

The Media Monthly

OOH's Game-Changing Transformation Continues

By PJ Solomon's Mark Boidman, Managing Director, Ben Zinder, Associate Director and Christian Bernel, Analyst

- The OOH media industry continues to offer smarter, more digital media amplified by using location-based tech, bringing the industry through its most transformative period on record
- Though the industry has been replacing static boards with digital boards for years now, we are seeing an increased focus on implementing state-of-the-art digital screens, featuring higher pixel densities and LED technology, which together will allow for thinner, larger and brighter screens than ever before
 - Brands and OOH media companies have already seen increased user engagement and recall of digital screen advertisements

New Hardware & Software Implementations for OOH

- Displays can now be outfitted with different features, including cameras, proximity networking tech, Wi-Fi, and audience measurement software, enabling companies to collect information on the demographics of the audiences viewing their advertisements
 - Future ad tech will carefully hone in on where you have been, where you are and what you may do next, in order to develop consumer patterns in the form of a predictive algorithm
- A recent Toronto **Mazda** ad on a billboard loaded with crowd detection and facial recognition software maintained a tally of how many shoppers stopped to look at the advertisement
 - It was a clear success – within two days, the advertisement had turned 15,000 heads and received significant media attention
- Additional technologies that OOH media companies have begun to implement include smart chip technologies like radio-frequency identification (RFID), which leverages electromagnetic fields to identify and track tags attached to objects
 - However, the technology is quite flexible – RFID chips are rather small, and hence can be integrated into a number of surprising industries, including OOH media

Recent RFID Campaign Example

- Ogilvy recently executed a campaign for Battersea Dogs and Cats Home in East London's Westfield Stratford mall, where RFID chips were placed in leaflets handed out to shoppers across the mall; concurrently, several displays advertising Battersea Dogs and Cats Home were outfitted with RFID technology as well
- When shoppers passed one of the displays, the RFID chip embedded in their leaflets triggered the display to play a video of Barley, a dog up for adoption at Battersea, resulting in shoppers seeing Barley wherever they went throughout the mall
- Such advertisements highlight OOH media as a flexible medium that can have remarkable pull over consumers when leveraged by advertisers and is the only media channel that can be leveraged for such emotional, engaging and experiential advertising campaigns

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OOH's Game-Changing Transformation Continues (Cont.)

- Given the US's high smartphone penetration, mobile platforms represent a highly-coveted channel and a mostly unexplored opportunity for OOH media
 - A recent study by UK firm **Outsmart** showed that exposure to certain brands through OOH advertising dramatically increased consumer smartphone action related to these brands
 - OOH companies, in turn, have sought out brands to run cross-platform campaigns through both mobile and OOH
 - Concurrent with these developments, mobile marketers have begun leveraging location-based data to reach audiences on the go and better measure return on ad spending
 - To that end, PJ Solomon believes that the use of geo-temporal data is the newest revolution in OOH media, and for good reason – brands have demonstrated increased engagement of up to 60% with the use of geo-temporal data to create cross-platform campaigns within OOH media

Buying Side of OOH

- We've seen a continued shift from negotiated to programmatic buying in OOH media which, if successful, will revolutionize the way the media is bought
 - Programmatic buying allows brands to directly purchase and sell ad slots in real-time, simplifying the process and encouraging more brands to enter the media landscape
 - Algorithms and data analytics will provide brands with more programmatic buying opportunities, where brands can purchase ad slots based on views, audience, demographics and weather patterns
- While programmatic buying has met some resistance from industry giants and ad agencies need to adapt to this new buying method, major vendors are getting closer and closer to automation
- We think a middle ground exists between brands, OOH media companies and ad agencies, which in turn, will allow parties to apply data more productively and make informed, data-driven decisions
- As we move through the remainder of 2017, the ad market for OOH media looks strong as we see the OOH media channel innovate as other channels stagnate. With the industry's continued drive towards the future, OOH has transformed from a historically passive medium to an interactive, experiential media channel

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Leasing Billboard Space for Wireless Connectivity: OOH's Unexplored Frontier

By PJ Solomon's Mark Boidman, Managing Director, Ben Zinder, Associate Director and Christian Bermel, Analyst

- Among the various types of OOH advertising channels, billboards have a storied and long-standing history of carrying distinctive messaging visuals on behalf of brands and organizations big and small
 - However, an application that extends beyond advertising may be in the offing for this iconic platform, with significant revenue potential for OOH media companies
 - The typical locations of billboards and other OOH advertising structures include major thoroughfares, city centers and other high-traffic areas – all of which coincide with locations in which wireless communications companies are eager to boost signals for their customers
- With the advent of “small cell” technology (radio access nodes so named due to their small size relative to the larger macrocells commonly attached to cell towers), wireless communications companies are able to boost connectivity in areas where signals have traditionally been weak
 - Wireless companies need space to host this technology; billboards and transit shelters offer a perfect host for enhancing cellular reception
 - For OOH companies, leasing space for small-cell technology on these assets could represent a significant cost-minimal revenue stream
- Major OOH operators, including **OUTFRONT Media**, **Clear Channel Outdoor** and **JCDecaux**, have all signed deals in recent years with wireless infrastructure companies to manage these attachment opportunities
 - **OUTFRONT Media** signed an agreement with **Diamond Communications** in July 2015 to market the Company's leased and owned assets and assist in leasing billboards and other assets to wireless carriers
 - **Clear Channel Outdoor** teamed with **Vertical Bridge Holdings** in September 2015, giving Vertical Bridge exclusive rights to antenna and small cell deployment across CCO America's footprint
 - **JCDecaux** has been exploring the opportunity in a big way, with a number of wireless contracts signed globally
 - In January 2016, the Company signed a multi-year agreement with **Verizon Wireless** to deploy Verizon's 4G LTE small cells across its street furniture assets in the USA
 - More recently, it signed a 10-year agreement with **Vivo** to deploy small cells on its street furniture assets in Brazil

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Leasing Billboard Space for Wireless Connectivity: OOH's Unexplored Frontier (Cont.)

Privacy Concerns

- Users that connect to small cell wireless networks may be exposing their identity and location to the telcos that control small cell technology
 - Because of the narrower range of small cell technology, location data from the use of a cell can place a user in a very precise location
- Although some consumers may welcome this as an acceptable trade-off to receiving improved connectivity in a place previously bereft of it, it may bother others unwilling or unprepared to forgo privacy for better service
- For telecom carrier companies, the data is invaluable; companies could begin monetizing it to subsidize the buildout of the technology and rents paid to OOH companies
- It is worth noting that if collected, such data would likely be aggregated and anonymized
 - For this reason, we do not see concern over potential infringement on individual user privacy as a stumbling block to widespread implementation of small cell technology

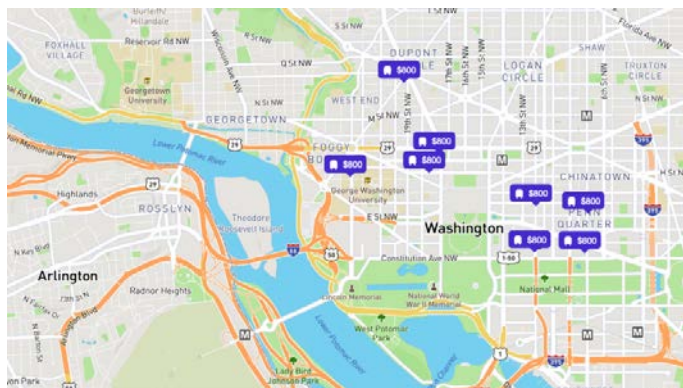
A Still Untapped Opportunity

- While the opportunity for OOH media operators to provide billboard structure space shows promise, the process of leasing space is still in its early stages
 - In an August 2016 earnings call, OUTFRONT Media CFO Donald Shassian noted, “It’s fair to say, right now, that the income that’s hitting our revenue numbers is somewhat de minimis.”
 - He went on to report that the Company was working with multiple tenants on master license agreements with wireless carriers and cable tenants
 - OUTFRONT CEO Jeremy Male echoed this statement at a Goldman Sachs event in September 2016: “Right now the dollars are relatively small and the interest is relatively high.” However, he did allude to future profitability: “We think this is a 50% EBITDA business,” Male told attendees
- As smart phone proliferation continues and wireless connectivity becomes even more integral to daily life, we expect that wireless companies will look increasingly to leasing space on billboards in order to meet consumer demands for enhanced cell service

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AdQuick Attracts \$1.1 million for Expedia-Like Platform for Outdoor Advertising

- **AdQuick**, a Venice, CA-based technology company, raised a \$1.1 million seed round to help bring the outdoor and billboard advertising industry online by collecting new metrics for the effectiveness and reach of outdoor advertising, helping marketers better understand their work in a once data-poor ad channel
 - Investors include **Initialized Capital** (former **Y Combinator** partners Garry Tan and Alexis Ohanian), **VTF Capital** (founded by Tony Hsieh of **Zappos**) and **Haystack Ventures**
 - OOH advertising accounted for \$7.6 billion of the \$196 billion US ad spend in 2016, according to *eMarketer*
- The Company allows brands to plan, build, book and track their outdoor advertising campaigns all within AdQuick's platform
 - Making the experience easier has led to strong traction with bookings growing at over 150% per month, including early customers such as **H&R Block**, **Lyft**, **Peloton**, **Instacart** and **OVO/Drake**
 - AdQuick created a shortcode for **Orange Theory Fitness** that allowed ad viewers to text 'Fitness' to 47711 to receive a coupon for free classes, resulting in 4 new members and 594% ROI on the \$800 ad
- On the mentor vendor side, AdQuick has built technology to bring smaller, low-tech vendors online and give brands an easy way to find that inventory
 - Vendors as geographically diverse as **View Outdoor** (Chicago), **Angel Media** (Manhattan), **Circle City Outdoor** (Indianapolis) and **New South Outdoor** (Alabama) have all embraced AdQuick as an online channel for broader distribution
- On the analytics side, AdQuick measures an ad's effectiveness by creating campaign-specific shortcodes, integrating with Google Analytics and AdWords, conducting geotargeted surveys and using image recognition on social media to detect when people are sharing images of the ad
- The founding team hails from **Instacart**, where they built technology to help connect offline retailers to online buyers and frequently experienced frustration with the status quo of buying outdoor advertising
 - Other companies in the space function more like traditional agencies, relying on e-mail, spreadsheets and Powerpoints to plan and execute campaigns, where ad-buyers rarely get a clear sense of what all their options are – or whether their campaigns are actually paying off



Source: Billboard Insider, TechCrunch and Company website.

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60% of Video Plays on Mobile in 2017, Representing 10% Boost from Last Year

- According to the *Ooyala Global Video Index* report, more than 50% of all video plays were on mobile in 2016 for the first time; that number is expected to rise to 60% in 2017
- The state of the media industry shows that data-driven video and advertising are changing the game for all kinds of media brands and companies, helping give consumers personalized video in more places and ways while opening new fronts and monetization opportunities in the ever-growing social and mobile markets
 - Video is proving to be the best way to satisfy media content that consumers want: Immediacy, Individualization, Interactivity and Immersion

Consumers

- Mobile surpassed desktops last year for internet consumption globally, although viewing habits still vary by global region in part to market device penetration, content and broadband availability differences
 - In the US, mobile digital video will take up 31 minutes of the average viewer's daily media time, up from nine minutes just five years ago, according to *eMarketer*

Industry

- The rise of mobile and social video brings the industry new opportunities and challenges
 - Look for data to help publishers further refine offerings and understand exactly who, what, where, how and why their video is being consumed and how to best optimize and monetize it going forward

Technology

- Technology has continued to alter the landscape of media – humans and machines are becoming more interchangeable in many areas as data-driven automation rises
 - This is speeding the creation and dissemination of video content, just as more advances are making it possible to place audiences in the middle of all the action

Content

- Publishers are finding that live video not only sets them apart, but sets them free to explore new ways of sharing information and telling stories in the moment
 - Live video streaming is now a key point of differentiation among media companies, as video streaming on mobile is expected to rise 39x by 2021, according to a new *Cisco Visual Networking Index* report

Advertising

- Data-driven practices are helping to hone new ad formats and overcome some of the industry's growing pains around ad avoidance and accountability – along with rising threats from social players
 - According to *eMarketer*, US adults now spend over an hour of their daily media time with digital video and US ad spending on instream digital formats is expected to increase by over 19% YoY in 2017
 - The Magna Global Advertising Revenue Forecast shows that programmatic grew from \$14.2 billion in 2015 to \$19.5 billion one year later and is expected to hit \$36.8 billion in 2019

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Online Shopping Wins for Convenience and Selection

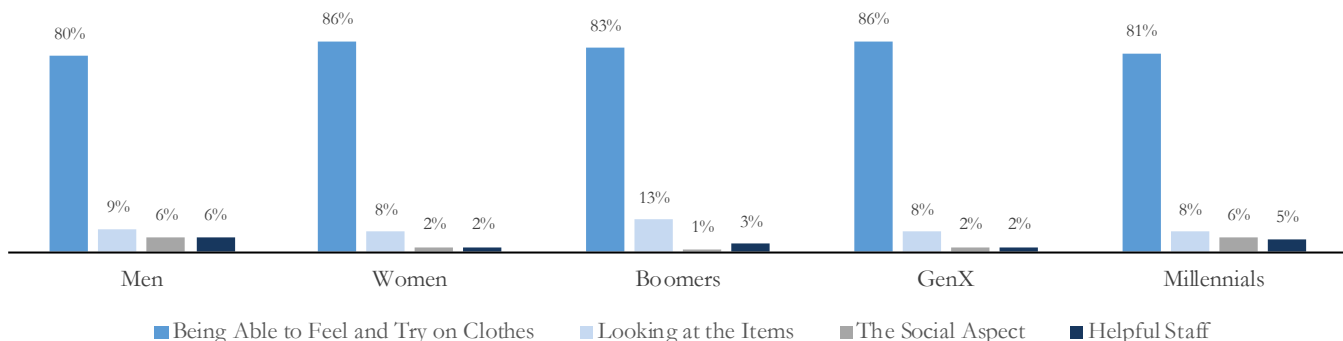
- According to a study of 1,000 men and women, most people shopped as much online as they did in a physical store location
 - While some people only shopped online or in-store once every couple months, women who shopped multiple times a week were more likely to do so online versus a brick-and-mortar store
- Women who made purchases at least three times a week were slightly more likely to shop online while men shopping at this volume didn't appear to have a preference when it came to in-store and online shopping
 - In 2014, shoppers in the US spent over \$320 billion on clothing, shoes and accessories. By 2021, it's estimated more than \$96 billion of the total retail industry will be spent online

Top Reasons for Shopping Online



- The number one reason for women and men to shop at a physical location was to feel and try clothes on before purchasing
 - This preference has inspired new online clothing retailers to experiment with helping customers try on clothes without ever leaving their home
 - Some companies have gone so far as to create lifelike 3-D models that use customers' measurements to visualize how clothes might look
- Very few would-be customers said the social aspect of shopping or customer service swayed their decision to shop in-store rather than online

Favorite Reasons to Shop in Stores



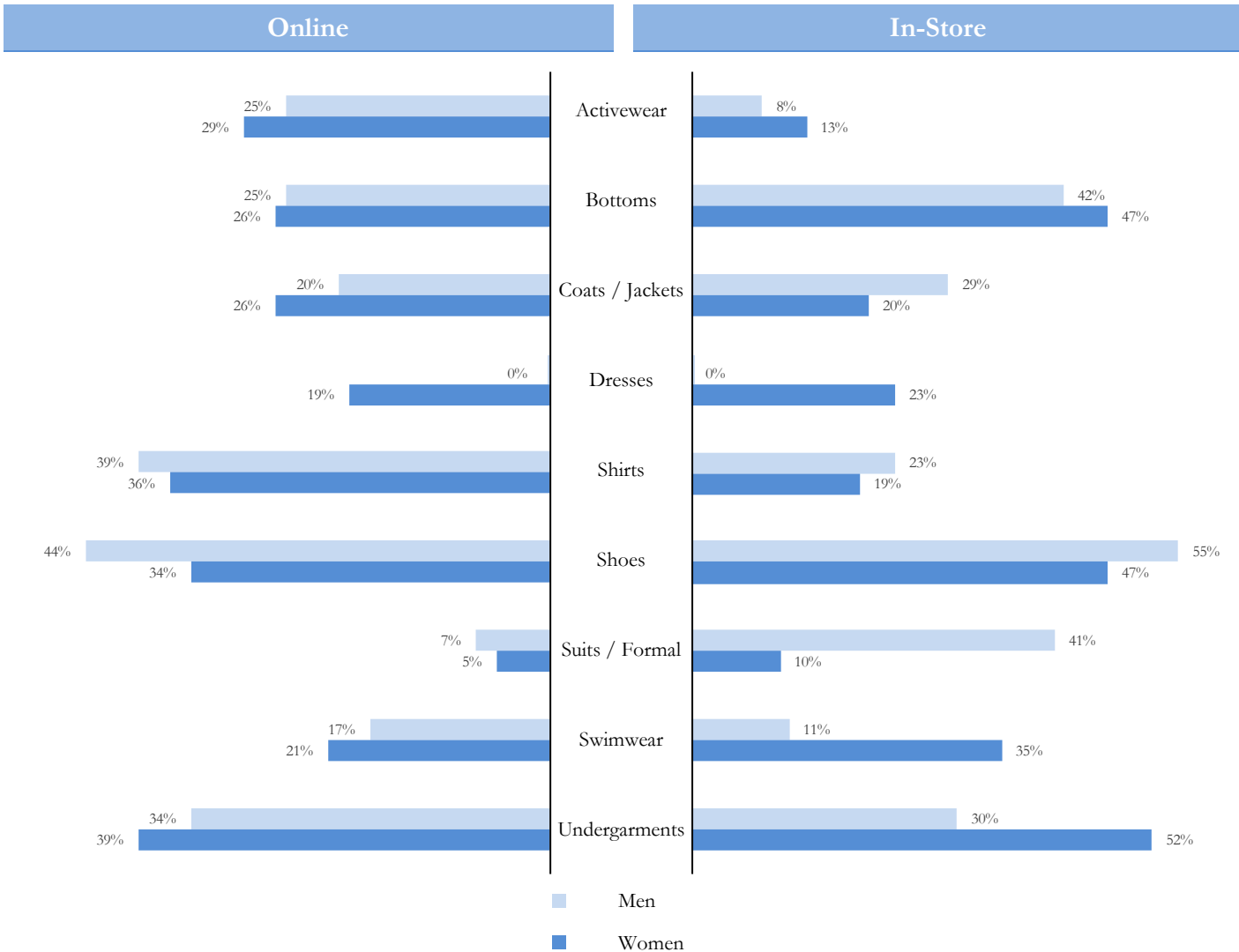
Source: MediaPost, Ooyala Global Video Index, eMarketer and Cisco Visual Networking Index.

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Online Shopping Wins for Convenience and Selection (Cont.)

- More people today are shopping online rather than in-store and people who shop online are more likely to return their purchases
 - Thirty-nine percent of women would rather buy their undergarments online – the highest percentage of women in any online shopping category
- Millennials have been found to be both frugal spenders and less likely to take big risks in life, which may contribute to their lack of decisiveness when shopping for new apparel
 - Millennials were the most likely to always or often return their online purchases
- The survey also found baby boomers were the most likely of any demographic to rarely return their online purchases

Items People Prefer Buying Online and In-Store – By Gender



Source: MediaPost, Ooyala Global Video Index, eMarketer and Cisco Visual Networking Index.

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Sector News

OOH Media

- 8/15: **Branded Cities Network**, an OOH and media company in North America, announced the strategic acquisition of **Clear Channel Outdoor's** 50.001% interest in Clear Channel Outdoor Canada – thereby becoming the 100% owner of Clear Channel Outdoor Canada
- 8/4: **Lamar Advertising**, an owner and operator of outdoor advertising and logo sign displays, announced it acquired the assets of **Steen Outdoor Advertising** for an undisclosed sum
- 8/4: **PatientPoint**, which engages in patient and physician engagement solutions, announced the acquisition of digital oncology waiting room provider, **Patient Education Network (PEN)**
- 8/1: **WPP's** global OOH media and experimental market division, **tenthavenue**, invested in start-up company **LOOM Media**, which specializes in creating opportunities for brands to sponsor urban innovation
- 7/27: **The Gores Group**, a global investment firm, announced that it completed the acquisition of **AMI Entertainment**, a US provider of entertainment solutions to bars, restaurants and nightclubs
- 7/18: **JCDecaux**, a global outdoor advertising company, announced its subsidiary, JCDecaux Belgium, renewed the 7 year exclusive concession for **Brussels Airport**, following a competitive tender
- 7/14: **Tamedia**, a private media group, announced its plan to acquire a majority stake in **Neo Advertising SA**, an OOH company
- 6/28: **PatientPoint** announced it raised \$140 million in capital from private investment firms **Searchlight Capital Partners** and **Silver Point Capital** to expand the digital footprint of its point-of-care networks
- 6/14: **OUTFRONT Media**, an OOH media operator, announced its acquisition of **Dynamic Outdoor**, a Canadian portfolio of digital billboards from **All Vision** for \$94.4 million

Radio / Music

- 8/11: **SoundCloud**, the streaming music company, raised ~\$170 million at a \$150 million pre-money valuation from **Temasek Holdings** and **The Raine Group**, in order to keep the music service afloat
- 8/9: **Olympus Capital Holdings Asia**, along with **UOB Venture Management Private Limited**, acquired a controlling stake in **Yuanyu Advertising**, a China-based advertising and radio broadcasting company, for a consideration of \$90 million
- 8/3: **Entercom**, the fourth-largest radio broadcasting company in the US, purchased a 45% stake in **DGital Media**, a creator of personality-based podcasts, as part of a strategic partnership
- 8/2: Veteran broadcaster **Jon Kelly** announced he will pay nearly \$32 million for the 65% of **SummitMedia**, which owns radio 23 stations, that was previously owned by private equity firm **HighPoint Holdings**
- 7/31: Streaming music service, **Spotify**, updated its website to reflect it has over 60 million paid subscribers, nearly doubling the size of **Apple's** Apple Music service, which boasted 27 million paid subscribers as of June
- 7/24: **Jana Partners**, an activist hedge fund, took an undisclosed investment in **Pandora**, a California-based online music platform, seeing the stock as under-valued with opportunity to grow its advertising revenue
- 7/14: **Warner Music Group** announced its acquisition of the concert discovery application from **Songkick**, the award-winning live music platform that attracts 15 million fans a month
- 6/9: **SiriusXM**, a New York City-based radio company, made a \$480 million strategic cash investment in **Pandora**
- 6/9: **Eventbrite**, a global ticketing and event technology platform, agreed with **Pandora** to acquire **Ticketfly**, a ticketing platform focused on music promoters and venues for \$200 million

Source: Company press releases and Wall Street research.

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Sector News

Broadcasting / Telecommunications

- 8/7: **iflix**, a Subscription Video on Demand (SVoD) service for emerging markets, announced it completed a \$133 million funding round led by **Hearst**, the US-based diversified media company
- 8/2: **Sierra Wireless**, a Canadian provider of fully integrated device-to-cloud solutions agreed to acquire **Numerex**, an Atlanta-based wireless equipment maker for \$107 million
- 8/2: **NEP Group**, an outsourcer of tele production services, acquired **Vitec Broadcast Services (Bexel)**, the US-based company providing broadcasting services and equipment rental services, from **Vitec Group** for a cash consideration of \$35 million
- 8/1: **Verizon** announced a definitive agreement to buy fiber-optic network assets in metro Chicago for \$225 million from **WideOpenWest**, the telecom company in Englewood, Colorado
- 8/1: **The EW Scripps Company**, a Cincinnati, Ohio-based television, radio and digital media company, agreed to acquire Marietta, Georgia-based **Katz Broadcasting** for \$292 million
- 7/31: **Discovery Communications** and **Scripps Networks Interactive**, a developer of lifestyle content in the home, food and travel categories for TV, announced that they have signed a definitive agreement for **Discovery** to acquire **Scripps** in a cash-and-stock transaction valued at \$14.6 billion or \$90 per share
- 7/21: **Entravision Communications Corporation**, a diversified media company serving Latino audiences, announced its agreement with **OTA Broadcasting** to acquire the **KMIR-TV** and **KPSE-LD** stations serving Palm Springs, CA for \$21 million
- 7/10: **Cogeco Communications** announced that its subsidiary, Atlantic Broadway, entered into a definitive agreement with **Harron Communications** to purchase all of its cable systems assets operating under the MetroCast brand name for a total consideration of \$1.4 billion
- 7/10: **Cincinnati Bell**, the local exchange and wireless service provider, agreed to acquire **Hawaiian Telcom**, the US-based telecommunications company providing integrated communications, broadband, data center and entertainment solutions, for \$640 million
- 6/19: **Vice Media** raised an additional \$450 million in funding from **TPG**, placing its value at \$5.7 billion
- 6/12: **Altice USA**, the American cable-TV unit of Altice NV, announced it will pursue an IPO, which could raise as much as \$1.4 billion, to make potential strategic acquisitions
- 6/5: **Eight Dragons** announced its joint venture with **Press Media Group**, a multicultural streaming and entertainment platform provider, to create a content driven company serving its audience via independent fee-based streaming services and ad-based sales
- 6/2: **AT&T** announced its purchase of the **Vyatta** network assets from **Brocade Communications Systems**, a San Jose, California-based data and storage networking products maker, for an undisclosed sum
- 6/1: **Norsat International**, a provider of communication solutions, announced that it agreed to acquire Hytera Project, a subsidiary of **Hytera Communications**, for \$69 million
- 6/1: **Trans-High Corporation**, the New York and Los Angeles-based owner of **High Times**, sold a 60% stake to an **Oreva Capital** based investor group for \$42 million

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Sector News

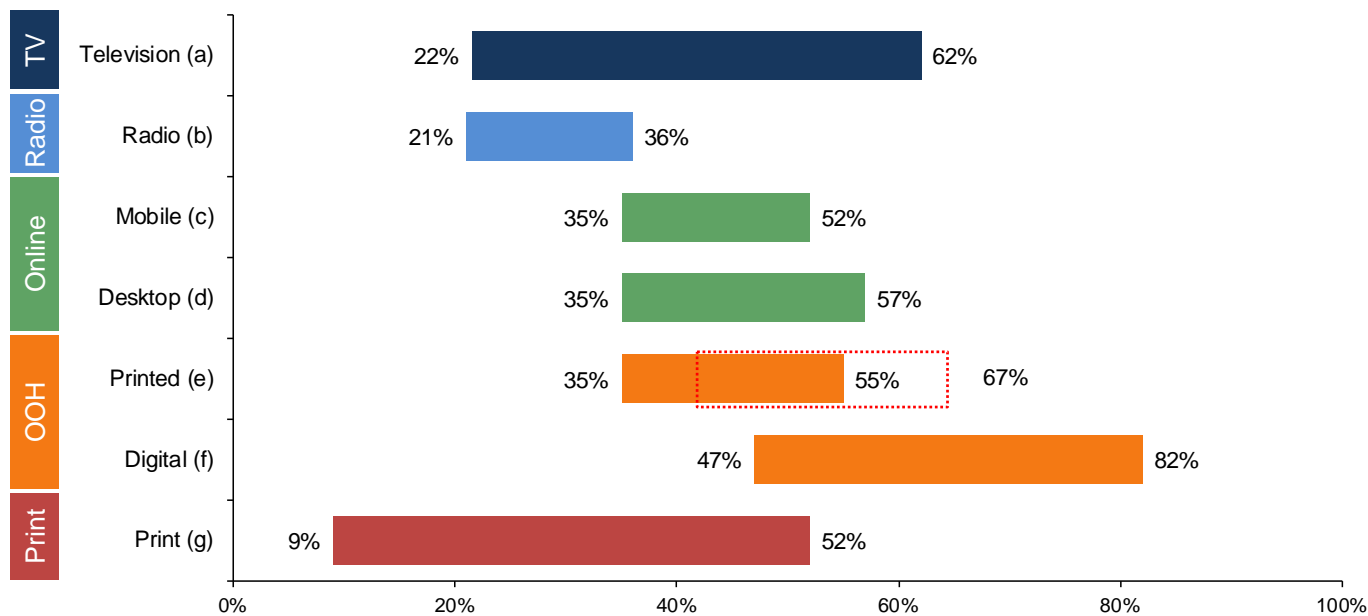
Other Key Digital Media and Tech Headlines

- 8/10: **Coinbase**, the San Francisco-based bitcoin exchange, secured a \$100 million Series D round led by **IVP** with participation from **Spark Capital, Greylock Partners, Battery Ventures, Section 32** and **Draper Associates**
- 8/7: **Netflix** announced its acquisition of **Millarworld**, the comic book publishing founded by Mark Millar, the creator of characters and stories such as Kick-Ass, Kingsman and Old Man Logan
- 8/3: **GrubHub**, an online and mobile food ordering company, and **Yelp**, a company that connects people with local businesses, announced a long-term partnership, whereby GrubHub will acquire Yelp's Eat24 business for \$287.5 million in cash and Yelp will integrate GrubHub's delivery service on its existing platform
- 8/2: **RealPage**, a multinational corporation that provides property management software solutions, acquired nearly all of the assets of **On-Site Manager** for ~\$250 million in cash
- 8/2: **Symantec**, a global cyber security company, agreed to sell its web verification business to **Thomas Bravo**-backed **DigiCert**, a provider of scalable identity and encryption solutions, for \$950 million
- 7/27: **Verisk Analytics**, a data analytics company, announced the acquisition of **G2 Web Services**, a provider of merchant compliance monitoring and e-commerce risk management services, from private equity firm **Primus Capital** for \$112 million
- 7/24: **Internet Brands**, a **KKR** portfolio company, announced its acquisition of **WebMD**, an online source of health information, for \$2.8 billion or \$66.50 per share
- 7/20: **Parthenon Capital Partners**, the US-based private equity firm, acquired **Etix**, the US-based provider of ticketing software and solutions
- 7/18: **Sizmek**, a portfolio company of **Vector Capital**, announced its acquisition of **Rocket Fuel**, a predictive marketing platform, for \$2.60 per share in cash, representing an EV of \$145 million
- 7/12: **Spectrum Equity Management**, a US-based private equity firm, acquired a majority stake in **Bitly**, a US-based company that helps users collect and share links on the internet, for a consideration of \$63 million
- 7/6: **Liberty Interactive**, the US-based company engaged in video and internet commerce businesses, agreed to acquire the remaining 61.8% stake in **HSN** for an enterprise value of \$2.6 billion
- 7/3: **Bankrate**, an online publisher of personal finance content, announced it will be acquired by **Red Ventures**, a digital consumer choice platform, in a \$1.4 billion all-cash transaction
- 6/29: **Bison Capital**, a Hong Kong-based investor in film and TV, agreed to acquire a majority stake in **Cindigm**, a developer of custom content solutions to retail, media and technology companies, for \$30 million
- 6/19: **Amazon** agreed to acquire **Whole Foods Market** for \$42 per share in an all-cash transaction valued at ~\$13.7 billion
- 6/16: **Walmart** agreed to acquire the New York fashion retailer **Bonobos** for \$310 million
- 6/7: **Pinterest** value increased to \$12.3 billion after a \$150 million funding round from existing investors
- 6/5: **OpenText**, a Canadian business software firm, acquired **Covisint**, a Detroit, Michigan-based cloud platform for \$103 million
- 6/2: **Sage**, the UK-based provider of accounting, payroll and payments services, sold its North American Payments business, **Sage Payment Solutions**, to private equity firm **GTCR** for \$260 million

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Advertising Effectiveness – PJSC Study and Recall Comparison Analysis

- Based on PJSC independent study of the five primary advertising channels
- Advertising recall defined as advertising effectiveness in which respondents were exposed to an advertisement and then at a later point in time, respondents were asked if they remembered the advertisement on an aided or unaided basis



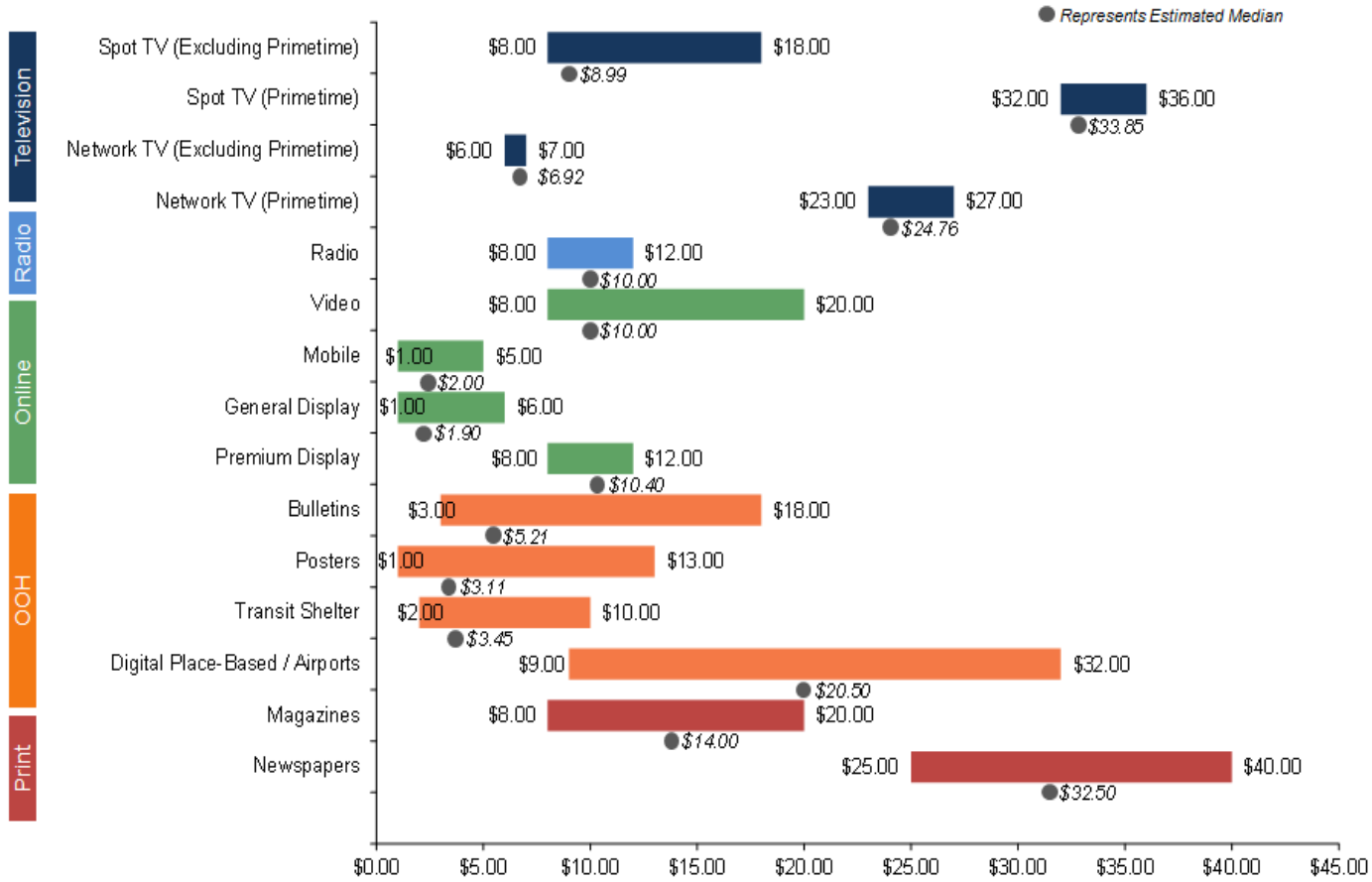
Source: Peter J. Solomon Company Study as of March 2017 and Wall Street research.

Note: Ranges shift depending on aided vs. unaided recall basis, length of time for recall and sample size / nature and scope.

- (a) Includes linear and non-linear television.
- (b) Includes terrestrial and non-terrestrial / streaming radio, including either analog radio or digital audio over a variety of radio formats (broadcast, simulcast, satellite radio, internet radio, via streaming, media on the internet).
- (c) Includes interactive and non-interactive banner ads that appear embedded in mobile websites, downloaded apps or in mobile games on smartphones and tablets. Does not include text ads via short message service (SMS).
- (d) Includes all forms of desktop display advertising on websites, including text, image, flash, video and audio.
- (e) Includes all forms of outdoor advertising, including billboards, posters, wallscapes, rotary programs, transit, airport advertising and in retail venues. Dotted box indicates revenue-weighted composite of printed and DOOH channels.
- (f) Includes digital media used for marketing outside of the home and includes digital billboards, digital placed based networks and digital signage.
- (g) Includes advertising in newspapers, magazines, directories and circulars.

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PJSC US Major Media CPM Comparison



CPM (Cost Per Mille or Cost Per Thousand) is a commonly used measurement in advertising. Radio, television, newspaper, magazine, OOH advertising and online advertising can be purchased on the basis of showing the ad to one thousand viewers. It is used in marketing as a benchmarking metric to calculate the relative cost of an advertising campaign or an ad message in a given medium.

The cost per thousand advertising impressions metric (CPM) is calculated by dividing the cost of an advertising placement by the number of impressions (expressed in thousands) that it generates. CPM is useful for comparing the relative efficiency of various advertising opportunities or media and in evaluating the overall costs of advertising campaigns.

Source: Peter J. Solomon Company estimates as of July 2016 based on SEC filings, news, research and other industry sources.

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Market Indicators

	8/21/17	Performance		
		% off 52	1-Month	YTD
		Week	%	%
		High	Change	Change
Nasdaq Composite	6,213	(3.3%)	(2.7%)	15.4%
Dow Jones Industrial	21,704	(1.9%)	0.6%	9.8%
S&P 500	2,428	(2.1%)	(1.8%)	8.5%

	Bloomberg Economic Forecast					
	3Q17E	4Q17E	1Q18E	2Q18E	3Q18E	
Real GDP	2.10 %	2.20 %	2.50 %	2.40 %	2.30 %	
Core CPI	1.90	1.80	1.70	2.20	2.30	
Fed Funds	1.25	1.50	1.60	1.85	2.00	
3 Mo. LIBOR	1.37	1.55	1.71	1.91	2.10	
10 Yr Treasury	2.40	2.56	2.70	2.81	2.90	
Unemployment	4.30	4.30	4.20	4.20	4.20	

Share Price Performance

	Stock Price	1 - Month %	YTD%
	8/21/17	Change	Change
Out of Home Media			
APG SGA	\$431.04	(11%)	(2%)
AirMedia Group	2.59	5%	5%
Clear Channel Outdoor	4.05	(20%)	(20%)
JCDecaux	33.61	(0%)	14%
Lamar	64.57	(11%)	(4%)
National CineMedia	5.45	(27%)	(63%)
OUTFRONT Media	22.05	(4%)	(11%)
RMG Networks	1.96	(31%)	(32%)
Ströer	65.84	7%	50%

Out of Home Median		(11%)	(4%)
Out of Home Mean		(10%)	(7%)

Broadcasting			
Entertainment	\$5.55	(19%)	(21%)
Gray Television	13.85	(4%)	28%
Nexstar Broadcasting Group	60.30	(7%)	(5%)
Sinclair Broadcast Group	29.25	(15%)	(12%)

Broadcasting Median		(11%)	(9%)
Broadcasting Mean		(11%)	(3%)

Diversified Media			
CBS	\$65.01	(1%)	2%
Discovery	22.34	(16%)	(18%)
Disney	101.17	(6%)	(3%)
Hemisphere Media Group	12.80	3%	14%
News Corp.	13.31	(4%)	16%
Scripps Networks	85.70	9%	20%
Time Warner	102.11	3%	6%
Viacom	28.11	(22%)	(20%)

Diversified Media Median		(3%)	4%
Diversified Media Mean		(4%)	2%

Advertising Technology			
Criteo	\$47.79	(5%)	16%
The Rubicon Project	3.72	(26%)	(50%)
TubeMogul	3.57	(7%)	24%
Rocket Fuel	2.60	(2%)	52%
MaxPoint Interactive	5.41	(23%)	(10%)
YuMe	4.92	13%	37%
Tremor Video	2.97	32%	19%

Advertising Technology Median		(5%)	19%
Advertising Technology Mean		(3%)	13%

	Stock Price	1 - Month %	YTD%
	8/21/17	Change	Change
Radio			
Beasley Broadcast Group	\$8.85	(18%)	44%
Cumulus Media	0.42	(7%)	(59%)
Emmis Communications	2.59	(9%)	(24%)
Entercom Communications	10.10	6%	(34%)
iHeartMedia	1.80	16%	62%
Saga Communications	40.55	(4%)	(19%)
Salem Communications	6.35	(12%)	2%
Sirius XM Radio	5.52	1%	24%

Radio Median		(6%)	(9%)
Radio Mean		(4%)	(1%)

Advertising/Marketing			
Dentsu	\$44.19	(4%)	(6%)
Havas	10.92	1%	29%
Interpublic	20.59	(19%)	(12%)
Omnicom	76.91	(7%)	(10%)
Publicis	72.40	(4%)	5%
WPP	20.14	(3%)	(10%)

Advertising/Marketing Median		(4%)	(8%)
Advertising/Marketing Mean		(6%)	(1%)

New Media			
eBay	\$34.24	(6%)	15%
Alphabet	920.87	(7%)	16%
Twitter	16.11	(20%)	(1%)
PayPal	59.40	1%	50%
Facebook	167.78	2%	46%
Amazon	953.29	(7%)	27%
Netflix	166.76	(12%)	35%
Snap	13.58	(6%)	(45%)

New Media Median		(7%)	22%
New Media Mean		(7%)	18%

Advertising Research			
Nielsen	\$39.35	(0%)	(6%)
comScore	29.20	7%	(8%)
GfK	55.56	1%	21%
Ipsos	32.95	(12%)	5%

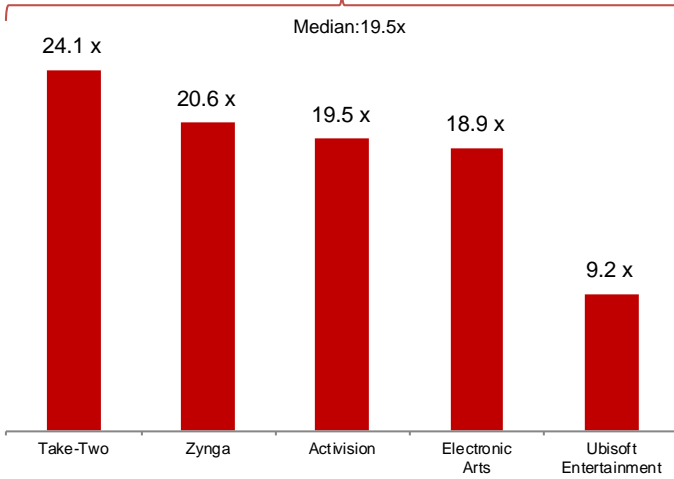
Advertising Research Median		1%	(1%)
Advertising Research Mean		(1%)	3%

Source: Capital IQ, Bloomberg and Wall Street research.

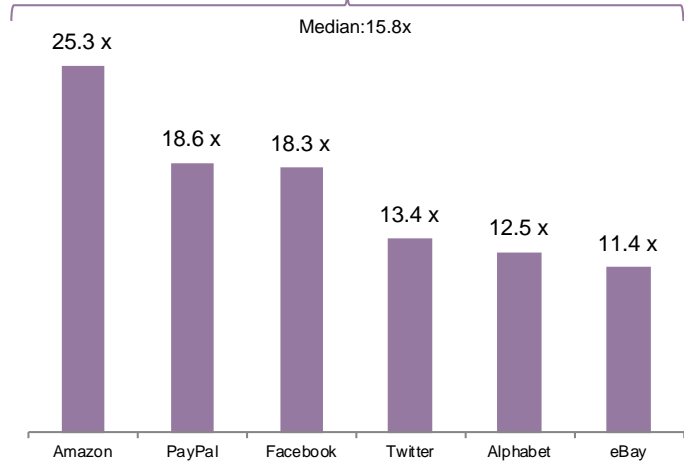
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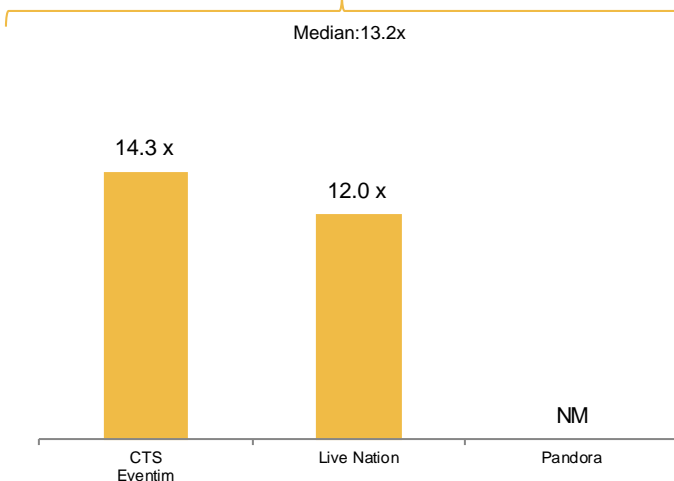
Video Games



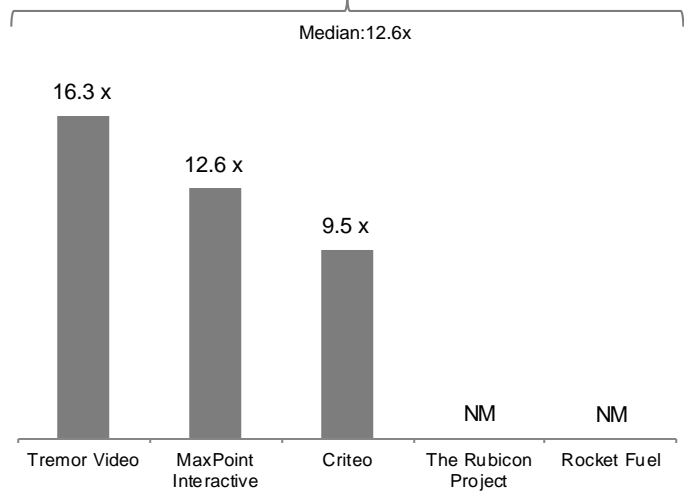
New Media



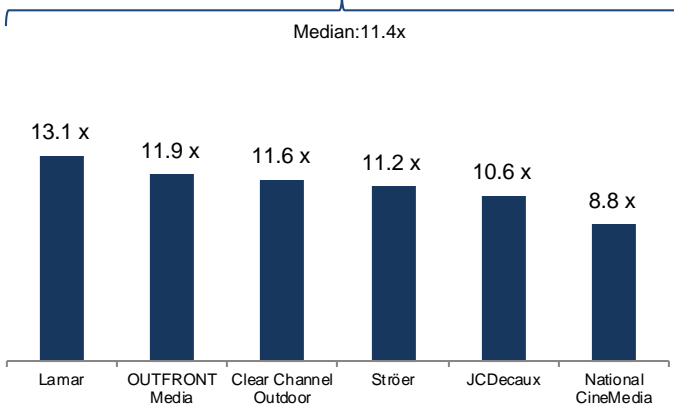
Music / Events



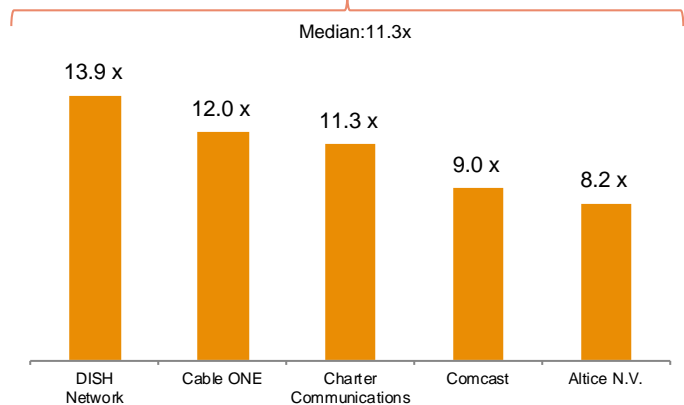
Advertising Tech



Out-of-Home Advertising



Cable



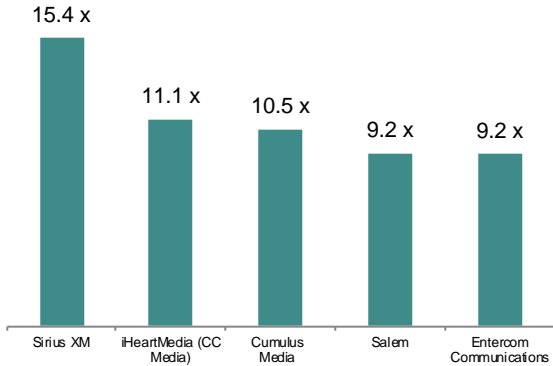
Source: Capital IQ as of August 21, 2017 and Wall Street research.

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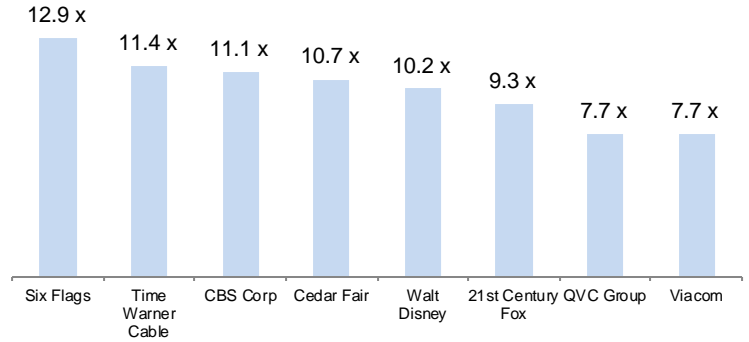
Radio

Median: 10.5x



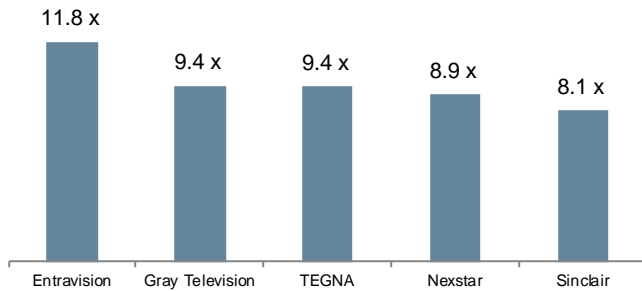
Cable / Content

Median: 10.4x



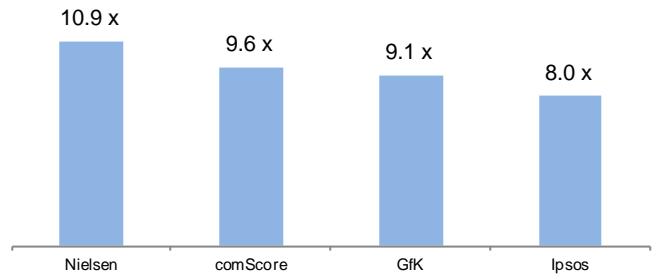
Broadcasting

Median: 9.4x



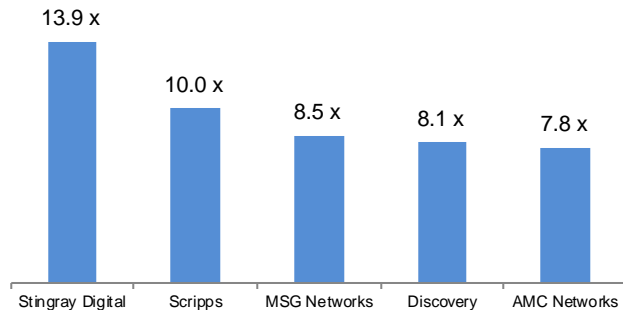
Advertising Research

Median: 9.3x



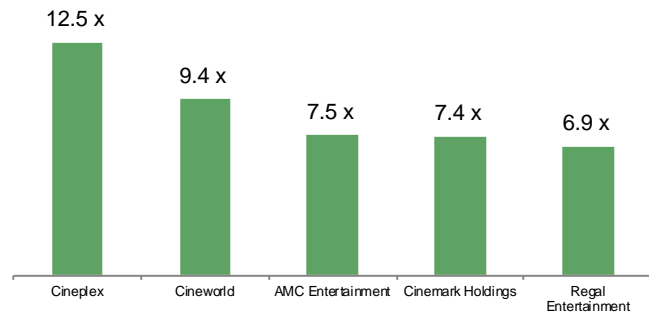
Cable Content

Median: 8.5x



Theaters

Median: 8.5x



Source: Capital IQ as of August 21, 2017 and Wall Street research.

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Valuation Metrics

	Stock Price 8/21/17	52-Week Low	52-Week High	Equity Value	Enterprise Value	Valuation Multiples		Growth	
						EV / Revenue 2017E	EV / EBITDA 2017E	'15A - '17E CAGR Revenue	EBITDA
Out of Home Media									
Clear Channel Outdoor	\$4.05	\$3.55	\$7.25	\$1,458	\$6,566	2.5 x	11.6 x	(4%)	(8%)
JCDecaux	33.61	25.59	36.11	7,144	7,826	1.9 x	10.6 x	21%	18%
Lamar	64.57	59.30	79.05	6,330	8,679	5.7 x	13.1 x	6%	8%
National CineMedia	5.45	5.45	15.97	840	1,726	4.0 x	8.8 x	(2%)	(3%)
OUTFRONT Media	22.05	20.78	27.65	3,057	5,307	3.5 x	11.9 x	0%	6%
RMG Networks	1.96	1.90	3.96	22	20	0.5 x	NM	(1%)	NM
Global / U.S. Median						3.0 x	11.6 x	(0%)	6%
Global / U.S. Mean						3.0 x	11.2 x	4%	4%
APG SGA	\$431.04	\$402.69	\$517.73	\$1,293	\$1,251	3.9 x	15.4 x	1%	2%
Ströer	65.84	37.15	68.38	3,640	4,271	2.8 x	11.2 x	35%	49%
Europe Median						3.4 x	13.3 x	18%	26%
Europe Mean						3.4 x	13.3 x	18%	26%
AirMedia Group	\$2.59	\$1.40	\$3.54	\$163	\$43	NA	NA	NA	NM
Clear Media	1.14	0.93	1.21	619	547	NA	NA	NA	NM
China Median						NA	NA	NA	NA
China Mean						NA	NA	NA	NA
Total Out of Home Advertising Median						3.4 x	11.6 x	1%	6%
Total Out of Home Advertising Mean						3.5 x	11.8 x	7%	10%
Radio									
Beasley Broadcast Group	\$8.85	\$4.75	\$16.55	\$255	\$450	NA	NA	NA	NA
iHeartMedia	1.80	1.07	3.84	163	20,399	3.3 x	11.1 x	(1%)	2%
Cumulus Media	0.42	0.23	3.20	12	2,260	2.0 x	10.5 x	(2%)	(2%)
Emmis Communications	2.59	2.23	4.16	32	280	NA	NA	NA	NA
Entercom Communications	10.10	9.50	16.15	412	892	1.9 x	9.2 x	7%	(0%)
Salem Media Group	6.35	5.15	8.15	166	425	1.6 x	9.2 x	1%	(2%)
Sirius XM Holdings	5.52	4.08	5.86	25,464	31,880	5.9 x	15.4 x	9%	14%
Radio Median						2.0 x	10.5 x	1%	(0%)
Radio Mean						2.9 x	11.1 x	3%	2%
Broadcasting									
Entravision Communications	\$5.55	\$5.10	\$7.83	\$502	\$733	2.7 x	11.8 x	4%	(7%)
Gray Television	13.85	7.35	15.30	979	2,776	3.2 x	9.4 x	21%	21%
Nexstar Broadcasting Group	60.30	47.20	73.15	2,787	7,150	2.9 x	8.9 x	65%	63%
Sinclair Broadcast Group	29.25	24.80	42.90	3,004	6,243	2.3 x	8.1 x	11%	6%
Broadcasting Median						2.8 x	9.2 x	16%	13%
Broadcasting Mean						2.8 x	9.6 x	25%	21%
Advertising/Marketing									
Havas	\$10.92	\$7.54	\$10.99	\$4,619	\$4,461	1.6 x	9.6 x	14%	16%
WPP	20.14	20.01	24.15	25,635	31,536	1.5 x	9.3 x	29%	26%
Publicis	72.40	63.38	77.83	16,362	18,848	1.6 x	9.2 x	10%	8%
The Interpublic Group	20.59	20.51	25.57	8,097	9,532	1.2 x	8.3 x	2%	6%
Omnicom Group	76.91	76.76	88.47	17,747	21,545	1.4 x	9.2 x	1%	3%
Dentsu	44.19	43.49	57.92	12,456	14,794	1.7 x	9.1 x	(90%)	(91%)
Advertising/Marketing Median						1.6 x	9.2 x	6%	7%
Advertising/Marketing Mean						1.5 x	9.1 x	(6%)	(5%)
Advertising Technology / New Media									
Alphabet	\$920.87	\$753.22	\$1,004.28	\$633,111	\$542,353	5.0 x	12.5 x	20%	33%
Amazon	953.29	719.07	1,052.80	457,941	460,109	2.7 x	25.3 x	26%	52%
Facebook	167.78	115.05	172.45	487,266	451,814	11.6 x	18.3 x	48%	74%
Netflix	166.76	94.56	189.08	71,999	74,670	6.5 x	NM	30%	72%
PayPal	59.40	36.83	60.29	17,422	62,257	4.8 x	18.6 x	18%	31%
Twitter	16.11	14.29	24.87	11,831	9,497	4.0 x	13.4 x	4%	NM
Criteo	47.79	33.09	55.39	3,121	2,835	3.0 x	9.5 x	(15%)	61%
The Rubicon Project	3.72	3.57	9.22	182	(10)	NM	NM	(16%)	(8%)
Rocket Fuel	2.60	1.71	5.60	122	143	0.4 x	NM	(14%)	NM
Advertising Technology / New Media Median						4.4 x	15.8 x	18%	52%
Advertising Technology / New Media Mean						4.7 x	16.3 x	11%	45%
Advertising Research									
Nielsen	\$39.35	\$37.14	\$54.93	\$14,031	\$22,248	3.4 x	10.9 x	3%	17%
comScore	29.20	21.14	34.50	1,672	1,558	2.5 x	9.6 x	29%	109%
GfK	55.56	29.13	56.04	2,028	2,428	1.4 x	9.1 x	6%	12%
Ipsos	32.95	28.72	39.46	1,373	1,981	0.9 x	8.0 x	9%	11%
Advertising Research Median						2.0 x	9.3 x	8%	14%
Advertising Research Mean						2.1 x	9.4 x	12%	37%

Source: Capital IQ as of August 21, 2017 and Wall Street research.

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Upcoming Events

Dates	Name	Location	Description
September 5-8, 2017	Content Marketing World	Cleveland, OH	<ul style="list-style-type: none"> Learn and network with the best and the brightest in the content marketing industry
September 25-28, 2017	Inbound 2017	Boston, MA	<ul style="list-style-type: none"> Provides attendees with the inspiration, education and connections needed to transform their businesses to the way purchasing behaviors are evolving in a connected and digital world
October 2-4, 2017	iMedia Agency Summit USA: Delivering the Future of Media	New Orleans, LA	<ul style="list-style-type: none"> Summit delves into the collision of automation and creativity; topics include AI, programmatic buying, commoditization of media, media and technology vendor partnership and customer relationship management
October 3-5, 2017	Smart Cities Week	Washington, D.C	<ul style="list-style-type: none"> Showcases demonstrations of the next wave of innovative, integrated technologies that are helping cities save money, build more robust economies and enhance citizens' lives
October 4-7, 2017	ANA Masters of Marketing	Orlando, FL	<ul style="list-style-type: none"> Engage with the nation's chief marketing officers and leaders from the agency and media worlds at the industry's signature event, attracting upward of 3,000 attendees
October 16, 2017	VR 20/20 Summit	New York, NY	<ul style="list-style-type: none"> VR/AR media executives, technology pioneers, investors and creative minds will converge to share inner secrets of the industry
October 16-19, 2017	NYC Television & Video Week	New York, NY	<ul style="list-style-type: none"> Will bring the industry's leaders together to discuss the full breadth of trends and topics that are vital to today's television businesses Will draw more than 2,400 television industry executives and feature 200 industry leaders as keynotes and presenters PJSC's Mark Boidman Will Attend
October 18, 2017	Next TV Summit	New York, NY	<ul style="list-style-type: none"> Next TV Summit is a high-level, future-focused conference providing insights into the impact of new video devices, technologies, viewing experiences, business models and consumer expectations in the OTT and On Demand era.
October 24-26, 2017	SMX East 2017	New York, NY	<ul style="list-style-type: none"> Conference addresses strategies and tactics from some of the savviest brands and digital marketing agencies managing earned, owned and paid social media marketing campaigns across multiple platforms
October 30- November 3, 2017	New York Digital Signage Week	New York, NY	<ul style="list-style-type: none"> Will include events for retail, employee communications, digital OOH and of course digital signage PJSC's Mark Boidman to present and Ben Zinder to attend

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Upcoming Events

Dates	Name	Location	Description
October 31, 2017	The DailyDOOH Investor Conference	New York, NY	<ul style="list-style-type: none"> ▪ Networking event for senior executives in the Digital Signage and DOOH industry ▪ The conference will update investors on the latest trends and the future direction of digital signage and DOOH directly from the CEOs of major companies that participate in the market ▪ PJSC's Mark Boidman Will Present
November 1, 2017	DPAA Video Everywhere Summit	New York, NY	<ul style="list-style-type: none"> ▪ Summit will bring together 700 delegates representing brands, agencies, digital place based networks, ad tech, research firms and others for a full day of presentations, panels, case studies, networking events and experiential exhibits ▪ PJSC's Mark Boidman Will Attend
November 13-14, 2017	M&A Advisor Summit	New York, NY	<ul style="list-style-type: none"> ▪ Gathering of professionals engaged in M&A, restructuring and financing and industry leaders from the US and around the world who will participate in over 20 interactive thought-leadership sessions and social functions ▪ PJSC's Mark Boidman Will Attend
January 9-12, 2018	International Consumer Electronics Show	Las Vegas, NV	<ul style="list-style-type: none"> ▪ Event that showcases more than 4,000 exhibitors, including manufacturers, developers and suppliers of consumer technology hardware, content, technology delivery systems and more ▪ The conference has 300 sessions with more than 180,000 attendees from 158 countries ▪ PJSC's Mark Boidman Will Present ▪ PJSC's Juan Mejia and Ben Zinder Will Attend

Prior issues available online:
http://www.pjsc.com/insights/tag/Media_Monthly/

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Peter J. Solomon Company (PJSC), an investment banking advisory firm, provides strategic advice to owners, chief executives, senior management and board of directors of companies and institutions worldwide.

PJSC advises clients on mergers and acquisitions, divestitures, financings, recapitalizations, restructurings, and activism defense. To date, the firm has successfully completed more than 500 strategic and financial advisory assignments.

In June 2016, PJSC sold a 51% stake in the firm to Natixis, a French financial services firm owned by Groupe BPCE, France's second largest financial institution. The remaining 49% of PJSC's ownership continues to be held by existing partners, resulting in an entrepreneurially-spirited company with a global M&A and financing platform and an increased breadth of product offerings.

Throughout our nearly thirty-year history, PJSC has served as a trusted advisor to our corporate clients. With this latest development, our tradition of providing unbiased advice, grounded in intellectual integrity, will continue. Our goal is to bring the collective experience and knowledge of our senior bankers and the capabilities of Natixis to each assignment, advising our clients on how to achieve the optimum value and outcome for each transaction.

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