model estimated the revenue share of RTB-based trading on advertising exchanges to arrive at the absolute amount of RTB-based indirect sales for each market. Again, for the years 2009–2011, that RTB share was based on interviews with industry executives. For the forecast years, the share was grown to follow a natural growth curve.

- *RTB-based direct display ad sales* were estimated as follows:

  - The model first calculates spending on direct sales based on the above estimates for total display advertising spending and spending that goes through indirect sales.

  - RTB-based direct sales numbers are based on the assumption that they will stand for 0.5% or less of total direct sales in 2012 (depending on the market) and will grow from there at growth rates similar to those of RTB-based indirect sales at similar points in their respective life cycles.

- *RTB-based mobile ad sales* were estimated based on total mobile display ad spending as outlined in IDC's *Worldwide New Media Market Model, 1H12: Worldwide and U.S. Data* (IDC #237128, September 2012), by an estimated share of that spending which is transacted through RTB platforms. The model assumed that this share for each given year was equal to the share of RTB-based indirect online display ad sales of total online display advertising spending three years prior. For example, the U.S. share of mobile display advertising sold through RTB for 2013 is equal to the share of indirect online advertising spending traded through RTB within total online display advertising in 2010.

IN THIS WHITE PAPER

This white paper estimates current and past spending on RTB-based display ad sales and forecasts spending until the year 2016 for the United States, Canada, Germany, France, the United Kingdom, the rest of Western Europe, Central and Eastern Europe, the Middle East and Africa, Japan, China, the rest of the Asia/Pacific region, and Latin America. It breaks down total revenue into RTB-based spending on indirectly sold display advertising, premium display advertising (sold through private marketplaces), and mobile display advertising. It is an update to last year's research document *Real-Time Bidding in the United States and Western Europe, 2010–2015* (IDC #230785, October 2011).

Note: All numbers in this document may not be exact due to rounding.

SITUATION OVERVIEW

Introduction

Real-time bidding is a new online advertising technology to programmatically buy and sell display advertising inventory. RTB has only been available since late 2009, but it is rapidly attracting more spending and gaining market share because it is much more efficient than traditional forms of machine-based inventory trading. The United States has been on the forefront of that development, closely followed by Western Europe and Japan.

Programmatic trading has been around at least since the early 2000s with the launch of the first advertising exchanges, but RTB transcends its traditional trading mechanism. In the traditional model, buyers and sellers trade tranches of inventory (e.g., buckets of 1,000 impressions or multiples of it) at fixed rates. RTB, on the other hand, enables market participants to trade display advertising inventory on an ad exchange platform on an impression-by-impression basis as each impression becomes available on a publisher's Web site (in real time).

RTB enables buyers and sellers to dynamically adjust their bids and asks as market conditions change and also based on real-time feedback on the effectiveness of an ad campaign. Inventory traded under RTB is used in conjunction with user data, such as demographics, behavioral data, and search data, which allows for improved ad targeting and greater campaign effectiveness.

Advantages of RTB

RTB has several advantages over other forms of trading inventory. It integrates, automates, and optimizes a value chain that up to now has largely been disjunct, manual, and wasteful. RTB makes it easier, less labor intensive, less error prone, and faster to set up and run a campaign for both agencies and publishers and allows for greater ad efficiency on top of that, both of which improve return on investment (ROI) for both publishers and advertisers.

For *publishers,* RTB increases the effective cost-per-mille (eCPM) rates (i.e., it increases the prices at which they can sell advertising) because RTB advertising is better targeted and more effective and can, thanks to its real-time nature, realize efficiencies that traditional forms of inventory trading cannot. Industry executives at both publishers and ad agencies reported an increase in ad prices of anywhere between 15% and 300%, depending on the campaign in question, with the median being somewhere around a 100% eCPM increase.

RTB also makes trading inventory cheaper for publishers since it reduces the amount of human labor that is needed to support trading. Today, some of that cost advantage is neutralized by the fact that RTB calls for a fairly advanced, expensive infrastructure, but as technology advances, that cost factor will become marginal.

For *ad agencies,* the major advantage of RTB is that they get access to better targeted, and therefore more effective, inventory. Because of that, even though eCPM rates tend to be higher with RTB compared with traditional methods of trading (as described previously), RTB campaigns generate a higher ROAS, making the agency more profitable. Agency executives reported improvements in ad effectiveness anywhere between 20% and 150%, depending on the campaign and the key performance indicator (KPI) employed (CTR, CPA, conversions). Campaign effectiveness and ROAS can further be improved by the use of dynamic ads (i.e., creative that is custom tailored in real time to specific users).

Indirect Inventory Versus Direct Inventory

Today, RTB is almost exclusively used to trade *indirectly sold inventory* (i.e., inventory that publishers are unable to sell directly). Indirect inventory is sold via middlemen ("indirect"). First it was sold through ad networks; then through ad exchanges, which automated the process; and then also through supply-side platforms and demand-side platforms, which further optimized and automated the trading.

Until only a couple of years ago, some publishers were hesitant to make inventory available even only on ad networks or ad exchanges, fearing that their unsold, cheaper inventory would compete with their own expensive premium inventory they sold directly, thereby undermining their own business. They were even more reluctant to trade inventory on RTB platforms, being concerned that they would have even less control over the business impact this would have, given the real-time nature of RTB.

But IDC's numbers for the past couple of years speak a very clear language: Both spending on display ads traded through RTB and RTB's market share of indirect display ad sales have grown at a dramatic pace, indicating that the economic upsides of RTB trading are just too great for publishers to ignore (and perhaps also showing that agencies' demand for RTB trading is continuing to grow).

If some publishers have been reluctant to trade indirect inventory under RTB, they are even more hesitant to also trade directly sold, high-priced premium inventory via RTB. Their concerns are that RTB creates a more transparent marketplace and one in which they have even less control over the sales process. Publishers are worried that because of that, their premium inventory would face even greater competitive pressure from an endless deluge of cheap, yet effective, indirect inventory, with the result that they would not be able to realize prices as high as they currently do for their premium inventory. Ultimately, they fear that embracing RTB would eventually destroy a working, if sputtering, old business model. Because of the perceived lack of control, they are also concerned that inappropriate advertisements might end up on their sites, thus compromising their brands.

But almost any RTB platform allows publishers to set a minimum price at which their impressions can be sold, thus protecting them from RTB prices eroding their premium inventory prices. Most also enable publishers to control which advertisements will end up on their Web pages.

Beyond that, SSPs — publishers' main entry point to RTB trading — have tried to alleviate publishers' concerns by offering them the so-called *private marketplaces,* RTB platforms that run on existing public ad exchanges, but these platforms are restricted to just one or few publishers and a select set of buyers. They also offer greater control over pricing and over which advertisers and advertisements are featured on a publisher's site. Thus private marketplaces also address publishers' two major concerns around RTB: protecting their current price levels and making sure no inappropriate ads run on their services. Private marketplaces are also designed to be a tool to help the sales force rather than to replace it, in order to dispel concerns that RTB might devalue the contribution of the sales force.

Finally, publishers are also concerned that RTB trading works worse with brand campaigns than with DR campaigns. While RTB trading thrives on closing the feedback loop between ad spend and ROI, premium inventory is typically bought to support brand campaigns, where the measurement of ad effectiveness is more ephemeral. Brand recognition, brand liking, purchase intent, likelihood to recommend, and long-term online and offline purchases — all of these are KPIs not easily measured by advertising platforms. Providing automatic feedback loops for these kinds of KPIs is a very tough nut to crack for SSPs, even though some have begun to address the issue, for example, by running post-ad surveys to assess the impact of brand campaigns even when using programmatic trading.

Private marketplaces so far have gained limited commercial significance. IDC estimates that even in the United States, private exchanges will only stand for about 0.5% of premium ad revenue in 2012, and less in other markets. One of the reasons for the slow start is that the control a private marketplace bestows upon publishers also tends to limit both the platform's liquidity or amount of available inventory and the number of bidders, both of which are what make ad exchanges and RTB platforms work well in the first place. IDC believes private marketplaces will gain greater significance going forward (see the Future Outlook section), but even now what they do accomplish is to allow publishers to stick a toe into the water of RTB, gather experience, and alleviate psychological barriers to adopting RTB.

The vast majority of ad slots traded today are those for display ads proper (i.e., banner ads, rectangles, skyscrapers, and the like). Hardly any video ad inventory is being traded largely because the volume of available video inventory is too small to make ad exchange and RTB trading possible.

RTB Standards

Publishers enable RTB trading by connecting their ad management and operations platforms with ad exchanges through application programming interfaces (APIs). At the time when we were researching last year's RTB white paper, standardization of APIs across different RTB platforms was still an issue. A lack of strong standards made it difficult to trade inventory or the data that came with it. Much progress has been made since: In January 2012, the Interactive Advertising Bureau (IAB) published version 2.0 of the OpenRTB API specification, which has been developed with the cooperation of all major SSPs and DSPs and which will greatly enhance the interoperability between RTB platforms.

Mobile RTB

One obvious area for further growth of RTB is mobile display advertising. As of today, mobile RTB is in its infancy, about three years behind online RTB in its life cycle. IDC estimates 2012 spending even in the United States will be negligible, even if we foresee strong growth going forward (see the Future Outlook section).

There are several issues that delay RTB adoption in mobile advertising:

- An increasing number of publishers make mobile inventory available through SSPs, either publicly or through private marketplaces, amounting to billions of available impressions per month, almost exclusively on the iOS and Android platforms (with little available on the Windows Phone platform). But advertisers and agencies are not yet demanding enough inventory to make mobile RTB take off. This is caused by either a lack of mobile marketing strategy or a reluctance to move ad dollars from other budgets into mobile.

- Agencies also complain that there are no mobile standards. For one, there is no generally accepted set of mobile ad formats (even if industry organizations such as the Mobile Marketing Association [MMA] and the Interactive Advertising Bureau [IAB] have published a set of standard formats). This makes producing creative cumbersome and expensive and media planning difficult.

- One other standardization issue is the fact that a data normalization layer that would allow disparate sets of data coming with impressions to be mapped against each other (as proposed by the Mobile OpenRTB committee) is yet to find wide adoption. Until it does, impression/data sets cannot be traded between platforms as easily as it would be desirable.

- Targeting on mobile devices is more difficult than on PCs because mobile browsers by default do not allow the placement of cookies, and mobile apps are sandboxed, which means they cannot by definition easily exchange with targeting platforms.

- Latency can also be a problem on mobile networks. Round-trip times between a browser client requesting a page, the server requesting an ad, and the page rendering, including the ad, should be below 100ms, better below 50ms, and ideally below 30ms. This is an issue on 2G and even on 3G networks and will perhaps only be resolved when 4G networks have found widespread adoption.

RTB in the Regions

United States

As was the case a year ago, the penetration of the market with RTB is furthest in the United States. As predicted, strong growth continues, and 2012 RTB spending will come in at $2.2 billion (15% of total display advertising spending), up by 105% from the $1.1 billion spent in 2011 (10% of total display advertising spending). Within indirect ad sales, the rise of RTB is even more pronounced: In 2012, it will stand for 44%, up from 28% in 2011.

The U.S. market is followed by the Western European markets, which are still 12–18 months behind, as was the case a year ago. RTB unfolds somewhat more slowly in the European markets than in the U.S. market, one, because the markets are smaller (which tends to dampen the upsides of a technology thriving on large volumes of inventory and a big number of bidders) and, two, because the advertising industries of continental Europe are more conservative than those of the United States or the United Kingdom. Among the markets researched for this project, this held particularly true for Germany.

Western Europe

In Europe, among the three major markets, the United Kingdom continues to be the furthest along in adopting RTB. Here, RTB-based display ad sales will stand for $212 million, or 12% of total online display sales, in 2012, up by 108% from $100 million, or 6% of total online display sales, in 2011. Within indirect ad sales, RTB will stand for 29% in 2012, up from 16% in 2011.

Among the two continental European markets examined, Germany is ahead of France in terms of the absolute TRB-based spending but slightly behind its neighbor in terms of RTB's market share within both total display ad sales and indirect display ad sales. German RTB spending will be $168 million, or 8% of total display ad sales, in 2012, an increase of 171% from the 2011 spend of $62 million, or 3% of all display ad sales. RTB's market share in indirect ad sales will be 23% in 2012, up from 9% in 2011.

In France, $37 million, or 8% of all display ad sales, will be spent using RTB in 2012, representing growth of 120% compared with the 2011 spend of $30 million, or 4% of total display ad sales. Its market share within indirect ad sales will be 24% in 2012, up from 11% in 2011.

Japan

The biggest surprise among the regional developments is how much Japan has caught up to Europe. In 2011, RTB revenue in Japan was behind European markets both in terms of absolute spending and market share. This year, Japan's absolute spending has already overtaken those of France and Germany and is projected to overtake that of the United Kingdom in 2014.

A key factor in this development is that within just one year, more than a dozen SSPs and DSPs have entered the Japanese market, most of them native products, accompanied by ad agencies launching trading desks to interface with the DSPs. Several of these players are already branching out to other APAC markets. One major holdback is that Yahoo! Japan does not yet sell inventory to ad exchanges or SSPs. Another one, similar to the United States, is that major publishers demand control over pricing and the ad creatives that will be shown on their sites, for which reason several demand private marketplaces.

Other Markets

Besides Japan, the Asia/Pacific region is still far behind. IDC estimates that in China, RTB spending in 2012 will be around $21 million (compared with no spending in 2011), which is equivalent to about 1% of total display advertising spending and about

2% of indirect spending. In India and Taiwan, there is some movement but hardly anything that would amount to any real RTB business yet. Australia and New Zealand are perhaps 12–18 months behind Western Europe, but because these markets are small to begin with, absolute spending is minimal. IDC estimates there will be no RTB spending in APAC in 2012 besides Japan and China.

In Russia, Yandex, the country's biggest search engine company, has begun to test RTB for its display advertising sales in March 2012, but overall spending is still small. IDC estimates total spending in the CEE region in 2012 will be about $7 million (compared with no spending in 2011), which will stand for about 1% of total display ad spend and 2% of indirect display ad spending.

In Brazil and other parts of Latin America, there is interest in RTB, but so far little activity. IDC believes total RTB-based spending in Latin America in 2012 was $5 million, or 1% of total display ad spending and 2% of indirect spending.

FUTURE OUTLOOK

IDC predicts real-time bidding–based spending on display advertising will continue to rapidly grow through 2016. Worldwide spending will grow from $1.4 billion in 2011 to $13.9 billion in 2016 (a CAGR of 59.2%). RTB's share of total display advertising spending will quadruple, growing from 5% to 20% during the same time; RTB's share of indirect display ad sales will grow from 14% to 58% (see Figures 1–6 and Table 1).

The major driver of RTB growth is that it promises to improve ROI for both publishers and agencies/advertisers. Publishers stand to improve yield (i.e., the amount of revenue realized against a certain amount of inventory) while automating sales and thereby reducing costs. Advertising agencies and advertisers benefit because RTB trading improves campaign efficiency and thereby ROAS.

Growth will at first mainly be fueled by RTB penetrating almost all of indirect sales. As a certain saturation is reached (2016 and later), growth will decelerate. Further growth after that will be supplied by the growth of mobile RTB and by RTB-based sales of premium, formerly directly sold inventory.

In mobile, IDC expects RTB to only slowly penetrate sales because the mobile advertising ecosystem is simply not sophisticated enough yet and because mobile advertising faces some challenges that online advertising on the desktop does not. And yet, as the consumer Internet goes mobile first, TV second, and PC a distant third, there will be tremendous pressure on mobile advertising vendors to develop the ecosystem to a level that will more readily support RTB. What may also accelerate mobile RTB growth is the fact that most mobile advertising is being sold through advertising networks anyway rather than by publishers directly, which will make it easier to transfer it onto a mobile ad exchange/RTB platform).

The dark swan in the equation clearly is "premium" or direct sales. As explained previously, publishers have so far been very hesitant to expose any premium inventory to RTB platforms. However, IDC is convinced that long term (5–10 years out), significant portions of premium inventory will be sold through RTB platforms, first mainly through private marketplaces but later on exposed to public programmatic trading. Eventually, almost all premium inventory will be sold programmatically, with the sole exception of custom executions.

The business facts speak a clear language. Continuing pressure to improve profitability will force publishers to introduce the RTB-based trading of directly sold inventory. Not only will publishers in most cases be able to improve the average revenue per impression, they will also be able to save costs as the value chain becomes more integrated and optimized.

Strategically, portals such as Yahoo! should expose their entire inventory to RTB. Keep in mind that the top 2 U.S. display ad companies are RTB plays, whereas the laggards, the portals, are not: Google and Facebook not only have the greatest market shares in the segment but also boast year-on-year growth rates none of the traditional online portals can match. Google already sells the majority of its inventory through RTB (through DoubleClick). Facebook is about to sell vast parts of its inventory through RTB (through the Facebook Exchange [FBX]).

At some point, even a reduction of the sales force will be possible, which would save tremendous amounts of money. Consider that Google generates almost four times the revenue per employee as does a portal such as Yahoo! One reason for this worse financial performance is that portals have huge sales staffs.

Embracing RTB is the portals' one best chance to become more relevant again to agencies and advertisers and to be more competitive once again versus Google and Yahoo!

Advertisers and agencies are also under pressure to improve profitability. Agencies embrace RTB because, while it does increase eCPM rates, it increases ROI even more. Gone will soon be the days when agencies were willing to pay extra dollars just because a publisher labeled them as "premium." They will demand hard performance data.

RTB-based direct sales will at first grow very slowly. But IDC expects that by 2016 RTB-based direct sales will contribute 13% of total RTB sales in the United States, 8% in the United Kingdom, 16% in Germany, and 15% in France. In Japan and China, RTB-based sales of premium inventory will stand for 10% and 18%, respectively, in 2016.

The Regions

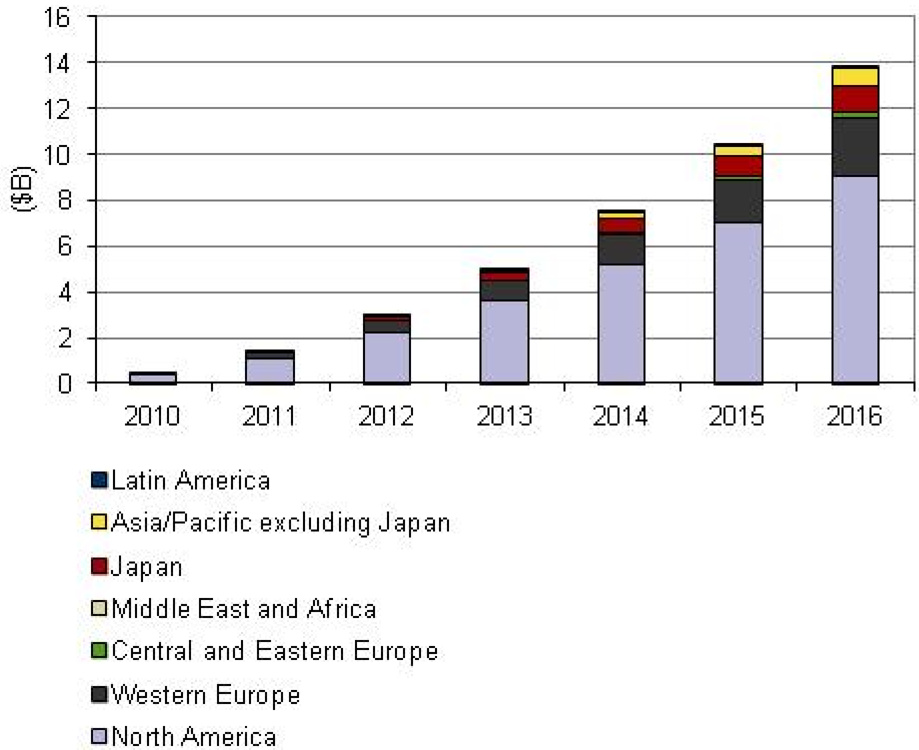
Among the regions, the United States will remain the most advanced market with regard to RTB sophistication, absolute RTB spending, and RTB market share of display advertising at large. RTB-based spending on display advertising in the United States will grow eightfold from $1.1 billion in 2011 to $8.9 billion in 2016 at a CAGR of 53%, which makes real-time bidding the fastest-growing segment of the online advertising industry bar none, including hot growth segments such as mobile advertising, video advertising, and social advertising. The market share of RTB-based spending of all display ad spending will grow from 10% in 2011 to 27% in 2016; RTB's share of all indirect spending will grow from 28% to 78%, nearing total penetration of this segment.

The Western European markets will see slightly faster growth than the U.S. market simply because they are at earlier points in their RTB life cycle, being 12–18 months behind,, depending on the country in question. Total WE RTB-based revenue will grow from $227 million in 2011 to $2.5 billion in 2016, at a combined CAGR of 62%. The market share of RTB of display advertising spending at large will grow from 3% to 19%; RTB's share of indirect sales will expand from 8% to 52%. At the end of the forecast period, the three major European markets, while today roughly at about half the RTB penetration level of the United States, will begin to catch up toward the end of the forecast period, with the United Kingdom almost equalizing the United States. This is happening because in the United States, RTB will have begun to exhaust the total addressable market (TAM) in the indirect sales segment (whereas that is less of a factor in the European markets), while the new RTB-based direct sales and mobile sales do not yet contribute enough revenue growth to sustain the United States' lead.

Japan will develop more quickly than even the WE markets. While it was clearly a year behind WE in 2011, this year (2012), Japan's absolute spending will already overtake France and Germany and is projected to overtake the United Kingdom in 2014. In terms of RTB penetration levels (i.e., market shares), Japan will overtake France and Germany in 2014 (but not the United Kingdom during the forecast period through 2016). Total RTB spending in Japan will grow from $47 million in 2011 to $1.1 billion in 2016. RTB's market share of total display advertising spending will increase from 2% to 24%, and RTB's share of indirect ad spend will grow from 6% to 68%.

FIGURE 1

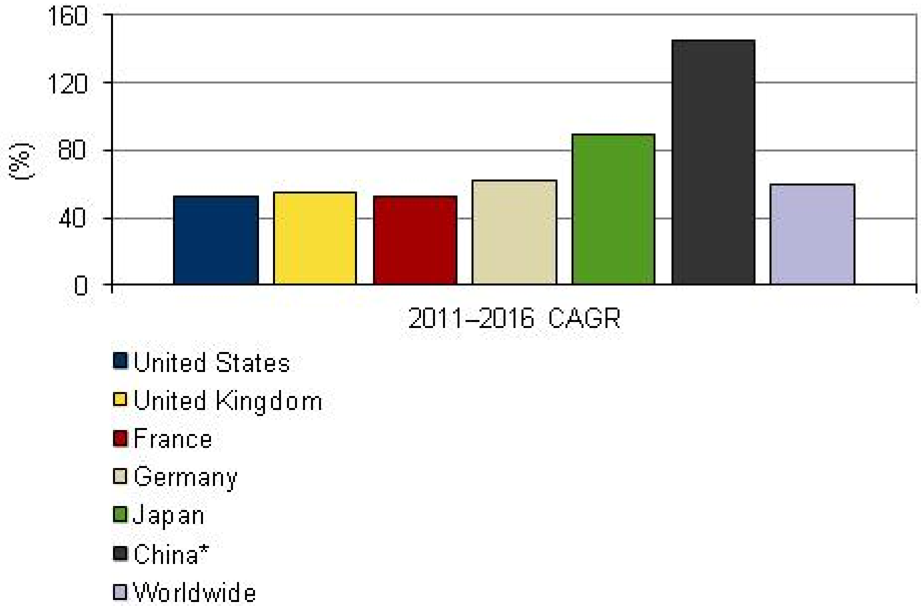
Total RTB-Based Display Ad Spending by Region, 2010–2016



Source: IDC, 2012

FIGURE 2

RTB Compound Annual Growth Rates by Region, 2011–2016

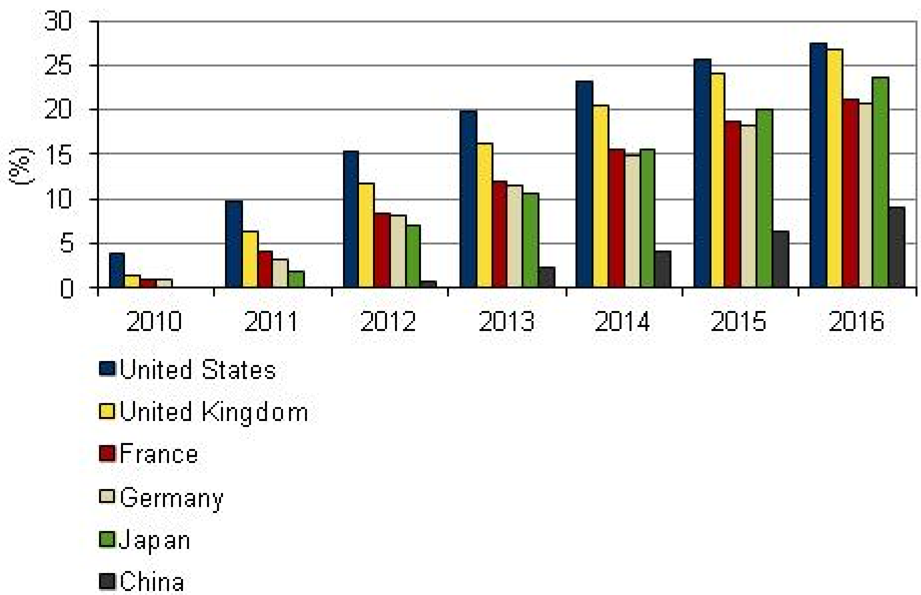


* The CAGR for China is calculated for 2012–2016.

Source: IDC, 2011

FIGURE 3

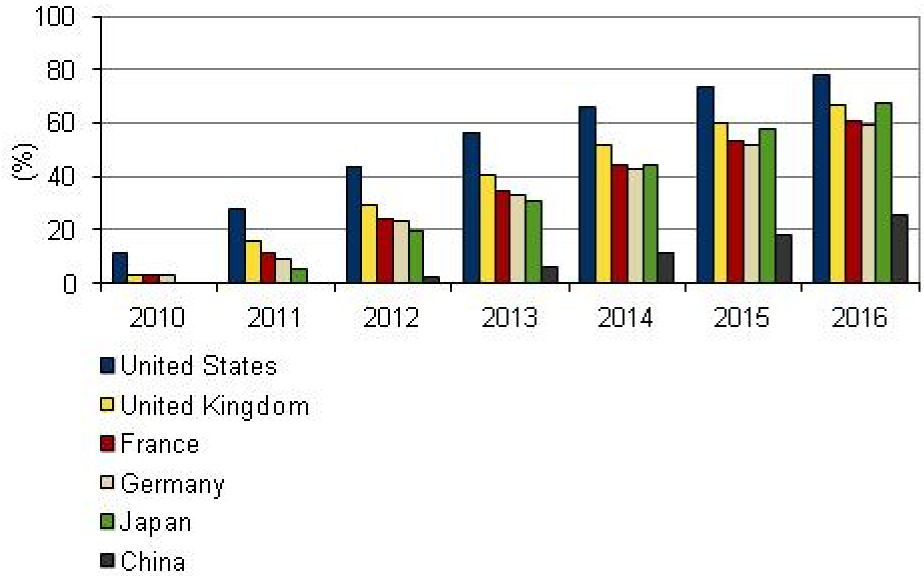
RTB-Based Display Ad Sales as a Share of Total Display Ad Sales by Region, 2010–2016



Source: IDC, 2012

FIGURE 4

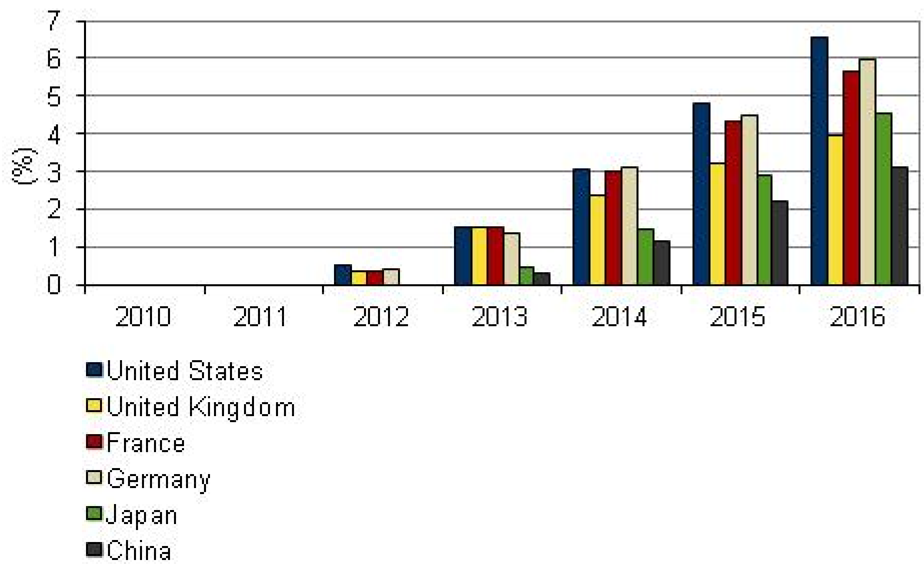
RTB-Based Indirect Ad Sales as a Share of Total Indirect Ad Sales by Region, 2010–2016



Source: IDC, 2012

FIGURE 5

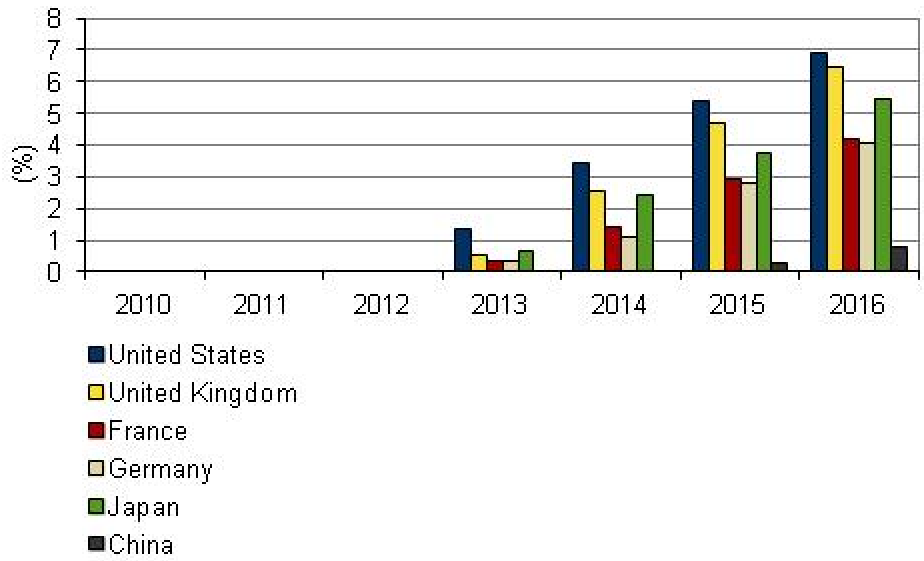
RTB-Based Premium Ad Sales as a Share of Total Premium Ad Sales by Region, 2010–2016



Source: IDC, 2012

FIGURE 6

RTB-Based Mobile Ad Sales as a Share of Total Mobile Display Ad Sales by Region, 2010–2016



Source: IDC, 2012

TABLE 1

Total RTB-Based Display Ad Spending by Region, 2010–2016 ($M)

	2010	2011	2012	2013	2014	2015	2016	2011–2016 CAGR
United States	352.1	1,067.0	2,183.0	3,555.6	5,099.7	6,882.7	8,883.7	
Year-over-year change (%)		203.0	104.6	62.9	43.4	35.0	29.1	52.8
Canada	5.2	15.1	29.3	53.0	81.5	116.4	153.2	
Year-over-year change (%)		191.0	94.0	80.6	53.9	42.8	31.6	58.9
France	6.4	30.3	66.7	106.4	151.2	197.0	249.6	
Year-over-year change (%)		373.6	120.3	59.5	42.1	30.3	26.7	52.5
Germany	16.0	62.0	167.9	268.1	395.9	538.9	691.5	
Year-over-year change (%)		287.8	170.7	59.7	47.7	36.1	28.3	62.0
United Kingdom	15.3	100.0	211.5	360.0	523.5	702.7	880.7	
Year-over-year change (%)		552.0	111.5	70.2	45.4	34.2	25.3	54.5

TABLE 1

Total RTB-Based Display Ad Spending by Region, 2010–2016 ($M)

	2010	2011	2012	2013	2014	2015	2016	2011–2016 CAGR
Rest of Western Europe	6.7	34.6	80.0	165.8	295.2	467.3	694.4	
Year-over-year change (%)		417.3	131.1	107.4	78.0	58.3	48.6	82.2
Central and Eastern Europe	0.0	0.0	7.0	26.9	67.3	140.3	258.6	
Year-over-year change (%)				287.0	149.8	108.5	84.2	NA
Middle East and Africa	0.0	0.0	0.0	2.0	7.4	17.2	32.1	
Year-over-year change (%)					260.2	133.6	86.7	NA
Japan	0.0	46.8	200.8	351.1	612.0	879.8	1,147.1	
Year-over-year change (%)			329.3	74.9	74.3	43.8	30.4	89.6
China	0.0	0.0	20.8	83.0	195.3	378.3	627.1	
Year-over-year change (%)				299.9	135.4	93.7	65.8	NA
Rest of APEJ	0.0	0.0	0.0	7.3	29.2	64.8	118.3	
Year-over-year change (%)					298.6	122.3	82.5	NA
Latin America	0.0	0.0	5.5	20.5	47.8	89.0	143.0	
Year-over-year change (%)				275.4	133.5	85.9	60.8	NA
Worldwide	401.7	1,355.8	2,972.3	4,999.9	7,506.0	10,474.4	13,879.2	
Year-over-year change (%)		237.5	119.2	68.2	50.1	39.5	32.5	59.2

Source: IDC, 2012

United States

Marketers, and therefore agencies, are always under pressure to prove the effectiveness of their marketing spend and to increase its ROI. As the United States has gone through troubled economic times, that pressure has only increased. That is why ad agencies have sought, and demanded of publishers and other vendors to provide, more effective means of online advertising. For that reason, ad targeting, ad exchanges, DSPs, SSPs, and in particular RTB have begun to rapidly penetrate the display ad segment.

RTB-based spending has almost tripled in 2011 compared with the previous year and will double in 2012. RTB-based spending on display advertising in the United States will grow eightfold from $1.1 billion in 2011 to $8.9 billion in 2016 at a CAGR of 53%. The market share of RTB-based spending of all display ad spending will grow from 10% in 2011 to 27% in 2016; RTB's share of all indirect spending will grow from 28% to 78%, nearing total penetration of this segment (see Table 2).

TABLE 2

U.S. Total Display Ad Sales and RTB-Based Display Ad Sales, 2010–2016 ($M)

	2010	2011	2012	2013	2014	2015	2016	2011–2016 CAGR
Total display ad sales	9,009.5	10,902.8	13,945.6	17,050.4	20,003.4	23,404.0	27,230.0	
Year-over-year growth (%)		21.0	27.9	22.3	17.3	17.0	16.3	20.1
RTB-based indirect sales	352.1	1,067.0	2,137.6	3,365.1	4,623.6	5,986.8	7,448.5	
Year-over-year growth (%)		203.0	100.3	57.4	37.4	29.5	24.4	47.5
RTB-based direct (premium) sales	0.0	0.0	45.3	167.9	394.7	726.9	1,162.1	
Year-over-year growth (%)				270.5	135.0	84.2	59.9	NA
RTB-based mobile sales	0.0	0.0	0.0	22.6	81.4	168.9	273.1	
Year-over-year growth (%)					260.2	107.5	61.7	NA
Total RTB-based display ad sales	352.1	1,067.0	2,183.0	3,555.6	5,099.7	6,882.7	8,883.7	
Year-over-year growth (%)		203.0	104.6	62.9	43.4	35.0	29.1	52.8

Source: IDC, 2012

Major European Markets

In the three major European markets, RTB-based spending has grown faster than in the United States because it is at an earlier point in its life cycle (see Tables 3–5 and refer back to Table 1). In detail:

- In the United Kingdom, RTB-based spending will grow eightfold from $100 million in 2011 to $881 million in 2016 at a CAGR of 55%. The market share of RTB-based spending of all display ad spending will grow from 6% in 2011 to 27% in 2016; RTB's share of all indirect spending will grow from 16% to 67%.

- In France, spending will expand from $30 million to $250 million at a CAGR of 53%. The RTB market share of display advertising at large will incline from 4% to 21%; RTB's share in indirect sales will grow from 11% to 61%.

- In Germany, spending will grow more than tenfold from $62 million to $692 million at a CAGR of 62%. In display advertising, RTB's share will increase from 3% to 21%; RTB's share in indirect sales will grow from 9% to 59%.

TABLE 3

U.K. Total Display Ad Sales and RTB-Based Display Ad Sales, 2010–2016 ($M)

	2010	2011	2012	2013	2014	2015	2016	2011–2016 CAGR
Total display ad sales	1,200.1	1,560.1	1,771.4	2,095.5	2,329.0	2,616.6	2,899.1	
Year-over-year growth (%)		30.0	13.5	18.3	11.1	12.3	10.8	13.2
RTB-based indirect sales	15.3	100.0	207.5	339.2	478.7	628.1	775.2	
Year-over-year growth (%)		552.0	107.5	63.4	41.1	31.2	23.4	50.6
RTB-based direct (premium) sales	0.0	0.0	4.0	18.9	33.5	50.8	69.1	
Year-over-year growth (%)				374.9	76.8	51.8	36.1	NA
RTB-based mobile sales	0.0	0.0	0.0	1.9	11.3	23.9	36.4	
Year-over-year growth (%)					495.2	110.5	52.5	NA
Total RTB-based display ad sales	15.3	100.0	211.5	360.0	523.5	702.7	880.7	
Year-over-year growth (%)		552.0	111.5	70.2	45.4	34.2	25.3	54.5

Source: IDC, 2012

TABLE 4

France Total Display Ad Sales and RTB-Based Display Ad Sales, 2010–2016 ($M)

	2010	2011	2012	2013	2014	2015	2016	2011–2016 CAGR
Total display ad sales	639.9	764.3	771.7	819.3	859.8	905.7	982.6	
Year-over-year growth (%)		19.4	1.0	6.2	4.9	5.3	8.5	5.2
RTB-based indirect sales	6.4	30.3	64.9	98.2	133.7	169.2	208.5	
Year-over-year growth (%)		373.6	114.3	51.3	36.2	26.6	23.2	47.1
RTB-based direct (premium) sales	0.0	0.0	1.8	8.1	16.8	25.4	36.2	
Year-over-year growth (%)				345.0	106.9	51.5	42.3	NA
RTB-based mobile sales	0.0	0.0	0.0	0.1	0.7	2.3	4.9	
Year-over-year growth (%)					522.3	216.9	109.1	NA
Total RTB-based display ad sales	6.4	30.3	66.7	106.4	151.2	197.0	249.6	
Year-over-year growth (%)		373.6	120.3	59.5	42.1	30.3	26.7	52.5

Source: IDC, 2012

TABLE 5

Germany Total Display Ad Sales and RTB-Based Display Ad Sales, 2010–2016 ($M)

	2010	2011	2012	2013	2014	2015	2016	2011–2016 CAGR
Total display ad sales	1,642.5	1,993.7	2,015.2	2,162.1	2,330.1	2,544.4	2,792.1	
Year-over-year growth (%)		21.4	1.1	7.3	7.8	9.2	9.7	7.0
RTB-based indirect sales	16.0	62.0	162.7	249.0	347.8	461.8	577.5	
Year-over-year growth (%)		287.8	162.3	53.1	39.7	32.8	25.0	56.2
RTB-based direct (premium) sales	0.0	0.0	5.3	19.0	47.5	74.3	107.9	
Year-over-year growth (%)				261.4	150.2	56.4	45.4	NA
RTB-based mobile sales	0.0	0.0	0.0	0.1	0.7	2.8	6.0	
Year-over-year growth (%)					426.4	306.9	112.1	NA
Total RTB-based display ad sales	16.0	62.0	167.9	268.1	395.9	538.9	691.5	
Year-over-year growth (%)		287.8	170.7	59.7	47.7	36.1	28.3	62.0

Source: IDC, 2012

Japan

RTB in Japan has seen tremendous progress in only the past year. It has nearly caught up to Western Europe, and IDC expects it to have overtaken most of the European markets by 2016. Total RTB-based revenue in Japan will grow from $47 million in 2011 to $1.1 billion in 2016, at a CAGR of 90%. The market share of RTB of display advertising spending at large will grow from 2% to 24%; RTB's share of indirect sales will expand from 6% to 68% (see Table 6).

TABLE 6

Japan Total Display Ad Sales and RTB-Based Display Ad Sales, 2010–2016 ($M)

	2010	2011	2012	2013	2014	2015	2016	2011–2016 CAGR
Total display ad sales	1,948.7	2,418.8	2,916.0	3,124.8	3,522.5	3,776.6	4,028.2	
Year-over-year growth (%)		24.1	20.6	7.2	12.7	7.2	6.7	10.7
RTB-based indirect sales	0.0	46.8	200.8	332.6	546.6	758.0	953.0	
Year-over-year growth (%)			329.3	65.7	64.3	38.7	25.7	82.7
RTB-based direct (premium) sales	0.0	0.0	0.0	9.9	33.6	71.3	118.3	
Year-over-year growth (%)					239.8	112.0	65.9	NA
RTB-based mobile sales	0.0	0.0	0.0	8.6	31.8	50.5	75.8	
Year-over-year growth (%)					269.4	59.0	50.0	NA
Total RTB-based display ad sales	0.0	46.8	200.8	351.1	612.0	879.8	1,147.1	
Year-over-year growth (%)			329.3	74.9	74.3	43.8	30.4	89.6

Source: IDC, 2012

China

China will develop less quickly than the other markets. Total RTB spending in China will increase from $21 million in 2011 to $627 million in 2016 at a 2012–2016 CAGR of 145% (note that all other CAGRs are for the 2011–2016 period). RTB's market share of total display advertising spending will increase from 1% in 2012 to 9% in 2016, and RTB's share of indirect ad spend will grow from 2% to 26% (see Table 7).

Gating factors are a lacking infrastructure (leading to latencies impracticable for RTB), a lack of data to allow for targeting, and a generally lower level of maturity of the online ad market (a lot of advertising is still sold on a per-day basis, not on a CPM basis, let alone on a per-impression pricing). Ad efficiency KPIs such as click-through rates or conversion rates, the lifeblood of RTB, also often are not supported.

TABLE 7

China Total Display Ad Sales and RTB-Based Display Ad Sales, 2010–2016 ($M)

	2010	2011	2012	2013	2014	2015	2016	2011–2016 CAGR
Total display ad sales	1,742.3	2,210.2	2,845.2	3,415.2	4,087.0	4,843.8	5,671.9	
Year-over-year growth (%)		26.9	28.7	20.0	19.7	18.5	17.1	20.7
RTB-based indirect sales	0.0	0.0	20.8	76.3	165.2	306.4	505.5	
Year-over-year growth (%)				267.6	116.5	85.5	65.0	NA
RTB-based direct (premium) sales	0.0	0.0	0.0	6.7	30.2	69.9	114.7	
Year-over-year growth (%)					349.9	131.7	64.2	NA
RTB-based mobile sales	0.0	0.0	0.0	0.0	0.0	2.0	6.8	
Year-over-year growth (%)							240.0	NA
Total RTB-based display ad sales	0.0	0.0	20.8	83.0	195.3	378.3	627.1	
Year-over-year growth (%)				299.9	135.4	93.7	65.8	NA

Source: IDC, 2012

CHALLENGES/OPPORTUNITIES

RTB helps in integrating and automating the display ad value chain, which up to now has largely been manual. This makes it easier, less labor intensive, less error prone, and faster to set up and run a campaign for both agencies and publishers and reduces costs, thereby improving ROI for both publishers and agencies/advertisers.

RTB faces a number of challenges that IDC believes RTB will be able to overcome:

- The primary key to the future of RTB is publisher adoption. If publishers don't make sufficient amounts of inventory available, RTB growth could be stunted. Publishers' major concerns are yield, data leakage, and cannibalization:
  - *Yield,* or the amount of revenue realized against a certain amount of inventory, must be better when using RTB than when using traditional channels. This for the most part does not seem to be much of an issue anymore as publishers actually realize higher eCPMs rather than lower ones.

- *Data leakage* is the potential theft of valuable publisher audience data through the dropping of data-collecting cookies. Buyers buy impressions targeting a certain audience, capping the exposure frequency per user at one, only to gain the targeting that came with the impression. They place their own tracking cookie on the consumer's machine, which they then use to run a separate campaign using much cheaper inventory.

- *Cannibalization* is the concern that if publishers made massive amounts of inventory available through ad exchanges and RTB, possibly with *too little price control* and resulting lower sales prices, it would start to compete with publishers' directly sold inventory, jeopardizing their core revenue source. However, we do not believe this will be a factor limiting RTB growth as long as ad exchanges and SSPs offer publishers a reasonable amount of price control.

- Some publishers are also concerned that a *proliferation of platforms* would in fact fragment the market, reducing volume and the number of bidders, thereby decreasing demand and lowering revenue yield. This matter, however, is being addressed effectively by SSPs and DSPs.

- *Brand safety* is a concern for both publishers and agencies. Publishers want to control which advertisers and advertisements are being featured on their services so as to not dilute their brand with low-quality or inappropriate advertisements. Conversely, agencies want *content safety* to make sure their clients' ads are not run against inappropriate or unfitting content or are not run below the fold or among multiple ads on one page. This, however, should satisfactorily be addressed by ad exchanges, DSPs, and SSPs by allowing block lists for both certain advertisements and certain types of content.

- Since data on users is critical to the effectiveness of RTB advertising, the safety of valuable audience data is important. Even more so than in the United States, *privacy protection* is of particular concern in the European markets (particularly in Germany and France), where regulation and legislation are more severe than in the United States. There are some proposed regulations on the use of cookies, for instance, that might curtail the usefulness of RTB. However, industry executives assess the risk of any severe impact of such regulations at below 10%.

- European industry executives also see *technological challenges.* Running back-end solutions that are able to scale with the demands of a real-time auction, targeting, and ad serving environment is key. The integration of RTB platforms into the workflow is not trivial. Slow public infrastructure and latency are also concerns. IDC feels that as long as the financial incentive is strong enough, technological hurdles will be overcome.

- Some companies interviewed bemoaned a *lack of standards.* This problem has largely been addressed by the OpenRTB initiative.

- Publishers are also concerned that RTB trading works worse with *brand campaigns* than with DR campaigns. While RTB trading thrives on closing the feedback loop between ad spend and ROI, premium inventory is typically bought to support brand campaigns, where the measurement of ad effectiveness is more ephemeral. Brand recognition, brand liking, purchase intent, likelihood to recommend, and long-term online and offline purchases — all of these are KPIs not easily measured by advertising platforms. Providing automatic feedback loops for these kinds of KPIs is a very tough nut to crack for SSPs, even though some have begun to address the issue, for example, by running post-ad surveys to assess the impact of brand campaigns even when using programmatic trading.

CONCLUSION

RTB has the potential to revolutionize the way display advertising is being traded and served by automating, integrating, and optimizing it. Both publishers and advertisers/ad agencies can reap its benefits and must do so to remain competitive.