From: Nitish Korula [nitish@google.com]

Sent: 1/4/2019 4:12:42 PM

To: Dan Taylor [dantaylor@google.com]; Rahul Srinivasan [rahulsr@google.com]

CC: Sam Temes [temes@google.com]; Tobias Maurer [tmaurer@google.com]; Nick Danziger [ndanziger@google.com];

Chris LaSala [chrisl@google.com]; Uchechi Okereke [uchechi@google.com]; Bryan Rowley [browley@google.com];

Terri Ozoroski [terrio@google.com]

Subject: Re: First-price reviews with Suresh and Prabhakar

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[+Rahul]

Thanks, Dan and Sam. +1 to discussing more.

To the independence / inextricability question of #1 and #2 that you both asked about:

- As you would imagine, it would be fundamentally impossible to do #2 (unified auction) without #1 (AdX moving to first-price), because an auction with some first-price and some second-price participants can't be unified.
- -#1 followed by #2 would be theoretically possible, but I believe very challenging, though this may also depend on what exactly is meant by unification. With the current plan (common floors, or removing per-buyer pricing), we would be taking away some functionality that publishers have today. We could likely sell it to them as part of this broader change (there's less need for it in the first-price world), but if we offer it in a first-price world, I think it would be very hard for us to take it away later: It would be viewed as a pure loss of functionality that we're doing for our own (perceived 'nefarious / self-serving' reasons), rather than (if we do it together) removing (or never building in the first place) functionality that doesn't make as much sense in a first-price world.

I'll send a longer email later today, and we can also talk in person. Definitely agree that it's worth the conversation, and also good to see we all agree that as Dan said, unwinding places where DV360 is unnecessarily buying impressions on 3PE via EB when they could get the same impression via AdX is ultimately a good thing for advertisers, pubs and google.

Thanks, Nitish

On Fri, Jan 4, 2019 at 10:45 AM Dan Taylor dantaylor@google.com wrote:

Thanks for this summary Sam, agree it needs discussion.

One thing I'm not clear on - are #1 and #2 linked? Or are they independent of each other?

FWIW, I think unwinding places where DV360 is unnecessarily buying impressions on 3PE via EB when they could get the same impression via AdX is ultimately a good thing for advertisers, pubs and google.

Dan Taylor |

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On Thu, Jan 3, 2019 at 10:44 PM Sam Temes < temes@google.com > wrote: ATTORNEY-CLIENT PRIVILEGED AND CONFIDENTIAL

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Hi NItish,

I wanted to summarize our comment thread and quick chat for this group. We can talk more on Monday with +Tobias Maurer and +Nick Danziger too.

First, there's too things happening. Until today, I had only been tracking the first. Admittedly, I don't fully understand how inextricable they are from one another, so you may have to bring me a long a bit more still. Here is my take:

- 1) Adx moving to first price auctions. This move makes sense and is a bit of a shoulder shrug from a comms perspective. DV360 has dealt with this on 3PEs over the last year. Data may show some positive / negative trends and help buyers prepare, but it won't have an impact on the ecosystem at large. I'm not too concerned with this personally for comms, but we should really understand it for revenue purposes.
- 2) Move to a unified auction. This move will unwind a large subset of the ecosystem we built with EB. Specifically, it will cause DV3 to effectively stop buying these impressions from 3PEs, even without code changes or releases on the DV3 side. So, the ecosystem manifestation of this 'sell side' change will be a shift in DV360 spend patterns away from 3PE. Regardless of where the change lives in PM / Eng and how we communicate the 'why' of the decision, the *forced* behavior change on the buy-side will be *perceived* as a deliberate move by *google* to cut out other SSPs. I don't think more data will change our understanding of this -- the data will just prove what we already know will happen: DBM will stop buying (inefficient) EB and Header inventory from 3PEs (a significant amount of revenue to those 3PE). For better or worse, we know what we are doing is better for customers and creates more 'direct' paths for inventory it is ultimately the 'right' end state. However we are battling a big perception issue. The perception issue is created by making this a unilateral decision on behalf of the ecosystem versus giving customers tools to make it themselves. Net net, in making this change we very likely invite 3PE SSPs and DSPs to claim we are committing unfair practices and tell buyers to use other DSPs which are not 'tied to Google' -- almost no comms message could combat this without tools for publishers and marketers to see for themselves it is not actually the case.

An alternative approach, that allows us to convey a more customer centric mindset would be to consider something that draws the customers to this same end state on both sides:

- 1) DBM builds a supply path optimization feature that allows customers to see they are buying AdX from other places and stop doing do.
- 2) AdX releases a feature after #1 is in place and widely commercialized to unify the auction based on publisher opt-in with a message that says "get more direct access to buyers"
- 3) Force a unified auction (current plan) after buyers demand fair access to AdX publisher inventory (using Data from #1) and publishers demonstrate they don't want their inventory to daisy chain through several SSPs back to Google demand via #2.

Can we talk about this on Monday? I am certain that I am missing important nuances by not fully understanding AdX and that my alternative approach has holes in it, but I hope that we can think of model where we lead buyers and sellers into this outcome versus force it and be accused of not acting in their interest by the market at large.

Thanks, Sam

On Thu, Jan 3, 2019 at 6:04 PM Nitish Korula <<u>nitish@google.com</u>> wrote: ATTORNEY-CLIENT PRIVILEGED AND CONFIDENTIAL

Hey Chris,

Absolutely, that's a great question. I think it might be challenging to walk it back, but we did come up with an 'out' of a slightly different kind, which I'd love to get your take on.

Basically, we commercialize the first-price launch, but we offer all buyers the ability to continue to submit second-price bids, with a promise that AdX will help them submit sensible bids into the unified first-price auction. (This is similar to what Rubicon offers via their 'EMR' system, and many small Authorized buyers who might be concerned about intelligent bidding into a first-price auction might be inclined to choose this option.) DBM and GDN can *also* choose this option if bidding into the direct first-price auction isn't profit maximizing: In this case, they would continue to submit the same bids they did before; we run the same second-price auction that we always have, and submit its clearing price (which is a sensible first-price bid) to the unified auction.

The net effect is exactly like the status quo (plus we can optimize the bid into the unified auction a little to make it more competitive), except:

- (a) with lower / unified floors, which can only help and
- (b) some of the Authorized buyers bidding directly into the unified auction, which they would presumably do only if it results in more revenue. But in any case, the total spend on the subset of Authorized buyers who would choose not to use our optimized first-price bidding system is relatively small, and even if bidding directly into the first-price auction were to result in a 10% drop on their spend (say), that would be a tiny fraction of total publisher revenue.

From the publisher's perspective, this would look exactly like the first-price auction we commercialized, with some buyers using our optimization service, but in terms of revenue, they should be largely protected from a drop. In fact, we can even use this as a ramp-up mechanism to manage the transition relatively smoothly.

Thoughts? We have this in the deck under mitigations, but of course I'm happy to discuss it in more detail to get your feedback.

Thanks, Nitish

On Thu, Jan 3, 2019 at 5:29 PM Chris LaSala < chrisl@google.com> wrote: Smaller group.

Thanks Nitish - I appreciate the complexity. Given we don't really know how bidding behavior will change, have we considered a January announcement that suggest we are testing moving to a 1P auction (or someway of giving us an out if our tests don't prove the hypothesis)? What happens if we find that this strategy is not profit maximizing...can we we walk it back? I suspect there all sorts of holes in that idea . . . but worth asking.

Chris

On Thu, Jan 3, 2019 at 4:03 PM Nitish Korula <<u>nitish@google.com</u>> wrote: Thanks, Chris. Jeff is including Dan in our ongoing scheduling thread.

Regarding the estimate, we don't have a 'firm' estimate yet, because the impact is hard to quantify - even the known unknowns are large. Based on some highly preliminary experimental results and lots of conservative modeling assumptions, Max Lin and I had done some analysis which I've hesitated to share broadly, because the uncertainty around it is so large I'm worried about how that number is used. I'm happy to walk you through it, though I would strongly caution against trusting the number. :)

It's also hard because some of the benefits will be realized over time: Over the last several years, Ali and his team have built (for GDN) what's probably the most sophisticated bidding system out there today, and it's highly optimized for our second-price auctions. The team is working hard right now to have good bidding logic for the first-price system ready for launch time, but it's hard to replicate all the years of optimizations in a few months, and I'm sure they'll continue to iterate and improve the system after the launch. Similarly on the sellside, a lot of our optimizations like RPO or dynamic revenue sharing will likely continue to evolve after the launch. (As one example, the revenue lift from RPO has more than tripled after its initial launch, after a long series of subsequent launches.)

Nitish

On Thu, Jan 3, 2019 at 9:10 AM Chris LaSala < chrisl@google.com wrote: +Dan Taylor who should also be included in the meeting.

Do we have a firm estimate of the financial impact yet? Given a primary reason for doing this is to drive net revenue, there should be a clear link to associated goals given the eng and commercial effort on buy and sell sides, this is not free. . .

On Thu, Jan 3, 2019 at 7:26 AM Nitish Korula <<u>nitish@google.com</u>> wrote: Sounds good, thanks. We'll work with all your admins to set up time, most likely for Tuesday or Wednesday next week.

As Ali said, we've had a lot of buyside-sellside meetings already (averaging 2/week so far), and Ali has himself put in a lot of time to make sure we're aligned and guide much of the thinking. So we're hoping this isn't particularly controversial:), but would definitely be very interested in feedback. Thresholds for metrics (e.g. wrong track indicators) in particular is an area that we've only been discussing in the past couple of weeks.

Thanks, and Happy New Year!

Nitish

On Thu, Jan 3, 2019 at 12:56 AM Ali Nasiri Amini <amini@google.com> wrote:

Yes, I agree. I think we are generally aligned and had a number of meetings between buyside and sellside already. The focus of the pre-review will be on how to cover all the various topics that Suresh asked for, from both sell-side and buyside, into one hour review.

On Wed, Jan 2, 2019, 8:44 PM Sagnik Nandy < sagnik@google.com wrote:

Look forward to the reviews. Given how much hard work, planning and thinking file have already put in, I hope we can approach these as informational and feedback for iteration sessions as opposed to revisiting everything from scratch sessions.

Thanks.

On Wed, Jan 2, 2019, 8:27 PM Payam Shodjai pshodjai@google.com wrote: Looking forward to this review.

On Wed, Jan 2, 2019 at 3:02 PM Chris LaSala < chrisl@google.com wrote: +1 - would very much appreciate a preview.

On Wed, Jan 2, 2019 at 5:55 PM Vivek Rao < vivekrao@google.com > wrote:

Thanks for reaching out Nitish.

+1 on preview. Happy to make time. Very interested.

On Wed, Jan 2, 2019 at 2:47 PM Ali Nasiri Amini amini@google.com wrote: + Payam

Yes, I think we should do a pre-review (and please share slide deck as soon as it becomes ready). It would be nice to have Bahman and Vivek but I can represent buyside eng (GDN and DBM).

Thanks, Ali

On Wed, Jan 2, 2019 at 2:40 PM Nitish Korula <<u>nitish@google.com</u>> wrote: Hi Bahman, Sagnik, Ali, Vivek, Jim, Chris, Brad, Jason,

As many of you know, when Suresh last visited NYC, he asked for a couple of reviews in January related to AdX's migration to a first-price auction (scheduled for July). Just wanted to keep you all posted on the reviews and timelines:

- The first review is scheduled for Thursday of next week (01/10), primarily focused on commercialization: How will we message this to publishers, as well as Google Ads and DV360 buyers? Suresh also asked for this to be followed by an ACM review, scheduled for the next day, 01/11. Rahul and Tobias have been working with Sales and GTM teams on the deck for this, which should be available to share soon.
- The second review with Suresh (scheduled later) is on metrics we'll be keeping an eye on to make sure we're on track / not surprised by bad consequences.

Would any of you like a pre-review by the middle of next week, before we present at least the comms material to Suresh? Depending on your availability and interest, we can do an in-person meeting with you all, or send out the slides a couple days in advance for your review, or both (i.e. do a pre-review, and share slides with those who can't attend).

Thanks, Nitish

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