

# STATE OF DIGITAL MEDIA May 2017

 **DIGITAL  
MEDIA  
SUMMIT**  
BY  **LUMA**

*LUMA presents our annual State of Digital Media, which covers our views on the market, the industry trends and the future of the ecosystem. We hope you enjoy it.*

 **DIGITAL  
MEDIA  
SUMMIT**  
BY  **LUMA**

# Meet the Senior LUMA Team

**Terence Kawaja**



**Founder & CEO**

Terry leads strategy, banking and content for LUMA.

*He's also head comedy writer and performer.*

**Brian Andersen**



**Partner**

Brian is LUMA's marketing technology guru.

*He excels at coaching both little league and big clients.*

**Mark Greenbaum**



**Partner**

Mark runs M&A strategy and execution for LUMA.

*He's never met a term sheet he couldn't improve.*

**Dick Filippini**



**Partner**

Dick leads LUMA's mobile and gaming banking coverage.

*You can find him holding court every February in Barcelona.*

**Conor McKenna**



**Vice President**

Conor ties it all together, managing LUMA's junior teams.

*He also wrangles the senior team together.*

**Gayle Meyers**



**CMO**

Gayle runs LUMA's marketing, events, and partnerships.

*Think of her as top of the LUMA funnel.*

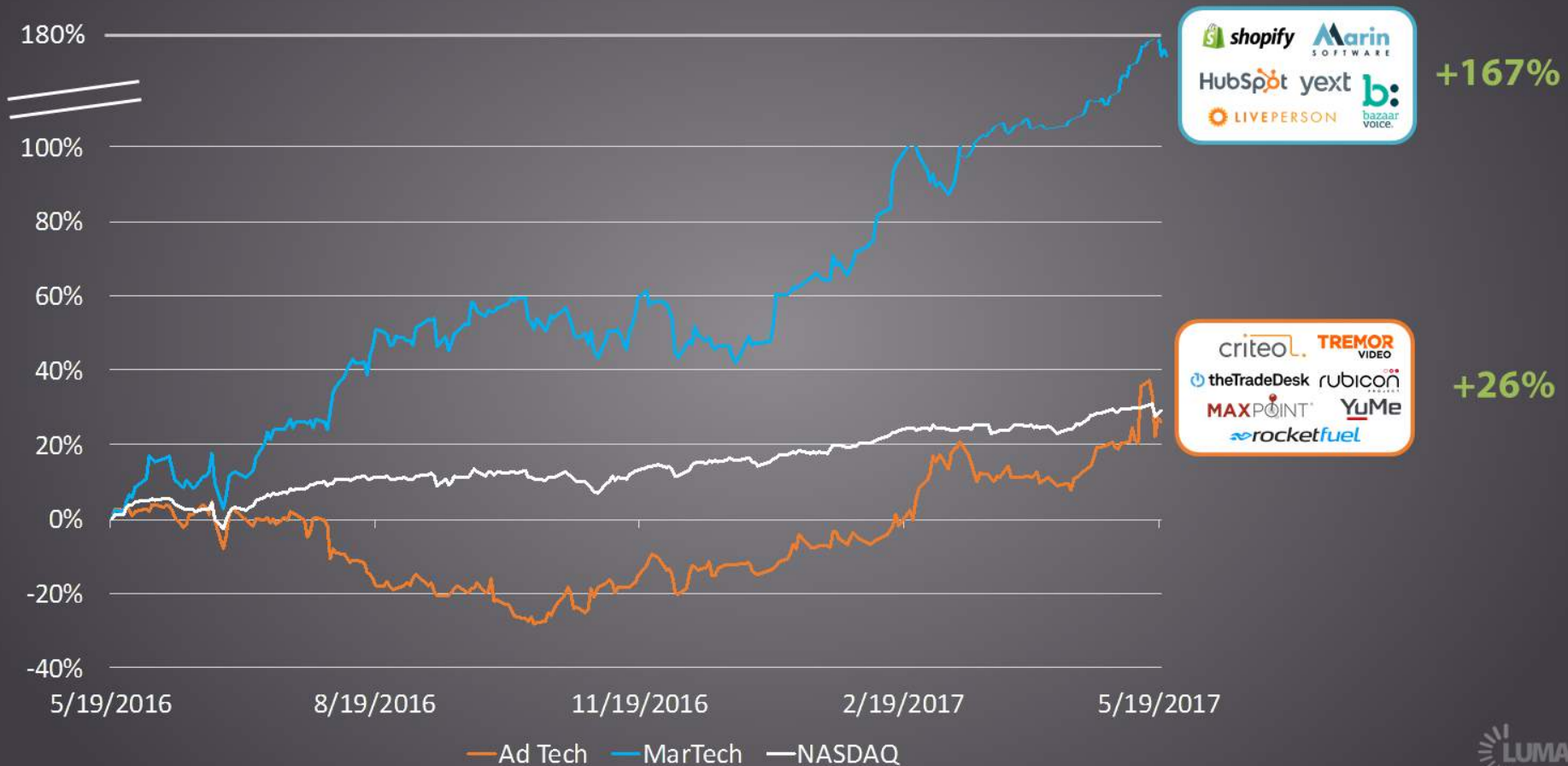
# Agenda

- 1. Market Update**
- 2. Ecosystem Considerations**
- 3. Significant Industry Trends**

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# Ad Tech & MarTech LTM Performance



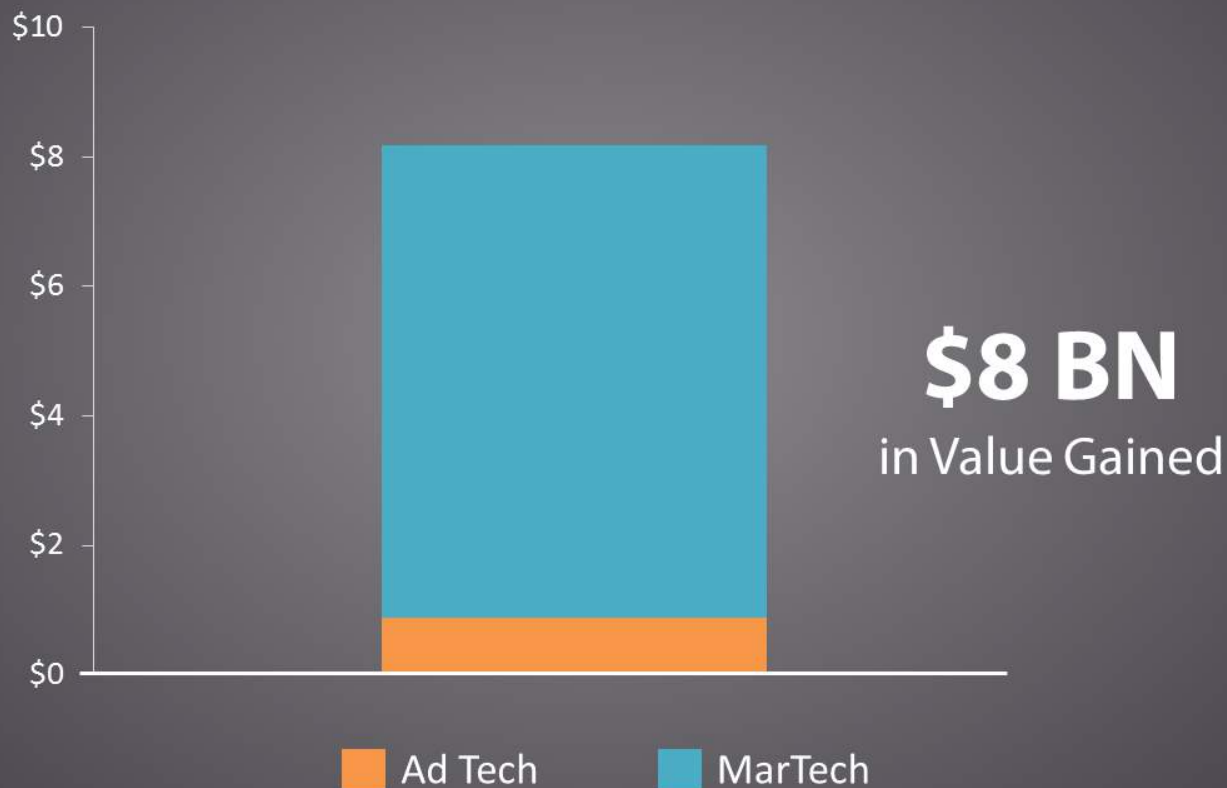
Source: Capital IQ, market data as of 5/19/2017



*Last year there was a lot of talk about the death of the sector, but it was perhaps exaggerated. The performance of Ad Tech and MarTech stocks this year screams "not quite dead yet". Ad Tech is up 26%, although largely due to the strong performance of The Trade Desk. MarTech is up an astounding 167%, led by the growth of Shopify. Absent Shopify, MarTech is still up over 50% on the year.*

# Ad Tech & MarTech LTM Performance

(\$ in billions)

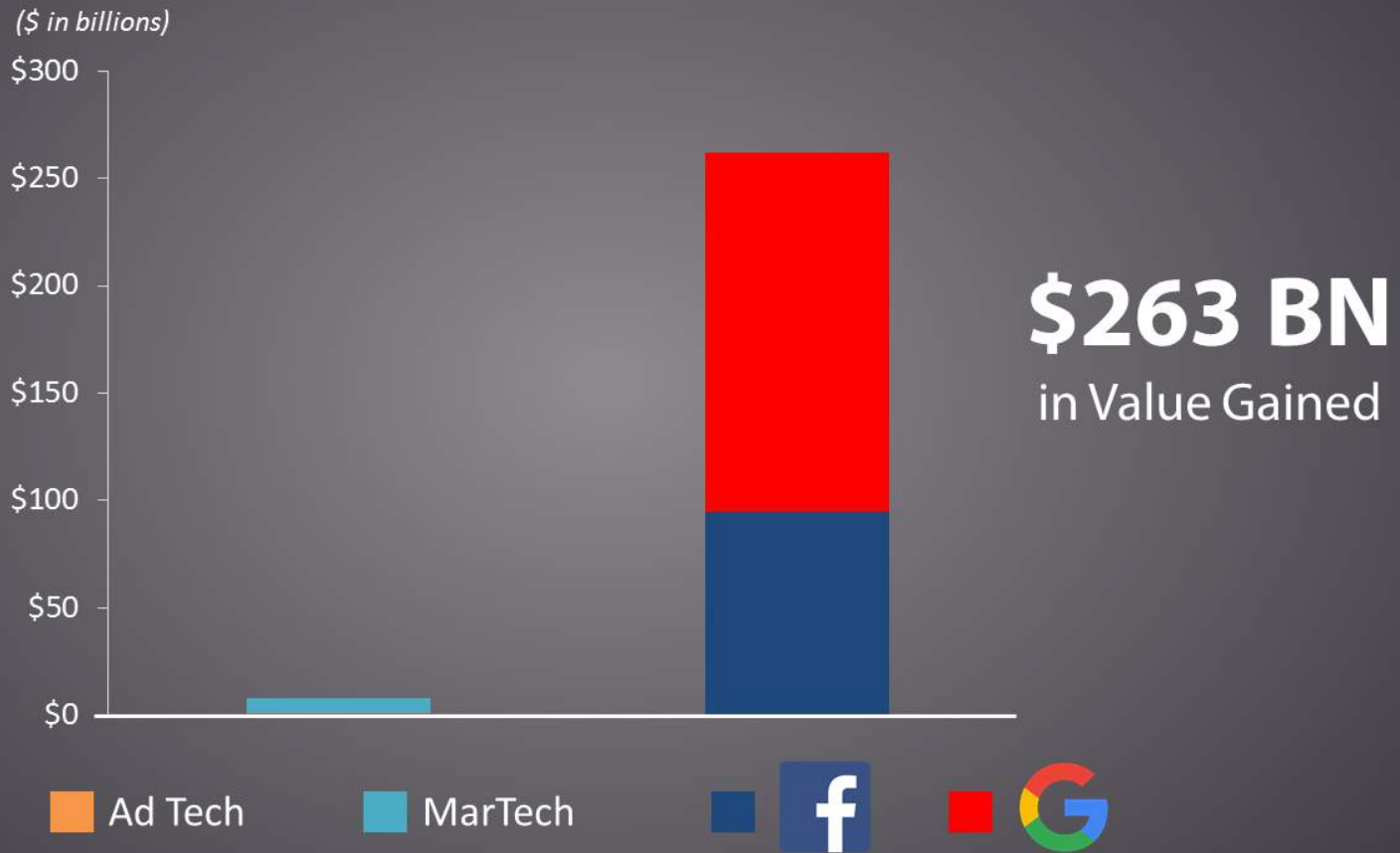


Source: Capital IQ, market data as of 5/19/2017



*Over this time period, Ad Tech and MarTech stocks have gained over \$8 billion in market cap value, a great sign for the sector.*

# Ad Tech & MarTech LTM Performance



Source: Capital IQ, market data as of 5/19/2017



*But to put the \$8 billion gain into perspective, Facebook and Google gained over a quarter trillion dollars of market cap value during the same time.*

# There is No IPO Market

DMS '16

**MediaPost**  
AppNexus Weighs Options  
Given IPO Climate  
Monday, January 19, 2016 8:04 AM

**The Boston Globe**  
DataXu sees revenue surge above  
\$100 million but in no rush for IPO

**TechCrunch**  
Digital Ad Company Turn Raises \$80M, Stays Vague on  
Possible IPO Plans

Posted Jan 13, 2014 by Anthony Ha (@anthonyha)

**Market Volatility Raises Questions  
For Pre-IPO Ad Tech Firms**

Liz Rowley // Monday, August 31st, 2015 - 4:17 pm

**MediaMath Raises Huge \$73.5  
Million Series C Round**

A Massive Funding Round As Ad-Tech Stocks Wobble

By Alex Kantrowitz. Published on June 03, 2014.

**Bloomberg**  
Canadian tech IPOs set for a slow 2016,  
with Hootsuite, D2L likely delaying  
plans: OMERS Ventures

SCOTT DEVEAU, BLOOMBERG NEWS | December 8, 2015 4:10 PM ET  
More from Bloomberg News

*Last year, we highlighted the solemn narrative surrounding the IPO market. The IPO window was very much closed.*





# There is No IPO Market

# DMS '16

## VentureBeat

### 31 tech companies that could go public in 2017

JORDAN NOVET @JORDANNOVET JANUARY 1, 2017 6:10 PM

## CNBC

### Here's why the tech IPO market may be hitting a 17-year peak

COMMENTARY

Bill Tai, venture capitalist and entrepreneur  
Tuesday, 21 Mar 2017 | 2:40 PM ET

## TC TechCrunch

### 2017 tech IPOs are on a tear compared to last year

Posted May 1, 2017 by Alex Wilhelm (@alex)

### A Massive Funding Round As Ad-Tech Stocks Wobble

By Alex Kantrowitz. Published on June 03, 2014

## FOX BUSINESS

### Snap Juices IPO Market, More Deals Coming: NYSE's Tom Farley

Published March 02, 2017 | IPOs | FOXBusiness

## MarketWatch

### The IPO market is back, baby!

Published: Mar 31, 2017 7:05 a.m. ET

## Bloomberg

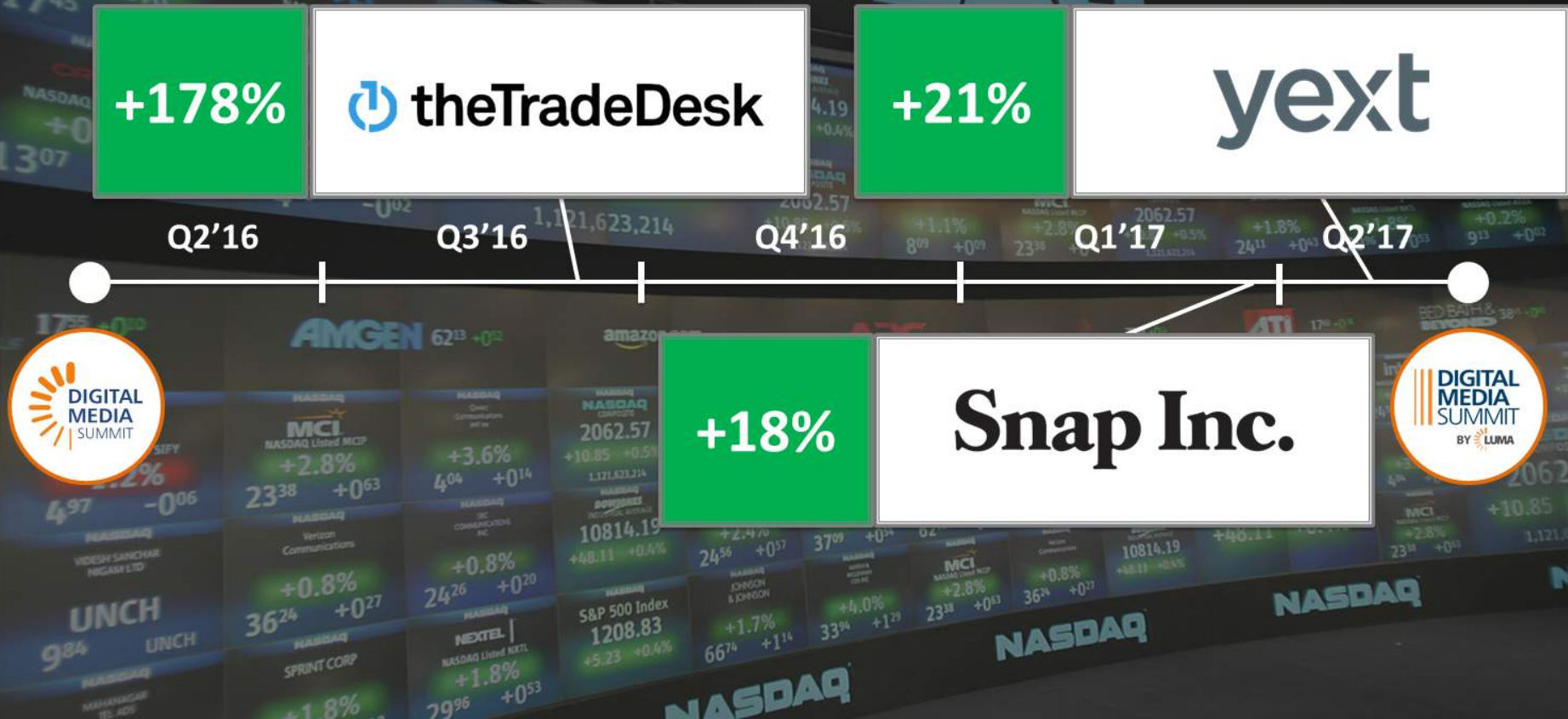
Apr 25, 2017 / by Kristyn Hyland

### U.S. IPOs OFF TO A STRONG START IN 2017



*But now the media messaging has changed. The IPO window has re-opened.*

# The IPO Window Has Reopened



*Over the last year, a few companies in the sector have gone public and maintained solid after-market trading performance.*

# Who's Next?

## IPO Pipeline

afiniti.



AppNexus



Blue Apron

## Soon?

BuzzFeed



Dropbox



qualtrics

SendGrid



Spotify

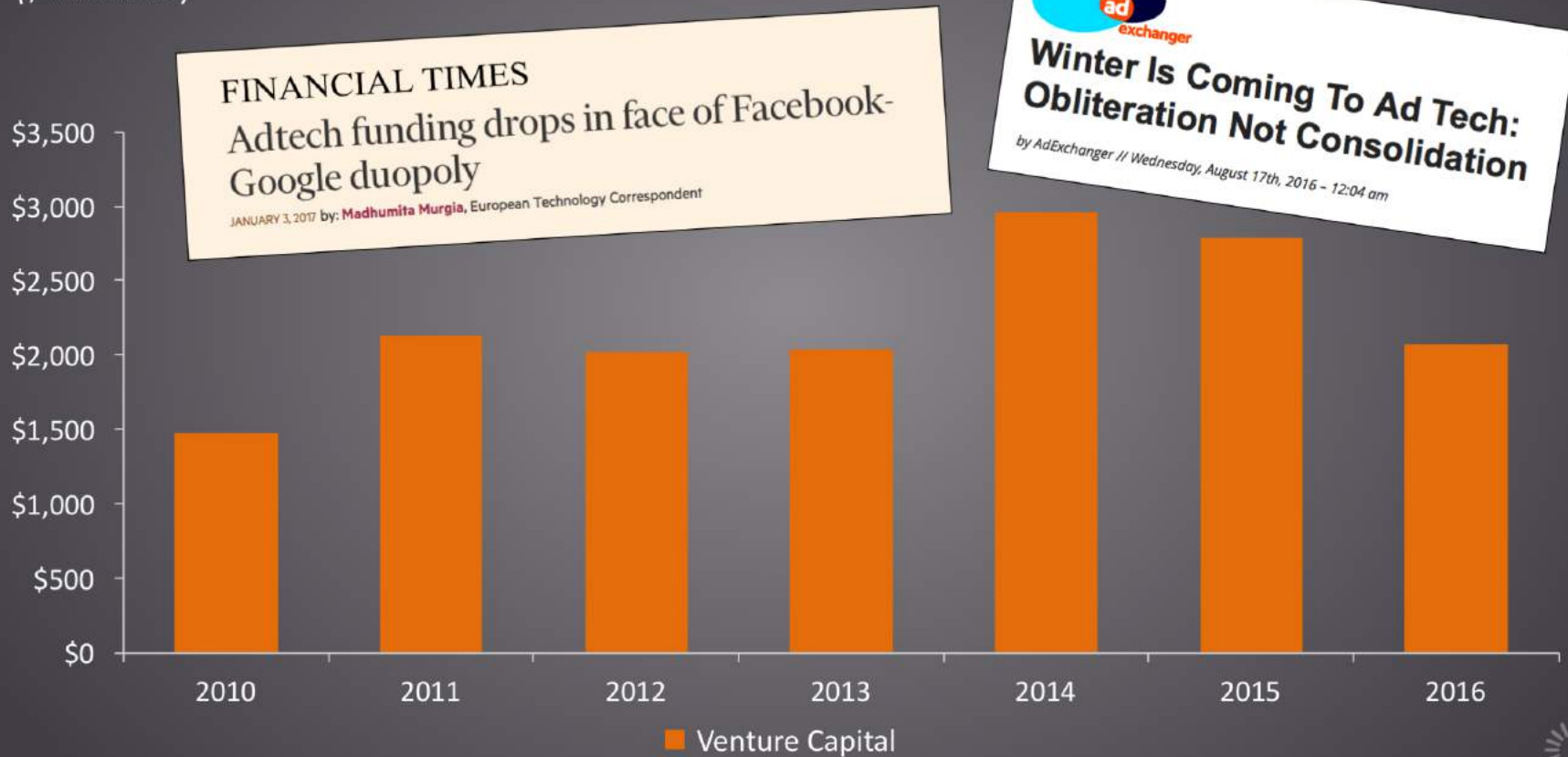
VICE



*The IPO pipeline is filling up quite nicely with companies from media to marketing. The IPO is finally back in vogue.*

# Ad Tech and MarTech Funding Has Dried Up?

(\$ in millions)



Source: Pitchbook



*If we shift to the private markets, the narrative has often been negative around the sector and we would have expected venture funding to fall off a cliff last year. However, nearly \$2 billion was still funded in 2016, which is more in line with the last six years.*

# YET, Differentiated Companies Still Get Funded

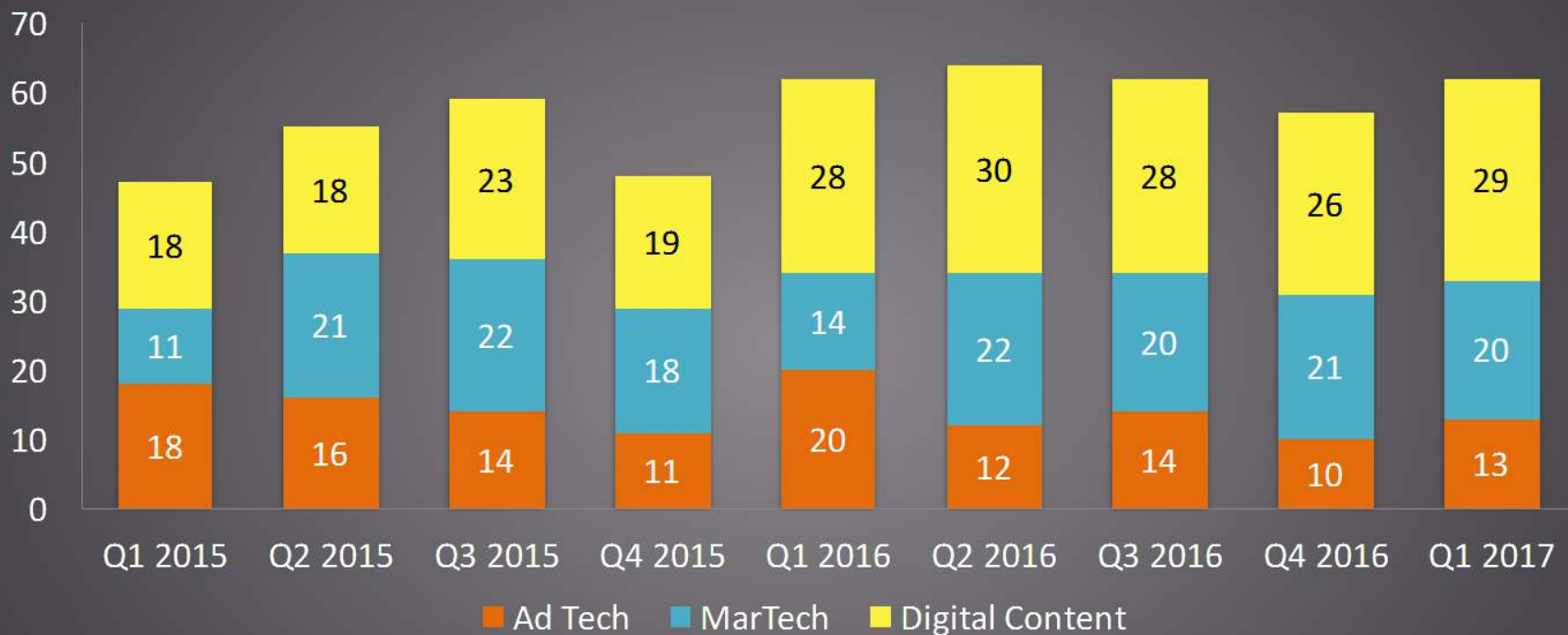
Raised Since DMS '16



*Differentiated companies will continue to get funded in any environment and here is a list of notable financings over the last year.*



# M&A Remains the Primary Source of Exits



# of Transactions Over \$100M								
11	9	13	6	9	13	14	14	7



Source: LUMA



*The one spot that continues to be bright in our perspective is M&A across Ad Tech, MarTech, and Digital Content. The M&A markets are on track for 250 deals this year, but what we find most notable is that there were nearly 50 deals over \$100 million in the last year.*

# Over Eight \$1 Billion+ Deals in 2016

 GOLDEN GATE CAPITAL → **neustar.** \$2,899M

 东方弘泰  
Oriental Horizon Capital → **APPLDVIN** \$1,420M

**ORACLE** → **NETSUITE** \$8,700M

**verizon** ✓ → **YAHOO!** \$4,830M

**THOMA BRAVO** → **Qlik**  \$2,615M

 salesforce →  demandware \$2,662M

 Vista Equity Partners → **Marketo**  \$1,700M

**IEQT** →  sitecore® \$1,100M

Source: LUMA



*In 2016, there were more than a handful of billion dollar exits in just Ad Tech and MarTech.*

# 2017 is Off to a Strong Start

**Aurea**



**jive**

\$341M

**ORACLE**



**MOAT**

ND



\$400M



**Teads**<sup>tv</sup>

\$308M



**TURN**

\$310M



*M&A is off to a strong start this year with a number of transactions over \$100 million.*



# Strategic Multiples in M&A

## M&A

## Public Trading

### MarTech

**8.1x**  
EV / LTM Rev



**6.7x**  
EV / LTM Rev

### Ad Tech

**4.8x**  
EV / LTM Net Rev



**1.7x**  
EV / LTM Rev



*Not only has M&A been the primary source of exits, it is also the most valuable. We've seen a sizable premium of strategic M&A values over public company trading.*

# Strategic Multiples in M&A

## M&A

## Public Trading

### MarTech



### Ad Tech



**8.1x**  
EV / LTM Rev



**4.5x**  
EV / LTM Rev



**4.8x**  
EV / LTM Net Rev



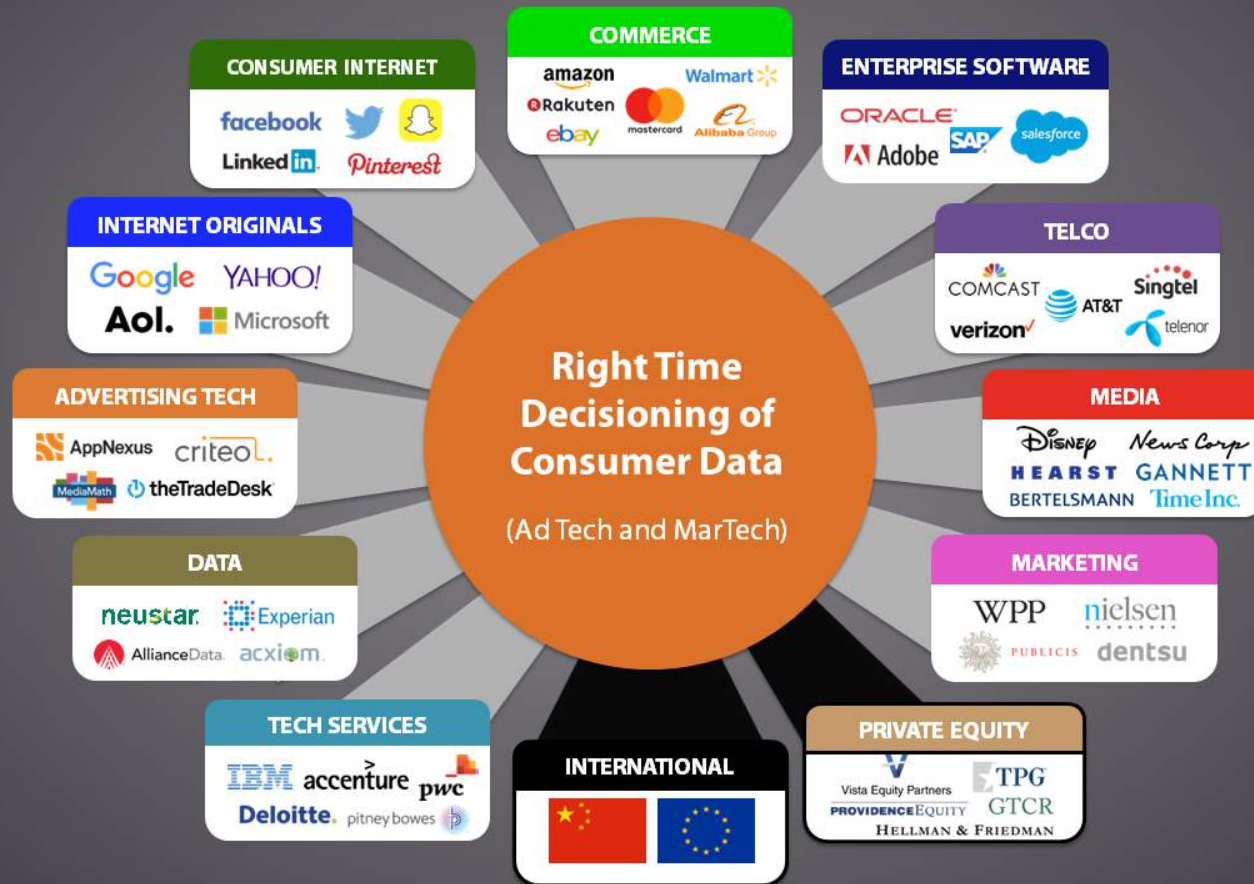
**0.6x**  
EV / LTM Rev



*The premium is even more pronounced if you remove the highflyers from each public company set (Shopify and The Trade Desk) which are disproportionately lifting public multiples.*

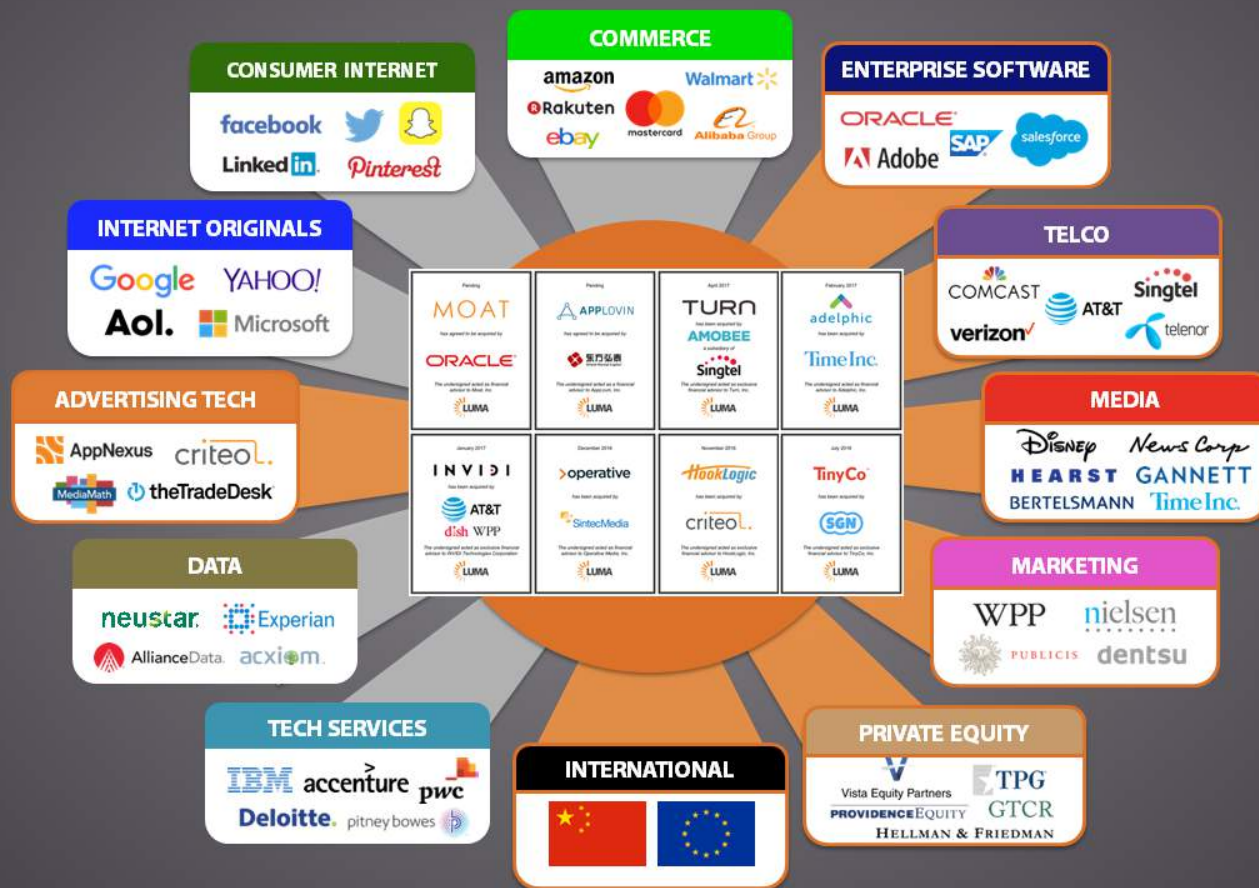


# Buyer Universe Continues to Expand



*What's driving this? As we've been saying for years, the universe of large potential buyers interested in data-driven marketing continues to expand.*

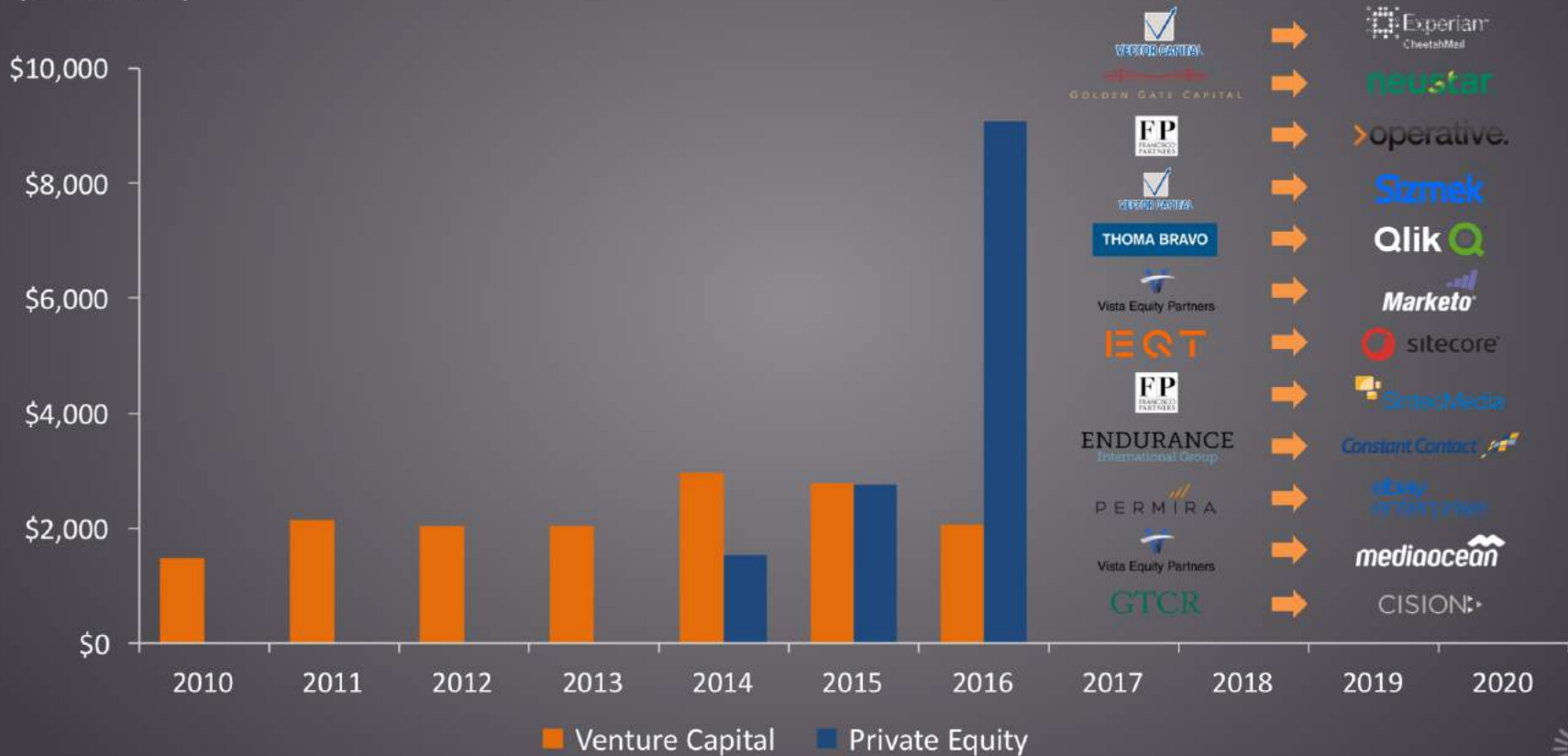
# Buyer Universe Continues to Expand



*Looking at LUMA's last eight deals – we touched seven different buyer categories (and we can tell you more are on the way).*

# Maturation of Ad Tech and MarTech

(\$ in millions)



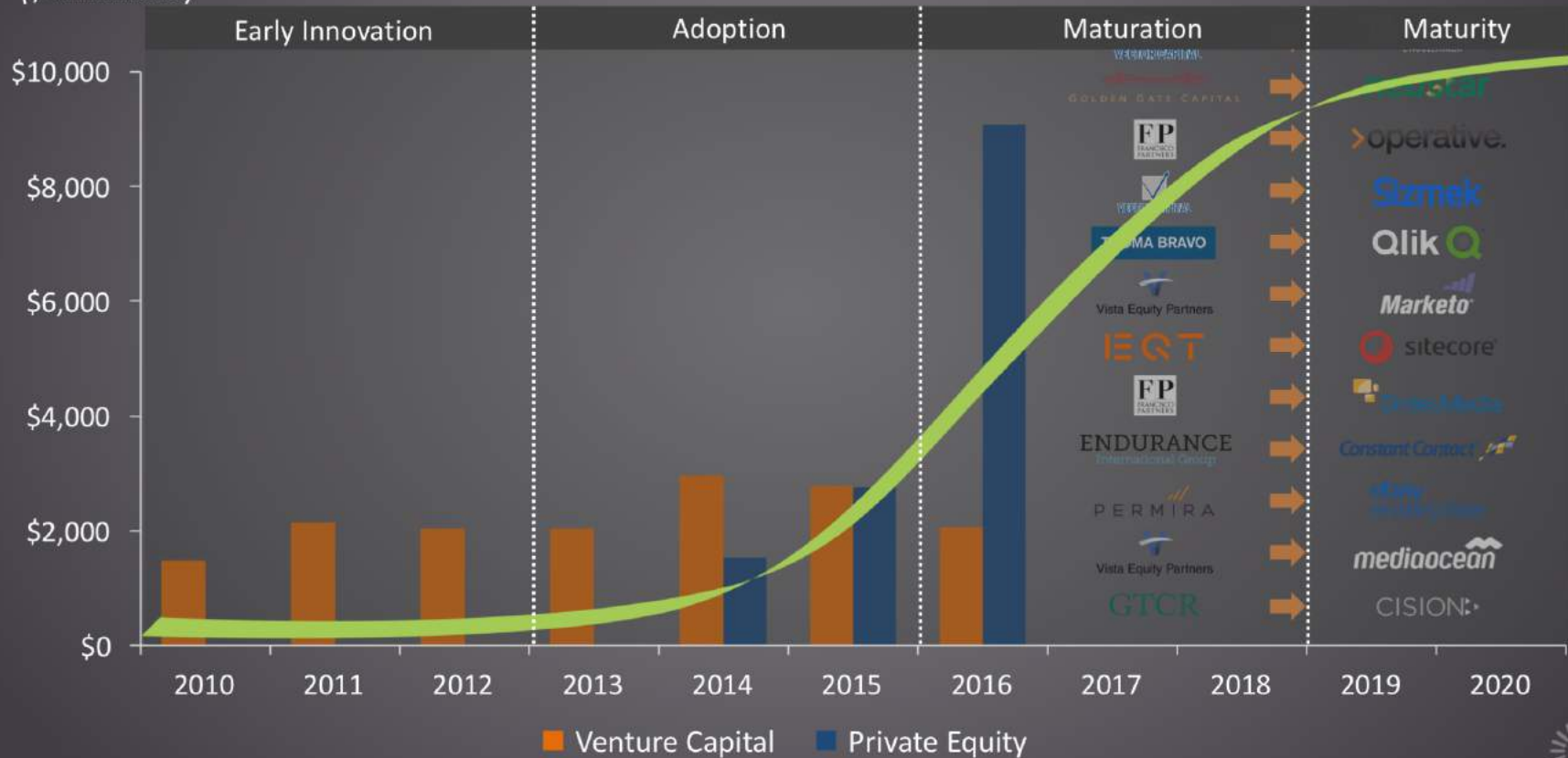
Source: Pitchbook



*If we look at private equity in Ad Tech and MarTech, we see a number of very significant deals contributing to the recent rise of private equity activity in the space.*

# Maturation of Ad Tech and MarTech

(\$ in millions)



Source: Pitchbook



*What we're seeing is the evolution and maturation of the sector – which is a good thing for increased exit opportunities.*

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# Digital Advertising Issues

2016

1. Transparency
2. Measurement
3. Latency
4. Header Bidding
5. Privacy / Tracking
6. Viewability
7. Fraud
8. Ad Blocking
9. Walled Gardens
10. Fragmentation



*Last year we highlighted a list of issues in digital advertising from transparency to fragmentation.*





# Digital Advertising Issues

1. Transparency
2. Measurement
3. Latency
4. Header Bidding
5. Privacy / Tracking
6. Viewability
7. Fraud
8. Ad Blocking
9. Walled Gardens
10. Fragmentation

Header Bidding  
Privacy / Tracking  
Viewability  
Fraud  
Measurement  
Walled Gardens  
Fragmentation  
⊕ Adverse Context



*All of these topics are still major issues, but we note that some of them continue to garner more attention, such as header bidding and measurement. This year we have added adverse context, a culmination of fake news and brand safety issues, which has been a big story in 2017.*



# Header Bidding: From Hack to Disruptive Force



## The Great Header Bidding Shake-Up Has Begun

by Sarah Sluis // Thursday, August 4th, 2016 - 1:04 pm



## The Rise Of 'Header Bidding' And The End Of The Publisher Waterfall

by Sarah Sluis // Thursday, June 18th, 2015 - 7:31 am



## Which Ad Networks Will Go Bankrupt Next

January 9, 2017 By MonetizePros - 38 Comments



## The Year Header Bidding Went Mainstream


by Sarah Sluis // Tuesday, December 27th, 2016 - 5:00 am

## BARRON'S

Rubicon Plunges 33%, Criteo Drops 6% as 'Header Bidding' Dogs Online Ad Market

By Tiernan Ray • Updated Aug. 3, 2016 3:04 p.m. ET

JMA



*What one could initially dismiss as a simple hack, header bidding has turned out to be a lot more. It is fundamentally changing the economics and relationships across the programmatic ecosystem as a major disruptive force.*

# Header Bidding: From Hack to Disruptive Force

## IMPLICATIONS



**Programmatic spend will grow with higher quality inventory and increased CPMs**



**Limited seats and fee compression will force consolidation**

*Net-net, we think header bidding is a good thing. It accelerates the availability of high quality inventory that will drive higher CPMs. The challenging aspect of header bidding, however, is increased competition and tighter economics, which we believe will hasten consolidation in the sector.*



# Preparing for New Privacy Regulations



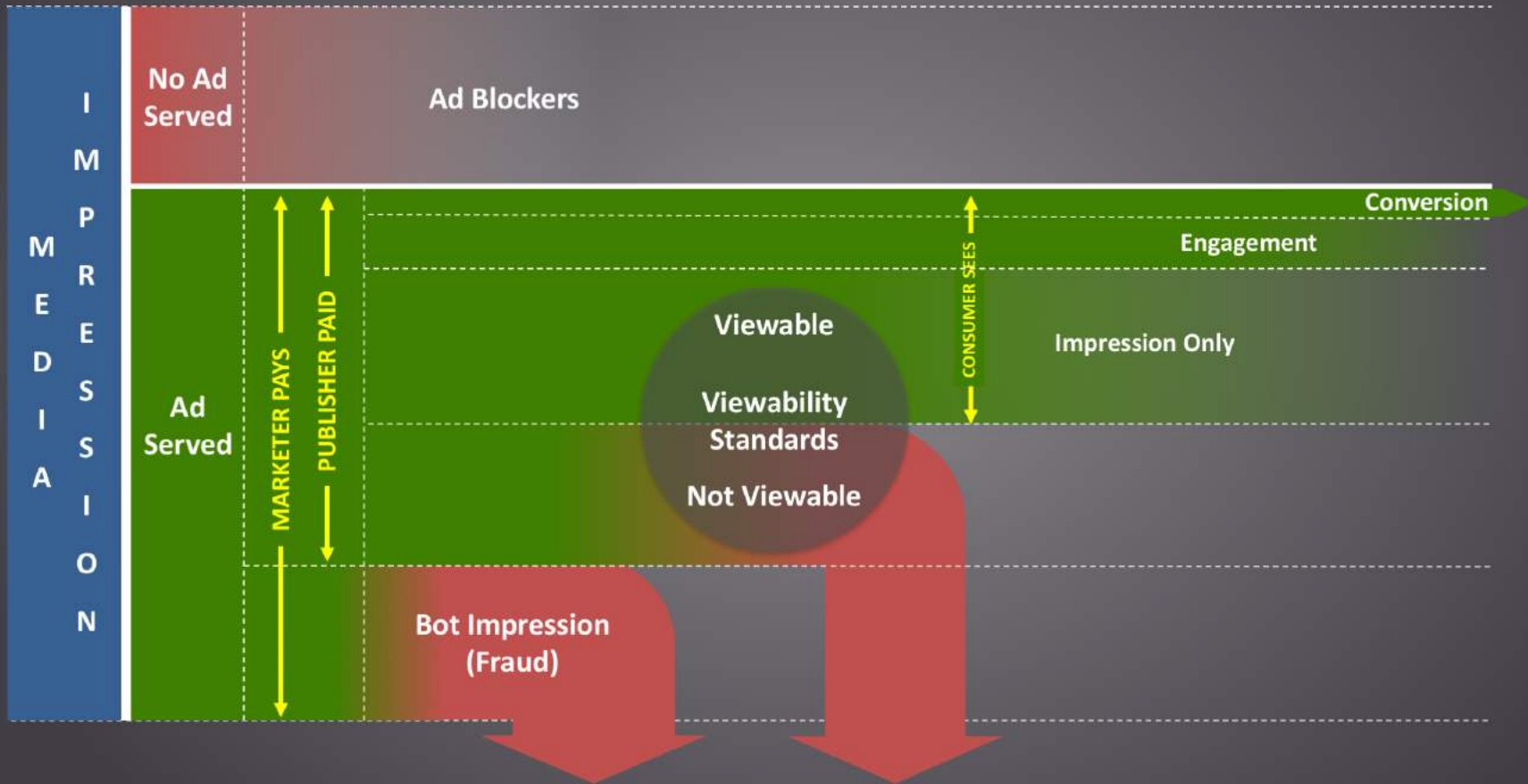
**“50% of companies affected by the GDPR will not be in full compliance with its requirements.”**

- Gartner



*A major issue in privacy that feels to be a blind spot for many in the industry is General Data Protection Regulation (GDPR): new European data protection regulations that will go into effect in 2018. GDPR will have a material impact on how companies manage consumer data. Gartner predicts that at least one out of every two companies will be underprepared for this shift.*







# Lifecycle of a Media Impression



*Last year we introduced this graphic on the lifecycle of a media impression to highlight the challenges of fraud, unviewable inventory and ad blocking. Marketers are taking a stand and demanding that we see changes to these issues.*



# Viewability Standards Are Inconsistent

Organization	Video Viewability Standard
	Desktop: 50% in-view, 2 seconds Mobile: 50% in-view, 2 seconds
	Desktop: 100% in-view, 3 seconds Mobile: 50% in-view, 3 seconds
	100% in-view, at least 30 seconds or to completion (whichever is shorter)
	100% in-view, 3 seconds
	100% in-view, upon start
	In-Feed: 100% in-view, 3 seconds Stories: 100% in-view, upon start

Source: Pressboard



*And it's no surprise because viewability standards are very inconsistent across the major platforms.*



# Brand Safety Isn't New, But It's At Greater Risk Now



*Brand safety is not a new issue, but it has certainly gotten more attention with recent troubles surrounding Facebook and YouTube's platforms.*

# And It's Having an Impact on Major Platforms

**MWG**

Sorrell slams 'outrageous' Google and Facebook over 'fake news' denials

8TH DECEMBER 2016



**REUTERS**

**J&J, JPMorgan suspend YouTube ads over offensive videos**

Thu Mar 23, 2017 | 4:33pm EDT



**CNBC**

Advertisers are pushing to keep their brands away from 'fake' news

Tuesday, 13 Dec 2016 | 4:44 PM ET

**THE WALL STREET JOURNAL.**

**AT&T, Verizon Pull Ads From Google Over 'Hate' Videos**

Carriers also aim to compete with Google for ad dollars

Updated March 22, 2017 7:52 p.m. ET

**theguardian**

Starbucks and Walmart join growing list of advertisers boycotting YouTube

Saturday 25 March 2017 01.27 EDT

**BuzzFeed**

**In Spite Of The Crackdown, Fake News Publishers Are Still Earning Money From Major Ad Networks**

posted on Apr. 4, 2017, at 9:05 a.m.



*Some of the worlds' largest advertisers are pulling spend from these platforms while others are boycotting them altogether until issues are resolved. In response, Facebook and YouTube are working quickly to clean up their platforms and win back their trust.*





# Rise of Premium Publisher Consortia

TV

OPEN  
Λ . P .

FOX

turner

VIACOM

DIGITAL

CONCERT

CONDÉ NAST

NBCUniversal

VOX MEDIA

TRUSTX

NBCUniversal SCRIPPS FINANCIAL TIMES FOX NEWS CORPORATION CBS CORPORATION ESPN  
The Weather Company The Washington Post News Corp AccuWeather abc  
CONDÉ NAST Purch VOX MEDIA meredith UNIVISION BUSINESS INSIDER A+E NETWORKS  
theguardian Slate TimeInc. DAILY CALLER edmunds ATLANTIC MEDIA



*One of the reactions to adverse context in the sector has been the rise of premium publisher consortia. Major publishers, traditional and digital, are banding together to offer advertisers aggregated premium inventory with large scale across their properties.*



# Who Should Be Measuring?



THE WALL STREET JOURNAL.

## Google Agrees to YouTube Metrics Audit to Ease Advertisers' Concerns

Feb. 21, 2017 7:00 a.m. ET

THE WALL STREET JOURNAL.

## Facebook Agrees to Audit of its Metrics Following Data Controversy

Updated Feb. 10, 2017 9:17 a.m. ET

## THIRD PARTY MEASUREMENT



*What the industry needs is valid third-party measurement where the major platforms cannot grade their own homework. Standards are being set by independent third parties, such as the MRC and its one-second, 50% in-view standard, while technology vendors are being leaned on to push consistency across the industry.*



# Are We Measuring the Right Thing?



## **Viewability Standard**

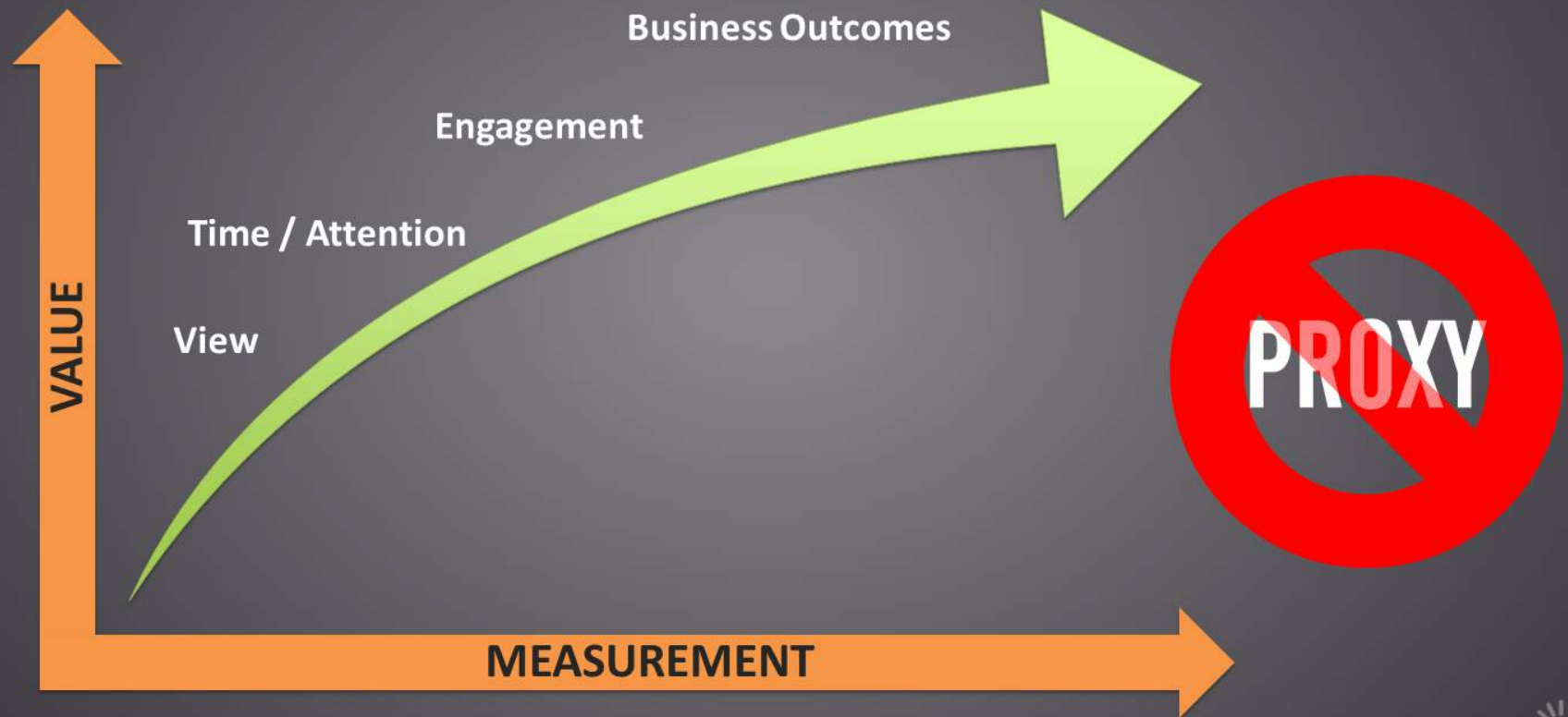
50% in View  
1 Second



*Even with standards in place like the MRC viewability standard, we should be asking ourselves: Are we measuring the right thing? Do you feel you are getting any value from these standards? Should we be focusing on something that has more to do with engagement?*

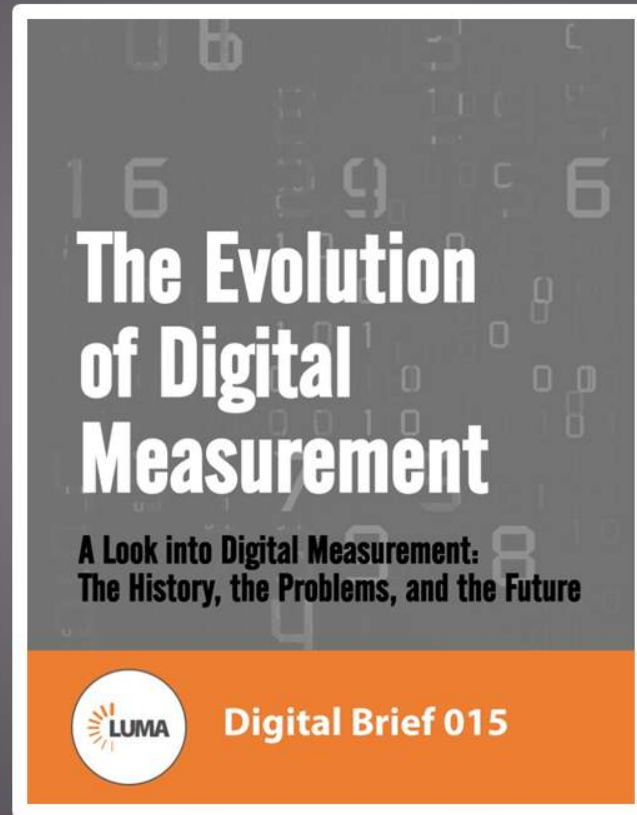


# Are We Measuring the Right Thing?



*We believe we are on an inevitable march away from proxies and more towards understanding where consumers are spending time, how they are engaging, and ultimately driving business outcomes.*

# Are We Measuring the Right Thing?



*We will be highlighting these issues in our upcoming Digital Brief: The Evolution of Digital Measurement.*

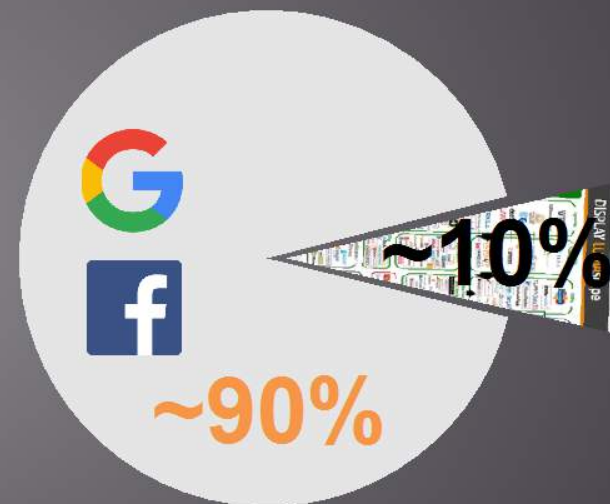


# The Digital Duopoly Continues to Grow

U.S. Digital Ad Spend



U.S. Incremental Ad Spend



Share %

	35%	39%	40%	41%	40%	42%	41%	41%
	0%	4%	5%	6%	7%	11%	14%	19%
<b>Total %</b>	<b>35%</b>	<b>43%</b>	<b>45%</b>	<b>47%</b>	<b>47%</b>	<b>52%</b>	<b>55%</b>	<b>60%</b>

Source: eMarketer, IAB, Company Filings, LUMA  
 \*Google Advertising Revenue reflects Advertising Revenue Ex-TAC



*The concern with the Digital Duopoly continues to grow as nearly two-thirds of digital advertising revenue and almost 100% of incremental growth of the market are captured by Facebook and Google .*

# Who Will Be the Third?



**Oath:**  
Aol. YAHOO!



*There has been a lot of discussion about who might be the third player: Twitter, Oath (Verizon), or Snap Inc.*

# Who Will Be the Third?

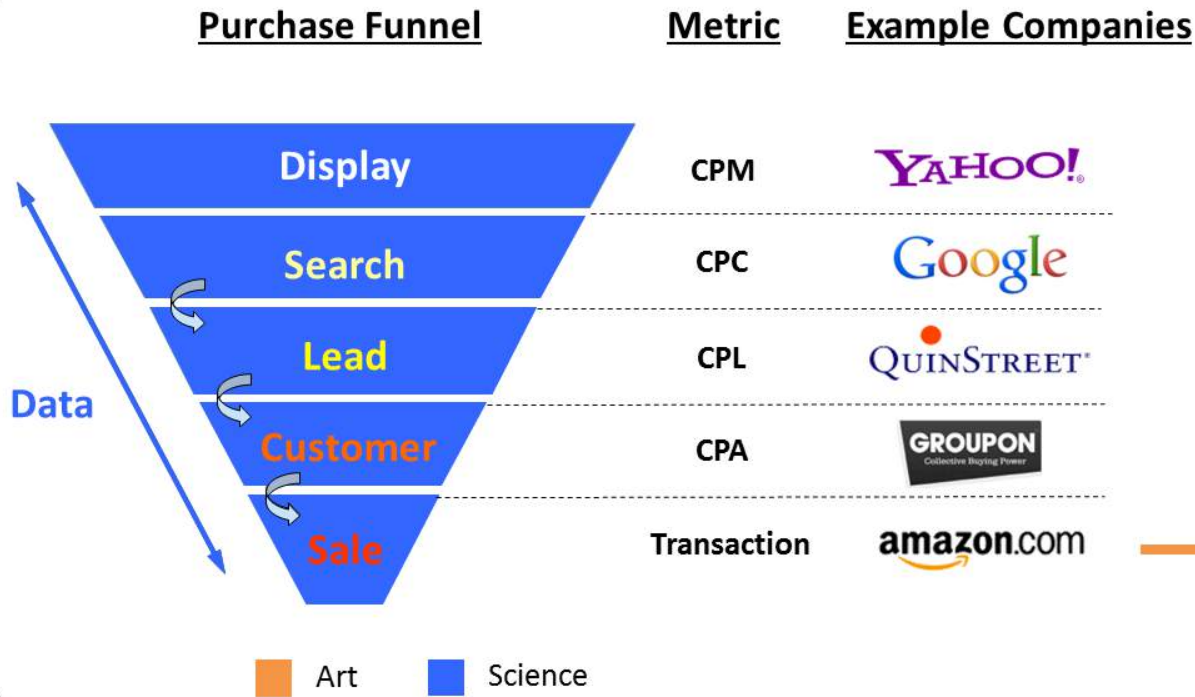


*But we believe Amazon will be the third force and if it chooses to, will become a massive player.*



# We've Been Calling For This for Some Time

Circa 2009



*In 2009, we predicted a collapse of the purchase funnel and the likely strategies of various companies. The conclusion that got the most heresy was the notion that Amazon would move up the funnel and into media in a big way. Although advertising was in fact outside Amazon's core business, it could help drive it.*

# Amazon Is Focused On Its Top-of-Funnel Business



Expected Advertising Revenue in 2018  
\$5 Billion



DSP & Header Bidding Solution



Source: Morgan Stanley



*That notion may have been heresy at the time, but with analyst estimates of Amazon's advertising business over \$5 billion next year, we have seen that come to pass. Amazon is well-positioned to capitalize on this opportunity with its sophisticated advertising technology, web services ubiquity, and the Amazon Echo.*

# Amazon Is Playing a Different Game...



**I know who you are...**



**I know what you might be  
looking for...**



**I know what you bought  
and what you will buy next.**



*While Facebook and Google may have demographic data and proxies for intent, Amazon has true intent and purchase history data to understand the full customer journey. Amazon has a unique data position in the ecosystem.*



# Continued Push for Industry Clean Up

**A's**

**ANA**

**iab.**



*We want to commend the large industry associations for taking a stand to create standards and highlighting issues for all constituents of the ecosystem.*

# Wallets Are Making the Difference



**“P&G does not want to waste time and money on a crappy media supply chain.”**

**A's**

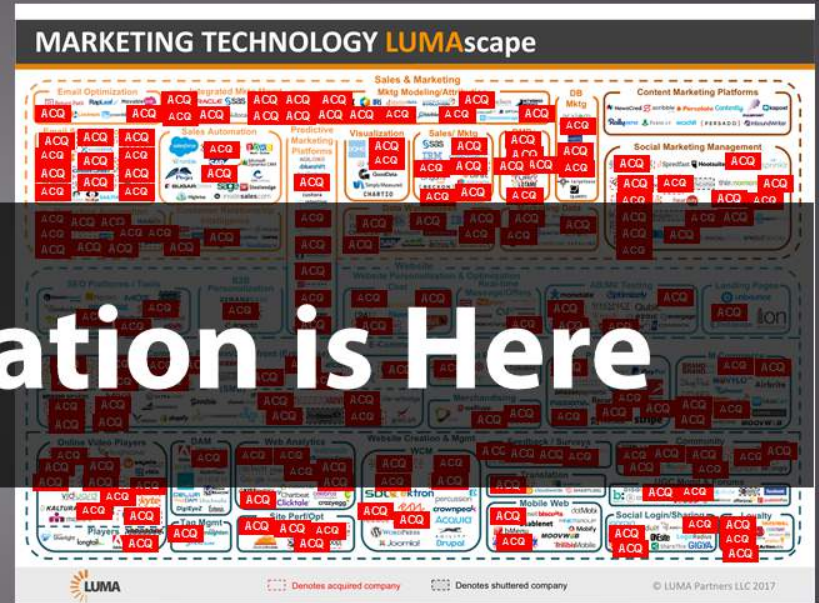
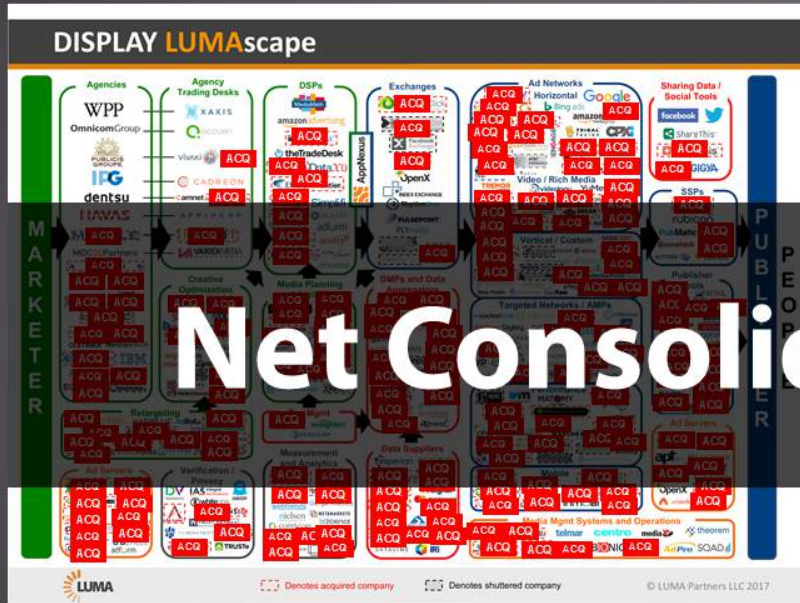
**ANA**

**iab.**



*Ultimately, those efforts helped marketers take on the issue first hand. It is the “power of the purse” that is making the difference. When marketers with the wallets take a stand on these issues, that’s when we start to see action, and we’ve been encouraged to see how major technology platforms have responded.*

# The Much Needed Consolidation Is Happening



## Net Consolidation is Here

2013 → 2017  
65 New Companies  
101 Acquired

2013 → 2017  
76 New Companies  
121 Acquired



Source: LUMA

*We talk a lot about the much needed consolidation and it is now happening. If we look back four years ago, acquisitions have outpaced new company formation on the Display and Marketing Technology LUMAscopes. Net consolidation is here!*



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# Significant Industry Trends

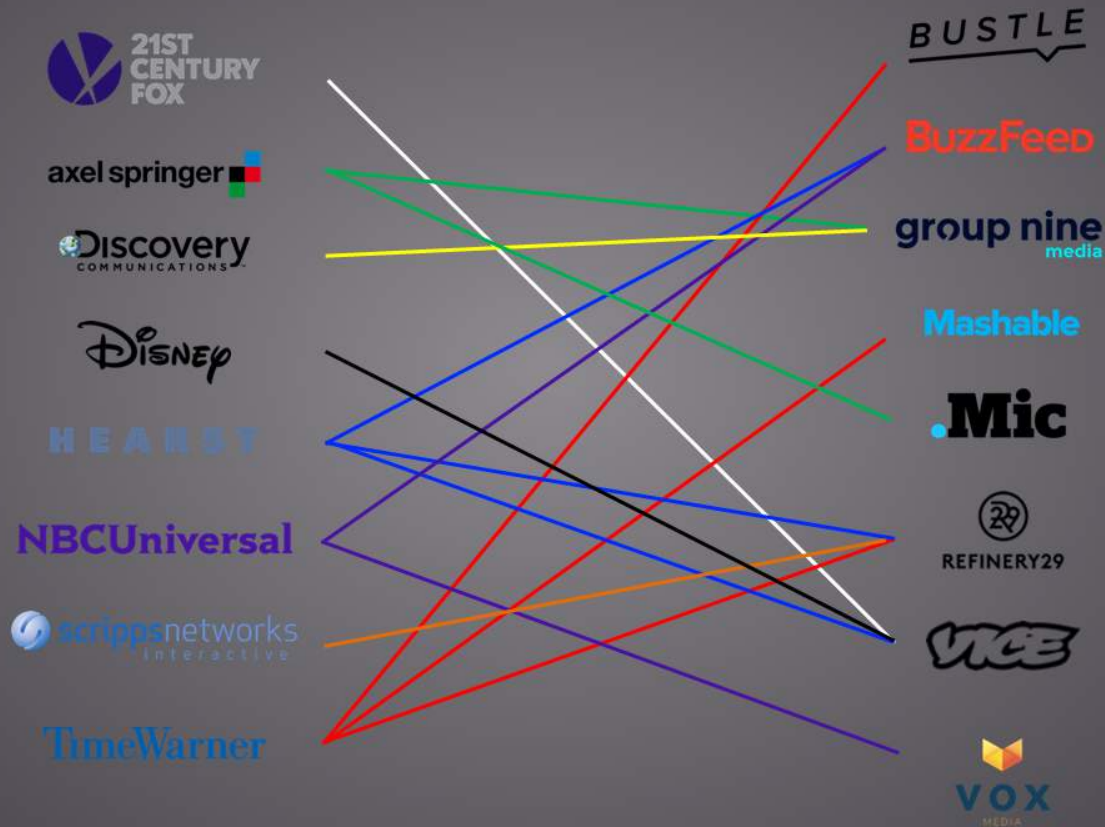
- 1. Content**
- 2. Mobile**
- 3. Data & Identity**
- 4. Commerce**
- 5. Convergent TV**



A top-down view of a wooden desk. A white sheet of paper is placed on the desk. On the left side of the paper, there are several crumpled pieces of white paper. On the right side of the paper, a black pen is lying horizontally. The word "CONTENT" is printed in large, bold, black capital letters in the center of the white paper.

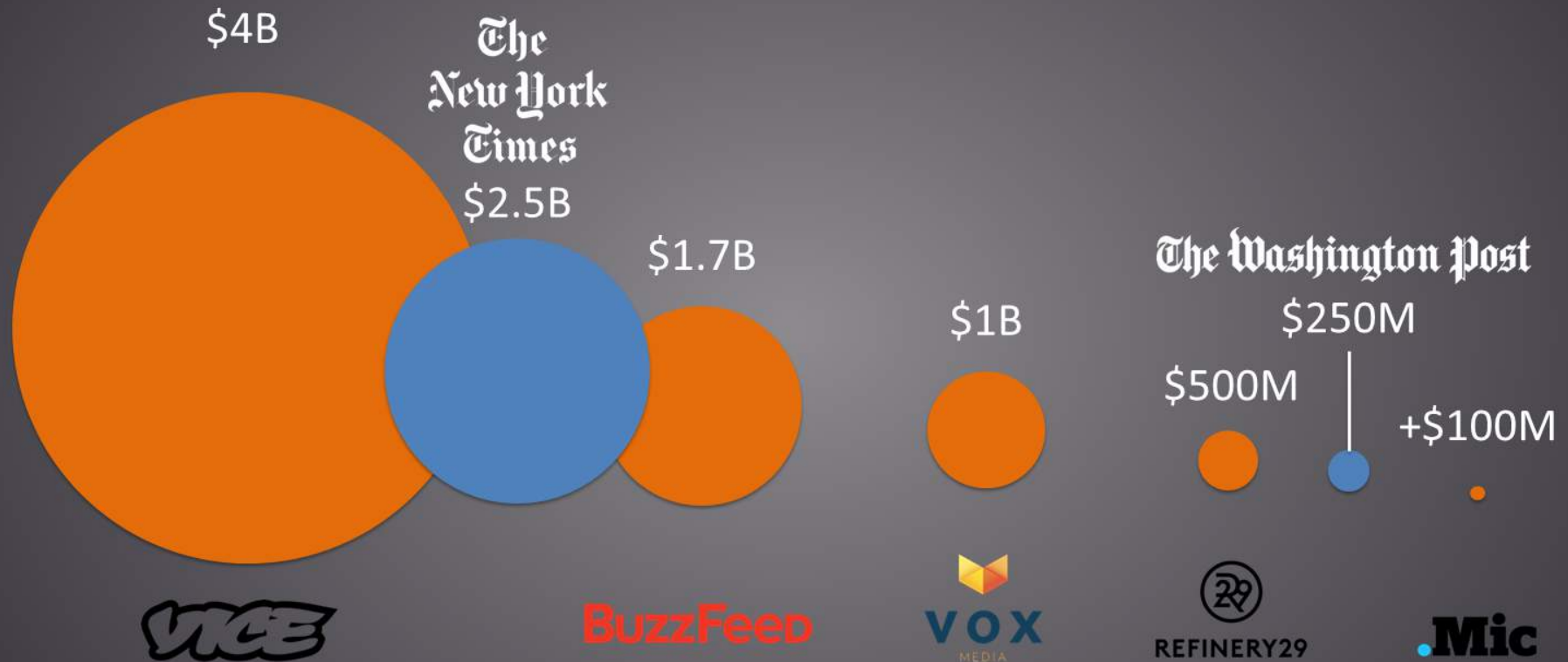
**CONTENT**

# New Media Is Being Funded by Old Media




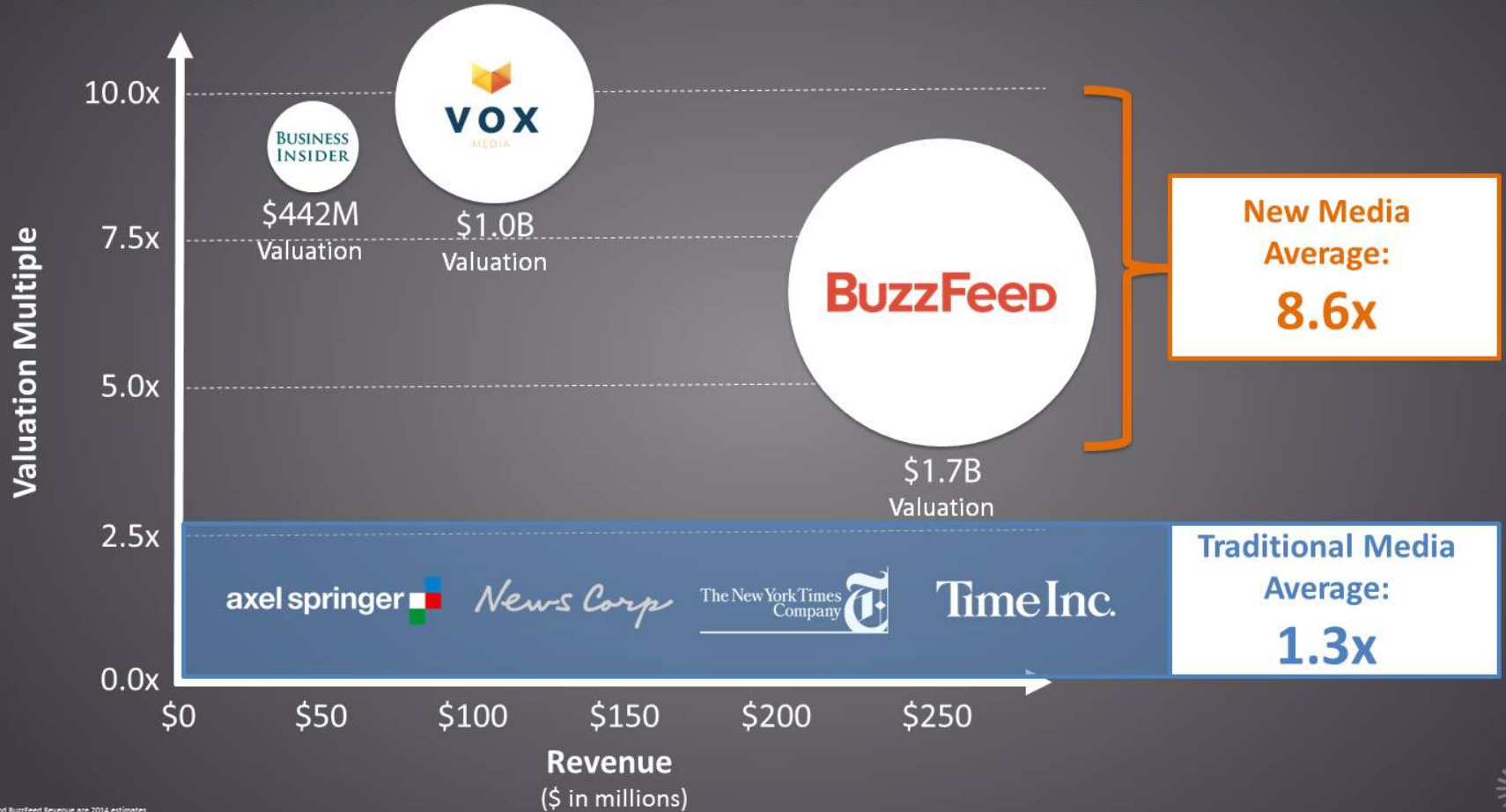
*It is interesting to see old media companies funding upstarts that are trying to unseat them. We believe this is a wise strategy to understand the digital ecosystem and how their business is going to change going forward.*

# ...With Soaring Valuations



*New media valuations are large – especially compared to their more traditional counterparts.*

# New Media Valuations Are 6x Traditional Media



*When we dig deeper into valuations, new media companies are being acquired or funded with very high single digit revenue multiples, which compares very favorably to low single digit revenue multiples of traditional media.*

# Overemphasis on Scale



*In digital, the pendulum may have swung too far with an overemphasis on scale over brand. With ubiquitous distribution from the Internet, a defensible position is garnered through a strong brand.*



# Creating A Unique Brand Is Very Challenging

The New York Times



VOGUE



BuzzFeed

WSJ

BUSINESS  
INSIDER

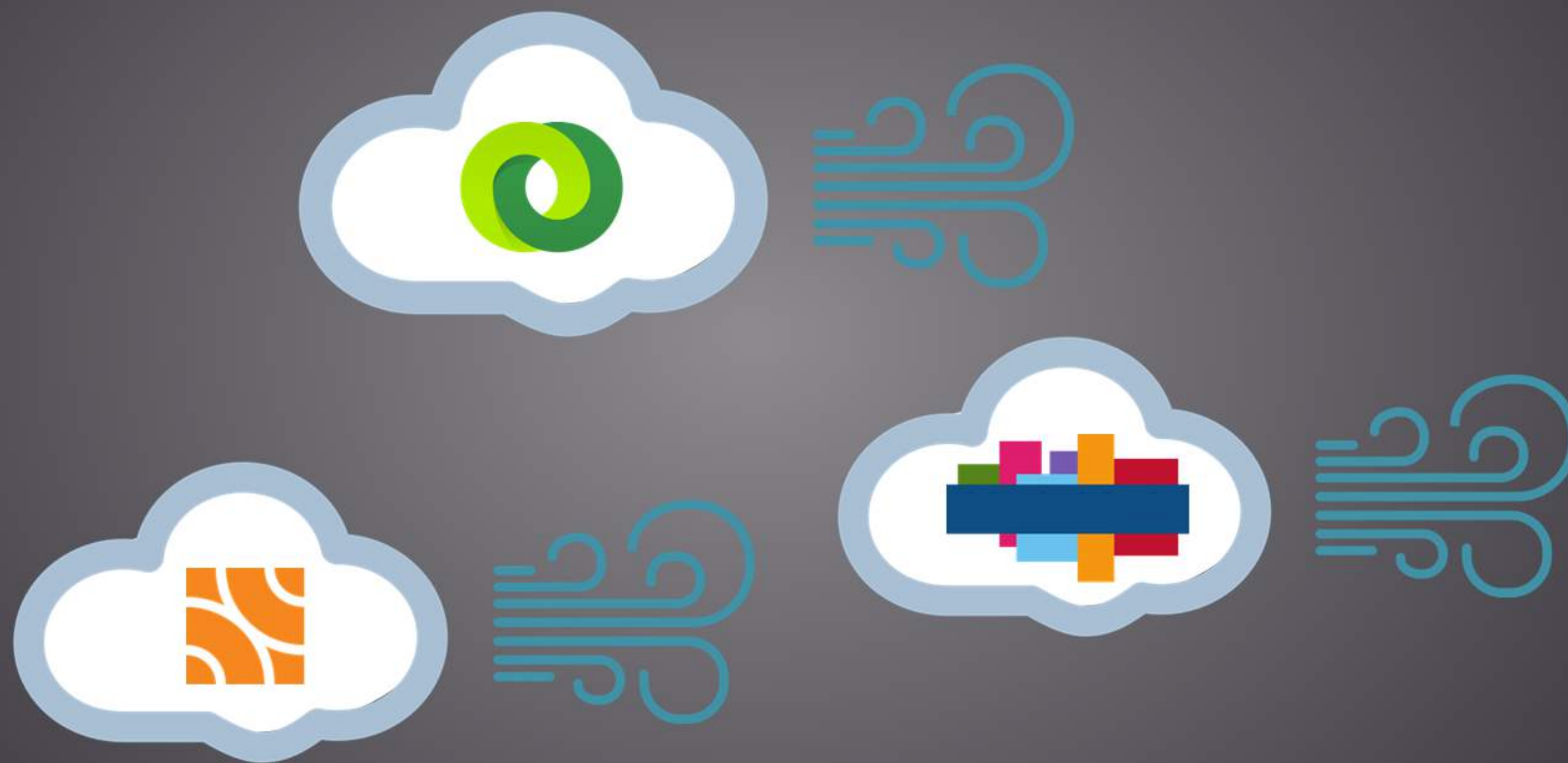
THE  
NEW YORKER



*But building a strong brand isn't easy. The most recognized and iconic media brands were built from a unique voice, history, and many other intangibles.*



# Strong Ones Aren't As Vulnerable to Programmatic



*Strong brands are a powerful asset because they are less vulnerable to ecosystem changes in monetization and the winds of programmatic...*



# Or Platform Risk



*...as well as algorithm changes and whims of the major distribution platforms.*





# The Publisher Value Matrix

Scale



Want to Know

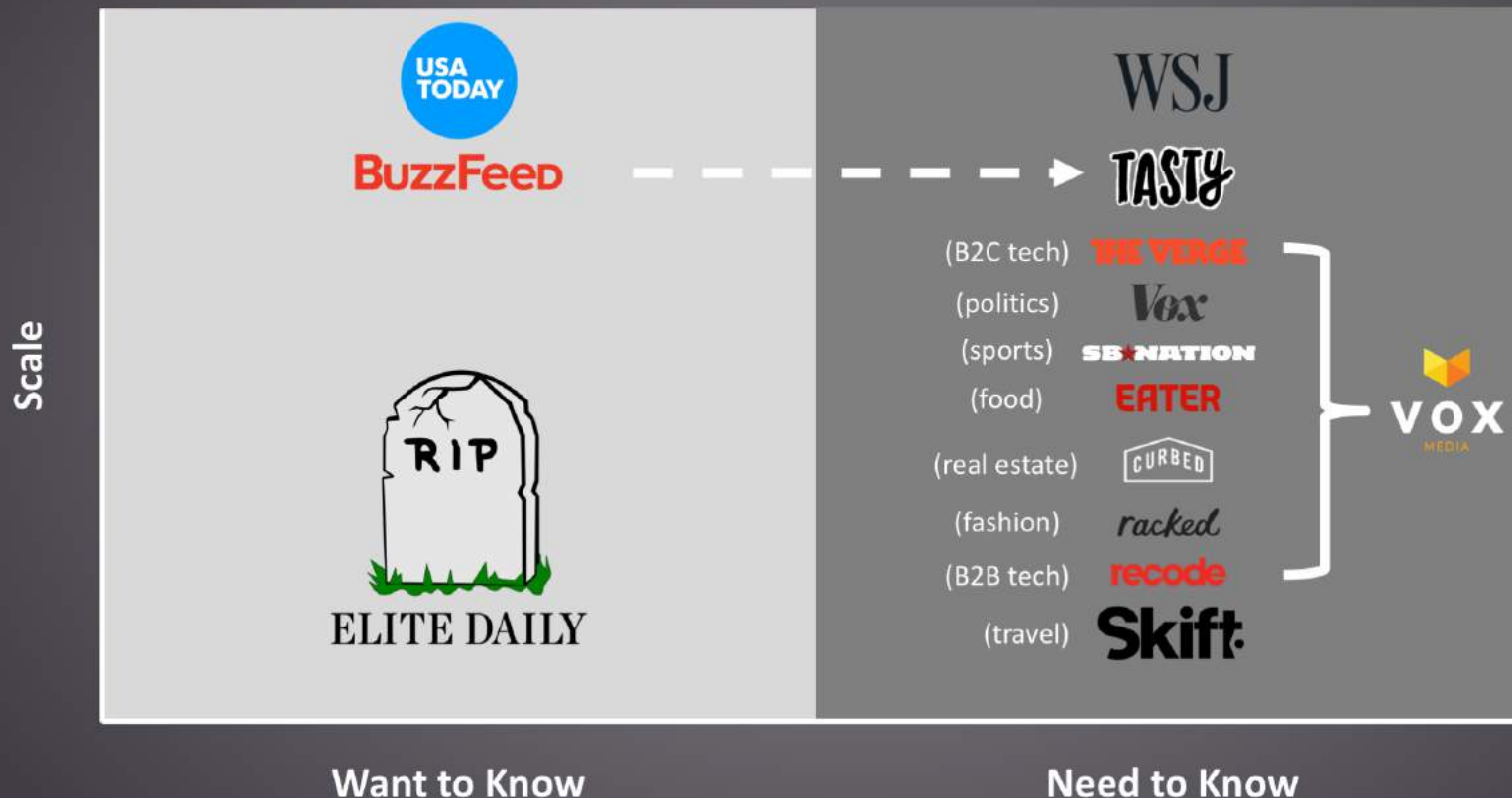
Need to Know



*We envision the publisher value matrix through “Want-to-Know” and “Need-to-Know” properties. While there are large publishers of general interest or “Want-to-Know” content, there are others with scale and “Need-to-Know” content that have a material advantage. Even small publishers with a niche focus like B2B travel media company Skift can build loyal, lucrative audiences and by effect, a strong defensible position. But if small publishers don’t deliver quality content, they will face a challenging future.*



# The Publisher Value Matrix



*We are witnessing some interesting developments unfold, such as BuzzFeed, which is finding success with its new standalone food brand Tasty and is building a blueprint to start more vertical properties. Vox Media has long pursued this strategy, having built and acquired a family of verticals to address all types of contents and engaged audiences.*



# Brands Gain Unique Monetization Opportunities

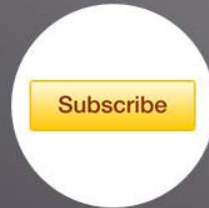
## MONETIZATION



ADVERTISING



SUBSCRIPTIONS



EVENTS



AFFILIATE



LEAD GEN



*Ultimately, if publishers can build a loyal following and direct relationships with their audiences, they will have a wide variety of monetization opportunities beyond advertising at their disposal.*



# Legitimization of Content Recommendation

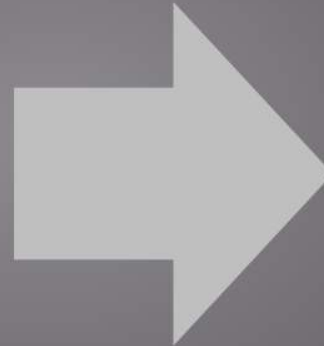
**Recommended From The Web**



**We're Sleeping With Leesa And It Is Incredible**  
A Cup of Jo | Leesa

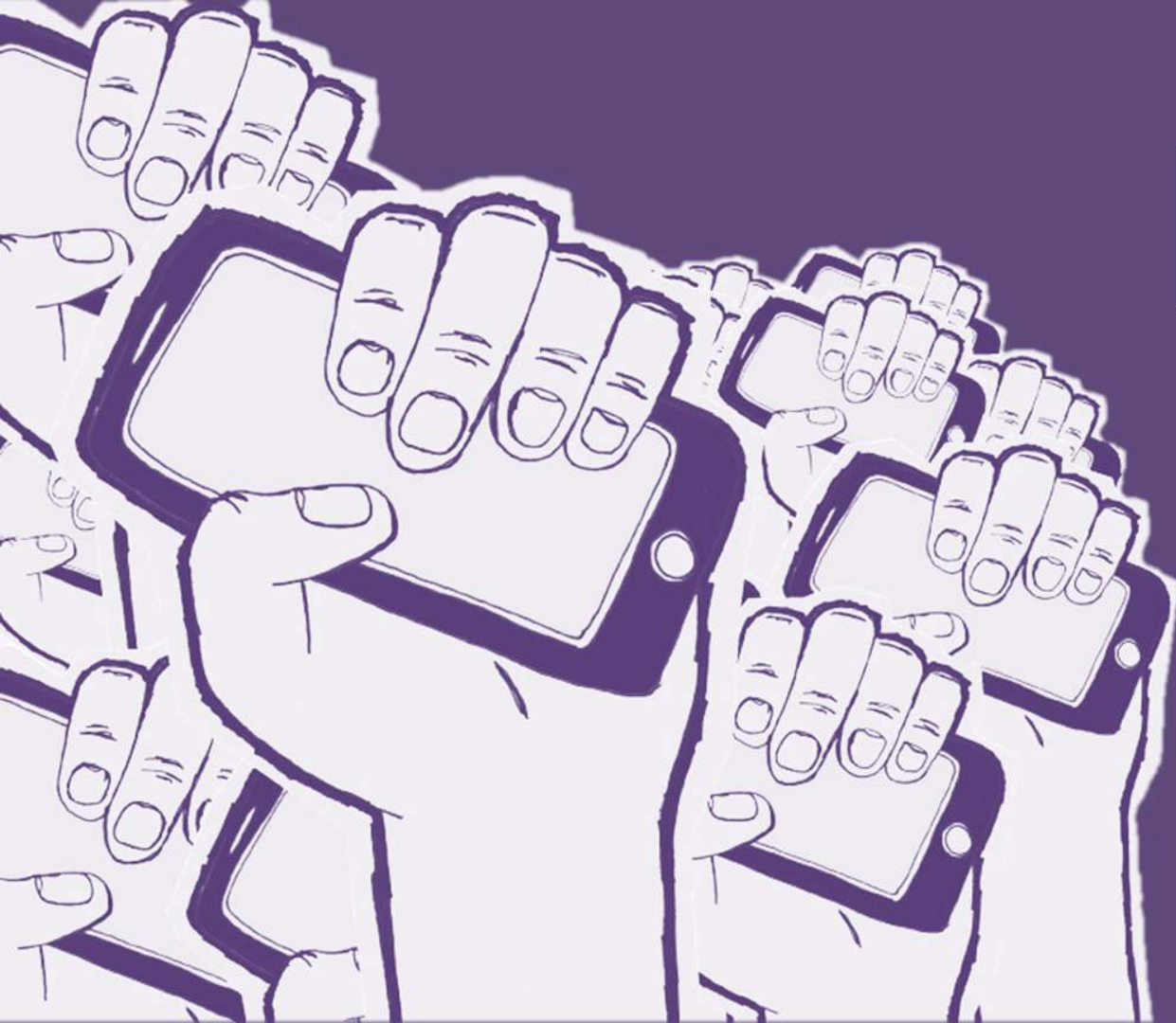
**Spring DIY Project: Create A Gorgeous Raised Garden Bed**  
The Home Depot

**Jenna Jameson's Net Worth Has Left Us Without Words**  
Kiwi Report



*We believe content recommendation will become legitimized. Companies like Taboola and Outbrain were on to the right thing with the idea that readers should receive suggested content, but it will need to evolve. Why shouldn't independent publishers be able to provide the same, personalized experience pioneered by Facebook? That is exactly what Taboola is trying to accomplish with its newest product innovation: News Feed.*

# MOBILE



# No More Wait til Next Year

# 2013...2014...2015...2016

**iab.**

**Mobile Captures More Than Half Of All U.S. Internet Advertising Revenue For The First Time Ever, Total Digital Ad Spend Hits a Landmark \$72.5 Billion in 2016**

04.26.17



*After years of hype, mobile advertising finally overtook desktop to account for the majority of digital ad spend in 2016.*

# Bringing New Set of Challenges



**Is There More Ad Fraud On iOS Or Android? The Thieves Don't Care**

by Allison Schiff // Monday, February 13th, 2017 - 10:50 am

**VentureBeat**

**Advertising's billion-dollar problem: app fraud – and how to fix it**

MATT MARSHALL FEBRUARY 17, 2016 12:24 PM

**ADWEEK**

**Dentsu's Mobile Agency Says a 'Significant Amount' of App-Install Ads Are Fraudulent**

By Lauren Johnson | September 20, 2016

**The Register**  
*Bitting the hand that feeds it*

**Google deploys flamethrower on Android ad-fraud apps**

14 Mar 2017 at 16:45, Andrew Orłowski

**VentureBeat**

**Install fraud is threatening the app economy**

PAUL MULLER, ADJUST JANUARY 2, 2016 9:00 AM



**Rovio Is Mad As Hell About Fraud And It's Not Going To Take It Anymore**

by Allison Schiff // Thursday, August 11th, 2016 - 12:35 am



November 30, 2016

**Gooligan ad fraud malware infects 1.3M Android users**

**MediaPost**

**IAB: Ad Fraud, Device Measurement, And Attribution Continue To Be Key Issues In 2017**

by Tobl Elkin , Staff Writer @tobelkin, December 15, 2016

**AdvertisingAge**

**Buckle Up: Ad Fraud's Going to Take Us For a Wild Ride in 2017**

By Amit Joshi, Published on December 13, 2016.

**MediaPost**

**Apple Tackles Ad Fraud By Purging The App Store**

by Christian Henschel , Op-Ed Contributor, September 6, 2016

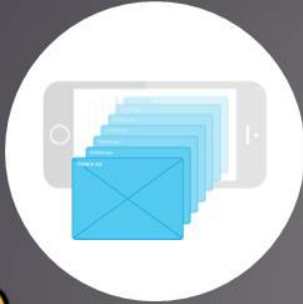


*Following the dollars flowing into the space, we also saw mobile ad fraud become a headline issue and key focus area for brands.*



# Mobile Fraud Whack-a-Mole

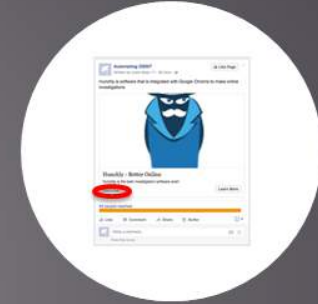
Ad Stacking



Pixel Stuffing



Domain Spoofing



Redirects



Click Injection



Fraud Farms



*Fraud is a serious challenge with bad actors continually innovating new methods to scam the ecosystem.*



# How to Fight Fraud

## PLATFORMS / EXCHANGES



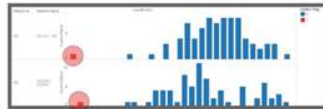
### Google Suspends 'Zombie' Apps Following Forensiq Report

Among the Suspended Apps: Celebrity Baby and Vampire Doctor

## ATTRIBUTION ANALYTICS

### Mean-Time-to-Install (MTTI) Outliers

Mean time to install varies by app and network. Kochava Data Science calculates the average MTTI for a given network in order to identify statistical outliers.



### Fraud Prevention Settings

#### ANONYMOUS IP FILTERING

Activate filtering for anonymous IPs to cross-check incoming traffic against a database of known data centers, VPNs or Tor exit nodes. Traffic coming from these endpoints will not be attributed to a tracker, and instead regarded as organic. If you have further questions, please ping [support@adjust.com](mailto:support@adjust.com).

ACTIVE

ON

## VERIFICATION / VIEWABILITY

### Going beyond Ad Viewability



## BLOCKCHAIN

### What's a blockchain? And how could it change marketing & advertising?

With promises of smart contracts, global and secure payment systems, token-based communities and transparent record keeping, blockchains are hot.



*Platforms have a responsibility to screen apps and ads to ensure compliance (and continue to monitor post-approval). Attribution players detect unusual click / install behavior and blacklist bad actors. Verification companies validate ads are viewable by humans. Blockchain holds potential with its transparent method of recording transactions, but needs to become more real-time to be viable in a programmatic environment. Finally, there are always legal consequences if violations can be proven.*

# How to Fight Fraud

PLATFORMS /  
EXCHANGES

android

facebook

iOS

mopub

ATTRIBUTION  
ANALYTICS

adjust

AppsFlyer

Apsalar

KOCHAVA★

singular

TUNE

VERIFICATION /  
VIEWABILITY

DV

FORENSIQ

IAS Integral  
Ad Science

MOAT

OpenSlate

pixalate

whiteops

BLOCKCHAIN

adXchain

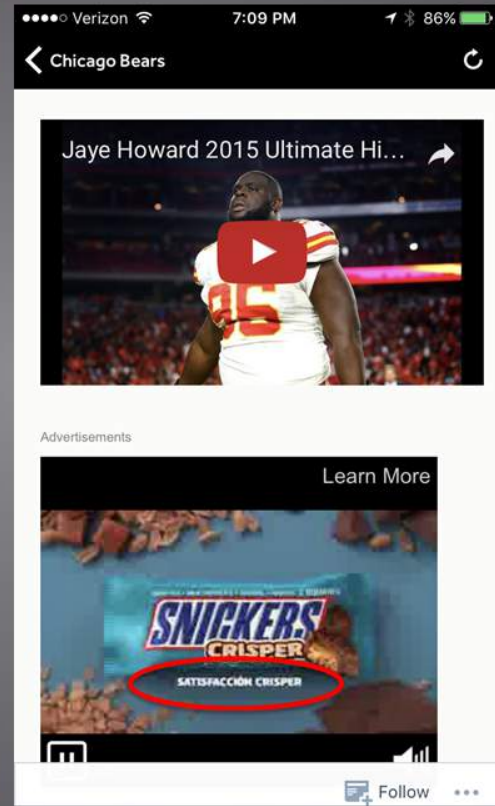
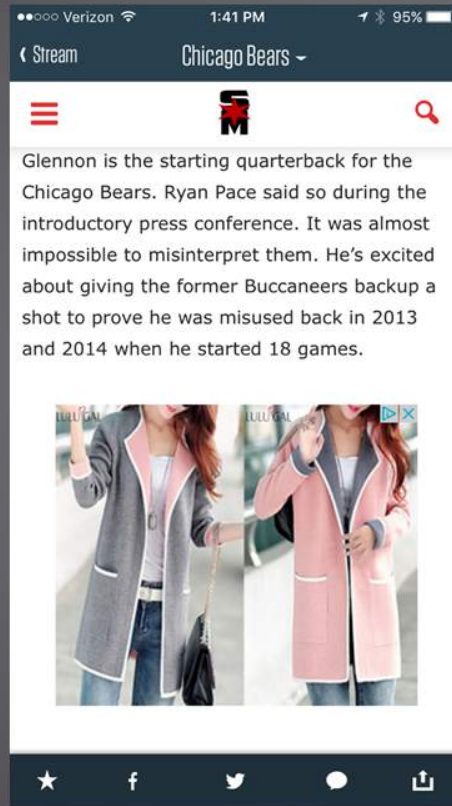
brave

NYIAX



*Here's a representative list of companies offering solutions to mitigate against fraud and facilitate better ad experiences.*

# Who Do They Think I Am?



*Looking beyond fraud, it's amazing how much waste persists in ad spend. It's not enough to employ the best performing formats if the targeting is off. These examples of ads served to an English-speaking male are difficult to reconcile with the promise of highly personal devices to deliver relevant messages.*

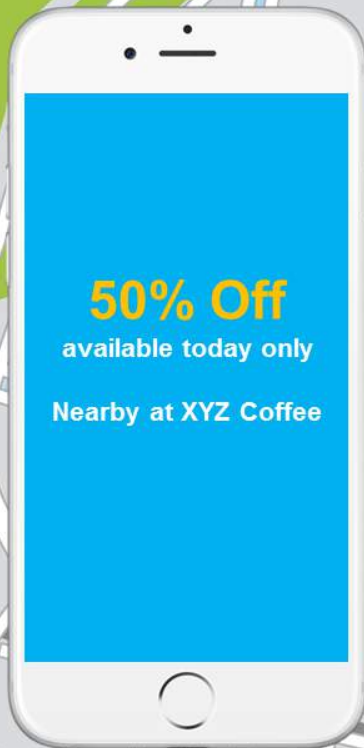


# Data is the New Oil



*Clearly leveraging the data that can be captured from devices is the answer to enabling effective targeting, but this is a two-sided coin. Data must be handled in a privacy-compliant manner to ensure it realizes its potential and doesn't become a safety hazard.*

# Location Promise vs Reality



**STREETFIGHT**

★★ INSIDE THE BUSINESS OF HYPERLOCAL ★★

## Local's Next Hurdle: The Impressionable Use Fallacy

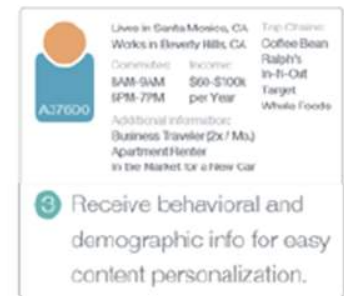
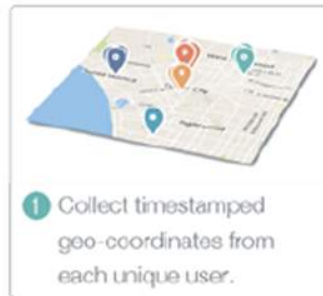
DECEMBER 12, 2016 BY MICHAEL BOLAND — 2 COMMENTS



*Location is a data set that is uniquely powerful on mobile, as consumers always carry their phones. The long-discussed location use case is geofencing, where people passing a retailer trigger ad delivery. This vision has not been realized and is unlikely to do so, as we typically move through life with a purpose and without wanting to be interrupted, as opposed to having a desire to be surprised and delighted by ads. Participants in the Pokemon Go craze may be the exception.*



# The Real Value of Location



*We are very bullish on the role of location in marketing and are seeing some good momentum in the sector. The real potential is for measurement, first for building audience profiles for targeting (if you can track a person for a handful of days, one can get a pretty good sense of their behavior and preferences), and ultimately for attribution to prove a served ad drove the desired action with a store visit.*

# Reach and Precision Are Difficult to Achieve



REACH



PRECISION



*A practical problem with executing on this vision is the quality of available location data relative to the scale needs required to efficiently run campaigns. Much of the lat / long coordinates passed through exchanges is inaccurate and some of it is fraudulent.*

# Good Progress on This Front

**Aol.** adsquare

engine   
fueled with  factual.

Pilgrim SDK  
by FOURSQUARE

 NinthDecimal

 ADCOLONY

  
VERVE™

ROXIMITY

 xAd

 WeatherBug

 LUMA

*The good news is we've seen a number of new initiatives and partnerships to bring to market high quality location signal at scale.*





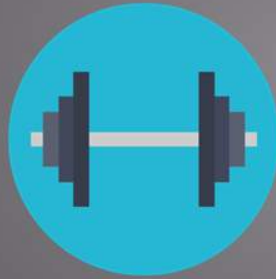
# “Snap to Store”



Percentage of Snapchat users using the app at particular venue:



80%



66%



50%



49%

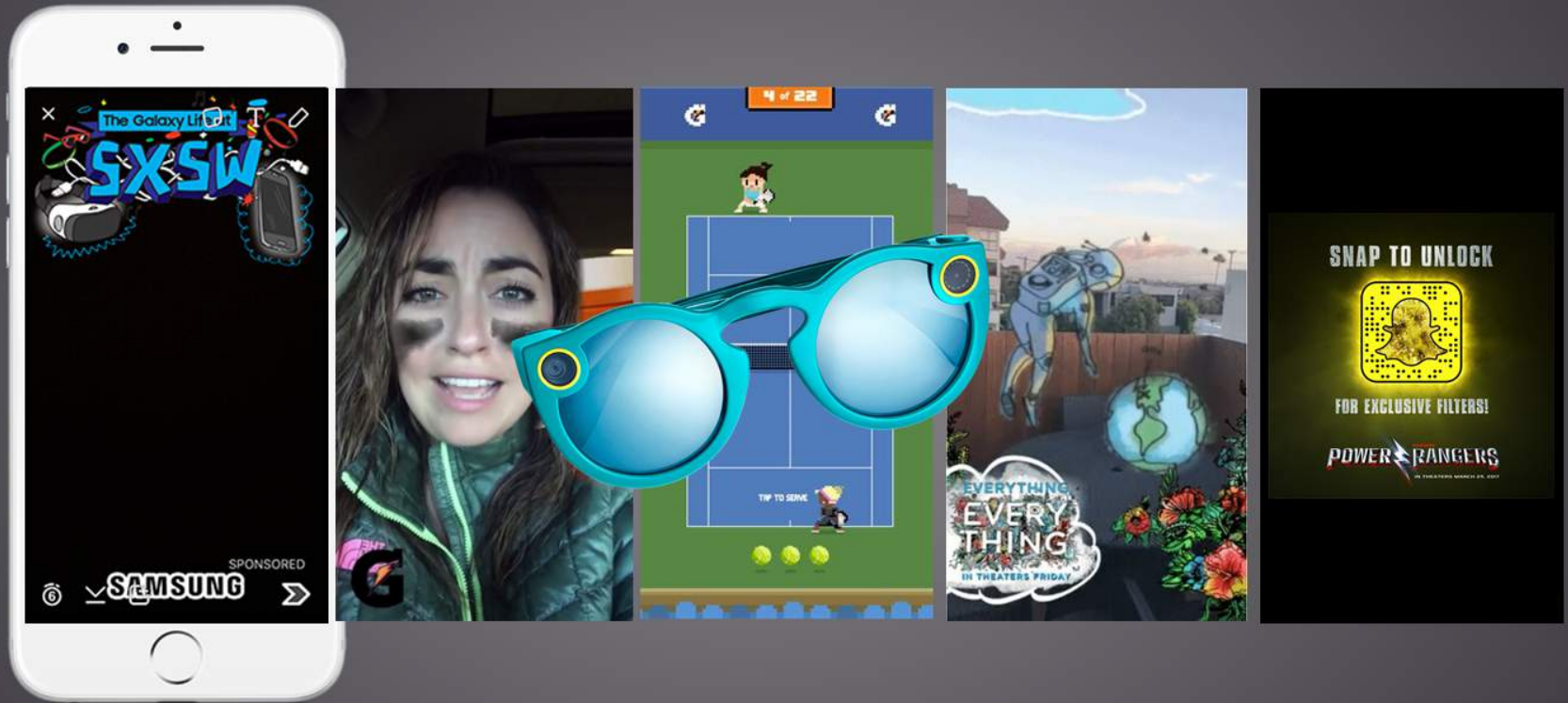


Source: Greenberg Strategy



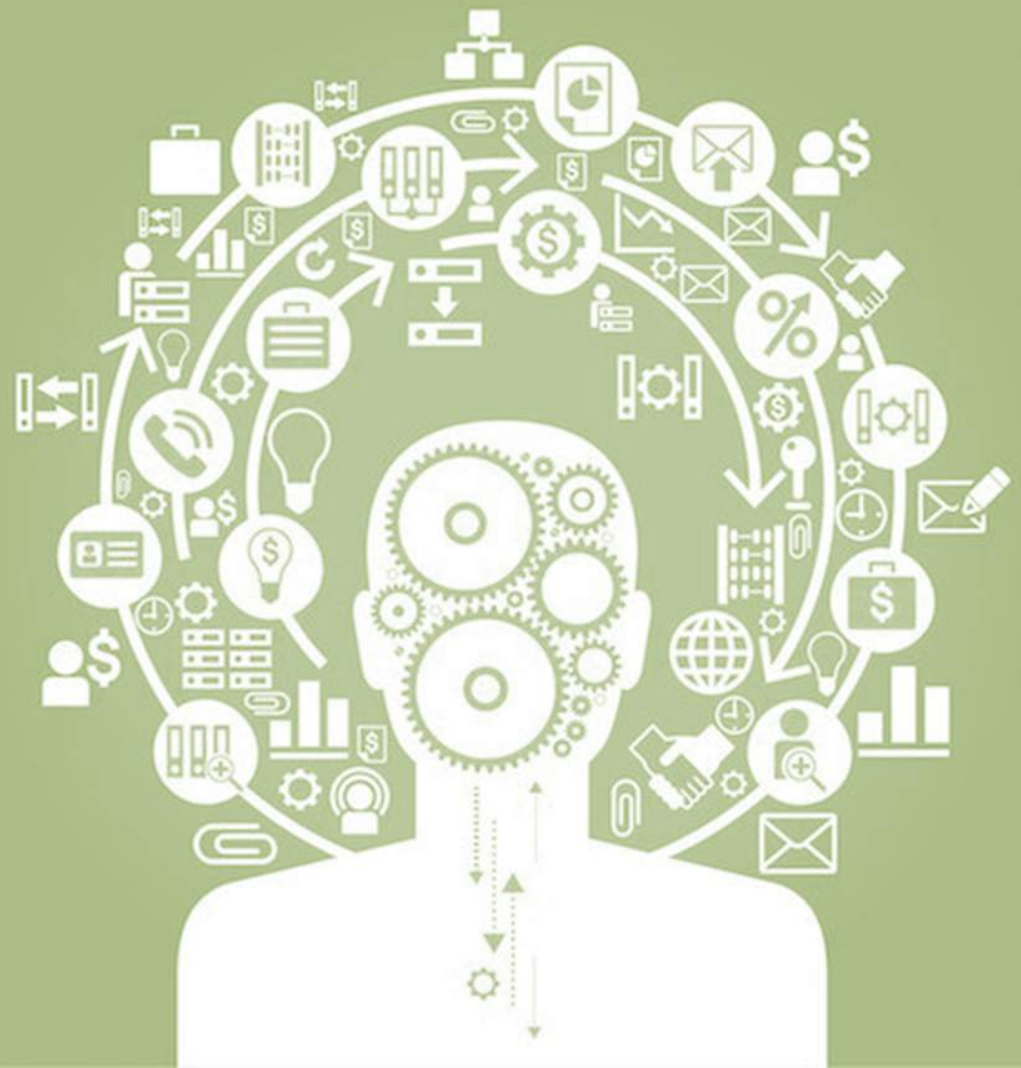
*A new entrant with promise is Snap, which recently introduced their “Snap to Store” product to measure the effectiveness of their geofilter campaigns. Given their highly engaged audience, there are more than 1 billion Snaps viewed daily that have geofilters applied and, as such, share location. A major digital agency commented favorably on the scale and accuracy potential, and Wendy's saw success with the product, measuring over 42,000 incremental store visits the week after they ran a geofilter ad.*

# Snap Innovation



*We've been very impressed with and encouraged by the pace of Snap's innovation. The ad experiences enabled by their creative tools aren't just tolerated, they're played with multiple times for meaningful durations and shared with friends. If Snap can be as successful with their measurement initiatives (which also includes a launch partnership with Moat's Video Score), it bodes well for the industry, as the ecosystem is developing a track record of adopting successful products that Snap pioneers.*

# DATA & IDENTITY



# Optimize the Customer Experience

Sept 2016



The Right Message



The Right Time



The Right Person

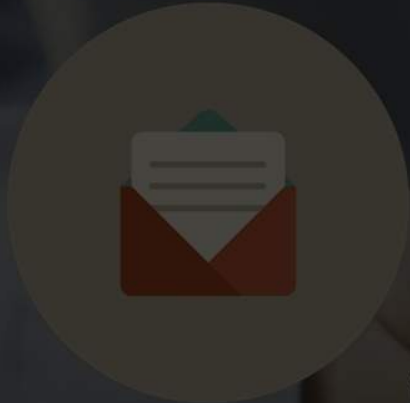


*We always like to remind ourselves what marketers are trying to achieve: to increase revenues profitably at the lowest cost. To do this, marketers are focused on optimizing the customer experience through delivering the right message at the right time to the right person – for each and every consumer.*

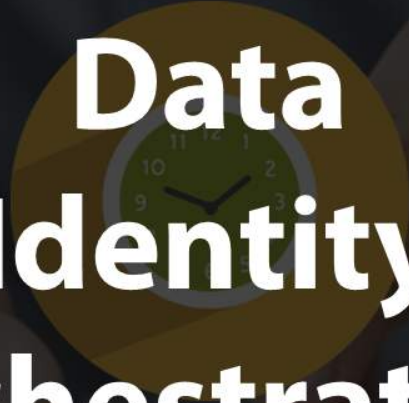
Optimize the Customer Experience

Sept 2016

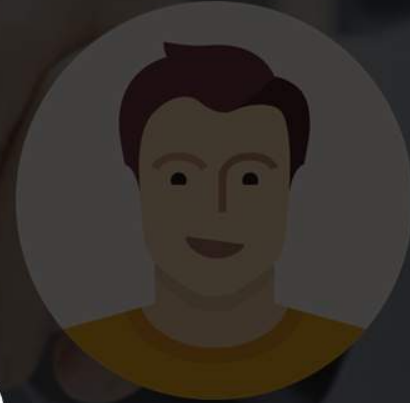
# Data Identity Orchestration



The Right Message



The Right Time



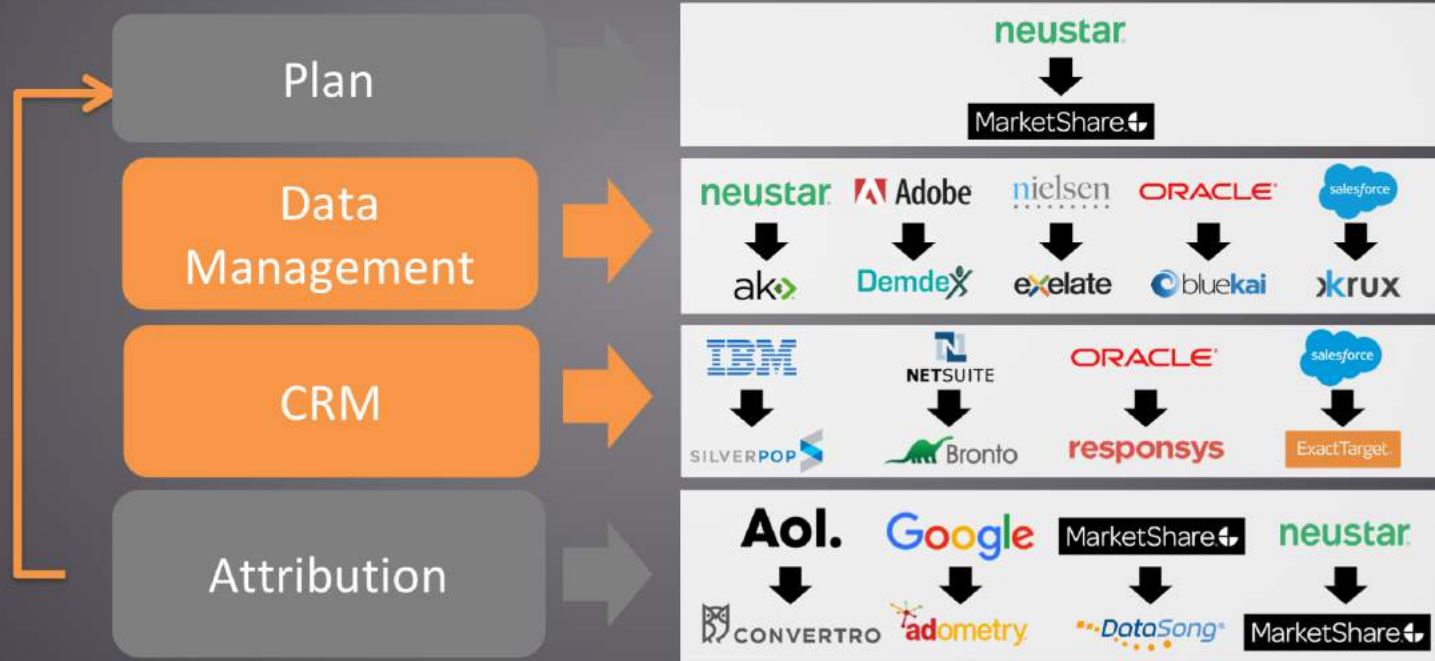
The Right Person



*To enable this, there are three fundamental areas that marketers need to master: data, identity and orchestration. Data and orchestration together enable “the right message” “at the right time” and identity enables “to the right person.”*

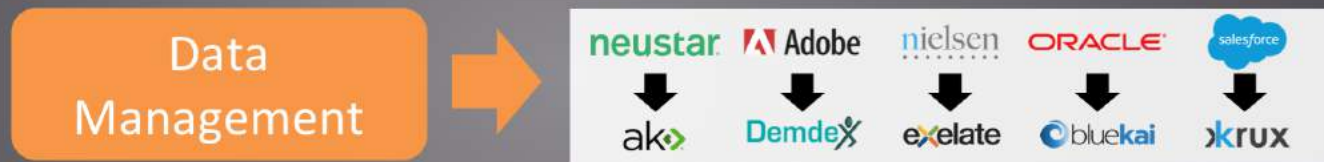
# Digital Advertising: The Enterprise Stack

## “The Intelligence Layer”



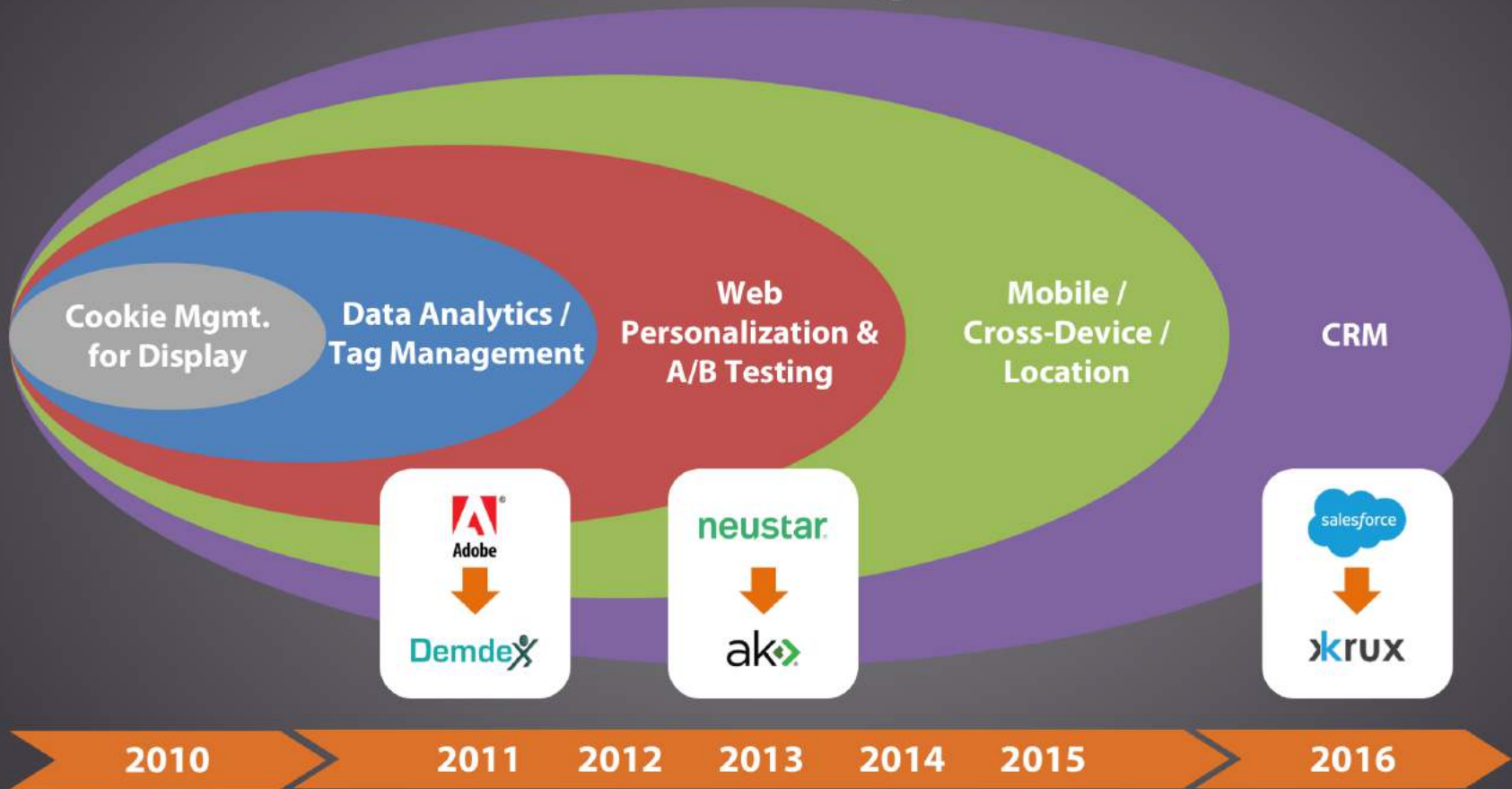
*For years we have noted that the “enterprise stack” is the intelligence layer for digital advertising, since it comprises the software that enterprises license to plan, power and measure digital advertising. This is one of the main reasons the “marketing clouds” have focused their acquisition efforts in these areas.*

# Digital Advertising: The Enterprise Stack



*Now that Salesforce has acquired Krux, the three largest marketing clouds all have a DMP offering. These companies are selling the DMP as a foundational technology to power digital marketing. In its most recent DMP Wave report, Forrester states that “DMPs sit at the center of the marketing cloud, bridging the gap between AdTech and MarTech... With the DMP at the center, the marketing cloud will be the hub of enterprise intelligence.”*

# Evolution of the Data Management Platform



*DMPs have evolved over the years. Initially, they managed cookies for desktop display advertising. Over time they expanded their capabilities, such as adding data analytics, tag management, and mobile data management. While DMPs to date have focused on managing anonymous data, Salesforce recently stated “the coming together of the known customer... and the unknown... is a unique opportunity to bring the best of CRM marketing” to the DMP.*



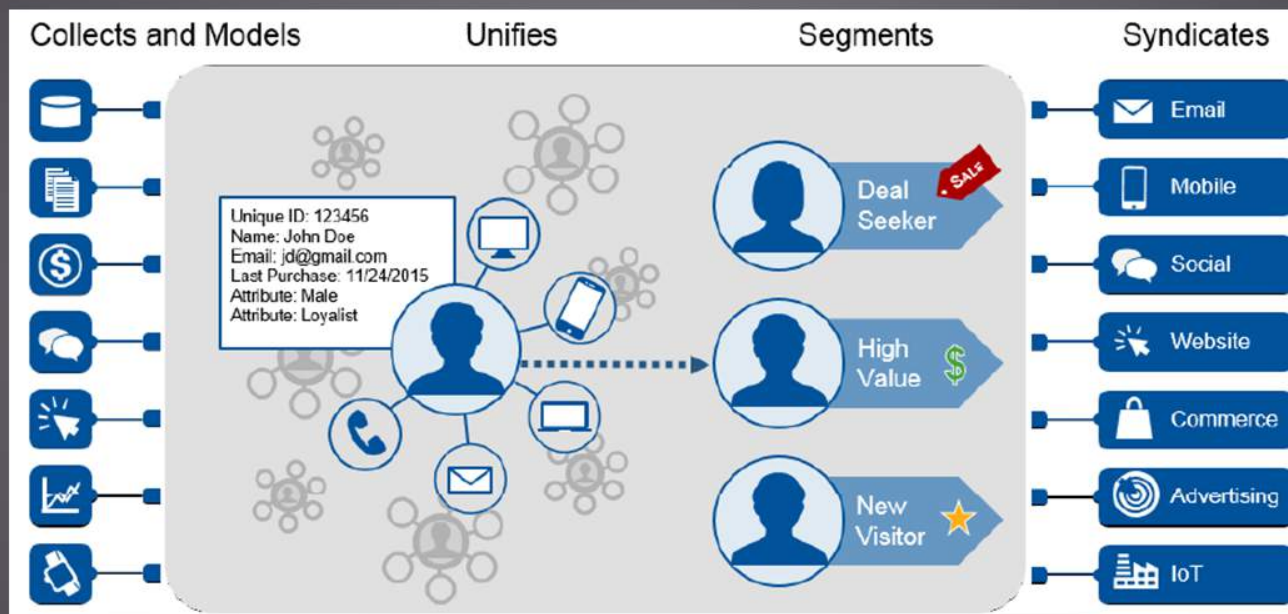
# Marketing: Channel-Centric with Data Silos



*Even though there may now be some blending of CRM and DMP data, marketing generally is still very channel-centric with multiple data silos. However, to create a “single view of the customer” and enable true omni-channel marketing, these data sets need to be utilized together.*

# The “Customer Data Platform”

The hub of multi-channel marketing



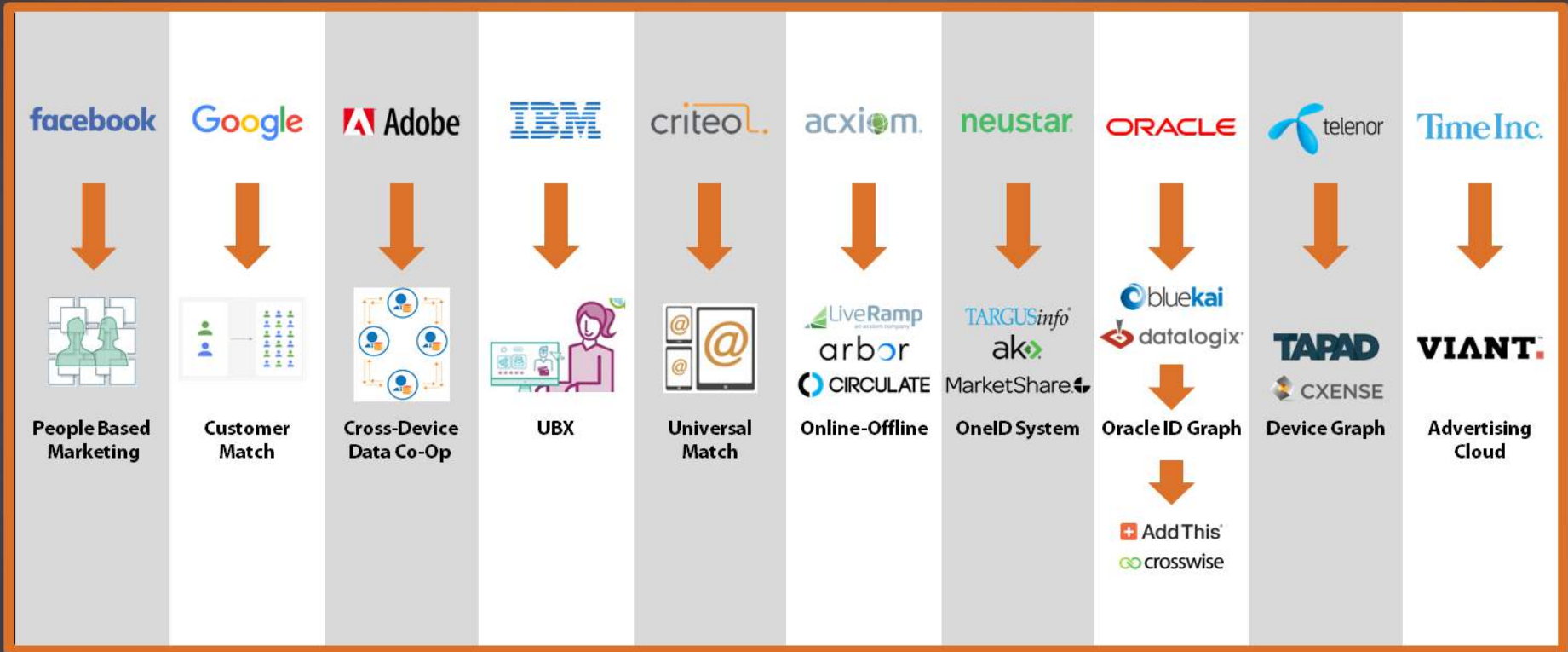
*“Our main challenge is connectivity. Disparate data is spread across multiple sites, geographies and business units.”*

“Innovation Insight for Understanding Customer Data Platforms,” Gartner, 11/21/16



*Therefore, one of the emerging segments to watch is the “customer data platform” category. These systems collect and unify data sources, analyze and segment the data, and then coordinate the interactions with each consumer through the various execution channels. We noted companies that were doing this for ecommerce a few years ago (and named them “predictive marketing platforms”), and now see this extending beyond commerce.*

# Identity Technologies: No Longer Niche



*The focus on data-driven marketing and advertising has spawned another emerging category: identity. Facebook kicked off the “identity” discussion with its launch of “people-based marketing.” Since then, both enterprise software and internet companies have invested heavily in this area, creating and assembling offerings that enable marketers to reach each consumer on whatever device they may be on – or screen they may be in front of.*

# Data Is the New Oil



*Earlier in this presentation, we noted that “data is the new oil.”*



# A.I. Momentum

**Forbes**

Big Data + Artificial Intelligence = Boom

OCT 6, 2016 @ 10:02 AM

***“A whole range of technologies are starting to reach the inflection point along the doubling curve where they go from **disillusionment to chaos to amazement.**”***

**NOW**

**SOON**

Source: Tractica



*One of the reasons for this is that data is the fuel for another significant new trend: artificial intelligence. Over the past year, the number of articles on A.I. has exploded, with many of them questioning whether A.I. works. We believe that A.I. is currently in the “disillusionment to chaos” phase, but that soon – within a few years – we will move into an “amazement” phase for what A.I. is enabling in general, and specifically in digital marketing.*

# A.I. Momentum

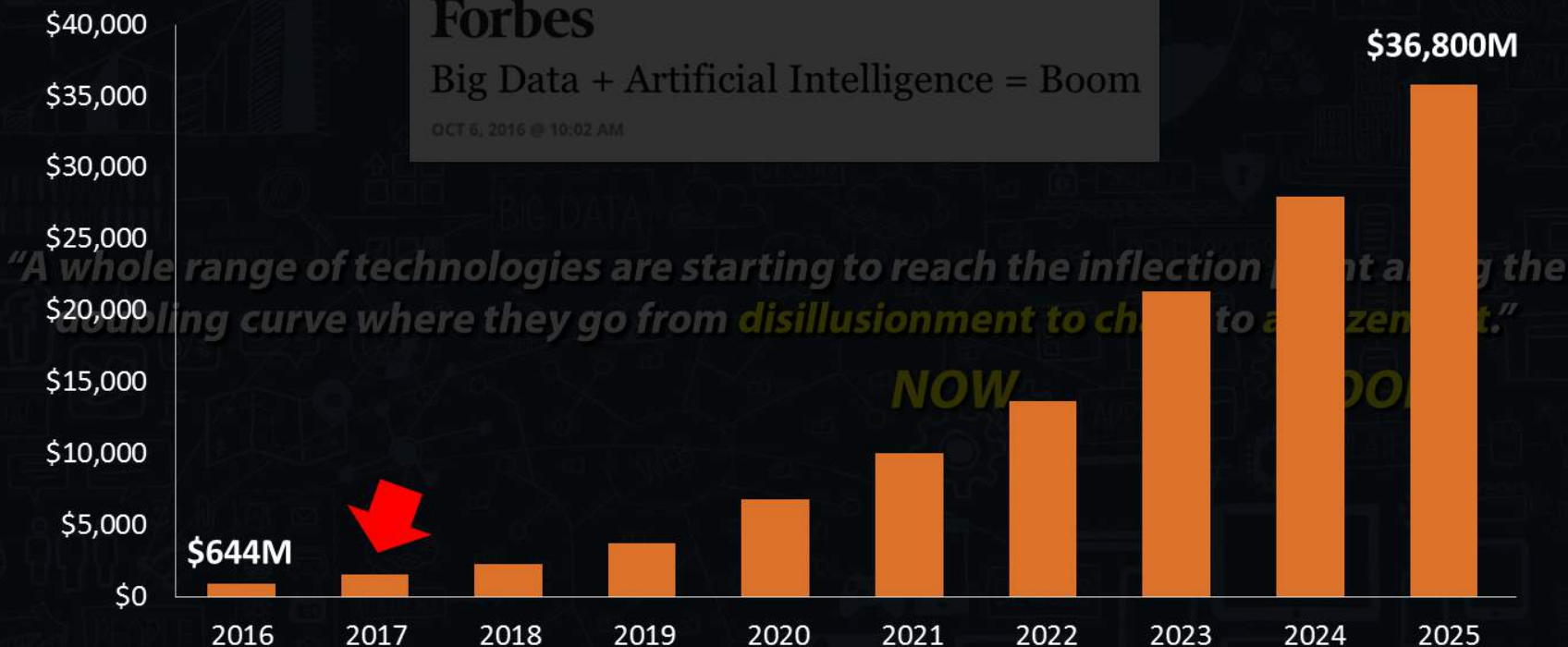
## Artificial Intelligence Revenue 2016 - 2025

Forbes

Big Data + Artificial Intelligence = Boom

OCT 6, 2016 @ 10:02 AM

(\$ in millions)



Source: Tractica



*We have to remind ourselves that the A.I. market is still very early, where marketers and vendors are currently experimenting with A.I. This graph reminds us of the programmatic advertising market in 2010 when marketers were first experimenting with that technology. But the market then took off and programmatic now represents about 2/3 of display advertising. We believe the same dynamic will occur with A.I.*

# A.I. Momentum



*"We are now witnessing a new shift in computing: the move from a **mobile-first to an AI-first world**. And as before, it is forcing us to reimagine our products for a world that allows a more natural, seamless way of interacting with technology."*

Sundar Pichai, CEO



*"These **big trends** are not that hard to spot (they get talked and written about a lot), but they can be strangely hard for large organizations to embrace. We're in the middle of an obvious one right now: **machine learning and artificial intelligence**."*

Jeff Bezos, CEO



*"Software is eating the world, but **AI is going to eat software**."*











Jensen Huang, CEO



*The above quotes speak for themselves on the importance of A.I. to these leading technology companies.*

# Data Is the New Oil

## Largest Companies by Market Cap

2007		2017*	
 PetroChina	\$707B		\$810B
	\$512B		\$659B
	\$375B		\$524B
	\$354B		\$465B
	\$339B		\$437B



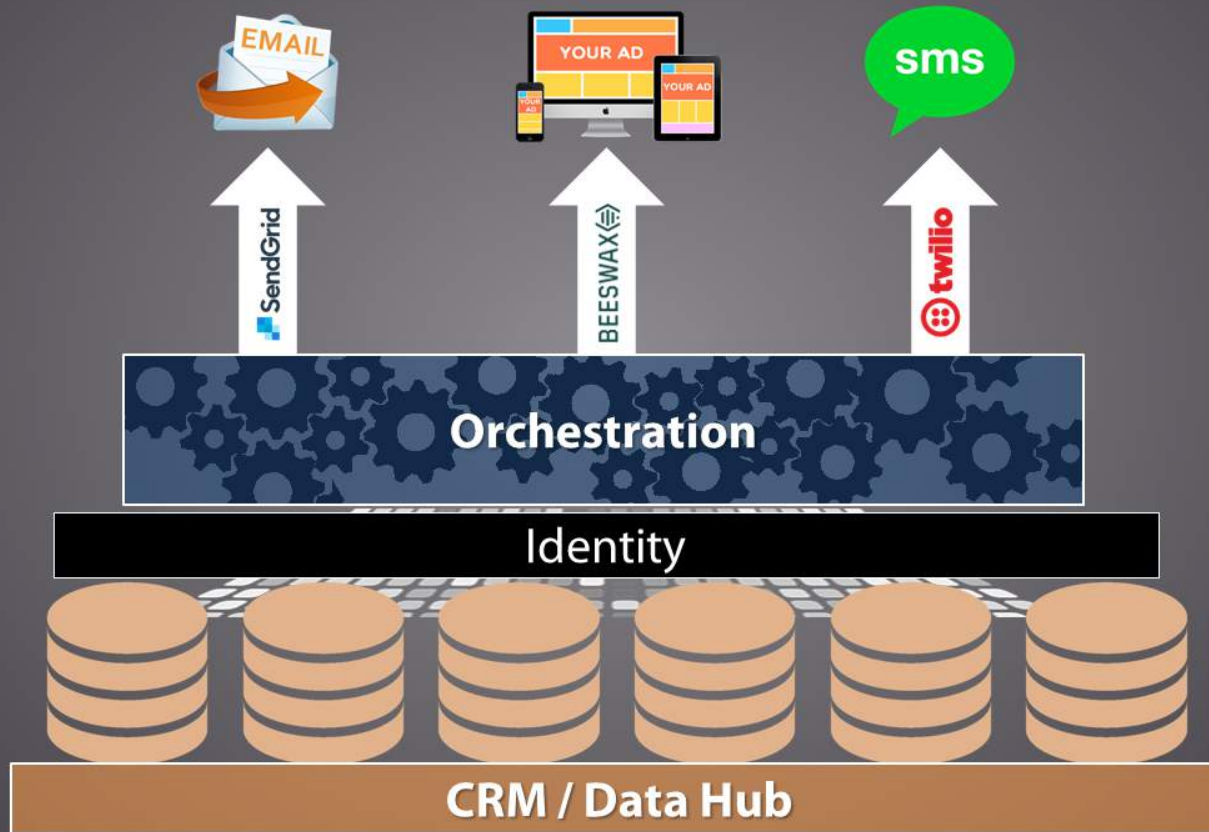
Source: Capital IQ, \*market data as of 5/19/2017



*It is very interesting to note that 10 years ago, the top two companies in the world by market cap were oil companies. Now, the top 5 companies are technology companies – all with massive amounts of data and all investing heavily in A.I.*



# Marketing Orchestration: Data + Identity + A.I.



*To wrap up this “data and identity” section, we believe that leading marketers will integrate their data sources and silos, likely using technologies such as a customer data platform. Identity will be a critical part of the stack in order to reach each consumer. And an “orchestration” layer, powered by A.I., will enable true omni-channel marketing, helping to optimize the customer experience with the right message at the right time to the right person.*

# COMMERCE



# Largest Ever E-Commerce Acquisitions

**PET SMART**

\$3.35 BN

 **chewy.com**

**Walmart** 

\$3.3 BN

**jet**

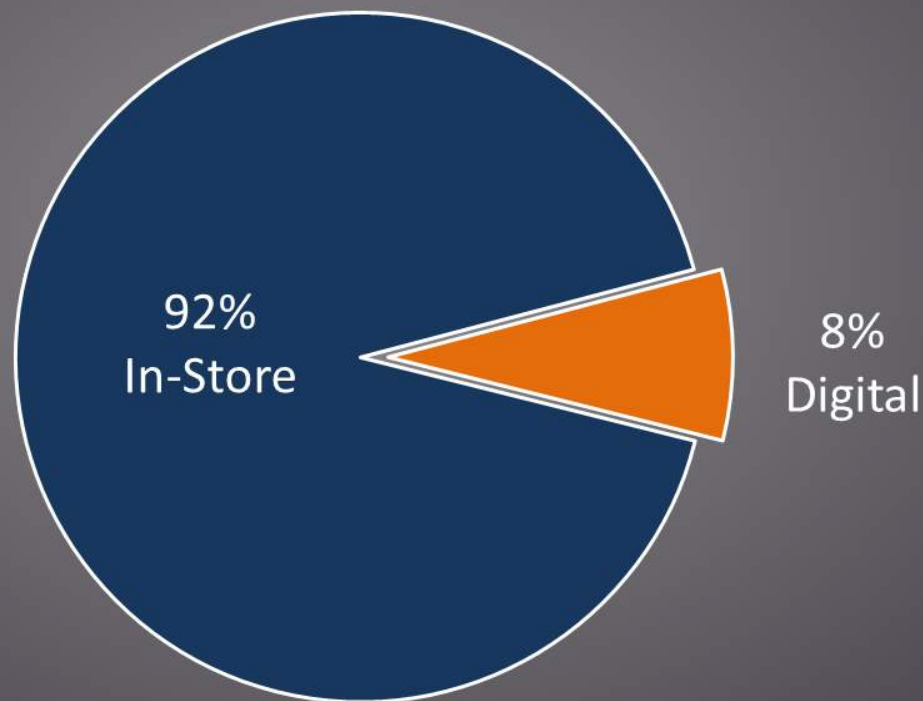


*Twice in the last 12 months, we've seen headlines about the largest E-Commerce transaction ever. First with Walmart's \$3.3 Billion acquisition of Jet and then more recently with PetSmart's \$3.35 Billion acquisition of Chewy. In both instances you had a large, traditional retailer with slowing growth, acquiring a high growth, innovative, digital-first counter part. We expect these types of transactions to continue as traditional retailers look for more digital touch points and increased innovation.*



# Yet, Retail is Still Overwhelmingly In-Store

U.S. Retail Sales



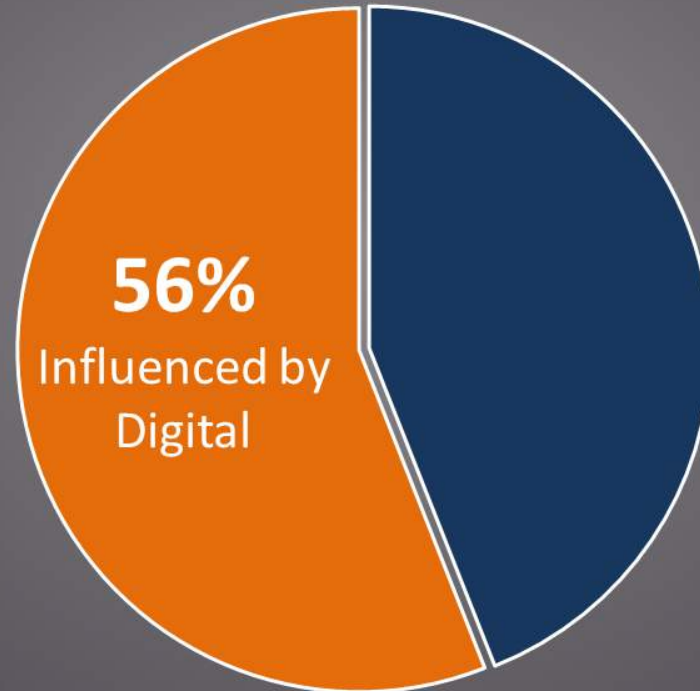
Source: U.S. Census

*Despite these large investments in E-Commerce, digital sales still make up a small percentage of total U.S. retail sales. According to data from the US Census Bureau, about 92% of all US retail sales still happen in stores. Digital sales are growing however and at a rate 3 to 4 times that of traditional retail - digital sales are expected to grow 8-12% this year, compared to ~3% growth for in-store sales.*



# The Shopping Experience is Changing

## Influence of Digital on U.S. In-Store Retail Sales



Source: Deloitte



*Over the last few years, Deloitte has conducted an annual study on the changing shopping experience and the influence that digital channels have on in-store purchases. This year, for the first time ever, Deloitte concluded that over 50% of in-store retail sales were influenced by digital channels. In 2013, digital influenced only 14% of in-store transactions. This growth has largely been driven by the proliferation of mobile devices and consumers continued use of these devices in all aspects of their lives.*

# Mobile is the New End Cap

U.S. Traditional In-Store  
Marketing Spend Annually  
**\$60B**



Source: Swirl Networks

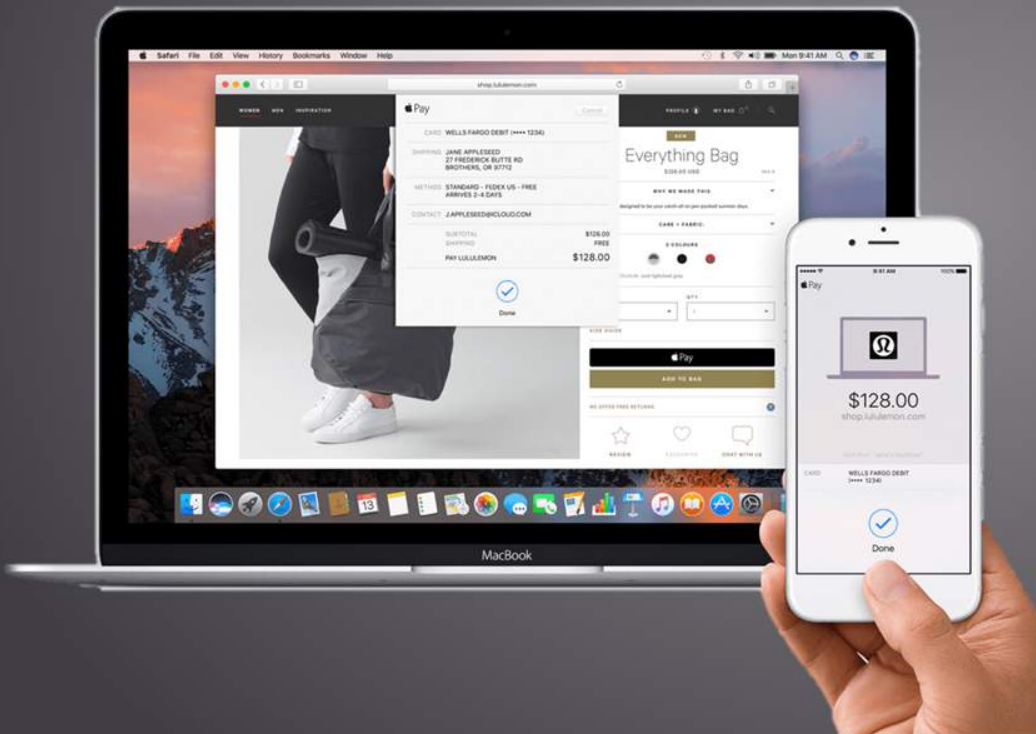
*The dramatic growth in digital influence could have significant implications for in-store marketing, an approximately \$60 billion market in the U.S., primarily for paper printed displays, end caps, and product placement. As mobile devices become common tools for shopping, mobile has the opportunity to essentially replace the end cap. How quickly and effectively mobile replaces the end cap, will be driven by advancements in location technology, consumer data platforms, and retailers' digital experiences.*



# Payments Further Fuse These Two Worlds

Online (Web & App)

In-Store



*Mobile payments further fuse these two worlds together and provide the opportunity to close the attribution loop from online to offline. Today, in-store mobile payments have not been widely adopted in the US, representing only 1% of total retail sales, according to a study done by Business Insider. However, volume is expected to pick up considerably, reaching \$503 billion by 2020.*



# The Retail Armageddon is Here...



## ...And Amazon is thriving



Source: CapitalIQ, market data as of 5/19/2017



*When it comes to commerce the biggest story continues to be Amazon's dominance at the expense of traditional retailers. Over the last few years, Amazon has continued to grow at staggering rates, while traditional retailers such as Target, Macy's, and Sears have seen declining revenues and declining market caps.*



# More Touch Points Than Traditional Retailers



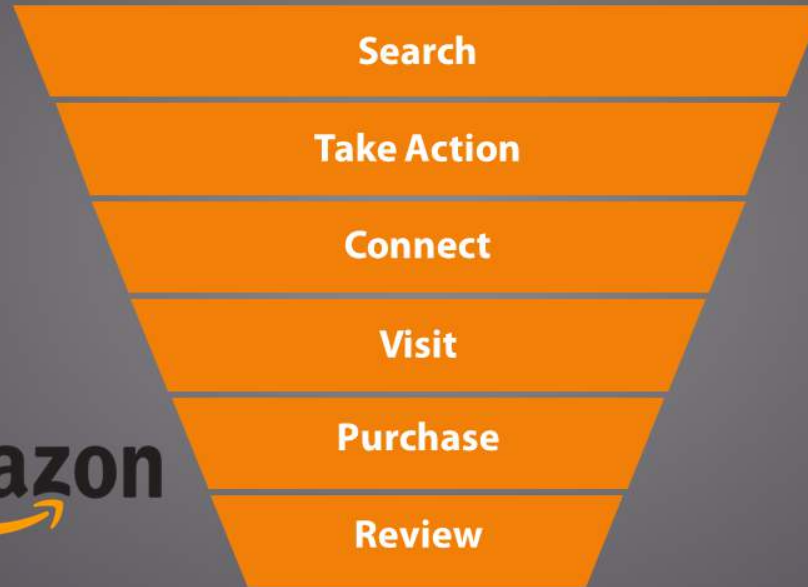
*One of the reasons Amazon has been so successful is that they have far more consumer touchpoints than most traditional retailers. Amazon leverages its many consumer touchpoints across desktop, mobile, and TV, in order to collect data on its consumers and enhance the customer experience.*



# Amazon is Displacing Search for Commerce

Google

amazon



*Amazon has been so good at leveraging this consumer data that they are even displacing Search. If you consider the digital purchase funnel, you tend to think of Google at the top of the funnel as the primary search engine and Amazon at the bottom for purchase and review.*



# Amazon is Displacing Search for Commerce



Source: Bloomreach



*However, according to a survey conducted by Bloomreach last year, Amazon is actually becoming the search engine of first resort when searching for products. Of those surveyed, 55% of US digital consumers go to Amazon to search for a product before going to other search engines or retailer sites. This is just another example of Amazon moving up the funnel, much the way they are now doing in advertising.*

# Alexa is a Game Changer



*Finally, we want to touch on the Amazon Echo and Alexa. We see Alexa as a total game changer for Amazon. While Amazon was by no means the first to voice assistants, they've used Alexa and their Echo products as a trojan horse into your home. They've priced their products in such a way that you could easily put one in every room of your house and have leveraged the fact that while most consumers don't normally talk to themselves in public, they are generally comfortable doing this in their own homes.*

# Driving Commerce and Eviscerating Brand



**Alexa, order me  
toothpaste.**



Scott Galloway

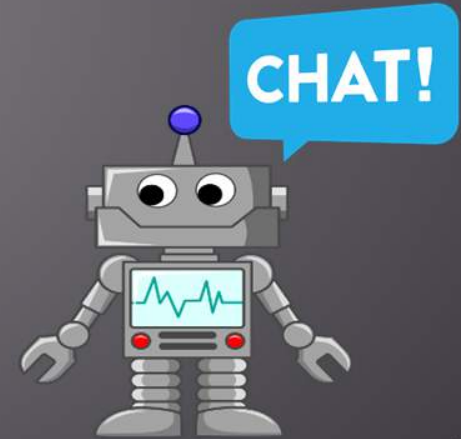


*Like all Amazon products, we expect Alexa to drive commerce. According to a test done by Scott Galloway at L2, Amazon is already incentivizing this practice by offering the products at cheaper prices through Alexa than Amazon's own website / app. This could have huge implications for brands, particularly CPG brands whose products tend to be low cost, tedious purchases, as Amazon attempts to train consumers to simply ask for a product, rather than a brand, such as "Alexa, buy me toothpaste".*



# CONVERGENT TV

# What's the Next Frontier?



*What's the next frontier? Is it virtual or augmented reality, A.I., bots, the Internet of Things, or self-driving cars? A.I. will be everywhere until it is ubiquitous, but while these other technologies are interesting and should be pursued in some instances, they will take awhile to grow meaningful adoption and traction in the market.*

# The Next Frontier Is in Your Living Room: TV



*In venture, being too early has the same return profile as being wrong so it is really important to look at near-term opportunities and the biggest opportunity in digital by far is already in your living room: television.*



# A Large Market Ripe for Disruption, Right Now



**\$73B**  
U.S. TV Ad Spend



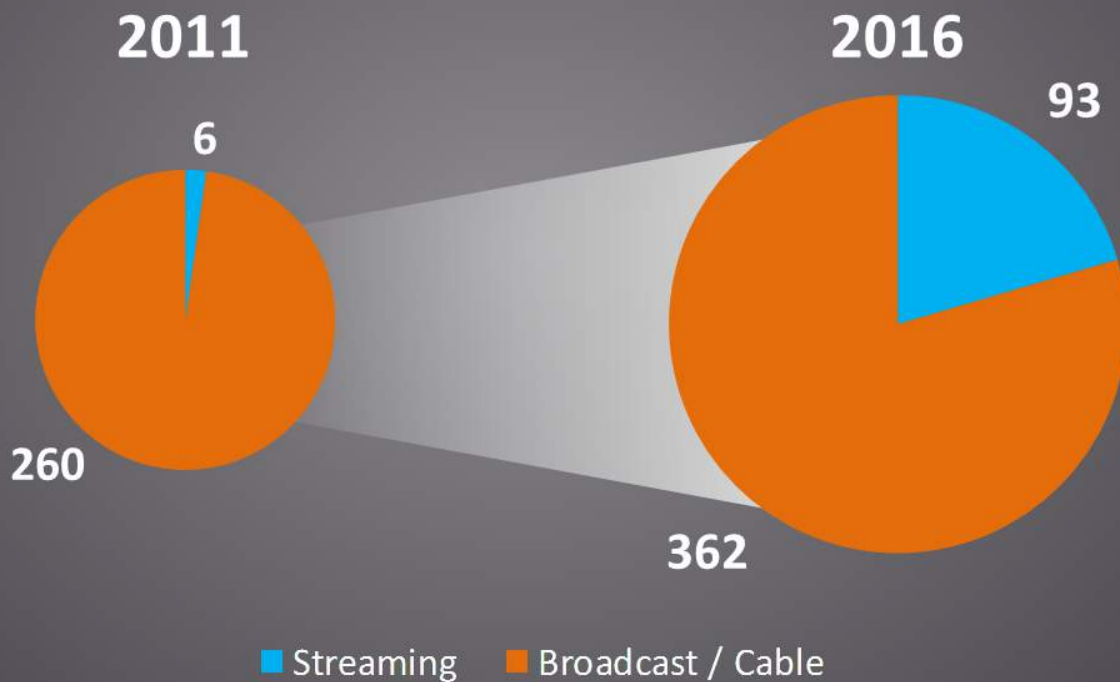
Source: eMarketer



*The coming digital transformation and addressability of television is a massive market over \$73 billion in the U.S. – right now.*

# The Golden Age of Content

## Original TV Scripted Shows



Source: FX Networks Research



*We are in the Golden Age of Content with an astounding increase in new shows and original content in a few years. And it isn't just about quantity. We have a better viewing experience now than what we had just 10 years ago.*



# Amazon and Netflix Outspending TV Networks

Estimated Content Spending in 2017



Source: L2



*Leading the charge are Amazon and Netflix, which are expected to significantly outspend traditional TV networks in original content this year. We expect these digital powerhouses to continue to invest heavily in content as they have generated huge returns from these efforts and are producing high quality programming that is being recognized by viewers and industry watchers.*

# Cord Cutting Is Accelerating

## FierceCable

Pay-TV has its worst Q1 subscriber losses ever; analyst pegs total carnage at 762K

by Daniel Frankel | May 3, 2017 12:32pm



*Contrary to the narrative coming from traditional TV stakeholders, cord cutting is not just a reality; it's also accelerating.*

# New OTT Options Emerging

DIRECTV  
NOW

hulu  
LIVE TV

You Tube TV

amazon.com  
Prime

CBS ALL ACCESS

HBO NOW

PlayStation.Vue

sling  
TELEVISION

NETFLIX



*For consumers who are cutting the cord and those who have never adopted traditional TV, there are now plenty of options that continue to get better. These alternatives, such as DirecTV Now, Hulu Live TV and YouTube TV aren't just offering great content and attractive price points, but they are also delivering better products with user-friendly interfaces and personalized experiences. Consumers can now experience "TV" in more than one way.*

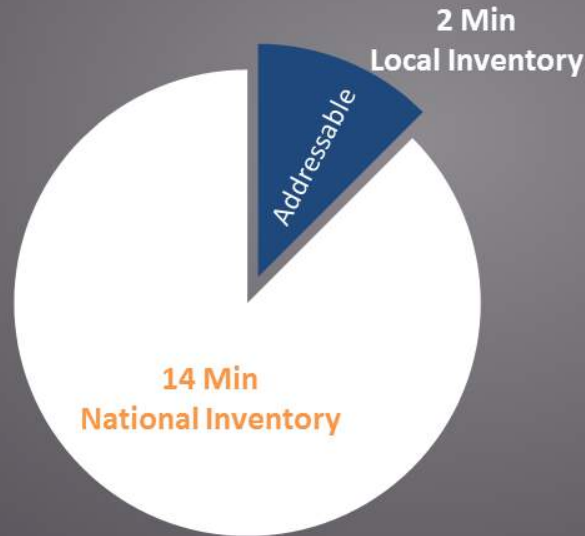


# Addressable TV Is Limited Today

Spend

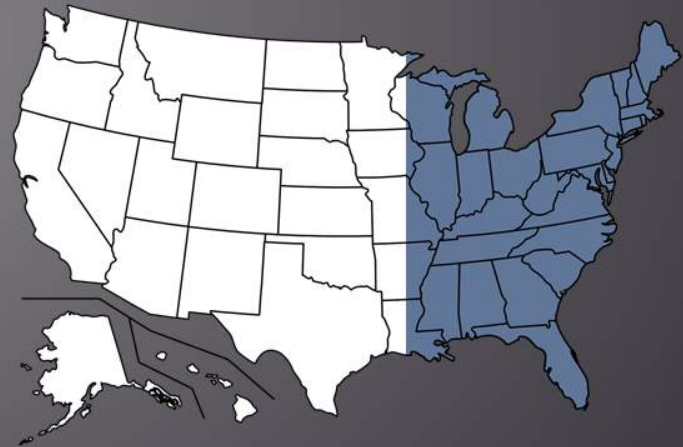
**\$890  
million**

Limited Inventory



Limited Households

**~42%** of TV households



*In linear, addressable TV advertising remains a sub-billion dollar market because it is limited by the 2 minutes of available local TV ad time and by MVPDs that have the proper technology deployed across the country, which is the minority. When you look at the true “addressable” market right now, it is only a fraction of all households in the U.S. In the future when national inventory becomes addressable and there is larger penetration of the required technology, addressable TV will become a massive market.*



# The Inflection Point Is Coming

## 3 Keys for Technology Adoption

1 DEMAND

2 SUPPLY

3 TECH IN THE RIGHT HANDS

## ADDRESSABLE TV

OmnicomGroup



dentsu

WPP

IFG



DIRECTV

dish COMCAST  
Spectrum▶

~50 MM

Households

COMCAST



visible world

AT&T  
WPP dish



INVIDI



*When we think about the inflection point that will drive the growth of addressable TV, we focus on demand, supply and getting technology in the right hands. When we look back to the rise of programmatic advertising, agencies found a large and profitable opportunity to grow their business with this new way of digital advertising while the ubiquity of digital inventory brought supply. Finally, we believe Google's acquisition of Invite Media was the catalyst to the market by getting technology in the right hands.*



# The Inflection Point Is Coming (Cont'd)

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INVIDI



*In addressable TV, we think the inflection point is coming. Agencies are positioned to make even more money in a market where supply is scarce and constrained. We are also seeing telco giants Comcast and AT&T acquire technology through the acquisitions of Visible World and INVIDI respectively and we expect more activity.*



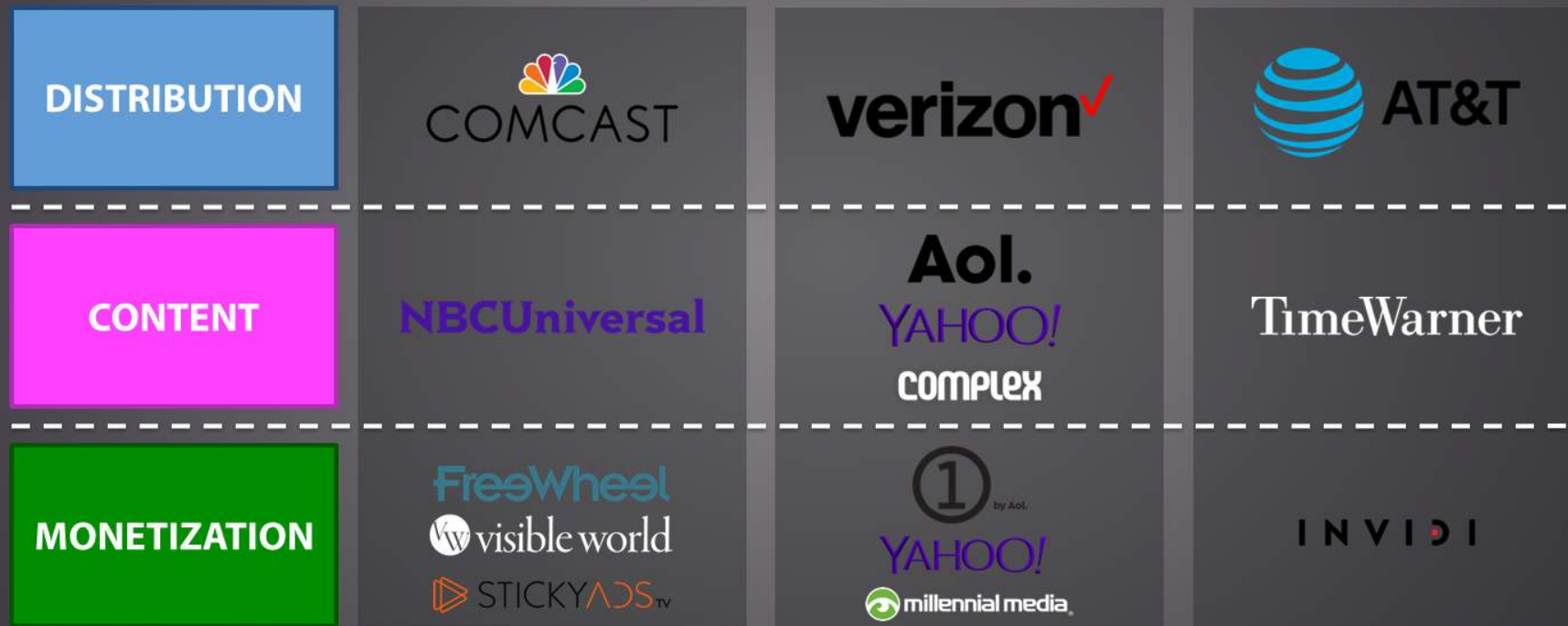


# The Battle for the Future of TV



*A massive opportunity is at stake here, which is why it's no surprise that there is an intense battle for the future of TV. The new entrants are taking an offensive approach to steal market share and the existing players are taking a defensive approach to maintain theirs. Digital companies are leveraging content and better products to get their way in while the incumbents are relying on regulation to secure their footing in the marketplace and M&A to acquire capabilities necessary to play in this future.*

# The Verticalization of Media



*Despite being on the defense, linear distribution has been actively pursuing the “verticalization” of media, where distribution firms are acquiring content and monetization technology to control the entire business. Comcast, Verizon and AT&T have been the most active with this strategy as they try to capitalize on the large opportunity in front of them. While they have not been sitting on their hands, we suggest that they lack sufficient digital monetization, which should lead to more M&A.*

# The Verticalization of Media (Cont'd)

## OTHERS?

DISTRIBUTION



CONTENT



MONETIZATION



*There are other players that are making moves into this arena as well. We expect to see more to continue.*



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