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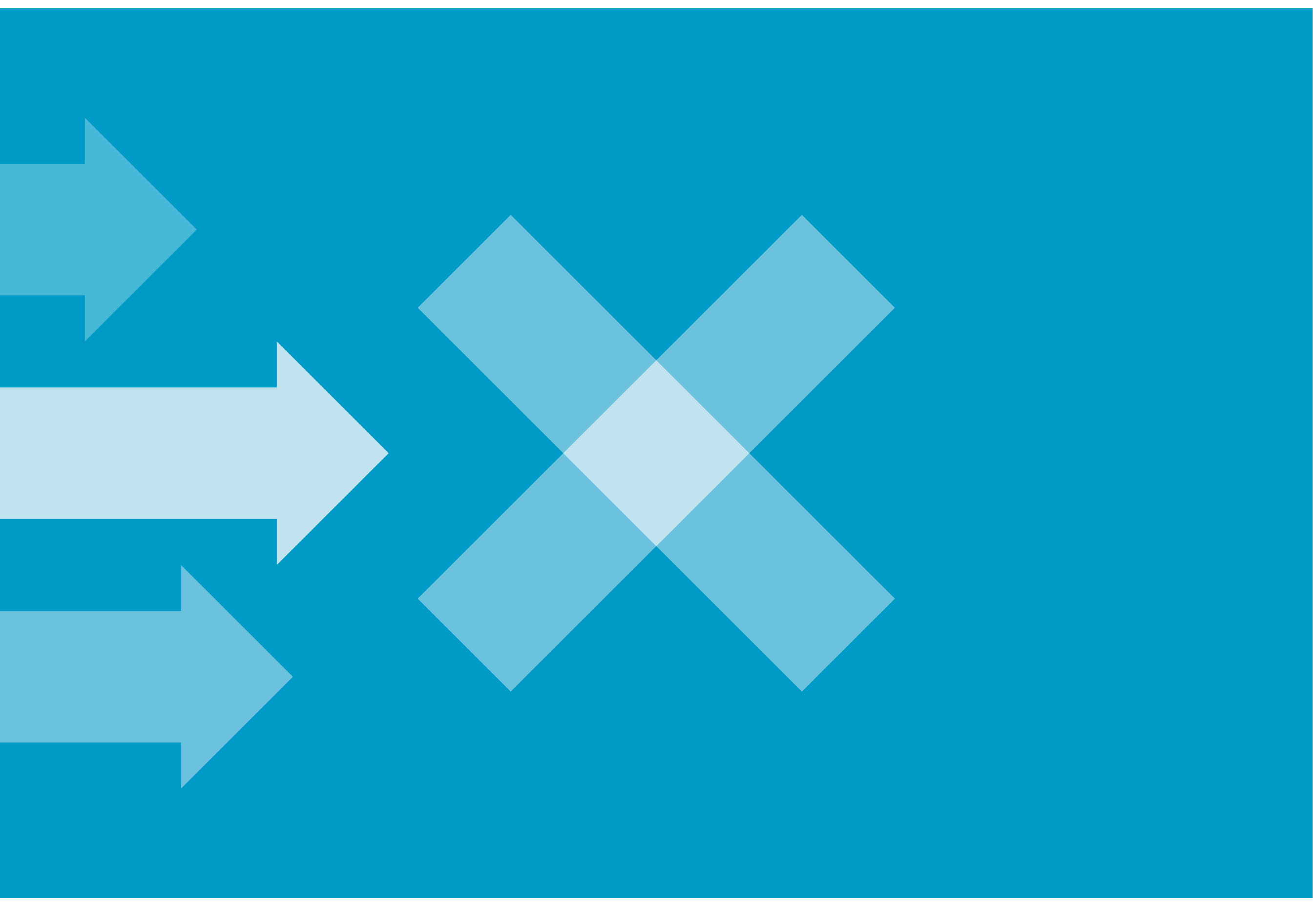
PROMISE UNFULFILLED? LESSONS FROM THE REVOLUTION

Six Things You Need to Know About Real-time Display Advertising

Jag Duggal
Vice President, Product Management



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The real-time bidding (RTB) industry began nearly three years ago with the September 2009 launch of Google's DoubleClick Ad Exchange, the first marketplace powered by real-time auction technology. Since then the industry has experienced tremendous growth. At Quantcast, we participate in more than 10 billion auctions daily for ad inventory on real-time exchanges, roughly 30 times more than just 24 months ago. eMarketer projects that spending on real-time exchanges will grow to $5 billion by 2015.[1]

It all began with a simple question: Could display advertising borrow the key lessons from search advertising? In creating the DoubleClick Ad Exchange, Google challenged the accepted wisdom of traditional advertising, choosing instead to discover new rules that took full advantage of the new medium. First, being able to uniquely target every single ad impression is immensely useful. Second, pricing each ad impression based on a real-time auction is massively valuable.

From those audacious ideas, the real-time ad exchange was born – a framework to take what had been pioneered on a handful of search engines and apply it across the entire Web. Today, the infrastructure is built to run impression-level targeting based on a real-time auction for any website, with exchanges undertaking a multiparty auction process in one-tenth of a second, all while the page is rendering.

This is unquestionably an impressive technical achievement. Yet there is a growing sense that the RTB revolution thus far has not delivered on its promise. Dramatic improvements in technical infrastructure have yielded, at best, marginal improvements in campaign performance. In fact, outside of a few small pockets, primarily in retargeting campaigns, the hope and the hype have yielded to disappointment and even despair. A recent headline suggests we are entering *"The Trough of RTB Disillusionment."*[2] The nervous whispers of industry insiders in 2011 threaten to become the angry roar of advertisers in 2012.

But revolutions don't proceed in straight lines. A December 2000 Businessweek article on the fledgling Google search engine posed the question, "Where's the business model?"[3] The article quoted a Google competitor as saying, "There isn't really good evidence, frankly, that companies focused purely on search, as Google has been, can support themselves with that model." As if anticipating the question, Google had launched AdWords six weeks earlier. The industry is now living the revolution that followed.

"In retrospect, all revolutions seem inevitable. Beforehand, all revolutions seem impossible."[4] Over the last year and a half, Quantcast has worked hard to figure out the new rules for a new medium.[5] We've found that RTB campaigns perform incredibly well when executed correctly, meeting or even exceeding the hype. However, we've also learned that many original assumptions and hypotheses shared throughout the industry have turned out to be wrong. This Quantcast point of view is our first in a series intended to explain what we've learned – *the new rules of RTB*.

1. According to International Data Corporation, as quoted in "Real-Time Bidding Spending to Quadruple This Year," eMarketer, October 27, 2011.
2. ExchangeWire, January 23, 2012, Martin Kelly, cofounder of Infectious Media.
3. "Will Google's Purity Pay Off?," Businessweek, December 7, 2000.
4. Michael McFaul: NSC expert on Democratization.
5. *RTB is dead, long live RTB*. RTB works as spectacularly as its early advocates envisioned, but making it work means iterating some of the original premises. Failure to do so means that most campaigns are not working anywhere close to their potential.

The Way It Was Supposed to Work

The industry has begun refashioning display advertising based on real-time audience targeting. Organizations structured themselves so that those responsible for optimizing campaigns are separate from those responsible for providing the data. As an industry, we believed that the new real-time infrastructure would allow advertisers to mix and match data from various sources, combine with algorithms and execute through any preferred bidding technology.

While most of the industry still believes in these principles, Quantcast has increasingly found that such thinking stands in the way of fulfilling RTB's promise. We have learned that diverging from conventional wisdom can drive approximately five times the performance for RTB campaigns. Great news for the entire industry!

Here are six reasons why some perfectly reasonable hypotheses of RTB 1.0 have turned out to be flawed:

1. Cookies are <u>far</u> shorter-lived than thought. We all know that cookies don't live forever. But we built a real-time display industry structure – separating data from optimization and lower-purchase-funnel retargeting from upper-purchase-funnel prospecting – that implicitly assumes that cookies are, at least, reasonably long-lived.

As it turns out, *the half-life of an average third-party cookie* (the type most commonly used for data exchange, ad serving and attribution analysis) *is approximately three days, and cookies for one third of online users last for less than an hour*. Data buyers today are erring in one of two ways. They're either focusing only on the subset of the population with stable cookies or they are buying lists of cookies with a good chance that many on that list will never be found again. Stale cookie lists equate to dramatic degradation in either effectiveness or efficiency. Said another way, real-time bidding requires real-time data.[6]

2. Clicks are a poor metric for display advertising. Real-time display is a new medium requiring its own unique metrics. Importing the philosophy of accountability from search is entirely appropriate, but lazily applying the same metrics is not.

Quantcast's roots are in audience measurement. We have the benefit of understanding the demographic and income profiles of clickers across thousands of advertisers. Amazingly, the clicker profiles for *all* these products – from car insurance to plane tickets, men's pants to groceries – is almost exactly the same. Clickers skew very young (under 18 years of age) or older (more than 50 years of age) with lower incomes (less than $30,000 annually).

In general, the profile of converters is the *exact opposite* of the profile of clickers, a finding consistent with a host of display advertising studies. For example, comScore's Natural Born Clickers studies have shown that only 8 percent (and declining) of online users ever click on an ad in a given month.

3. Prospecting and retargeting are <u>not</u> separate activities.
Most advertisers have been encouraged to split marketing objectives into upper and lower funnel. This practice would be entirely rational if cookies were even reasonably stable.

But if the consideration window for an advertiser's product is more than a day or two, a single customer working his or her way down the purchase funnel from awareness to consideration to purchase will likely appear as two, three or more different cookies because cookies are so often short-lived (see above). When that customer is ready to visit an advertiser's website,

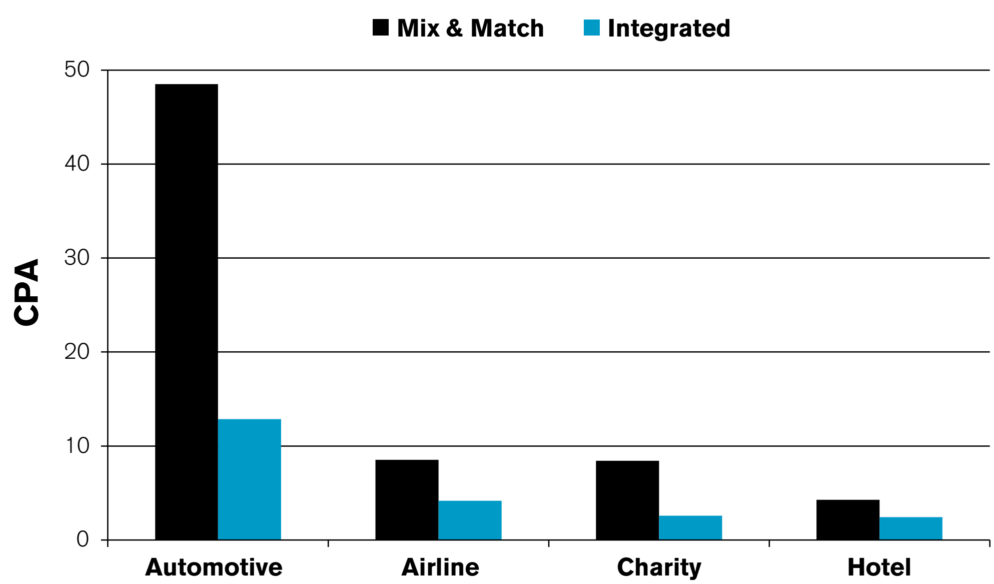
6. According to 2012 Quantcast internal research, if the consideration window for your product is more than a day or two, your customers may manifest themselves as two, three or more different cookies. One customer's journey down the conversion funnel will look like two, three or more new customers who magically appeared at your website ripe for retargeting.

he or she will likely appear as a different cookie from that appearing in the awareness or consideration phase. The advertising that drove the person to visit the website – the single hardest task in advertising – will not be properly attributed because cookie churn has broken the causal link.

Such mistaken attribution causes advertisers to overinvest in retargeting and underinvest in the important work of finding new customers.[7] Through extensive testing, Quantcast has found that *full-funnel campaigns routinely drive a 40 percent or greater increase in incremental customers over a split-funnel approach.*

4. Data is necessary but not sufficient. Providing data to many RTB players has allowed Quantcast to compare performance for campaigns run with independent components to those that integrate data with algorithmic optimization and bidding strategy. The data leveraged in both approaches was exactly the same, but the divergence in performance was stark. Campaigns with integrated data, algorithms and bidding produced a two to seven times lower cost per action (CPA) than the independent approach (see Figure 1). Upon this finding, Quantcast made the decision to no longer provide data to third parties for use in RTB.

Figure 1.
Quantcast comparative campaign performance against four different sectors



Knowing *whom to target* (the data or cookie list) is important, but it is not enough. It is also crucial to know *when* (purchase funnel management), *where* (context and placement), *how often* (frequency) and *how much to pay* (auction strategy). Separating the data from the algorithmic optimization and bidding makes the dynamic optimization required in RTB impossible.

7. The Chrysler story: This practice can lead to bankruptcy.

5. Data volume matters. While data alone is not sufficient, a massive amount of it is nonetheless needed to make targeting in real-time display work. Display is a far noisier environment than search, where users specify what they are looking for by entering keywords.

It is easy to gloss over the mind-boggling statistics associated with RTB, but here's a helpful rule of thumb: If you are not leveraging petabytes of data to make each targeting decision, you are missing the true power of RTB.[8] In today's world of big data, the amount of data actually *does* matter, for two reasons.

First, data freshness really matters, because less data means more dated insights and a greater sensitivity to cookie deletion. Experiments at Quantcast over the last year have found that serving the right ad at the right time based on the latest insight makes a big difference.

Second, targeting models are only as good as the amount and quality of data against which they train. Many vendors can provide lookalike modeling. Similarly, most people reading this article can run 100 meters, but only a handful of people have a chance to win an Olympic gold medal doing it. Lookalike models, like sprinters, are not all created equal. The amount of training differentiates the world-class from the mediocre.

6. Machines beat people. The amount of data required to make optimal targeting decisions in the noisy display environment is incredibly large. At the same time, the volume of impressions has exploded.

At Quantcast, the amount of data we apply to every targeting decision is the equivalent of 200 million filing cabinets worth of paper-based content. At this scale, using human beings and spreadsheets to process the information and make optimization decisions is beyond suboptimal. It is utter folly. Leave the tactical buying decisions to machine-learning techniques, and let people focus on strategic planning for campaigns.

Improve Performance with a Holistic Approach

Slicing the purchase funnel into data, optimization, retargeting and prospecting makes it nearly impossible to create a coordinated set of targeting tactics. Through empirical observation and active experimentation over the last 18 months, Quantcast has found that an integrated approach to targeting in real-time display – data, algorithm and bidding – across the entire funnel simply drives better results.[9]

We've also found that it is possible to achieve both the performance and scale of search in display. While not all the way there yet, we are leaving behind the marginal performance of traditional display and fulfilling the original promise of RTB and targeting. For many of our clients, Quantcast is delivering a material portion of all their total conversions, including search, and doing so at a superior CPA to search engine advertising.

The RTB industry is only three years old. We are all witnessing the creation of a new industry, and we're still learning what works. As we move from RTB 1.0 to RTB 2.0, it is important to remember a key lesson from the evolution of search: Success comes by applying the emerging rules of a new medium rather than misapplying the rules of thumb from other media.[10]

8. According to 2012 Quantcast internal research, small amounts of data cobbled together in a mix-and-match fashion result in gaps and inconsistent overlaps.

9. This is empirical observation, not a dogmatic/theocratic assertion.

10. According to 2012 Quantcast internal research; for example, overestimating the impact of technological change in the short term and underestimating it in the long term.