

Message

**From:** rev-team@google.com [rev-team@google.com]  
on behalf of Rikard Lindquist [rikardl@google.com]  
**Sent:** 11/10/2011 2:28:18 AM  
**To:** MAds [madsteam@google.com]; sochrox@google.com; global-partnerships-finance@google.com; Rev-team [rev-team@google.com]  
**Subject:** [Rev-team] Fwd: Today's AdX Boot Camp: Survey & Materials  
**Attachments:** Display Industry Slides.pptx

For those of you wondering about how this whole display world fits together. Good deck attached

----- Forwarded message -----

**From:** **Raj Hathiramani** <rajhathi@google.com>  
**Date:** Wed, Nov 9, 2011 at 14:22  
**Subject:** Fwd: Today's AdX Boot Camp: Survey & Materials  
**To:** MMAP Finance <mmapfinance@google.com>

A good refresher preso on the Display ecosystem and role of RTB through exchanges, from a training that Ling and I attended today.

---

Raj Hathiramani | Google | Media, Mobile & Platforms  
rajhathi@google.com | 917-969-0725

----- Forwarded message -----

**From:** **Eileen Duffy** <eileenduffy@google.com>  
**Date:** Wed, Nov 9, 2011 at 4:13 PM  
**Subject:** Today's AdX Boot Camp: Survey & Materials  
**To:** Alex Johnson <alexjohnson@google.com>, Anna Nguyen <annatn@google.com>, Ali Pasha <apasha@google.com>, Barbara Petit <barbarap@google.com>, Inderpreet Sandhu <isandhu@google.com>, Jai Krishnan <jkrishnan@google.com>, Brandon Jung <jungb@google.com>, Kariyushi Casper <kariyushi@google.com>, Kiran Mathrani <kmathrani@google.com>, Ellen Ko <ko@google.com>, Ling Hou <lhou@google.com>, Mary Ashley Amon <maryamon@google.com>, Matthew Conroy <mattrc@google.com>, Martin Boulogne <mboulogne@google.com>, Mark Coppin <mcoppin@google.com>, Raj Hathiramani <rajhathi@google.com>, Sanjey Sivanesan <sanjey@google.com>, Stacy French <stacyfrench@google.com>, Tali Saar <talisa@google.com>, Tim Soennichsen <tsoennichsen@google.com>

Hi, AdX Boot Camp attendees!

First: Thanks for taking a break from your usual schedules to attend today's training. I know it can be hard to carve out time, so hopefully you were able to get something out of it.

If you could take 30 seconds to fill out a survey, I'd greatly appreciate it :)

Also, the deck for today's session is attached to this email.

Please feel free to contact me with questions about the "industry" today, or anytime.

Have a great day, and nice to meet you all!

--

Rikard Lindquist | Finance Mgr Strategic Partnerships | Office: +1  
(650)214-0780 | Mobile: [REDACTED] | Google Inc

"If you received this communication by mistake, please don't forward it to anyone else (it may contain confidential or privileged information), please erase all copies of it, including all attachments, and please let the sender

know it went to the wrong person. Thanks."

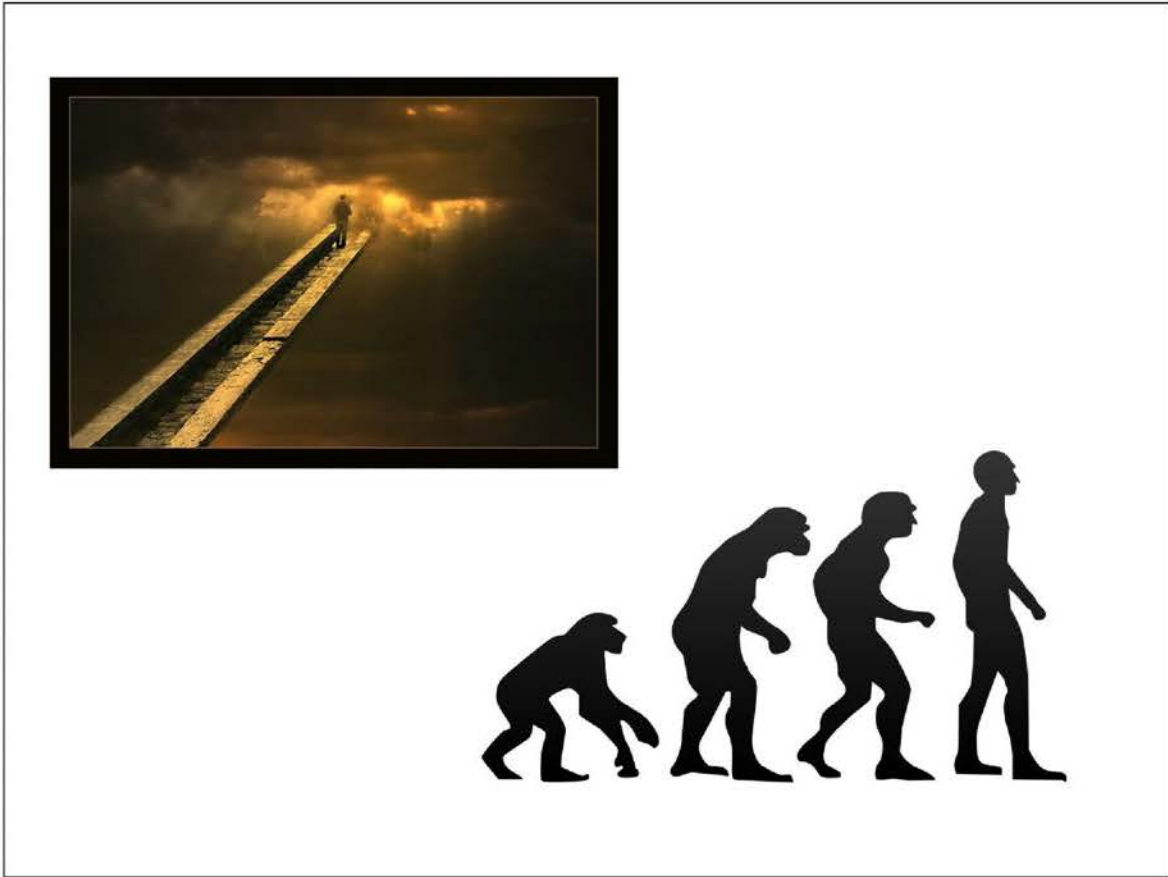
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For more options, visit this group at <http://groups.google.com/a/google.com/group/rev-team/?hl=en>.



# Display Ecosystem Boot Camp





## After today, you'll be able to:

- Tell a friend about the evolution of display media buying that led to the creation of ad exchanges and DSPs like Invite Media
- List key players in the current display industry, and state what each one does
- Describe how Ad Exchange ads end up on a publisher site, from dynamic allocation to real-time bidding to the auction





## In the beginning (well, the 1990s)...

publishers



advertisers  
+  
agencies

-  **reservation/direct buy:** an advertiser's purchase of inventory directly from a publisher's sales force, with an agreed-upon impression goal, budget, campaign dates, etc.
-  **guaranteed inventory:** inventory directly sold by a publisher's sales force

# Review: Ad Serving

1 User enters **espn.com** into her browser.



2 The browser contacts ESPN's **web server** for the website information.



3 As the browser begins to build the page content, it encounters a URL, or **publisher ad tag**, which tells it to call ESPN's ad server.



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## Review: Ad Serving

4 The browser contacts ESPN's ad server (in this case, DFP) asking it for an ad.



Which advertisers are targeting where this user is located?  
Which ad will make us the most money?  
Which ads are behind schedule?

5



DFP contains both creatives and URLs to advertiser ad servers, AKA "advertiser ad tag." DFP reviews all of its trafficked advertisers and selects the one it wants to show.

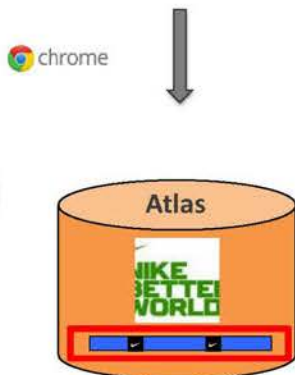
6 Once DFP has chosen an ad tag, it sends the tag to the browser.



# Review: Ad Serving

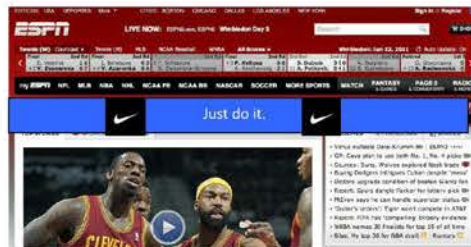
7 Now, the browser sees another link, so it calls Atlas.

9 Atlas returns the chosen creative, which appears on the user's screen.



8


Atlas knows it needs a Nike ad. But which one? Which one will speak to someone on ESPN.com that lives in Nebraska?



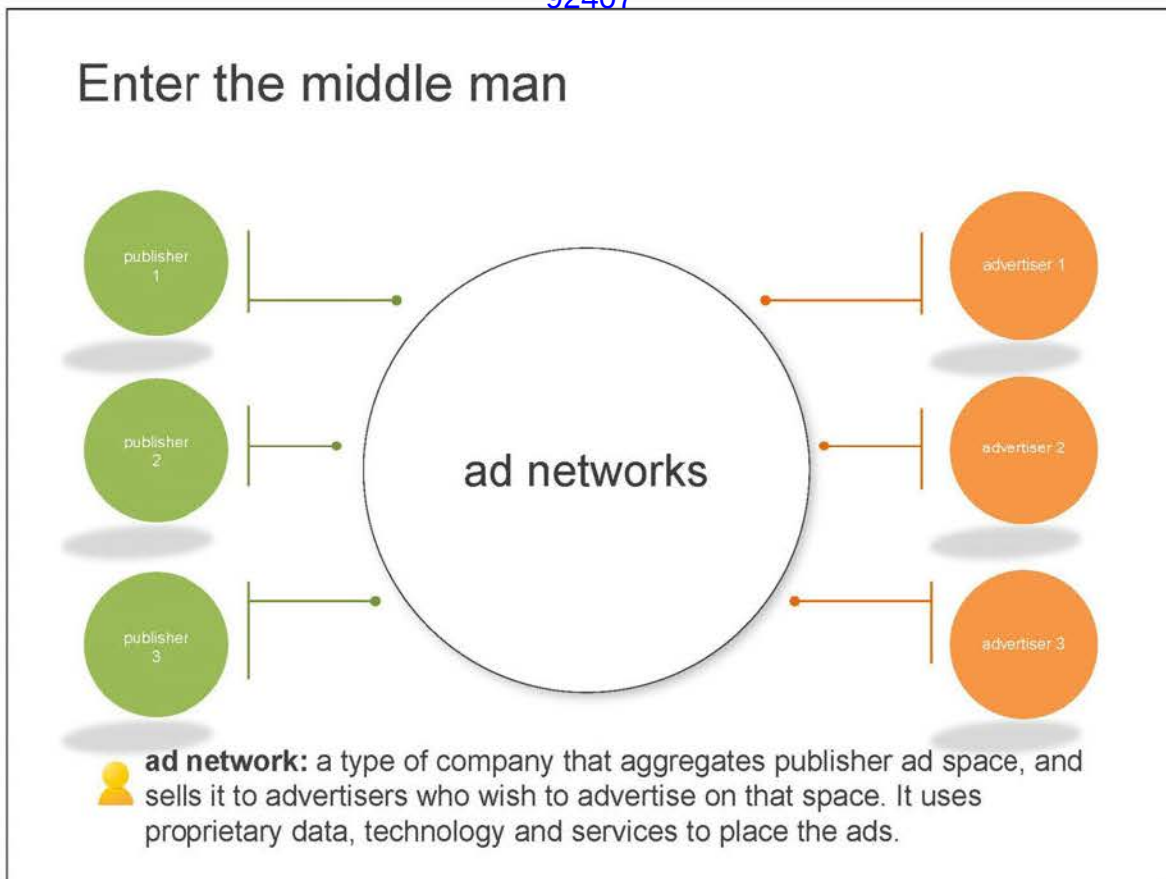
NOTE: If DFP had chosen a DFA ad, it would have fetched the ad creative and served it to the page – there's no extra call required.

## The problem with reservation buys...



 **remnant inventory:** inventory that's not directly sold by a publisher's sales force

leftovers.



a good remnant solution  
gave publishers access to a large range of advertisers  
gave advertisers access to a large range of advertisers

Meet ad networks.

Advertising.com



**Glam Media**



a good remnant solution  
gave publishers access to a large range of advertisers  
gave advertisers access to a large range of advertisers

## Ad Serving & Networks

1 User enters `espn.com` into her browser.



2 The browser contacts ESPN's **web server** for the website information.



3 As the browser begins to build the page content, it encounters a URL, or **publisher ad tag**, which tells it to call ESPN's ad server.



## Ad Serving & Networks

4 The browser contacts ESPN's ad server (in this case, DFP) asking it for an ad.

chrome



In this case, DFP now contains creatives, advertiser ad tags, and network ad tags. As usual, DFP selects the ad source that should show.



6 Once DFP has chosen an ad tag, it returns the tag to the browser.



## Ad Serving & Networks

7 Now, the browser sees another link, so it calls the ad network.



8



The ad network, using its proprietary technology, selects an ad to show. This may be the ad creative itself, or a DFA ad tag.

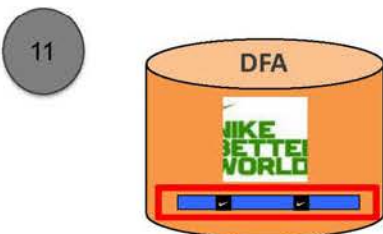
9 The ad network returns the advertiser ad tag to the browser.





## Ad Serving & Networks

10 Now, the browser sees another link, so it calls DFA.



DFA knows it needs a Nike ad. But which one? Which one will speak to someone on ESPN.com that lives in Nebraska?

12 DFA returns the chosen creative, which appears on the user's screen.



## Quiz!

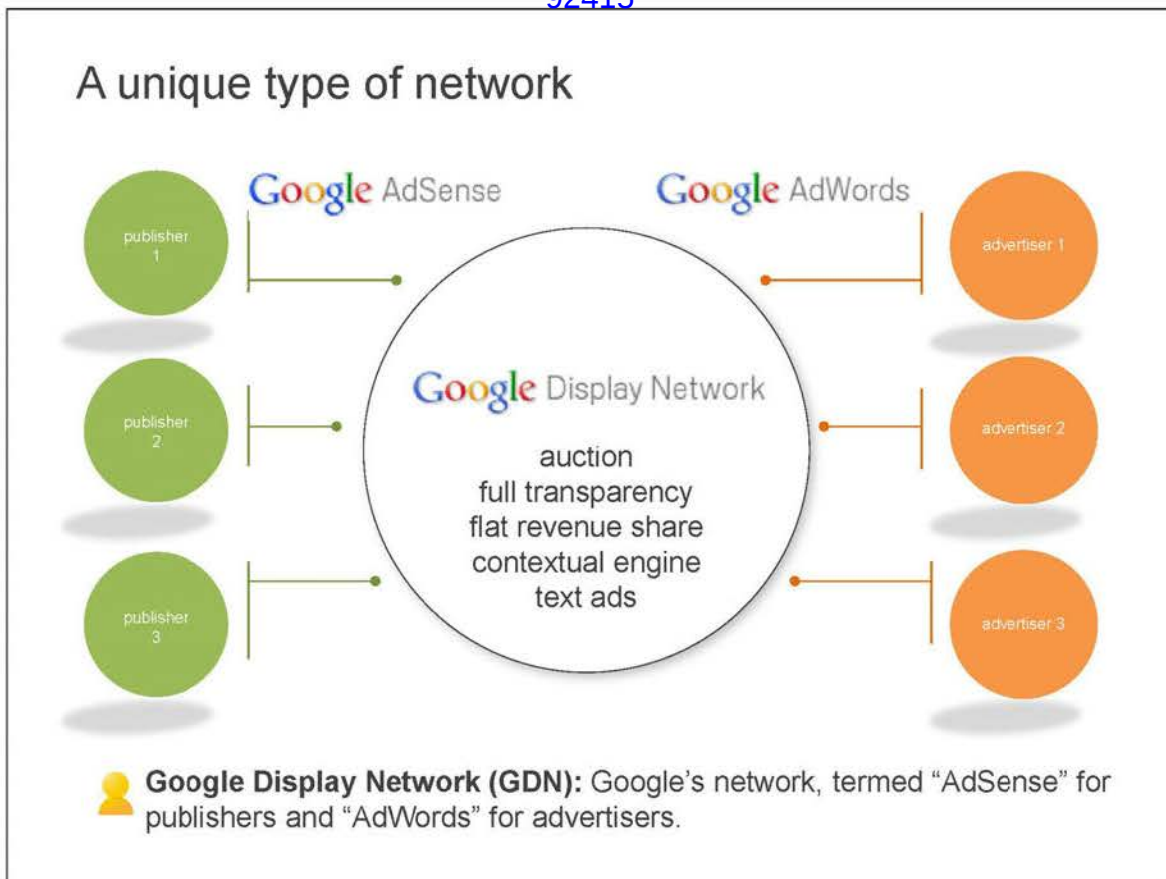
What do you call inventory that's directly sold from a publisher to an advertiser?

Guaranteed inventory

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## Ad network downsides





a good remnant solution  
gave publishers access to a large range of advertisers  
gave advertisers access to a large range of advertisers

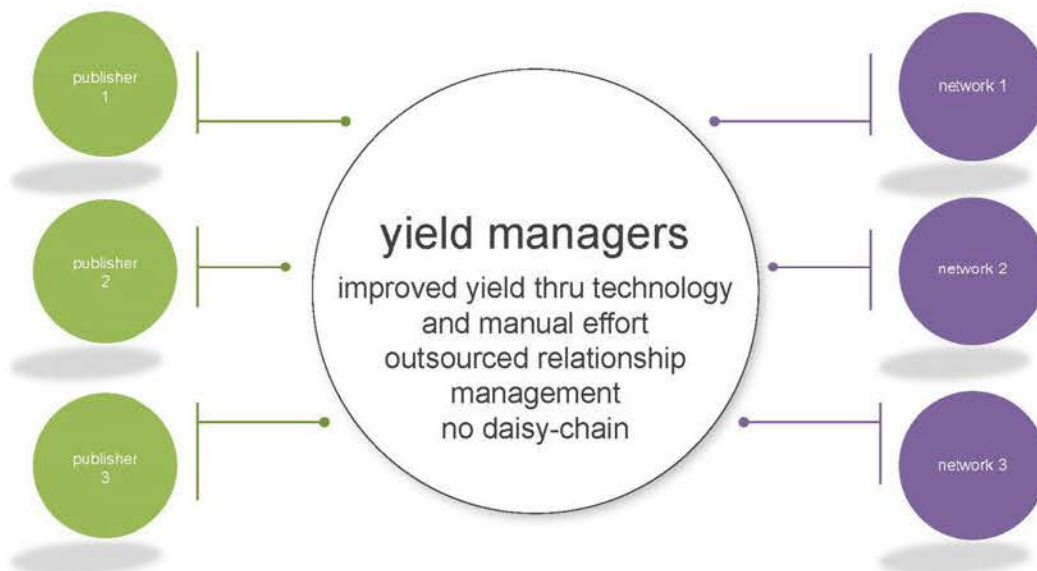
## Quiz!


What is a downside of the traditional ad network model?

Lack of transparency  
Proliferation  
Daisy Chaining  
Arbitrage

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## A new middle man



 **yield manager:** a third party which manages buyers like ad networks on behalf of a publisher. Its goal is to increase overall yield for the publisher by allocating the publisher's available impressions among each buyer in an optimal fashion.

Meet yield managers.



PubMatic

a good remnant solution  
gave publishers access to a large range of advertisers  
gave advertisers access to a large range of advertisers

# Ad Serving & Yield Managers

1 User enters **espn.com** into her browser.



2 The browser contacts ESPN's **web server** for the website information.



3 As the browser begins to build the page content, it encounters a URL, or **publisher ad tag**, which tells it to call ESPN's ad server.





## Ad Serving & Yield Managers

4 The browser contacts ESPN's ad server (in this case, DFP) asking it for an ad.

chrome



In this case, DFP contains – among other advertiser creatives and ad tags – a yield manager tag. As usual, DFP selects the ad source that should show.

Which advertisers are targeting where this user is located?  
Which ad will make us the most money?  
Which ads are behind schedule?

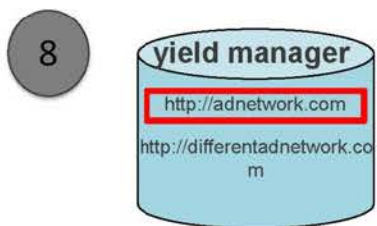
6 Once DFP has chosen an ad tag, it returns the tag to the browser.



## Ad Serving & Yield Managers

7 Now, the browser sees another link, so it calls the yield manager.

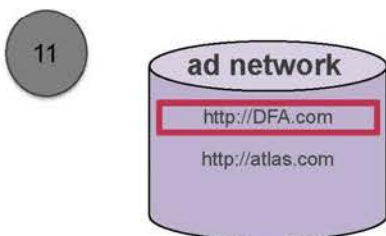
9 The yield manager returns the ad network tag to the browser.



The yield manager compares all of the remnant sources, and selects the best one to show.

## Ad Serving & Yield Managers

10 Now, the browser sees another link, so it calls the ad network.



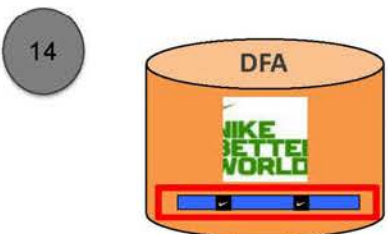
The ad network, using its proprietary technology, selects an ad to show. This may be the ad creative itself, or a DFA ad tag.

12 The ad network returns the advertiser ad tag to the browser.



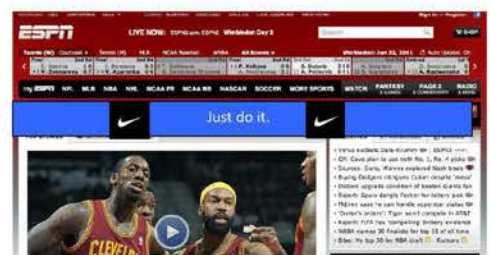
## Ad Serving & Yield Managers

13 Now, the browser sees another link, so it calls DFA.



DFA knows it needs a Nike ad. But which one? Which one will speak to someone on ESPN.com that lives in Nebraska?

15 DFA returns the chosen creative, which appears on the user's screen.




## Yield manager downsides

- One-sided (publisher-focused)
- Loss of control for publisher - didn't always know how or why yield managers were allocating \$ the way that they were
- Yet another middle man between publisher and advertiser (taking yet another portion of each dollar)
- Didn't always yield more for publisher

## A new concept: the exchange



 **ad exchange:** an auction-driven technology platform/marketplace that enables the buying and selling of ad inventory

## Meet exchanges.

**rightmedia:**  
from **YAHOO!**

 Microsoft Advertising Exchange

 doubleclick  
ad exchange by Google

 **CONTEXTWEB**

a good remnant solution  
gave publishers access to a large range of advertisers  
gave advertisers access to a large range of advertisers

# The DoubleClick Ad Exchange



300x250  
180x150  
728x90

1. Seller makes inventory available for purchase

- minimum CPMs
- text/display
- description/labels
- URL/advertiser blocking



2. Buyers create campaigns targeting desired inventory

- targeting
- restrictions
- ad tags
- maximum CPMs
- daily budget



3. Each time an impression becomes available, an auction matches each piece of eligible inventory to the highest bidder.



## Two options for buying on AdX

### User Interface (UI)



- Like in AdWords, buyers use UI to target desired inventory (sites, topics of sites, remarketing audiences)
- Enter static bids that, each time your ads are eligible, will be entered into the auction

#### AdWords differentiators:

- accounts correspond to buyers, campaigns to advertisers
- 3<sup>rd</sup> party ad serving easier
- display-only
- CPM-only
- Importing of audience lists

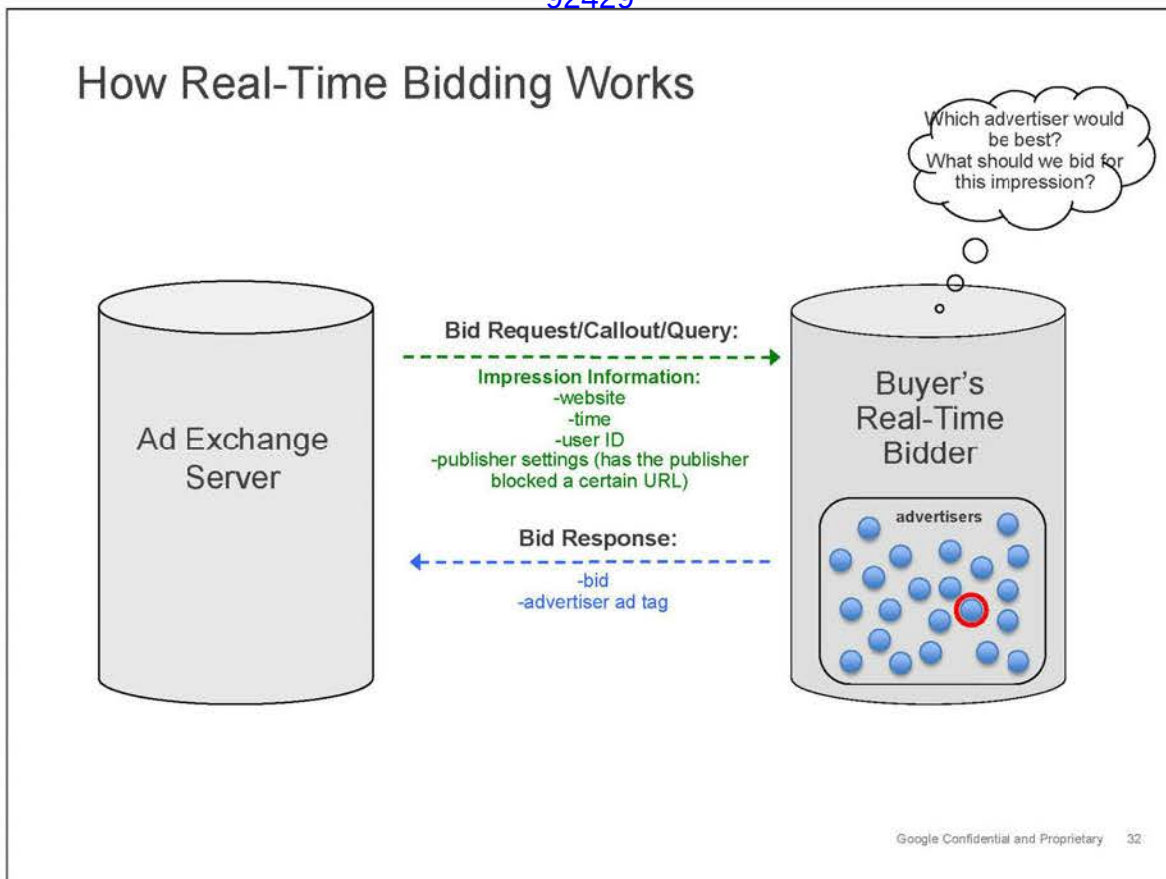
### Real-Time Bidding



- Buyers create one, large, widely-targeted UI campaign, and enable it for real-time bidding
- Buyers set up a bidder to "listen to"/analyze every AdX impression
- Bidder's built-in decision logic selects an advertiser and a bid to submit for each auction. Bid is submitted alongside other static UI bids.
- Buyers can control the number of impressions they "listen to" by adjusting UI campaign settings

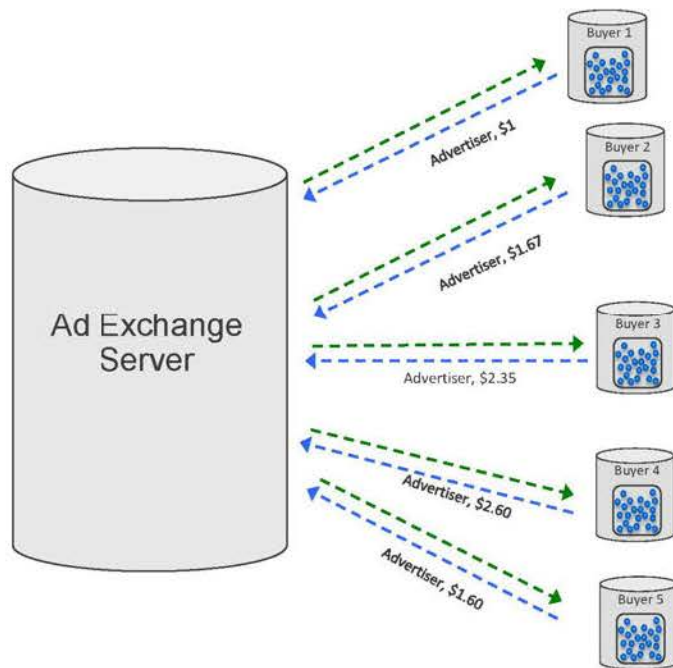


**real-time bidding:** an AdX feature whereby AdX sends a buyer information about an impression as it's happening. The buyers analyzes it, then returns a bid and ad tag to be submitted to the overall AdX auction.



like using the exchange without a UI  
like a firehose of impressions  
buyer analyzes and responds in real time  
being able to bid on every single impression. deciding whether or not u want it, at what price.  
you also decide which advertiser makes the most sense for this impression  
rather than UI, you have to bid on every single available one.

### A high-level view:



Every time an ad impression becomes available, the AdX server sends a callout to every eligible real-time bidder.

Each bidder responds with up to two bids, and an associated ad creative for each.

All RTB bids are submitted alongside non-RTB bids in the auction.

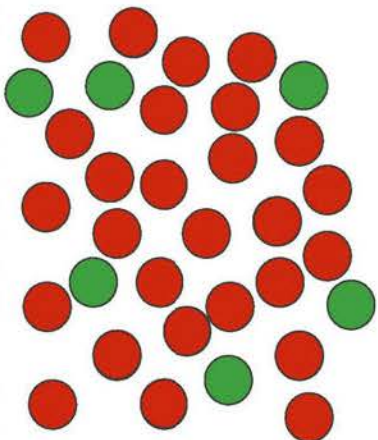
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like using the exchange without a UI  
like a firehose of impressions  
buyer analyzes and responds in real time  
being able to bid on every single impression. deciding whether or not u want it, at what price.  
you also decide which advertiser makes the most sense for this impression  
rather than UI, you have to bid on every single available one.

## The auction: First, pre-filtering.



**Date:** Thursday, June 30  
**Time:** 11:15 p.m.  
**Location:** San Diego, California  
**User ID:** 23456  
**Website:** espn.go.com



Ad Exchange then asks itself, out of all the campaigns in AdX, which are...

- active right now, and still have budget left?
- targeting San Diego, or area that includes San Diego?
- targeting espn.go.com, or a topic that the particular espn.go.com page fits into (i.e. sports), or targeting this particular user via an audience list?
- bidding at least \$2, espn.go.com's minimum CPM?

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At top, add user id 12345 (cookie)  
First, we filter out all campaigns that are not eligible for the auction.  
targeting a topic that this PAGE would fit into

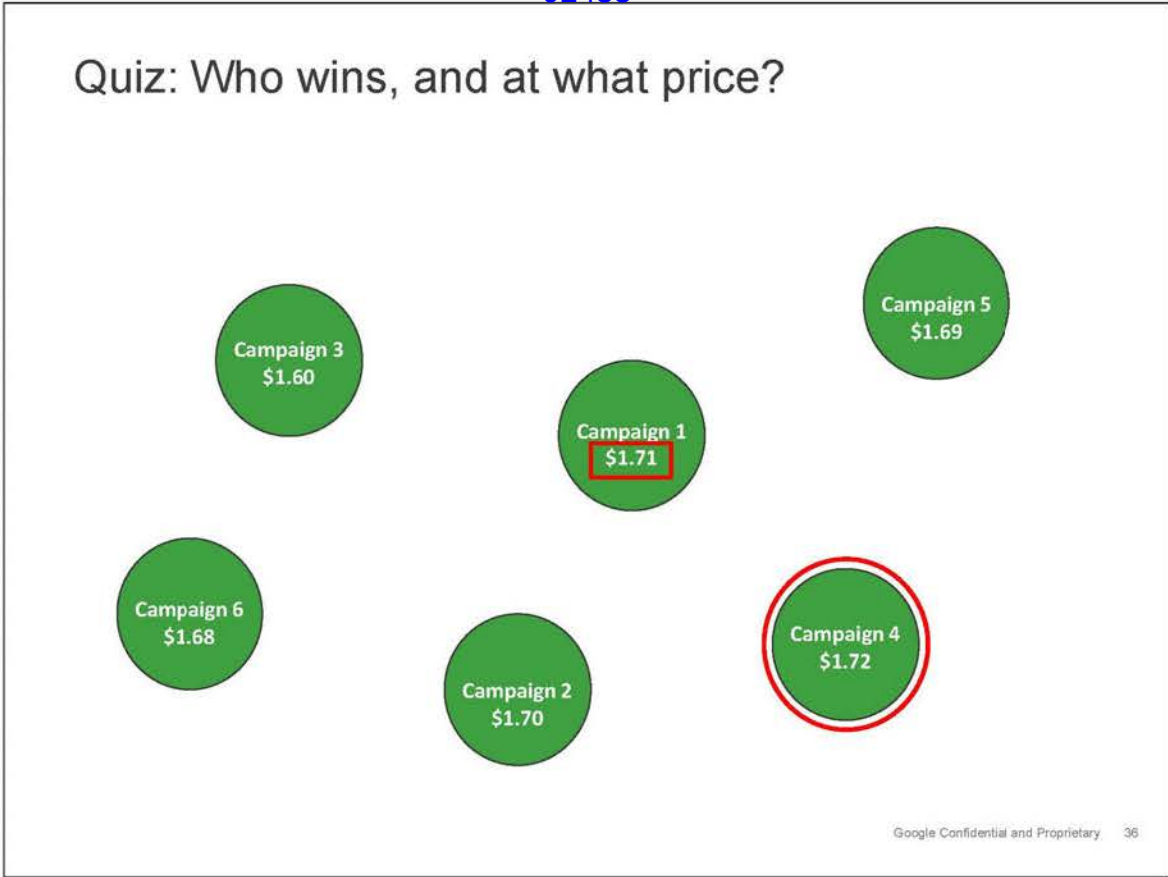
## Then, the auction.

Ad Exchange has a **second-price auction** model. The highest bidder wins, but the winner only pays what the second-place bidder was bidding. (Note: A tie results in a coin flip.)



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tie chosen at random



-maybe a tie

### Quiz: Who wins, and at what price?

Publisher Minimum CPM: **\$2.00**

If only one buyer is above the minimum CPM, the buyer pays that price.



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-maybe a tie

## Quiz!

What are two ways to buy on Ad Exchange?

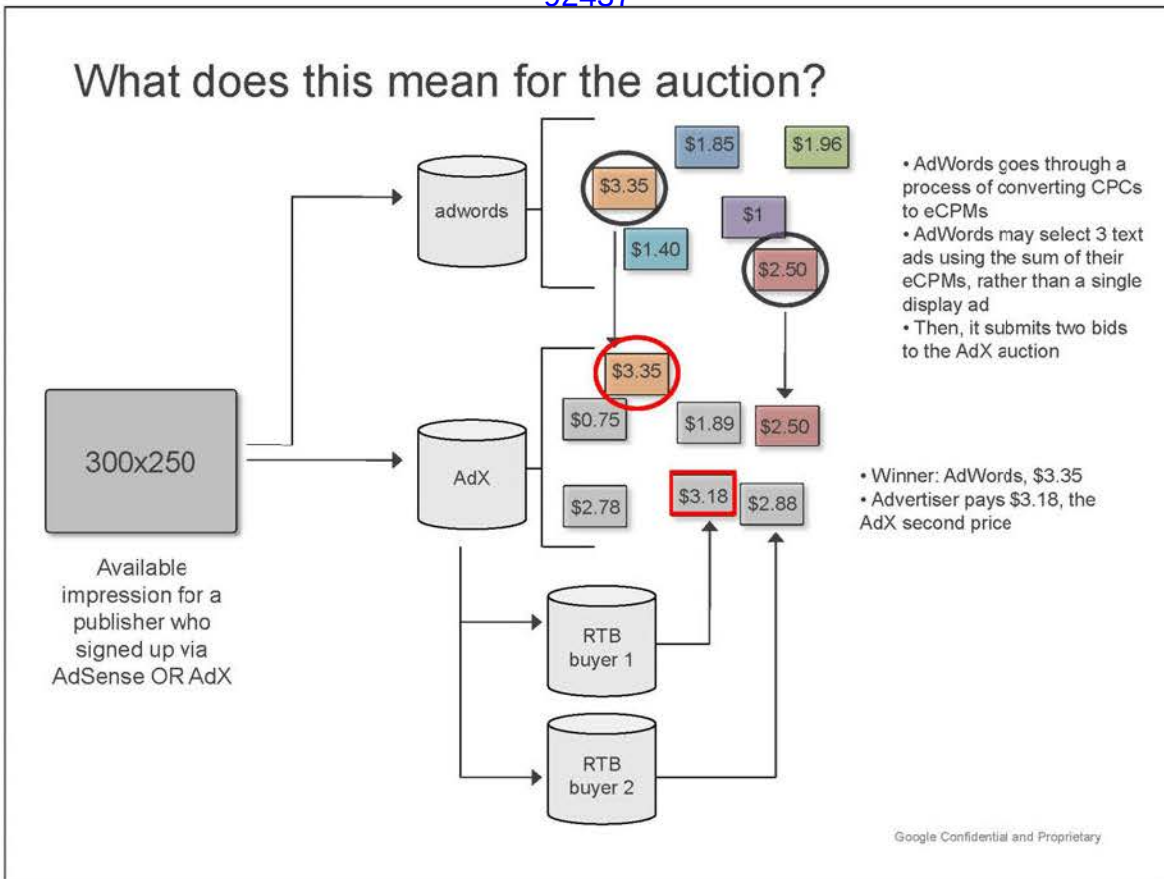
1. Through the UI
2. Via real-time bidding

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# Revisiting the GDN



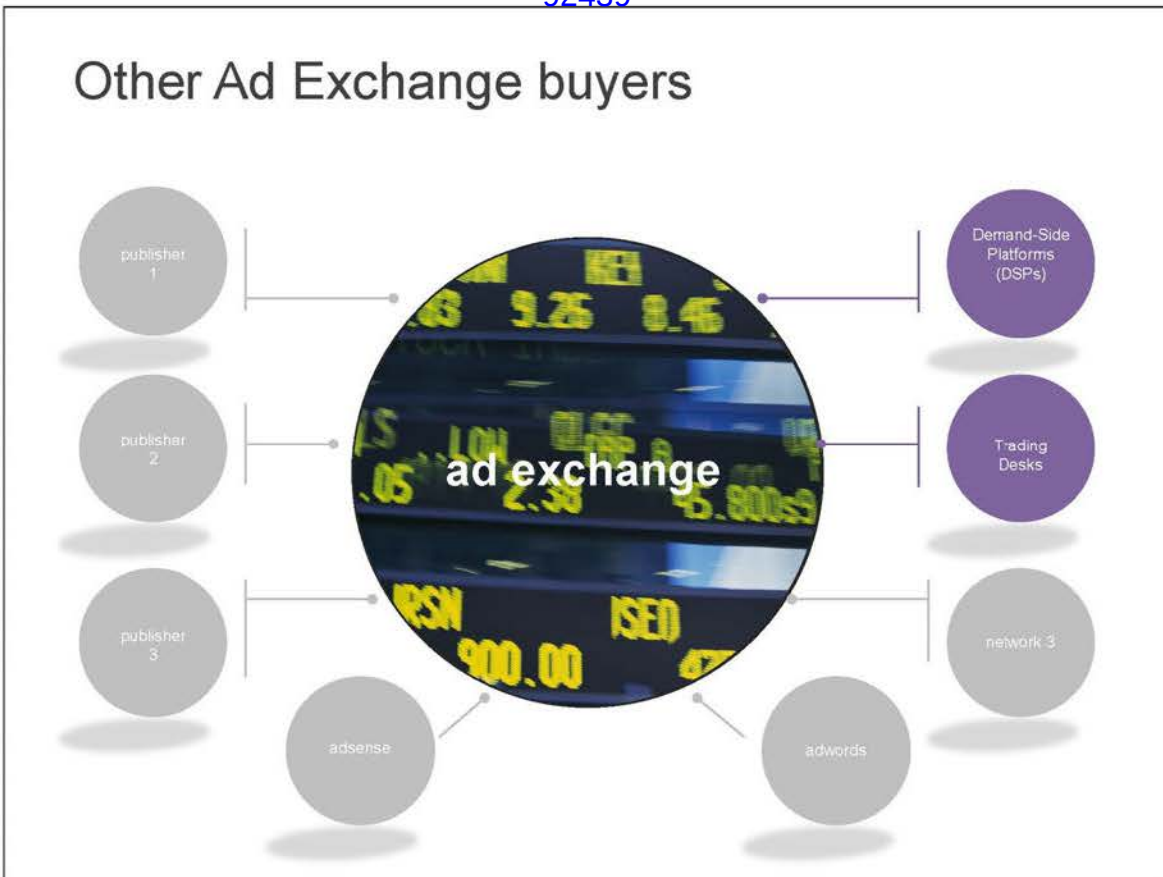


At top, add user id 12345 (cookie)  
First, we filter out all campaigns that are not eligible for the auction.  
targeting a topic that this PAGE would fit into

Quiz: When would AdWords be the only eligible buyer (for either an AdX or AdSense publisher?)


Answer: When the publisher has indicated they only want **text ads** for this ad unit.

# Other Ad Exchange buyers




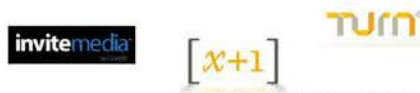
## As RTB has grown, new companies have emerged



 A division at an agency holding company designated to manage exchange buying for all of the holding company's agencies




 A user interface, or platform, that allows advertisers or agencies to buy across multiple exchanges. Often used by trading desks.



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replace triggitt w/turn (note: used to be an ad network), mediamath  
for trading desks: add accuen, MIG, xaxis (GroupM/WPP)  
highlight invite media in some way

## Other trends have emerged...



Ad Networks with DSP capabilities

Ad networks have evolved their business models to offer real-time bidding options to their clients







Audience Data Companies

Data companies are able to gather audience information on the exchange, and sell the data to DSPs and ad networks for targeting purposes on the exchange.



  
It's your audience. We just find it.™



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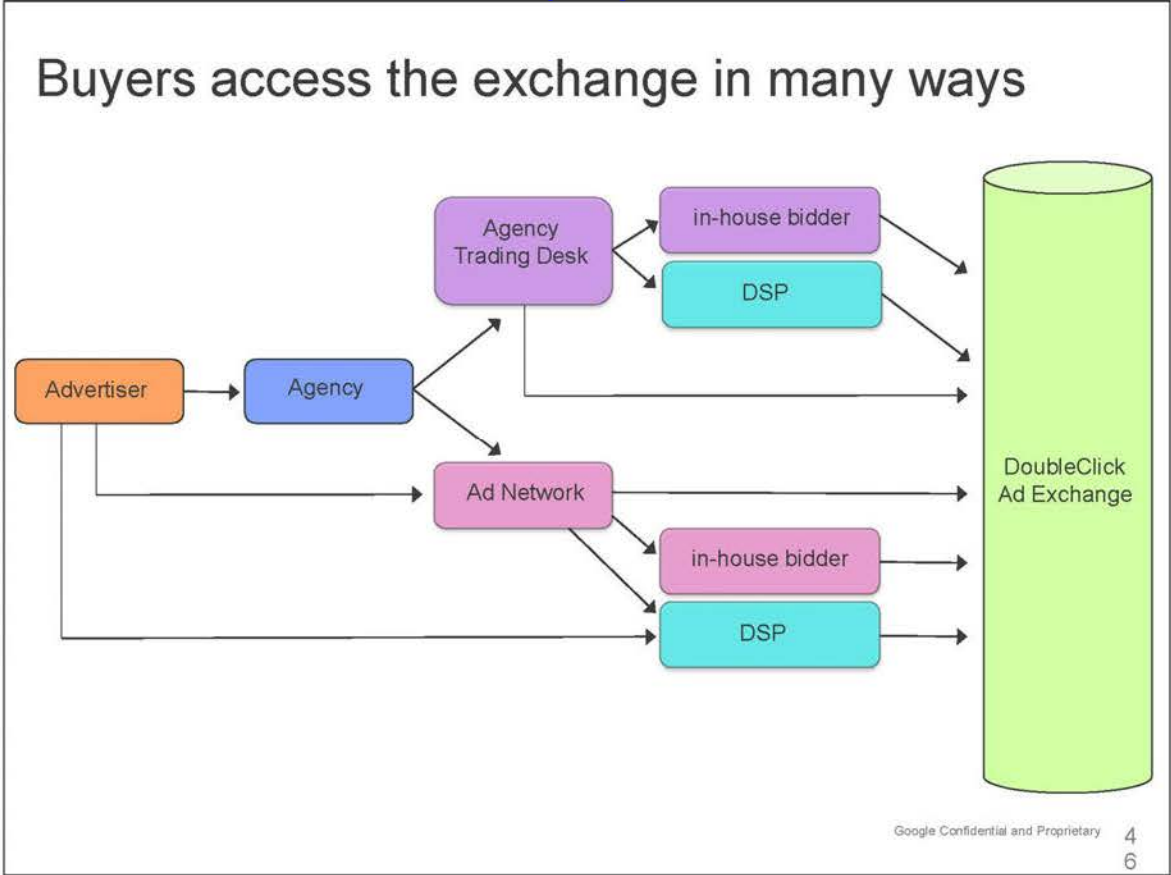
replace triggitt w/turn (note: used to be an ad network), mediamath  
for trading desks: add accuen, MIG, xaxis (GroupM/WPP)  
highlight invite media in some way

## Quiz!

What's an example of a yield manager?

Rubicon  
AdMeld  
Pubmatic

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API  
-mostly used for UI buys – see if we should incorporate that  
UPDATE ANIMATION



# What about the publishers?

1. Create an ad unit in AdX.

728x90  
blocked: ford.com  
Run of Site, above-the-fold

2. Get the code for the ad unit

```
Ad code
You can paste this code into any webpage or website that complies with our program policies.

Ad code
<script type="text/javascript"><!--
google_ad_client = "ca-pub-520306038990930";
/* DD Test 2 */
google_ad_slot = "9672820893";
google_ad_width = 728;
google_ad_height = 90;
//-->
</script>
<script type="text/javascript"
src="http://pagead2.googlesyndication.com/pagead/show_ads.js">
</script>

For more help with implementing the AdSense code, please see our Code Implementation Guide.
```

3. Add the code to your site, or into an ad server like DFP.

The screenshot shows the 'Inventory' section of the DFP interface. It includes a search bar, a table of ad units, and various filters. The table lists several ad units with their names, statuses, and descriptions.

Name	Status	Description
back_search	Active	back search
Friends_728x90	Active	Friends top of the page ad unit.
History_top_728x90	Active	History top ad unit.
Homepage_top_300x250	Active	Homepage Large Rectangle ad for non-logged in users.
Homepage_top_728x90	Active	Homepage ad slot.

## Publisher Benefits: Anonymity

- Publishers can set their inventory to be **anonymous**, so they can protect their direct sales channel efforts (i.e. the advertisers who are buying directly won't know they can get the same inventory for cheaper on the exchange).



**sales channel conflict:** The risk that advertisers who buy directly from publishers can get the same inventory for cheaper through other channels

- Publishers can also choose to make their inventory **anonymous unless the advertiser is bidding at least a certain CPM**. In this case, they'd set a low min CPM for anonymous, and a higher one for branded.

Branding Type	<input type="radio"/>	Allow advertisers to target my inventory by site name/custom channel only
	<input type="radio"/>	Allow advertisers to target my inventory by anonymous ID only
	<input checked="" type="radio"/>	Allow advertisers to bid on my inventory both ways
Min CPM ⓘ	\$	<input type="text"/> (Min CPM when targeting by site name/custom channel)
	\$	<input type="text"/> (Min CPM when targeting by anonymous ID)

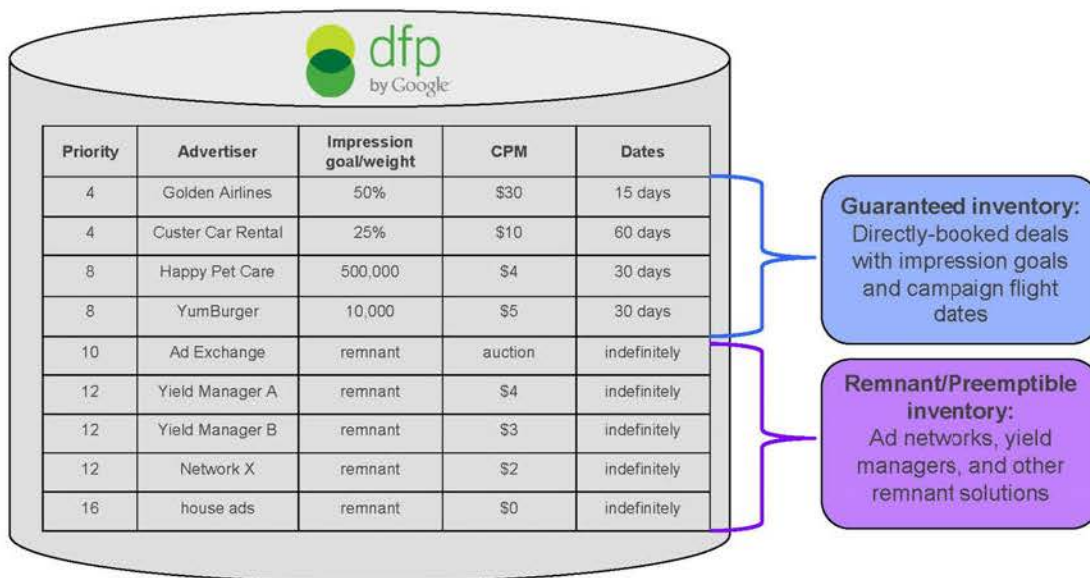
## **Quiz!**


**What's a trading desk?**

**A division at an agency holding company designated to manage exchange buying for all of the holding company's agencies**


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## Publisher Benefits: Dynamic Allocation



 **dynamic allocation:** A yield maximization feature within DFP which dictates that an AdX ad only serves if the price – calculated in real time – can beat the sources prioritized below it.

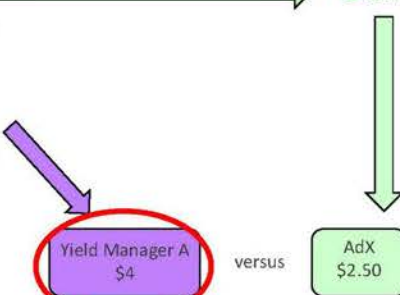
## Dynamic Allocation: How it works



Prior Ty	Advertiser	Impression goal/weight	CPM	Dated
2	Robert Amico	50%	\$30	15 days
4	Costco Car Rental	2%	\$10	30 days
8	Hobby Phil Cars	100,000	\$4	30 days
9	Landmark	10,000	\$5	30 days
10	Ad Exchange	remnant	auction	indefinitely
12	Yield manager A	remnant	\$4	indefinitely
12	Yield manager B	remnant	\$3	indefinitely
12	Network X	remnant	\$2	indefinitely
16	house ads	remnant	\$0	indefinitely

- DFP goes through its normal ad selection process, ignoring Ad Exchange for now
- If it selects an ad booked at a priority at or below AdX, an AdX auction is triggered
- AdX returns the actual price paid to the seller (second-price minus rev share), which is compared to the selected ad's price
- DFP serves whichever ad will pay more.

Auction triggered



## Putting it all together

1 User enters `espn.com` into her browser.



2 The browser contacts ESPN's **web server** for the website information.



3 As the browser begins to build the page content, it encounters a URL, or **publisher ad tag**, which tells it to call ESPN's ad server.



## Putting it all together

- 4 The browser contacts ESPN's ad server (in this case, DFP) asking it for an ad.



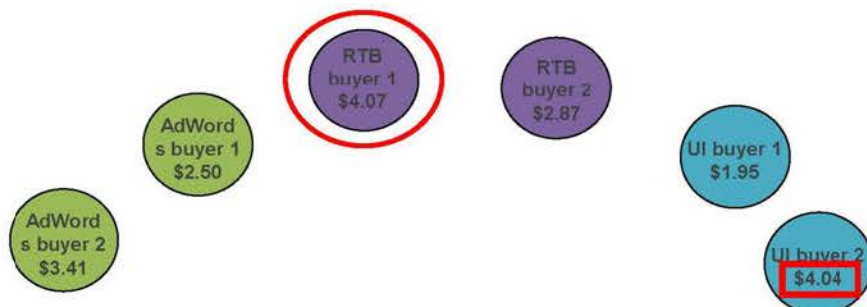
Which advertisers are targeting where this user is located?  
Which ad will make us the most money?  
Which ads are behind schedule?

- 6 Because there is an AdX tag booked above <http://yieldmanager.com>, an AdX auction is triggered.

In this case, DFP contains – among other advertiser creatives and ad tags – an ad exchange tag. As usual, DFP selects the ad that should show.

## Putting it all together

- 7 AdWords runs its auction, and selects its two highest bidders. Meanwhile, AdX sends a “callout” to its real-time bidders. It also scans through its eligible UI campaigns. Eventually, the AdX UI campaigns, AdX real-time bids, and two highest AdWords bids enter the AdX auction.



- 8 The AdX auction takes place. The highest bidder is chosen as the winner, and the second-highest price is noted.



## Putting it all together

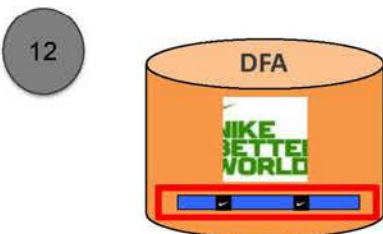
9 AdX sends the price paid by the winner – the second price minus the rev share – to see if it can beat the <http://yieldmanager.com> price.



If AdX can beat the price, AdX sends the winning ad creative – or ad tag – back to the browser. Usually, it's an ad tag.

## Putting it all together

11 Now, the browser sees another link, so it calls DFA.



DFA knows it needs a Nike ad. But which one? Which one will speak to someone on ESPN.com that lives in Nebraska?

13 DFA returns the chosen creative, which appears on the user's screen.



## Quiz!

What feature in DFP only shows the AdX ad if (a) DFP chooses an ad booked below AdX and (b) the price paid to the publisher from AdX can beat the price of the ad DFP has selected?

Dynamic Allocation

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