Ad Exchange: What is it?

Yishay Mansour

Mariano Schain

The New York Times

Tuesday, September 4, 2012   Last Update: 8:03 AM ET

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DEMOCRATIC CONVENTION

Without Spirit of '08, Mutual Fears Reunite Democrats

By ADAM NAGOURNEY

The party is not as united as it was four years ago, but Democrats are finding common purpose in denying Republicans control of the White House and Congress next year.

· Democrats Unveil Party Platform

Democrats Say U.S. Is Better Off Than Four Years Ago

By JIM RUTENBERG

The party's message to wavering voters is that President Obama was the right choice in 2008, and that he has the country on its way to a recovery.

· FiveThirtyEight: In Looking Back, Voters Have Short Memories

0:00 / 7:01

African Elephants Die as Ivory Fuels Wars

By JEFFREY GETTLEMAN

Conservation groups say tens of thousands of elephants a year are being killed, more than at any time in the past two decades, as the ivory trade is increasingly militarized.

· 📷 Photographs | 📊 Graphic: Illegal Ivory Trade

Money and People Leave Spain as Gloom Deepens

By LANDON THOMAS Jr. 12 minutes ago

While the situation in Spain is not as dire as that of Greece, some Spaniards are taking their euros, and sometimes themselves and their families, out of the country.

· Europeans Step Up Talks as Markets Grow Anxious 5:47 AM

OPINION »

EDITORIAL

Mr. Bernanke's Next Task

The Federal Reserve chairman seems to know the economy needs help, but will the Fed provide it?

· 💬 Comment

· Brooks: Obama's Speech
· Bruni: Paul Ryan's Curse
· Nocera: They're Not What They Used to Be
· Cohen: The Explanation Election
· Op-Ed: When It Pays to Talk to Terrorists

MARKETS »   At 7:50 AM ET

	Britain FTSE 100	Germany DAX	France CAC 40
	5,702.51	6,979.97	3,434.09
	−65.90	−34.86	−19.62
	−0.97%	−0.50%	−0.57%

Data delayed at least 15 minutes

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Classical Advertising

- Publisher:
  - TV, radio, newspaper, magazine, …

- Advertiser
  - selling goods, services, candidates, …

- Ad Agency
  - Handles the Advertiser advertising

Advertising Agency

- **Accounting Services**
  - Receives a budget, and deals with the accounting side of advertising

- **Creative**
  - content to the advertisements

- **Media Buying**
  - where to advertise and for how much

- **Production**
  - making the actual advertisements

Measuring Success

- Target attributes:
  - **Reach**: how many people was the campaign
  - **Frequency**: how many time a user saw the campaign
    - target numbers: 3-7 times
  - **Demographics:** who saw the campaign
    - **gender**
    - **income**
    - **geographic**

Internet Display Advertising

Mainstream Ads:

- Publishers:
  - Pre-sell impression
    - In bulk
    - Pay per impression
  - General categories
    - Demographics
    - Geography
- Advertiser

Alternative technology

- Sell in real time
  - "Stock market"
- Perform auction
  - Matching advertisers to impression slots
- Negligible end-to-end latency

AdExchange (AdX)

- **Two-sided market:**
  - buyers and sellers
  - Perishable inventory:
    - display ad slots (impressions)
- Sellers: publishers sell impressions on their webpages
  - Such as: Youtube, New York Times, CNN

- Buyers: ad-networks
  - Ad-network runs campaigns of multiple advertisers
    - Each ad-network can be viewed as a single advertiser with complex interests

AdX real-time information flow

Publishers

YouTube

CNN

ad-network
GM

ad-network
Coca-Cola

ad-network
citi

AdX

auction

Call Out

Bid

Page info,
minCPM

Call Out

Bid

Call Out

Bid

Ad
Info

winner

User requests
webpage

Ad displayed
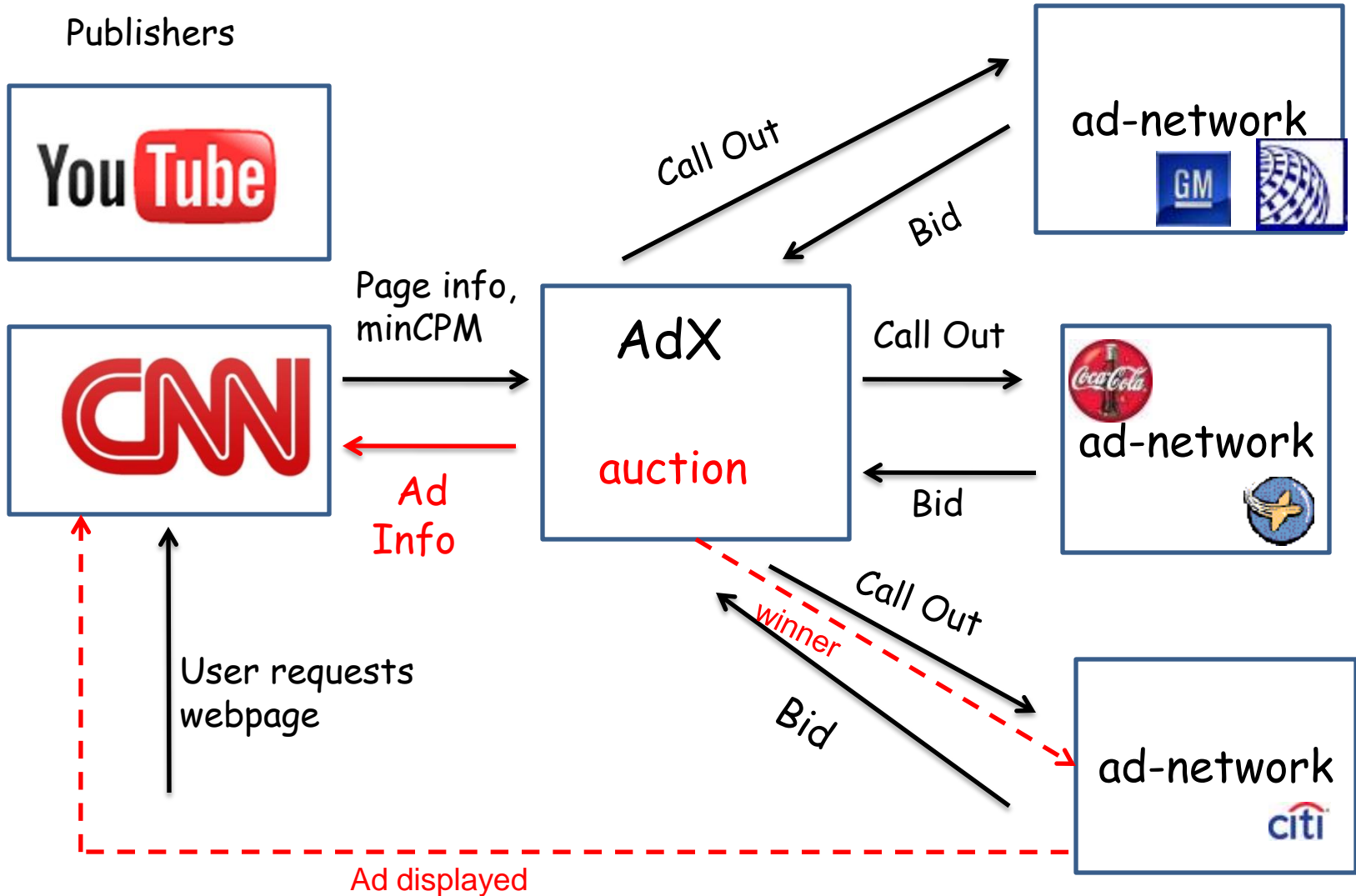
Real Time Bidding

Advantages

- Advertiser
  - User targeting
    - Geographic
    - Advertiser Cookie
    - Web page
  - Better control on ROI

- Publisher
  - Inventory utilization
  - Utilize user info

Challenges

- Real time
  - Latency of 100-200 ms

- Infrastructure
  - Scale
    - Larger than search

- Efficiency
  - Publisher revenue
  - Advertiser ROI

DISPLAY LUMAscape

MARKETER

Agencies
OmnicomGroup
WPP
PUBLICIS
IPG Interpublic Group
HAVAS
AEGIS
MERKLE
MDC PARTNERS
AKQA
LBi
ROSETTA.
epsilon
icrossing
Innovation INTERACTIVE
camelot
Media
at&t Interactive
ReachLocal
yodle
WebVisible

Agency Trading Desks
Accuen The Trading Desk
m!G
XAXIS
VivaKi
CADREON
RUN> adnetik
accordant media
IMPAQT
VARICKMEDIA

DSPs
MediaMath
invitemedia
TURN
DataXu
appnexus
EfficientFrontier
TRIGGIT
thetradedesk
AdBuyer.com
BRANDSCREEN
adz

Exchanges
doubleclick by Google
RIGHTMEDIA by Yahoo!
AdECN
OpenX
adjug
casalex
adBrite
OPERA software
mobclix

Ad Networks
YAHOO!
Horizontal
Google
Tribal FUSION
5:1
Microsoft Media Network
AoL.
cpx interactive
ADTEGRITY.COM
247 REAL MEDIA
audience
Casale MEDIA
ValueClick
Undertone
BurstMedia
Brand.net
UNDERDOG Media
AT&T AdWorks
xertive media
AdDynamix
traffic marketplace
SOLVE media

Video / Rich Media
SAY:
TREMOR VIDEO
videology
YuMe
BBE
TubeMogul
BrightRoll
spotXchange
adtube
adconion MEDIA GROUP
BREAK MEDIA
meebo
ScanScout
OGGIFINOGI
Meda

Vertical / Custom
ravora
LONGBOARD MEDIA
ADIFY
GORILLA NATION
Sportgenic
NetShelter
RGM ALLIANCE
GourmetAds
jumpstart
martini media
Glam
Q1Media
InflectionPointMedia
IDGTechNetwork
SOJERN
Integri ENTERTAINMENT
FEDERATED MEDIA
Ideas People
Tone Fuse

Targeted Networks / AMPs
NetSeer
pepsel
CONTEXTWEB
pulse360
media6degrees
S specificmedia
choicestream
33 across
radium one
XTEND
resonate networks
XGRAPH
Adblade
OwnerIQ
rocketfuel
socialvibe
adaramedia
Audience Science
collective
interclick

Performance
epic ADVERTISING
MATOMY MEDIA GROUP
VANTAGE MEDIA
VIBRANT
adknowledge
commission junction
Kontera
MARCHEX
LinkShare
moxymedia
neverblue
ADTERACTIVE
Datran Media
hydra
TattoMedia
TheUseful
MediaTrust

Mobile
admob
Jumptap
transpera
pontiflex
millennialmedia
mojiva
GREYSTRIPE
InMobi
Quattro WIRELESS
rhythm

SSPs
Admeld
rubicon PROJECT
PubMatic
ReviNet
LIFT DNA

Sharing Data / Social Tools
facebook
ShareThis
Add This
tynt
gigya

Publisher Tools
Yieldex
fatTail
ShortTail
LOOP
DailyMe
yieldbot
isocket
BuzzFeed
scout analytics
daylife
Mochila
MAXIFIER
PerfectMarket
Parse.ly
METAMARKETS
Jump Time
outbrain

Ad Servers
doubleclick by Google
247 REAL MEDIA
apt FROM YAHOO!
LiveIntent
BLOOM DIGITAL PLATFORMS
ADTECH
OpenX
ZEDO
AdJuggler
adzerk
aiMatch ai intelligence

Creative Optimization
teracent
TUMRI
adroit
dapper
struq
MIXPO
snapads
paper g
convertro
promote
adacado
STEELHOUSE
DYNAMIC VIDEO
spongecell
CERTONA
AdReady
richrelevance
ADISN

Retargeting
dotomi
criteo
TellApart
Simpli.fi
Chango
STEELHOUSE
FetchBack
buysight
crosspixelmedia
ReTargeter
AdRoll
myThings
MAGNE+IC
mediaFORGE

Ad Servers
doubleclick by Google
atlas
Mediaplex
mediamind
pictela
DG
adform
flashtalking
EYEWONDER
BLOOM DIGITAL PLATFORMS
pointroll
FLITE

Media Planning and Attribution
MarketShare
COGNITIVE MATCH
NETWORKED INSIGHTS
M FACTOR
pulsepoint
visualIQ
C3 Metrics
convertro
Encore
ThinkVine
COVARIO
ADCHEMY
MARKETING EVOLUTION
Korrelate

Tag Mgmt
Tag Man
ensighten
TEALIUM
BRIGHTTAG

Measurement and Analytics
OMNITURE
unica
Coremetrics
tracksimple
webtrends
FLURRY
nielsen
vizu
MOAT
comScore
biscience
aprimo

DMPs and Data Aggregators
bluekai
[x+1]
ak>
Demdex
exelate
quantcast
brilig
bizo
LOTAME
JovianDATA
krux DIGITAL
Red Aril
AlmondNet
RapLeaf
LeGolas
proximic
PEER39
acerno

Data Suppliers
Experian
ACXIOM
datalogix
NUOVA
TARGUSinfo
eBureau
NETEZZA
where
bluecava
IXI group
infogroup
V12 group
DATALINE
SymphonyIRI Group

Verification / Privacy
DoubleVerify
adsafe
AD XPOSE
ANCHOR intelligence
Ad-Juster
adometry
The Media Trust
TRUSTe
privacychoice
EVIDON

Media Mgmt Systems and Operations
DDS
media
telmar
centro
operative.
theorem
MEDIABANK
facilitate
TRAFFIQ
INVISION INC.
Solbright
SHINY ADS
AdPro

PUBLISHER

CONSUMER

LUMA partners

users

- view content

- no clear intent
  - unlike search

- potential consumers

- User Attributes
  - location
    - IP address
  - Behavior
    - Cookies
    - user lists
  - Implicit attributes
    - Gender

Advertisers

- Types
  - Direct Sells Advertisers: specific product sell
    - Maximize Return on Investment (ROI)
  - Brand advertisers:
    - Hard to measure ROI
- Limitation:
  - Budget
- Mode of Operation:
  - Hire an Ad Agency (can be more than one)

Ad Agencies

- Plan Ad campaigns for advertisers
  - budget, goals, creative, media, production

- Aggregate multiple advertisers

- Have trading desks
  - actual low level purchasing decisions.

- Ad serving
  - rare

Demand Side Platforms (DSP)

- Input
  - Multiple Ad agencies
    - large demand

- Output
  - Multiple Ad Exchanges
    - large inventories

- Function:
  - real time bidding
  - Ad Serving
  - Optimization
  - Ad statistics

- Infrastructure
  - Ad servers

Ad Exchange

- Input:
  - user page requests

- Output:
  - Allocation of Ads

- Infrastructure

- Auction:
  - Second price
    - reserve price
  - Clearing house

- Neutrality

- Fees

Supply Side Platforms (SSP)

- Managing Publisher Inventory

- Keep track of user attributes
  - cookies
  - geographic
    - IP address
  - device
    - mobile, PC,

- Optimize prices

- Merge reservation and real time

Publishers

- Own the web site

- Provide the content
  - what the users want to see

- Sells impressions:
  - reservations vs. real time
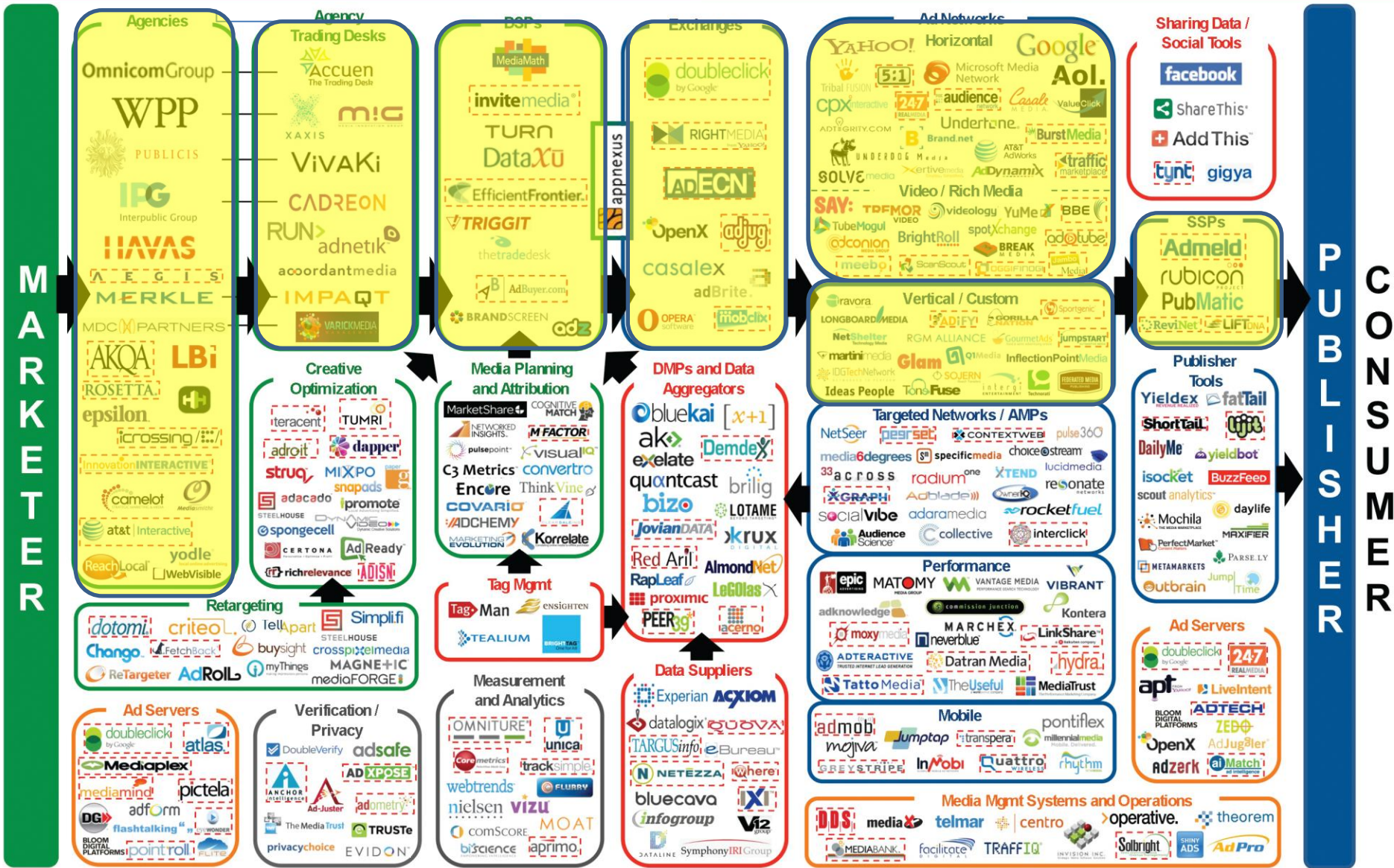
- Controls Ads content and media types

Ad media types

- text
  - can be multiple ads together
- display
  - banner
  - size of Ad
- video
- flash
- overlay

Payment charge

- per impression
  - CPM

- per click
  - online search

- per action
  - need to define "action"

DISPLAY LUMAscape

MARKETER → ... → **PUBLISHER** → **CONSUMER**

Agencies
OmnicomGroup
WPP
PUBLICIS
IPG Interpublic Group
HAVAS
AEGIS
MERKLE
MDC PARTNERS
AKQA
LBi
ROSETTA.
epsilon
icrossing
Innovation INTERACTIVE
camelot
Media whiz
at&t Interactive
ReachLocal
yodle
WebVisible

Agency Trading Desks
Accuen The Trading Desk
m!g Media Innovation Group
XAXIS
VivaKi
CADREON
RUN adnetik
accordant media
IMPAQT
VARICKMEDIA

DSPs
MediaMath
invitemedia
TURN
DataXu
EfficientFrontier
TRIGGIT
thetradedesk
AdBuyer.com
BRANDSCREEN
adz
appnexus

Exchanges
doubleclick by Google
RIGHTMEDIA by Yahoo!
AdECN
OpenX
adjug
casalex
adBrite
OPERA software
mobclix

Ad Networks
YAHOO!
Horizontal
Google
Microsoft Media Network
AoL.
Tribal FUSION
5:1
cpx interactive
ADTEGRITY.COM
247 REAL MEDIA
audience
Casale MEDIA
ValueClick
Undertone.
Brand.net
AT&T AdWorks
BurstMedia
UNDERDOG Media
xertive media
AdDynamix
traffic marketplace
SOLVE media

Video / Rich Media
SAY: MEDIA
TREMOR VIDEO
videology
YuMe
BBE
TubeMogul
BrightRoll
spotXchange
adtube
adconion MEDIA GROUP
BREAK MEDIA
meebo
ScanScout
OGGIFINOGI
Meebo

Vertical / Custom
Gravora
LONGBOARD MEDIA
ADIFY
GORILLA NATION
Sportgenic
NetShelter
RGM ALLIANCE
GourmetAds
jumpstart
martini media
Glam
Q1Media
InflectionPointMedia
IDGTechNetwork
SOJERN
FEDERATED MEDIA
Ideas People
ToneFuse
interg entertainment
Technorati

Targeted Networks / AMPs
NetSeer
pegasel
CONTEXTWEB
pulse360
media6degrees
S specificmedia
choicestream
lucidmedia
33across
radiumone
XTEND
resonate networks
XGRAPH
Adblade
OwnerIQ
rocketfuel
socialvibe
adaramedia
interclick
Audience Science
collective

Performance
epic ADVERTISING
MATOMY MEDIA GROUP
VANTAGE MEDIA
VIBRANT
adknowledge
commission junction
Kontera
MARCHEX
LinkShare
moxy media
neverblue
ADTERACTIVE
Datran Media
hydra
TattoMedia
TheUseful
MediaTrust

Mobile
admob
Jumptap
transpera
pontiflex
millennialmedia
mojiva
GREYSTRIPE
InMobi
Quattro WIRELESS
rhythm

Media Mgmt Systems and Operations
DDS
media
telmar
centro
operative.
theorem
MEDIABANK
facilitate
TRAFFIQ
INVISION INC.
Solbright
SHINY ADS
AdPro

Sharing Data / Social Tools
facebook
ShareThis
Add This
tynt
gigya

SSPs
Admeld
rubicon PROJECT
PubMatic
ReviNet
LIFT DNA

Publisher Tools
Yieldex
fatTail
ShortTail
LIJIT
DailyMe
yieldbot
isocket
BuzzFeed
scout analytics
daylife
Mochila
MAXIFIER
PerfectMarket
Parse.ly
METAMARKETS
Jump Time
outbrain

Ad Servers (Publisher)
doubleclick by Google
247 REAL MEDIA
apt from Yahoo!
LiveIntent
BLOOM DIGITAL PLATFORMS
ADTECH
OpenX
ZEDO
AdJuggler
adzerk
aiMatch ai intelligence

Creative Optimization
teracent
TUMRI
adroit
dapper
struq
MIXPO
snapads
paper g
adacado
ipromote
STEELHOUSE
DYNAMIC VIDEO
spongecell
CERTONA
AdReady
richrelevance
ADISN

Retargeting
dotomi
criteo
TellApart
Simpli.fi
STEELHOUSE
Chango
FetchBack
buysight
crosspixelmedia
MAGNE+IC
ReTargeter
AdRoll
myThings
mediaFORGE

Media Planning and Attribution
MarketShare
COGNITIVE MATCH
NETWORKED INSIGHTS
M FACTOR
pulsepoint
visualIQ
C3 Metrics
convertro
Encore
ThinkVine
COVARIO
ADCHEMY
MARKETING EVOLUTION
Korrelate

Tag Mgmt
Tag Man
ensighten
TEALIUM
BRIGHT TAG

Measurement and Analytics
OMNITURE
U unica
Coremetrics
tracksimple.
webtrends
FLURRY
nielsen
vizu
MOAT
comScore
biscience
aprimo

DMPs and Data Aggregators
bluekai
[x+1]
ako
Demdex
exelate
quantcast
brilig
bizo
LOTAME
JovianDATA
krux DIGITAL
Red Aril
AlmondNet
RapLeaf
LeGolas
proximic
PEER39
acerno

Data Suppliers
Experian
ACXIOM
datalogix
NUVA
TARGUSinfo
eBureau
NETEZZA
where
bluecava
IXI group
infogroup
V12 group
DATALINE
SymphonyIRI Group

Ad Servers (Marketer)
doubleclick by Google
atlas
Mediaplex
mediamind
pictela
DG
adform
flashtalking
EYEWONDER
BLOOM DIGITAL PLATFORMS
pointroll
FLITE

Verification / Privacy
DoubleVerify
adsafe
AD XPOSE
ANCHOR intelligence
Ad-Juster
adometry
The Media Trust
TRUSTe
privacychoice
EVIDON

LUMA partners

Denotes acquired company

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Summary

- This week:
  - Ad Exchange in the real world
- Next week
  - The game
- To do:
  - start thinking about group formation
  - 3-4 students.