

A Forrester Consulting Thought Leadership Paper Commissioned By Criteo

# Maximizing Display Advertising's Potential Requires A Data-Centric Approach

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**FORRESTER**

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## Executive Summary

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In September 2012, Criteo commissioned Forrester Consulting to evaluate how new data techniques and technologies are affecting online display advertising. We conducted interviews with individuals who employ data and data analysis in display advertising at media agencies, demand-side platforms (DSPs), trading desks, and real-time bidding (RTB) supply sources in the US and Europe and found that display is more complex than ever: 1) New devices and form factors are creating new traffic and new data sets to help increase accuracy and reduce churn; 2) the increasing commodity of third-party data sets are being complemented by deeper, more valuable integrations into the enterprise and social domains; and 3) managing the technical data stack requires new disciplines and use of unstructured data and display technologies.

This report examines the current state of data use and reveals insight from experienced professionals from leading online display players such as DSPs, sell-side platforms (SSPs), agencies, and large publishers. Recommendations illustrate the current state and future changes that marketers should expect to navigate.

### Key Findings

Forrester's study yielded four key findings:

- The real debate is around “big insights” — not “big data.”
- Innovation in display doesn't fear complexity — it thrives on it.
- Data distribution is a commodity — the value is in the cross-pollination of data sets.
- The display space is in for a disruptive few years of legislation.

## Display Advertising Is More Complex And Challenging Than Ever

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Changing customer engagement models are driving up the volume, variety, and, seemingly, complexity of data that display advertisers have to consider, with new devices, browsers, social signals, and multiscreen behaviors both changing and adding new layers to the path to purchase. Overlay that with the challenges in extracting valuable data insights across a patchwork of analytics methods and sources, the ever-looming threat of (even more stringent) privacy legislation, and the job of marketers trying to deliver relevant consumer experiences while driving meaningful business results through advertising is tough and getting tougher. The diverse group of senior-level marketers, agencies, and buy- and sell-side technology vendors we interviewed revealed that several factors are driving complexity:

- **The volume and diversity of data signals is unprecedented in display.** The explosion of social data, choices for third-party data targeting, and use of first-party data (from on-site prospect and customer behavior and customer relationship management (CRM) systems, for example) can leave marketers shaking their heads over what to pay attention to, and why. With most firms typically using only a small proportion of data available to them, there is a mountain still to climb. Under these unique conditions, the question many face is “*Which* data should I care about?” Data processing techniques ushered in under the banner of “big data” are not just for the

glut of new social and mobile data but for unlocking CRM and “old” data too. As one CEO at a US DSP put it: “Data volumes are growing so much. Some is clear and usable, but much of it is not. And how do you understand people with very specific behaviors? How do you do this at scale and with speed?”

- **Real-time decisioning isn't for the faint of heart.** The rise of ad exchanges and RTB over the past five to seven years has been a game changer in display; today, buy/no buy and price decisions must be made across a wide universe of impressions in milliseconds. Recursion through algorithms and inferences — something only entertained with high-performance computing — can feel at odds with marketers' oft-stated goal of getting, and acting on, deep insight about a consumer. Real-time decisioning necessitates wholly new hardware and memory management. A data strategist from a global ad exchange smartly captured this in an analogy to traditional computing, using working memory versus secondary storage to make his point: “Speaking with a PC proxy, it seems the hardest part is making the data sit in RAM. For it to be valuable [in today's ecosystem], data needs to sit in RAM, which is much more expensive than storing it on a hard disk.”
- **Display continues to serve as a second-class citizen for many advertisers.** Under the still-dominant “last touchpoint” model of attribution, search remains the darling of direct response, while brand advertisers still question the value of a banner in driving real brand impact, despite the availability of increasingly advanced multi-touch attribution techniques, the introduction of the viewable impression standard into the discussion, and the rising chorus that richer units such as the Interactive Advertising Bureau's “Rising Stars” are the answer.<sup>1</sup>
- **The tracking continuum is broken in an increasingly mobile world.** Although identity persistence problems exist within traditional desktop display, the addition of new platforms and browsers has made full multichannel tracking next to impossible, giving marketing initiatives the memory of a goldfish. Mobile especially remains a major challenge, with disappearing cookies, duplication of identities, and inaccuracy around impression counting. Said one media strategist at a European communications planning and buying agency: “We are seeing impressions and sales going on tablets, desktops, and mobile. Linking these channels together is hard. It adds an extra degree of complication.”
- **Privacy and consumer trust concerns loom large.** There is wide variation among display media players regarding the immediacy or relevancy of the privacy specter in the US, while those serving European markets have watched closely as European Union directives lumber onto the horizon. Legislation threats aside, it's no longer something that display media buyers, sellers, or technology companies can ignore as consumer participation in the privacy conversation inevitably grows over time. And while the current and future impact on the use of consumer data for targeting and insights is yet unknown, the shadow does color industry perceptions. One product manager at a global ad exchange told us point blank: “Our No. 1 [concern] is privacy and trust. The industry has created a consumer perception of use such that people want out. Telemarketers created ‘Do Not Call’; we've created ‘Do Not Track.’ It's an industry problem, not the problem of one individual company.”

*“The digital planning model has been based around data for a long time — but we used to think about all that we could measure rather than measuring what was important. . . . The quantity of data has always been ahead of the ability to use it effectively. . . . The art of these things is in managing the complexity of things.” (Media strategist at a European communications planning and buying agency)*

## With An Explosion Of Data Comes An Exploding Opportunity For Display

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Here's the good news: In the face of an increasingly complex display market, a whole host of new approaches and solutions is coming into play to turn complexity into competitive advantage. Display technology vendors and publishers alike are working on ever-tighter relationships with brands and the ecosystems they support — to open up new data sources, unlock value of existing data, and justify spend. We found that in the face of the “big data” explosion over the past several years, there is a corresponding increase in ecosystem maturity as exemplified by:

- **Advertisers and publishers more effectively unlocking the value of their own data.** The quantity of data available to display has always been ahead of display players' ability to use it — but this is changing thanks to the advent of both buy- and sell-side data management platforms and new data handling techniques. Until recently, many publishers have continued to rely on well-worn approaches to selling — contextual adjacency as the best proxy for reaching advertisers' desired audiences. Advertisers, for their part, were using, at best, simplistic remarketing techniques to leverage their own first-party data, and not much else. As a director at a leading US DSP explained: “Some of the solutions are obvious, but some aren't at all. We're facing difficult and powerful problems, but when we get it right we see incredible returns. The more data we get, the better the outcomes.”

But it's more than simply unlocking new data; it's also about leveraging the hidden gold in their organizations' existing data. Layered on top of new tools, data techniques provide richer models and AI algorithms to counter many limitations of traditional data techniques, such as the slow turnaround time inherent in direct mail campaigns.

*“Smaller companies can leverage assets they've had offline or in different online silos, add cool science to it (often provided by a third party). . . . At the end of the day, it increases the value of their spend.”* (Data strategist at a global ad exchange)

- **Campaign accuracy increasing due to real-time matching of buyer to impression (or user).** Poring over a deep and wide data set to get just the right answer can seem, on the surface, in opposition to achieving the low latency today's display buying and selling platforms require. And in the world of Excel-based look-up tables and the corresponding manual data-matching that that implies, such real-time analysis and action were not possible. But today's tools are built on a foundation designed for real-time data analysis, bidding, optimization, and measurement. Of course, the tradeoff between consistency and integrity versus speed and flexibility is a constant balancing act for those developing and investing in solutions. We heard loud and clear that those traditional players such as ad networks with 10-year-old technology and no real-time capabilities face quickly dwindling relevance. One CSO at a US-based data measurement and analytics platform told us: “Real-time is the only way to make the data actionable and useful. Data is like news; if you're working on old news then that's that, you've missed the opportunity.”

*“[Big data is . . .] the ability to take data from multiple sources, the potential to take data from isolated pockets and derive meaning from them by joining them together.”* (Commercial advertising director at a leading global financial news publisher)

## New Staffing And Technology Are Required For Success

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Unsurprisingly, amid the disruption caused by a massive influx in the volume, velocity, variety, and complexity of data comes disruption in staffing models, staffing decisions, and technology relationships. All interviewees noted that new staffing and organizational models were needed to compensate for new data pressures and requirements. Today's staff must not only see the big picture of how concept, campaign, and execution sit together but also narrow in with microscopic focus on previously unrecognized patterns in the data. The question that buy- and sell-side vendors, publishers, agencies, and marketers are all asking is: "Who do I need to run my display campaigns effectively, and what technologies will be required to support my people?" We heard that:

- **A blend of automation and manual skills is still required.** Algorithmic optimization, previously less prevalent in display media management, but increasingly the norm, can tackle much of the heavy lifting these days. When it comes to necessary computing power, the job is massive — as one VP of business development at a US DSP put it: "Machine learning and processing is the foundation we're using. Processing terabytes of data per day means we have around 750 different data processing jobs running at any time. Machine learning makes this possible."

However, manual strategy and day-to-day optimization still has a large role to play, especially around strategies for engaging audiences. A CEO at a leading US DSP said, "Staff are still essential for strategic planning. Complexity reduces the ability to plan, and we have to be responsive and innovative to stay ahead. We assume that technology will change the problems we face, not solve them."

*"In the last 10 years you were working with limited amounts of information. Now there are much more mature systems on the buy and sell side to capture, process, and visualize the data. And there are also more people dedicated to the analysis and action of the data. Data for data's sake is useless."* (Global digital director at a global media agency)

- **Staffing changes reflect the increased need for "science" in digital advertising.** Teams at display technology companies are mushrooming with engineers and data scientists, while agencies and end clients themselves also look to beef up their data analytics prowess, albeit significantly less dramatically (and not with respect to engineering). It was universally agreed that a mix of technologists and staff who understand the wider marketing business at work are now required. As explained by one VP of business development at a US DSP, the key challenge is finding people who understand the "science" and the "art" needed for successful marketing: "One of the key challenges is finding enough people who understand math and technology, but also understand media. We're less interested in psychology majors now and more interested in the people who breathe data and analytics across the company — sales, marketing, business development, and product management."

*"We have a dedicated machine learning team whose sole responsibility is data manipulation. Fifteen people all with advanced degrees. Outside of that we have roughly 150 engineers to manage the RTB data."* (Product marketer at a US RTB platform)

- **Skills specialization is needed, but not at the expense of the big picture.** In parallel with data sets coming together, so too are the different functions within brands and agencies. Colocation of teams and more intimate conversations across campaigns and brands are helping internal integration efforts grow — both for brands and agencies. One media strategist at a European communications planning and buying agency explained that: “Insights people now sit next to the data people. Researchers become important in their interaction with the data science and attribution people. [We now have] a lot of postgrads with data backgrounds, a more academic culture. We’ve got quieter people instead of [just] the loud media characters of old.” A common theme among all interviewees on the topic of staffing was the recognition that display does not live in a vacuum, and as new integrations are made with third-party data sources and first-party data increasingly finds its way into display campaigns, display must be seen in reference to the wider marketing activity.
- **Education is improving understanding of the data opportunity, but work remains here.** On both the buy and sell side, everyone’s favorite word these days is “data.” But the reality is that the level of understanding of the techniques, technologies, and required changes that all this data necessitates is widely varied. And of course, there’s the inevitable and timeless tension between buyers and sellers. As things currently stand, the buy side — as demonstrated by the rise of adoption of real-time buying platforms such as DSPs and agency and holding company level trading desks over the past several years — has an edge. One product marketer at a US RTB platform counseled publishers to stop sitting on the sidelines: “Education is needed. Publishers have been selling audiences by proxy to their content but advertisers increasingly know how to separate them and create value based on these different models; publishers need to learn this. Publishers have been leaving [audience management] to ad ops but it’s nearer to a business development function.”

## Big Data Competencies By Vendors Are Reaching Wider Than Display

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Sophisticated marketers know that to compete in the age of the customer, they must become channel-agnostic, audience-centric, and data-driven in their marketing communications (although interviewees agreed on this as the right destination, they also acknowledged that many buyers and sellers are still at the starting gate). The question faced by display is, what role does *it* play as part of the marketing machine of the future? It serves as a great “workhorse” in delivering marketing messaging, to be sure, but we heard that there are other ancillary benefits that can come out of smart approaches to data management in display. Specifically, we heard that:

- **Display vendors are becoming centers of expertise for broader data handling.** CRM may be great at list management in direct mail, but many are not built for the real-time world of display advertising. To that end, they struggle in their ability to act as both a single hub for the 360-degree view of customers and a flexible and fast enough tool for right-time data extraction and usage. Cutting-edge display vendors are seizing on that opportunity, working with brands to build bespoke data solutions, going beyond the traditional role as “display media partner.” One co-founder and COO of a European RTB told us: “[Brands] want to be able to unlock the value they have in their customer databases. We’re reaching a tipping point where we are managing data on behalf of clients now; media buying is just one of the things we’re doing.”

*“A trend we’re seeing now is advertisers asking us to build custom data warehouses. They want to be able to unlock the value they have in their customer databases. We’re reaching a tipping point where we are managing data on behalf of clients now; media buying is just one of the things we’re doing.”*  
(Co-founder and COO at a European RTB platform)

- **Display platforms are pushing out to other marketing environments.** With each new touchpoint and channel added to the marketing mix, the need for data aggregation and distribution grows higher. Smartphones, consoles, and digital OOH advertisements are just a few examples of new “marketing real estate” available to marketers, all coming with their own unique data streams, idiosyncrasies, and opportunities. Looking at real-time “display” vendors today — such as demand-side platforms and data management platforms — we increasingly see multi-touchpoint, multichannel communication platforms, delivering messaging in display, online video, mobile, and social because, although the challenges of going multiplatform are well-known to the players, they know that there will be no way around addressing these new screens. One US DMP’s VP of business development told us: “The integrated stack is where the market is heading. Companies will also move across mobile, social, video, and TV. Why? Data transfer. I don’t think any CMO wants to have siloed strategies.”
- **Some lateral-thinking vendors will begin to experiment with direct-to-consumer offerings.** The big data problem is not just one for brands and publishers — increasingly, consumers are swimming in and trying to glean meaning from it all. The data management, AI and predictive algorithms, and juggling of multiple taxonomies with display technology all could have meaningful consumer services derived from them. In fact, one media strategist at an EU communications planning and buying agency predicted: “Consumers will become their own DMPs — managing not just their data but the family, the house, and other objects they look after.” To that end, the full ecosystem of buyers, sellers, and vendors would be well served to focus much more meaningfully on consumer education, clearly explaining the benefits of relevant advertising.

*“We’re going to have to have an evolution of technology — what do the technologies want to ‘grow up’ to be? I think they will evolve into decision-making systems rather than just ad-serving, or they will have other sources of revenue for other related services. It’s not enough just to be, say, an ad server.” (Global digital director at a global media agency)*



## KEY RECOMMENDATIONS

Big data will eventually become huge data and then some subsequent superlative — suffice it to say, digital real-estate will grow and the context of this real-estate will become more programmatically “knowable.” Don’t simply add more data because you have it — appraise what the benefit of the data might be before spending money on integrating and developing it into algorithms. Innovators don’t fear complexity, they seek it. Our recommendations:

- **Ensure that data is widely used, and reduce barriers to insights.** Clean data so that it can be more widely used. If bad data enters the system, track it back to the source — enforce strict quality control at data entry in sales, CRM, and partner relationships. Once the data is clean “enough,” ensure that it is more widely available outside the advertising teams — to product development and others. The data alone is not enough; straightforward interrogation tools with visual capabilities are needed so that insights may be spotted and leveraged by the greatest number of people in the business. A media strategist at a European communications planning and buying agency told us, “[We are using] visualization techniques — we have the digital team and campaign management team using various programs. We are also developing [common] language . . . so they can more effectively interpret that kind of data — the vernacular between departments is important as well as the technology.”
- **Focus on the right data, not aggregating more data.** The combination of direct interaction through first-party data augmented, or complemented, when necessary, by third-party data is the special sauce that makes one display partner find an audience better than another. Understand what data sets partners can bring to the equation and how they think about the role and value of that data relative to your own data. Take time to understand the audience insights provided and be open to using them beyond a single display campaign. As the chief innovation officer and co-founder at a European SSP said, “It’s about trying to keep managing the data. The most important solution is to keep focusing on the right data, rather than the amount of data.”
- **Prepare for constant change by being flexible and communicative with partners.** From an architectural point of view, loose coupling of ad systems and data management platforms will provide the most flexible path ahead and allow for varied interaction with consumers, but be mindful that such an approach can significantly increase complexity and may have unforeseen consequences, such as data loss. If you do choose to work with multiple partners, ensure that the relationships between players is fluid and quick moving so that the human skills can reduce the gap between planning, execution, and measurement. A chief innovation officer and founder at a European SSP told us, “Getting notified of changes in KPIs increases effectiveness for us. We can give our clients actionable data that can give them more revenue; it means they can focus their time on doing smart things.”
- **With big data comes big responsibility; be accountable for your data use.** Everyone needs to respect consumers’ privacy and their choices; it’s unwise to wait for government intervention when that could leave you in hot water or scrambling to comply. And it certainly won’t score you any points with consumers. With the majority of agencies and vendors touching European consumers in some capacity, it’s imperative to make that meeting with your legal representative to spend time going through the European Union Revised Data Protection Directive slated to become active in 2014 or 2015. At the very least, get proof from your display targeting partners that they are compliant with any privacy laws and industry practices. As one product manager at a global ad exchange explained it to us: “Data hasn’t exploded or changed — it’s the ease with which we can use data. If we use it poorly then we will lose people’s trust. This will result in the obfuscation of the data and we will lose access.”

## Appendix A: Methodology

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In this study, Forrester conducted 13 double-blind telephone interviews with individuals from both the demand side and sell side who deal with the data analysis and use of data in display advertising at media agencies, DSPs, trading desks, and RTB supply sources in the US and Europe. These interviews served to evaluate the impact of data and data techniques on the ecosystem of display advertising. Interview participants included a diverse group of decision-makers from media agencies and buy and sell-side vendors. Questions provided to the participants asked about their role in the display data ecosystem, including current activities, their challenges and benefits of data as well as their view of the future of data usage when it comes to digital marketing. The study began in October 2012 and was completed in January 2013.

## Appendix B: Supplemental Material

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### Related Forrester Research

“The Future Of Digital Media Buying,” Forrester Research, Inc., September 7, 2012

## Appendix C: Endnotes

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<sup>1</sup> Source: IAB website. “Rising Stars display ad units were selected from a pool of 36 innovative submissions by a cross-disciplinary group that included agency creative directors, media executives, publishers and ad operations specialists, who judged the ad formats for their potential to drive brand equity at scale. This program is a core component of “Reimagining Interactive Advertising,” a top IAB initiative. These new-to-the-market formats will be named IAB Standard Ad Units following six months of in-market validation.”

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