

DVA Review
2019-09-03



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Agenda

Today's focus: Results on Ad Manager Web inventory, sell-side and buy-side view covered separately

(App performance reviewed earlier -- changes deliver status-quo like outcomes at transition)

ASK: Approval to complete ~100% sellside transition to new auction model in 2 weeks

Google

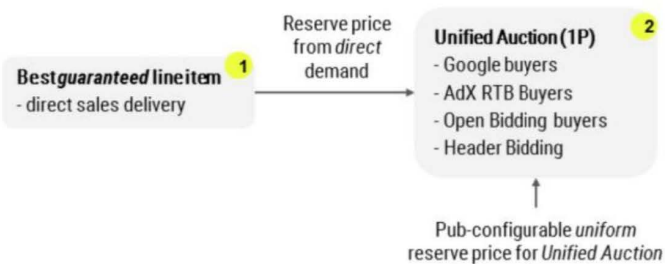
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- -1.5% Google gross revenue; neutral Google net revenue; -1.4% publisher payment from Google; neutral publisher payment overall

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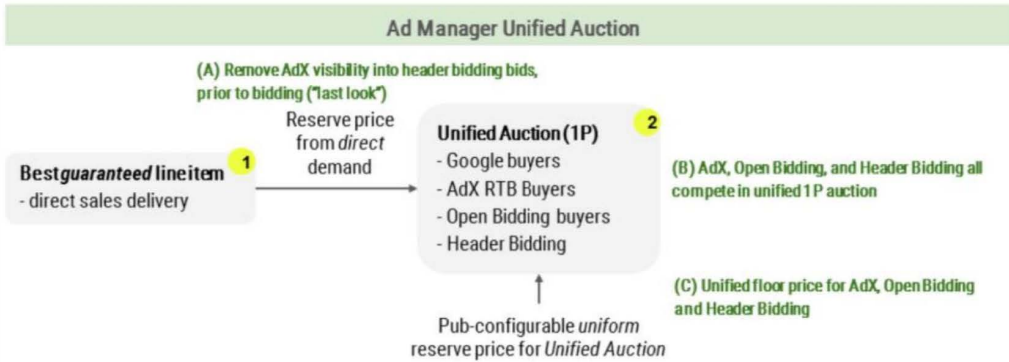
End-state: Simple unified auction w/ equal access
across indirect demand in end state

Ad Manager Unified Auction



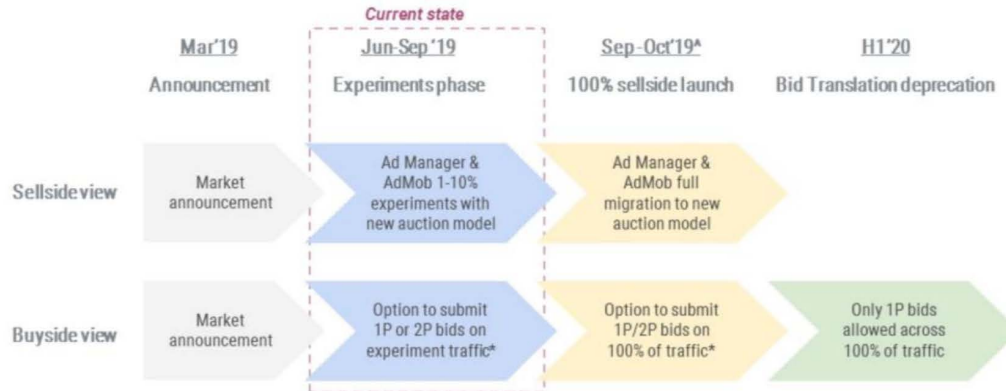
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End-state: Simple unified auction w/ equal access
across indirect demand in end state



Note: simplified for ease of explanation; (A), (B) and (C) apply to Ad Manager; (B) applies to Admob

Ad Manager & AdMob migration to new auction model in Sep '19, with buyer option to continue submitting 2P bids



^ABuyers can continue submitting 2P bids through the temporary & optional "bid translation" service, which will be "intelligently" converted to 1P bids by the exchange
^BThis stage will include a ~5% holdback for a period of 1-2 months for monitoring and analysis purposes

Buy-side view (web)

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Sell-side view (web)

Impact of individual changes comprising this launch

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Expected Impact

	Impact on Ad Manager Web inventory	Impact on Ad Manager App inventory	Impact on Admob inventory
(A) Last Look removal	<p>Reduces incentive to inflate HB prices, ensuring fairer competition with AdX/EB ("boost")</p> <p>Reduces AdX/EB visibility into HB prices prior to bidding</p>		
(B) Migration to 1P auction	GDA/ DV3/Auth. Buyers get direct access to the final 1P auction, improving competitiveness against external 1P demand (eg. Exchange/ Open Bidding)		
(C) Unifying floor prices	Levels playing field across AdX, EB, HB, reducing effective AdX floors		
(D) Investments in optimizations	Adaptation of auction optimizations and fine-tuning of bidding logic will improve performance over time		

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Removing Last Look* has significant negative impact

	Impressions	Value Clamped	Revenue	Google Profit	GDN profit	Post Revshare Payout
LastLookOverDfpRemnant:GlobalControl 246003051 TOTAL * Adx_Only * Web	548,549,820	1,786,486	690,764	154,233	56,196.1323	511,824
PriceFromSettingWinnerCostExperiment 246003052 TOTAL * Adx_Only * Web	496,914,005 -9.41% [-9.56, -9.26] %	1,699,227 -4.88% [-5.65, -4.12] %	624,314 -9.62% [-9.95, -9.29] %	144,356 -6.40% [-7.95, -4.86] %	54,296.8083 -3.38% [-7.79, 1.03] %	457,340 -10.64% [-10.79, -10.50] %
LastLookOverDfpRemnant:GlobalControl 246003051 Adwords_Buyer * Adx_Only * Web	333,223,170	418,763	248,815	73,917	35,312.8161	174,720
PriceFromSettingWinnerCostExperiment 246003052 Adwords_Buyer * Adx_Only * Web	298,497,803 -10.42% [-10.58, -10.26] %	375,698 -10.28% [-11.15, -9.42] %	220,983 -11.19% [-12.16, -10.21] %	69,427 -6.07% [-9.41, -2.74] %	34,838.0716 -1.34% [-8.48, 5.79] %	151,396 -13.35% [-13.48, -13.22] %
LastLookOverDfpRemnant:GlobalControl 246003051 Dtm_Buyer * Adx_Only * Web	108,676,700	1,164,124	287,571	62,827	20,883.3162	200,201
PriceFromSettingWinnerCostExperiment 246003052 Dtm_Buyer * Adx_Only * Web	102,152,821 -6.00% [-6.18, -5.83] %	1,147,250 -1.45% [-2.59, -0.31] %	269,666 -6.23% [-6.43, -6.02] %	59,667 -5.03% [-5.32, -4.74] %	19,458.7367 -6.82% [-7.04, -6.61] %	187,530 -6.33% [-6.52, -6.14] %

Aggregate:

- -9.6% revenue
- -4.9% value

But allows bundling of other valuable changes, that can be positioned as pro-competitive (fairer platform for *all* buyers); Pub outreach to reduce HB boosts planned

* This impact is measured in a 2P auction state comparing performance with and without last look; [Rasta source](#);

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Unified Pricing meaningfully improves inventory access by leveling the playing field

	Impressions	Value Clamped	Revenue	Google Profit	Post Revshare Payout
nt::DBM1xWithLegacyRulesAppliedPublic 51390104 Adx_Only * Second price Private exchange * T	233,006,841	395,382	323,221	85,638	221,945
irstPriceAuctionExperiment::DBM1xPublic 51390103 Adx_Only * Second price Private exchange * T	248,115,966 6.48% [6.31, 6.66] %	409,350 3.53% [2.23, 4.84] %	336,966 4.25% [3.85, 4.65] %	88,778 3.67% [2.58, 4.75] %	230,618 3.91% [3.61, 4.21] %
nt::DBM1xWithLegacyRulesAppliedPublic 51390104 Adx_Only * Second price Private exchange * D	60,424,780	170,285	195,109	47,798	131,708
irstPriceAuctionExperiment::DBM1xPublic 51390103 Adx_Only * Second price Private exchange * D	83,970,264 38.97% [38.70, 39.23] %	186,442 9.49% [8.31, 10.67] %	210,711 8.00% [7.64, 8.36] %	51,519 7.78% [7.41, 8.16] %	141,660 7.56% [7.19, 7.92] %

DBM impact:

- +8% revenue
- +9.5% value
- +39% impressions

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Overall performance of 1P change positive for AdX Buyers

	Impressions	MatchedQueries	Google Profit	Value Clamped	Revenue
Experiment::ControlSecondPriceAuctions 51390102 TOTAL * Adx_Buyer * Web	210,260,985	239,725,984	40,037	369,810	223,883
cGDNStaticNonVBBFloorGlobalAlchemist 51390159 TOTAL * Adx_Buyer * Web	30,252,572 23.33% [22.98, 23.67] %	35,004,690 25.16% [24.79, 25.53] %	5,736 22.80% [22.27, 23.33] %	37,525 -13.02% [-13.36, -12.69] %	30,950 18.49% [18.02, 18.96] %
Experiment::ControlSecondPriceAuctions 51390102 Adx_Only * Adx_Buyer * Web	119,647,911	148,303,710	30,959	309,070	195,604
cGDNStaticNonVBBFloorGlobalAlchemist 51390159 Adx_Only * Adx_Buyer * Web	19,964,068 43.02% [42.57, 43.47] %	24,685,111 42.67% [42.14, 43.21] %	4,716 30.56% [29.96, 31.16] %	30,682 -14.91% [-15.26, -14.55] %	27,772 21.70% [21.19, 22.20] %

AdX RTB impact:

- +21.7% revenue
- +43% impressions

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Buyers using Bid Translation service see improved competitiveness

	Impressions	Value Clamped	Revenue	Google Profit	GDN profit	Post Revshare Payout
ment: RtbSurplusMaximizerOffExperiment	432,803,661	1,358,981	557,220	118,764	37,909,0700	414,406
263561114						
TOTAL * Adx_Only * Web						
urplusMaximizerWithSmartBiddingControl	433,513,316	1,374,839	558,182	118,029	36,720,4203	416,003
263561113						
TOTAL * Adx_Only * Web	0.16%	1.17%	0.17%	-0.62%	-3.14%	0.39%
	[0.04, 0.29] %	[0.56, 1.77] %	[-0.24, 0.58] %	[-2.00, 0.77] %	[-7.26, 0.99] %	[0.15, 0.62] %
ment: RtbSurplusMaximizerOffExperiment	56,279,098	94,383	81,054	13,526	0.0000	67,528
263561114						
Adx_Buyer * Adx_Only * Web						
urplusMaximizerWithSmartBiddingControl	57,950,269	96,275	83,777	14,068	0.0002	69,709
263561113						
Adx_Buyer * Adx_Only * Web	2.97%	4.12%	3.36%	4.01%		3.23%
	[2.62, 3.32] %	[3.66, 4.59] %	[2.89, 3.82] %	[3.48, 4.53] %		[2.77, 3.69] %
ment: RtbSurplusMaximizerOffExperiment	39,150,319	53,609	53,594	2,791	0.0000	50,815
263561114						
Demand_Syndication * Adx_Only * Web						
urplusMaximizerWithSmartBiddingControl	38,951,665	53,378	53,363	2,777	0.0000	50,597
263561113						
Demand_Syndication * Adx_Only * Web	-0.51%	-0.43%	-0.43%	-0.48%		-0.43%
	[-0.83, -0.18] %	[-0.80, -0.06] %	[-0.80, -0.06] %	[-0.87, -0.09] %		[-0.80, -0.06] %

For AdX buyers, we maximize surplus in the BTS*:

- +1.2% overall value
- +4.1% AdX buyer value
- +3.4% AdX buyer revenue

* GDA/ DV3 are not using surplus maximizer; [Basta source](#)

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Bundled changes that simplify the product have near neutral impact

- Changes include unified protections, removing anonymous inventory, etc
- Rationale for these changes:
 - Significant product simplification: Clean separation of pricing from protections
 - Cleans up 'branding type' / removes anonymous inventory (not ads.txt compliant)
- Impact is [< 1% AdX web revenue](#)*

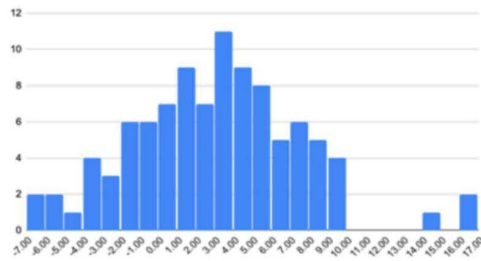
* when simultaneously enforcing old + new protections

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Indirect pub revenue impact

Histogram of overall indirect revenue* impact for top 100 pubs



*Includes revenue from AdX, Exchange Bidding and Header Bidding/ remnant line items

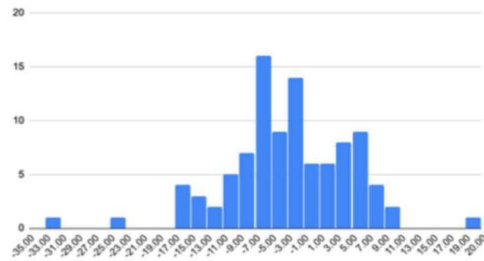
- Aggregate publisher indirect revenue* impact of +1.4%
- 76 out of top 100 pubs have a positive impact on indirect revenue

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Some pubs see decline in programmatic revenue; Planning outreach to top impacted pubs

Histogram of AdX + EB revenue* impact for top 100
pubs



*Notable ones include Daily Mail, Meredith and NY Post, Axel Springer, EA, Autotrader, MLB

- Few **strategic** pubs with meaningful (>10% AdX + EB revenue) impact*
- Most highly impacted pubs have neutral-positive overall revenue impact (AdX + EB + HB)
- Comms strategy: Outreach to pubs with >10% revenue impact, asking them to adjust floor prices and HB boosts

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Summary

- *Current results:* Near neutral (~1.5%) impact on revenue
- *Short term expectations:* Improved Google performance as (1) AdX buyers stop overpaying, (2) Publishers remove inefficient header bidding 'boosts'
- *Long term expectations:* Continued investments in optimizations across sellside and external + Google buyers should further improve performance. Unified auction which buyers can directly bid into should result in better positioning to compete against external 1P demand (eg. open bidding)

ASK: Approval to complete ~100% sellside transition to new auction model in 2 weeks

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- -1.5% Google gross revenue; neutral Google net revenue; -1.4% publisher payment from Google; neutral publisher payment overall

Appendix

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Delaying 100% sell-side launch to Q1

Advantages

- *Move short-term (~1%) AdX revenue loss from Q4 to Q1, and reduce loss as performance improves with bidding fine-tuning*

Risks

- *Reputation risk: committed earlier to a 2019 launch; Could be interpreted in market as result of poor performance*
- *Tech complexity: Will be pressured to share granular data with individual pubs; increases risk of some pubs wanting opt out*
- *Potential need to scale back experiment traffic through Q4.*

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Sell-side optimizations like Target CPM will benefit revenue and pub payout

	Impressions	MatchedQueries	Value Clamped	Revenue	Google Profit	GDN profit	Post Revshare Payout
TargetCpmModel1pSmartBiddingControl	2,843,139,557	3,232,910,780	9,345,931	3,483,150	696,453	175,400,8242	2,657,739
262565705							
TOTAL * Web * Adx_Only							
getCpmModel1pSmartBiddingExperiment	2,955,506,871	3,359,944,912	9,348,153	3,506,873	701,219	176,165,6062	2,675,474
262565706	3.95%	3.93%	0.02%	0.68%	0.65%	0.44%	0.67%
TOTAL * Web * Adx_Only	[3.89, 4.02] %	[3.87, 3.99] %	[-0.39, 0.43] %	[0.54, 0.82] %	[-0.03, 1.40] %	[-2.49, 3.36] %	[0.60, 0.73] %
TargetCpmModel1pSmartBiddingControl	1,528,048,587	1,635,945,651	1,886,021	1,080,390	270,398	69,009,4457	809,302
262565705							
Adwords_Buyer * Web * Adx_Only							
getCpmModel1pSmartBiddingExperiment	1,588,035,764	1,697,797,698	1,897,460	1,090,980	272,480	68,935,5453	817,833
262565706	3.79%	3.78%	0.61%	0.98%	0.76%	-0.11%	1.05%
Adwords_Buyer * Web * Adx_Only	[3.71, 3.88] %	[3.70, 3.86] %	[0.10, 1.11] %	[0.51, 1.45] %	[-1.13, 2.68] %	[-7.54, 7.33] %	[0.96, 1.15] %
TargetCpmModel1pSmartBiddingControl	639,453,533	779,332,870	6,483,542	1,497,290	311,179	106,391,3785	1,057,787
262565705							
Dbm_Buyer * Web * Adx_Only							
getCpmModel1pSmartBiddingExperiment	669,160,439	803,691,010	6,470,987	1,507,078	313,532	107,230,0609	1,064,000
262565706	3.08%	3.13%	-0.19%	0.65%	0.76%	0.79%	0.59%
Dbm_Buyer * Web * Adx_Only	[3.01, 3.15] %	[3.07, 3.18] %	[-0.74, 0.36] %	[0.57, 0.74] %	[0.66, 0.86] %	[0.72, 0.86] %	[0.50, 0.67] %

Target CPM helps pubs meet floors 'on average', rather than per-query

- +0.7% revenue
- +3.9% impr.
- +1% GDA revenue
- +0.6% GDA value

Continued investments in optimizations will further improve performance over time

* RASTER SOURCE

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Last look provides AdX/ EB buyers visibility into HB prices prior to bidding...

Example where last look impacts AdX auction



- Pubs call Header bidders first (compete in a 1P auction)
- This price informs the floor sent to AdX and EB, prior to bidding
- In this eg. Adwords wins the impression (2P bid of \$4 is highest)
- i.e. Adwords wins as long as "2P bid" > "1P bid" of header bidders

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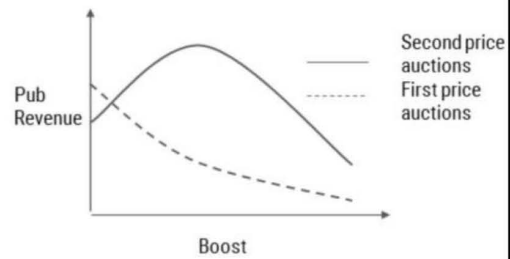
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... but incentivizes pubs to inflate ("boost") the floor sent to AdX

Example where last look impacts AdX auction



Comparison of boost and short-term pub revenue in 1P and 2P auctions



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Key launch benefits for sell-side partners

Simplicity



*Improved auction understanding
Operational efficiency
Focus on long-term value creation*

Fairness



*All indirect demand competes on
equal footing*

Transparency



*Ensure fair auctions
Gain improved insights*

App metrics

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Updated App numbers

	Revenue	Impr.	Publisher payout	Google profit
All app inventory	Neutral	+0.09%	-0.45%	Neutral
AdX	-0.5%	+9.7%	+0.2%	-1.7%
Admob	+1.0%	-0.8%	+1.1%	+0.9%
Gmob across app	-2.7%	-7.9%	-2.9%	-2.5%
AdWords across app	-5.4%	-7.9%	-6.9%	-2.3%
DV3 across app	-3.5%	-5%	-2.5%	-5.4%
AdX buyers across app	+49%	+42%	+47.5%	+54%

Source: [Basta](#)

Small increase in revenue, impressions, payout, Google profit

Overall results better on AdMob than AdX (deeper dive on next slide)

Spend shift from Google buy-side to AdX buyers

- Mitigating factors:
 - Increased AdX buyers spend may not sustain when traffic ramps up (if they are overpaying)
 - ~ 50% of revenue loss is budget-constrained on each of GMob, AdWords, and DV3.

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App impact ~neutral; GDN/DV3 can continue submitting 2P bids; some spend shift to AdX buyers

	Revenue	Impr.	Publisher payout	Google profit
All app inventory	+0.7%	+2.0%	+0.9%	+0.5%
AdX	-0.5%	+9.7%	+0.2%	-1.7%
Admob	+1.0%	-0.8%	+1.1%	+0.9%
Gmob across app	-2.5%	-7.1%	-2.4%	-2.8%
AdWords across app	-5.9%	-8.7%	-6.8%	-4.0%
DV3 across app	-4.4%	-5.8%	-3.6%	-5.6%
AdX buyers across app	+61.6%	+55.9%	+60.7%	+64.1%

Source: [Basta](#)

Small increase in revenue, impressions, payout, Google profit

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Spend shift from Google buy-side to AdX buyers

- Mitigating factors:
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 - ~ 50% of revenue loss is budget-constrained on each of GMob, AdWords, and DV3.

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Performance across different segments

	Revenue	Impr.	Publisher payout
AdX	-0.5%	+9.7%	+0.2%
Admob	+1.0%	-0.8%	+1.1%
On-platform	+2.1%	-0.3%	+1.7%
Off-platform	-0.1%	-0.9%	+0.8%
Off-platform multi-calling*	+0.2%	-0.5%	+0.2%
Off-platform not multi-calling*	-0.2%	-1.0%	+0.9%

- Some impression shift from Admob to AdX (probably due to lower effective AdX floors & multi-calling across AdX and AdMob)
- AdX revenue impact worse (potentially due to last look removal)
- On-platform inventory performance better
- Multiple call inventory not performing meaningfully different than non-multi-call inventory

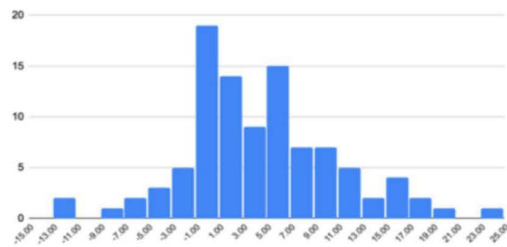
*Multi-call is defined here as > 4 calls. [Source](#)

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Most app pubs have low revenue impact

Histogram of overall indirect revenue* impact for top 100 app pubs



*For Ad Manager pubs, this includes revenue from AdX, EB and remnant line items

- Most pubs in -1% to +7% revenue* impact range
- ~5 pubs (in top 100) have >5% revenue decline
 - Impact mostly on remnant revenue -- remnant CPMs not always accurate
- 9 out of top 10 pubs with highest prog. revenue impact are on Ad Manager
 - Likely due to "last look" -- may/may not impact overall pub revenue (*investigation ongoing*)

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Top impacted pubs

Publ	Estimated ARR revenue impact (\$ mm)	Estimated % revenue impact
Edmunds DFP	22	12.99
VIMN - INTL Network	11	12.14
Chinatimes DFP	6	1.83
9GAG	5	6.35
eBay IT - DFP	5	4.42
Viki	5	13.78
Flipboard	4	8.15
MXPlayer	4	3.66
Times Internet Limited India - DFP - APAC	3	7.55
Univision - DFP	3	9.68
DAZN Group	3	0.82
Major League Baseball	2	5.80
TV2/Danmark A/S	2	5.61
Telecel Communication Channels Ltd (Walla)	2	15.08
eBay DE - DFP	2	0.64

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Additional context slides

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Market Perception

- *Mar '19*: Positive press following initial announcement to re. the migration of Ad Manager to a first price auction, around the improved simplicity this change would bring to the ecosystem
- *May '19*: Negative press upon subsequent announcement around our intent to unify pricing across all demand sources (including header bidding) and disallow the ability to set buyer-specific floors
- *May-June '19*: Extensive partner education through individual (>20 1:1 PM/eng/pub meetings) and group engagements (US/EMEA User groups) around benefits of changes, reaching >400 pubs
- *May-June '19*: Positive feedback received from a variety of publishers, including the Washington Post, Vice Media, NYT, MailOnline, etc
- *Jul '19*: A few unhappy publishers (including NewsCorp and the Guardian) who we continue to engage
- *Jun-Jul '19*: Regional sales teams conducted multiple hands-on workshops with clients around the operational aspects of setting unified floors in a first price auction

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Unifying floors (AdManager app & web)

Material reduction in effective floors, which will improve Ad Manager inventory access for buyers

- 56% queries have non-zero Unified Pricing floors vs. to ~80% queries with legacy floors
- When a UPR is set, it is ~72% (median) of the corresponding legacy Pricing rule floor.
- For AdWords, the avg. publisher floor reduces from \$3.31 under legacy floors to \$1.01 under UPR
- Estimated 6.4% increase in value of impressions won by AdX, that are currently blocked due to high legacy floors

Negative effect on 3P SSP spend, since HB/OB demand previously had no floors applied on Ad Manager

- Prior analysis showed 16.8% of HB impressions had a higher AdX bid, which was blocked due to a higher floor for AdX

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Last look removal (AdManager app & web)

Reduced visibility into competing HB prices results in a material revenue drop for Ad Manager

- On second-price traffic, this results in a 8% decrease in AdX revenue and impressions
- There is an increase in spend on 3P SSPs (DV3 is a large buyer of header bidding)
- Neutral impact on AdMob, since HB traffic is less significant on app

Reduced incentive to inflate HB prices in Ad Manager is not easy to measure in the short-term

- Pubs have no incentive to inflate prices in new HB setups
- Plan to educate pubs around strictly negative revenue consequences of HB price inflation, to correct for existing setups over time

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Graveyard

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Why make this change?

- Pro-competition
- Publishers 'compensate' for this through boosting Header Bidding (this also increases short-term revenue in the second-price world)
- Allows us to pair this up with other valuable changes to create a fair buying platform for all buyers.

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Why make this change?

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Id	Date	Text
		PRIVILEGED AND CONFIDENTIAL
2	09/01/2019 18:25:27	Also, product-wise, clean-up / simplification. (Unified Protections, removal of branding types, no per-buyer floors.)
1	09/03/2019 09:25:00	+rahulsr@google.com Could you add some content about the key benefits here? (Level playing field, improved buying efficiency when a final 1p auction exists, Pro-competition)
1	09/03/2019 09:25:00	we're covering this in slides 6 and 7

'Last Look'

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Id	Date	Text
3	09/03/2019 09:29:32	+rahulsr@google.com Could you please describe how last look works today?
2	09/03/2019 09:29:32	we've described this on slide 5
<div>Google</div> <div>Confidential + Proprietary</div>		

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Agenda

- Recap of auction changes
- Google impact expectations
- Initial results
- Top impacted pubs
- Next steps

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High level summary

Objective: Update on initial experiment performance (focus on app traffic)

- **Product launch:** simplification of display auction (incl. move to 1P) across Ad Manager and Admob
- **Timing:** Currently live on 10% of traffic; Aiming for a 100% launch in early September, with option for buyers to continue submitting second-price bids
- **Initial results:** Near-neutral overall revenue impact when Google demand uses Bid Translation service on app, with some spend shift from Google demand to AdX buyers
 - *Mitigants:* Increased AdX buyers spend may not be sustained as traffic ramps up; ~50% of Google demand revenue loss is budget constrained

GDA/DV3 using Bid Translation (AdManager app & Admob)

Performance on apps (Ad Manager + AdMob) is neutral overall, with some spend shift to AdX buyers

- Small increase in revenue (+0.7%), impressions (+2%), payout (+0.9%) and Google profit ([x]%)
- Overall results better on AdMob than AdX. Small decrease in impressions for AdMob (-0.8%), (likely due to impressions shifting to Ad Manager). ~+1% Google revenue, profit and payout to app pubs
- Spend shift from Google buy-side (GMob -2.8%, AdWords -5.8%, DV3 -4.5%) to AdX buyers (+ 68.9% revenue, +33.4% impressions)
- Mitigating factors:
 - Increased AdX buyers spend may not be sustained when traffic ramps up (if they are overpaying)
 - ~ 50% of revenue loss is budget-constrained on each of GMob, AdWords, and DV3.

Google

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