

MEDIA SECTOR REVIEW

INTERNET AND DIGITAL MEDIA COMMENTARY

Online Advertising Exceeded Traditional Media Advertising in 2019

As we start 2020 and a new decade, we take look back the past decade and look forward toward what the future may hold for media companies. According to several advertising prognosticators, online advertising accounted for slightly more than 50% of total US advertising spend in 2019, more than triple from 15% just 10 years earlier. For additional perspective, it was just three years ago (2016) that online advertising, at \$72.B, first exceeded TV advertising. Just three years later, the medium now exceeds all traditional media on a combined basis, as we expect total online ad spend to be approximately \$130B in 2019 (roughly 85% larger than TV ad spend).

The media sectors that suffered the most from the growth of the internet were print mediums such as Newspapers, Magazines, and Yellow Pages, follow by Radio, and, to a lesser extent, Television and Out-Of-Home. Newspapers declined from roughly 22% of total US advertising in 2009 to roughly 5% in 2019. Magazine's share declined from 12% to 5% and Radio from 11% to 7%, respectively. And, for the first time, Television, the second largest medium behind the Internet, fell below 30% of total US advertising to 28%.

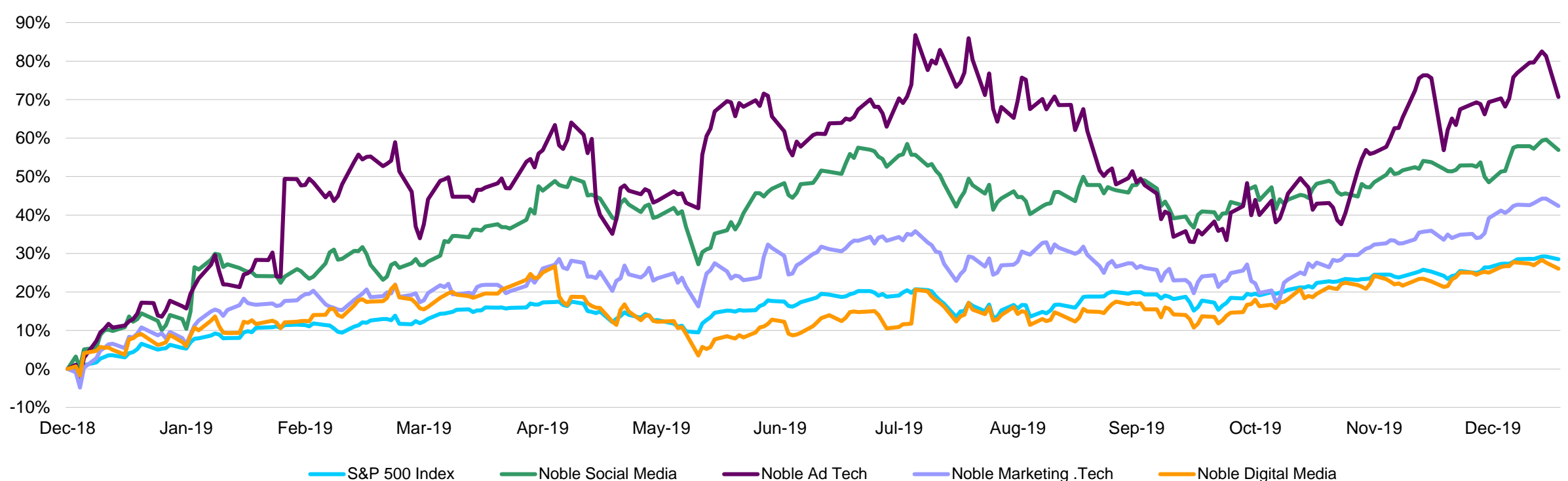
A Year of Strong Stock Price Returns in the Internet and Digital Media Sectors

All four segments of Noble's Internet and Digital Media sectors performed well in 2019. Noble's Ad Tech (+75%), Social Media (+58%), and MarTech (+43%) Indices all significantly outperformed the S&P 500 (+29%) for the year, while Noble's Digital Media Index (+26%) performed in-line with the broader market.

INSIDE THIS ISSUE

Outlook: Internet and Digital Media	1
Digital Media	4
Advertising Tech.	5
Marketing Tech.	6
Social Media	7
Industry M&A Activity	8
Outlook: Traditional Media	10
TV	14
Radio	15
Publishing	16
Industry M&A Activity	17
Noble Overview	18

STOCK MARKET PERFORMANCE: INTERNET AND DIGITAL MEDIA



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OUTLOOK – INTERNET AND DIGITAL MEDIA

INTERNET AND DIGITAL MEDIA COMMENTARY

Expect New Privacy Regulations to Keep M&A Healthy

Despite the strong stock price performances across the board, we don't expect companies in the Internet and Digital Media sector to rest on their laurels. Change is the only constant in this industry. Whether to stay a step ahead or just to stay alive, M&A in the Internet and Digital Media sectors has remained healthy. While the Big Three (Google, Facebook and Amazon) may account for roughly 75% of the industry's revenues, in a \$130B industry, that still leaves \$30B+ marketplace growing at a double-digit rate. We expect continued consolidation in the Ad Tech sector as independent companies seek to build scale and acquire new capabilities in an era of mass personalization driven by access to first party (not just third party) data. The focus on first party data is likely to drive M&A in coming quarters. Consolidation will provide advertisers with an alternatives to the Big Three, while also reducing the number of vendors they are partnered with, thus reducing the ad tech "tax" (numerous middlemen taking a percentage of an ad buy).

Privacy Regulations Have Created Unintended Consequences of Making the Walled Gardens Stronger

As tech giants have gotten bigger, politicians have begun to call for greater regulation on the tech "monopolies". While there appear to be increasing calls to "break them up", to date, efforts to ensure consumer protection and privacy by regulating the largest tech companies has resulted, unintentionally, in making them stronger. In May 2018, Europe's General Data Protection and Regulation (GDPR) went into effect, and on January 1st, 2020, the California Consumer Privacy Act (CCPA) went into effect. Companies such as Google and Facebook used GDPR as a reason to no longer share data with third parties. This provided them with more control over data and limited the effectiveness of the data third parties used to compete in the ad ecosystem.

GDPR and CCPA restrict the use of personally identifiable information (pii) in marketing and already have or will result in a decline in the use of cookies to track consumer behavior. Browsers now block (Apple's Safari) or limit (Google's Chrome) cookie use by requiring consumers to opt-in. Online publishers are finding it harder to scale audiences as cookies are either blocked or require consent, making it harder for online publishers to create marketing segments at scale.

In short, legislation that forces the systemic removal of digital profiles and identities (which have been used to prove attribution), is effectively ceding control to the walled gardens of Google, Facebook and Amazon. For example, pre-CCPA, a retailer might generate leads by buying data and audience models from third parties, but post-CCPA, the largest source of leads at scale are those brokered within the black boxes and walled gardens of Google, Facebook and Amazon.

Retailers Make AdTech/MarTech Acquisitions

Perhaps as a response to regain control over their data, 2019 was the first year that brands themselves began to make acquisitions in the ad tech or marketing tech sectors. For example, in March of 2019, McDonald's bought audience personalization company Dynamic Yield for \$300 million; Nike acquired analytics and inventory optimization company Celect in August 2019, and in October 2019, Mastercard acquired the customer data and loyalty marketing company Session M.

Connected TV M&A to Remain Healthy

M&A in the connected TV sector ramped up considerably in 2019, and in the fourth quarter in particular. When programmatic buying first began to take hold in the early 2010s, many industry execs opined that the lessons learned in online advertising would serve them well as programmatic or automated buying shifted to the biggest pot of gold: television. Of course, this was when TV advertising was 3x larger than online ad spend. But lessons learned in online advertising did not translate easily to TV, and in the years it took trying to figure out how to bring targeting and addressability to TV, online advertising surpassed TV advertising in size (\$130B vs. \$70B). Nevertheless, it is clear that M&A action has moved into the OTT or connected TV space, given the promise of marrying mass audiences with addressability. For example, in the month of October alone:

- Roku announced it would acquire DSP Dataxu for \$150M to bring "data-driven modeling focused on business outcomes for brands" to connected TV;



OUTLOOK – INTERNET AND DIGITAL MEDIA

INTERNET AND DIGITAL MEDIA COMMENTARY

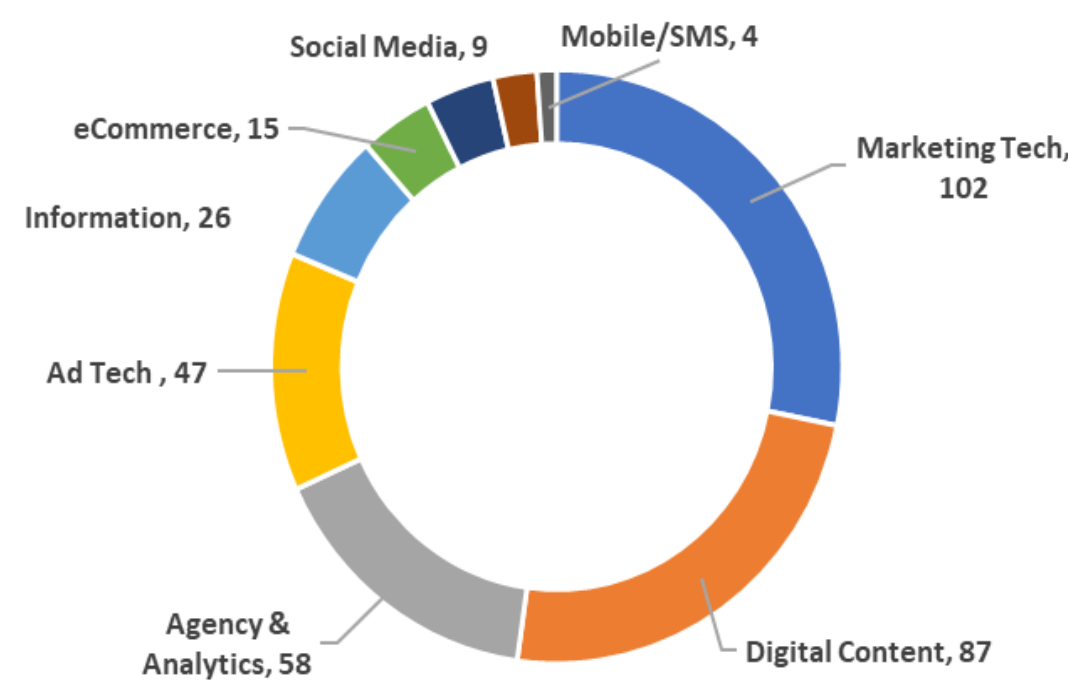
- AT&T’s Xandr acquired Clypd, a sell side platform (SSP) providing marketers the ability to buy both digital and linear ads with improved targeting; and
- LiveRamp acquired Data Plus Math for \$150 million providing marketers the flexibility to marry “TV and digital to any real-world outcome online or offline” and more accurately measure ad effectiveness.

Over-the-top (OTT) TV platforms were also in demand in 2019: in January, Viacom acquired Pluto TV for \$340 million, and in April, Altice USA acquired Cheddar TV for \$200 million.

Summary of 2019 Internet and Digital Media M&A

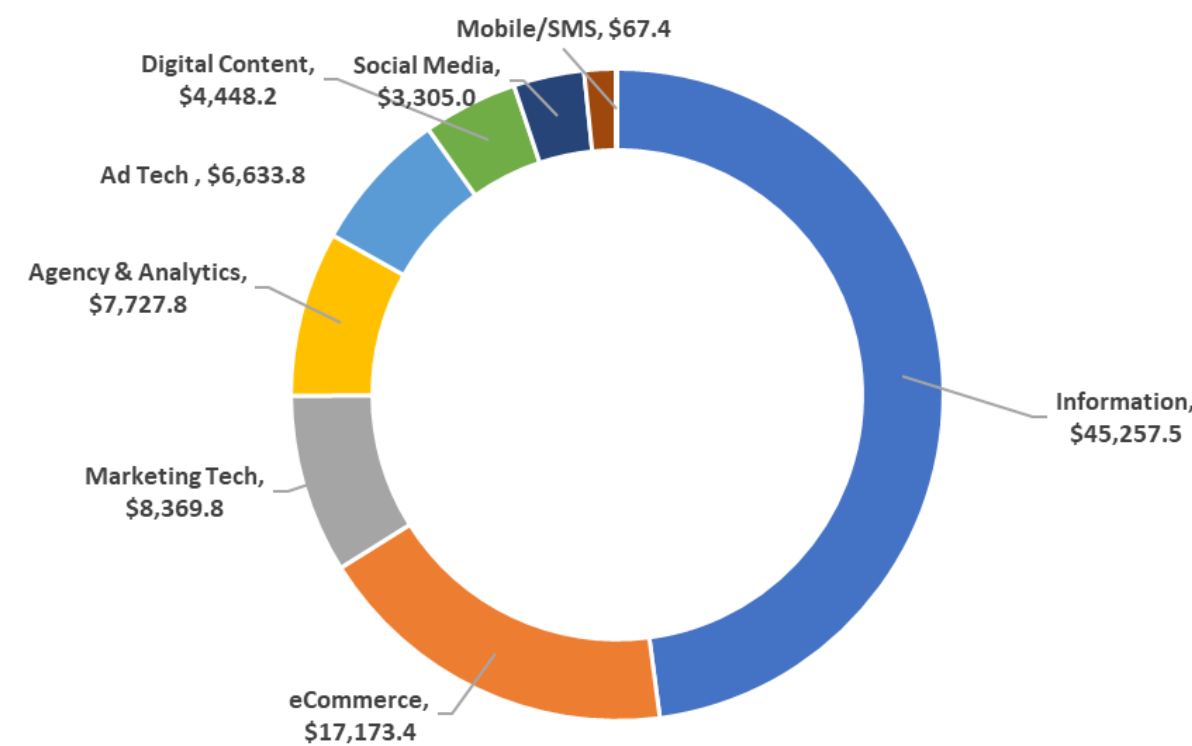
2019 was an active year for mergers and acquisitions in North America in the internet and digital media sectors. Noble breaks down our universe into 9 categories and we tracked 362 deals in 2019. The most active sector was the Marketing Technology sector, with 102 deals. This was followed by deals in the Digital Content sector (87 deals), the Agency & Analytics sector (58) and the Ad Tech sector (47), as shown in the chart below.

of Internet & Digital Media M&A Deals by Sector



While M&A was most active in the marketing technology sector, deals in the information services category represented the largest deals by transaction value, with just 26 deals representing \$45.3 billion in transaction value, followed by eCommerce deals valued at \$17.0 billion. MarTech and Ad Tech followed next, with total M&A transaction values of \$8.4 billion and \$7.7 billion, respectively.

Internet & Digital Media M&A Transaction Value, by Sector



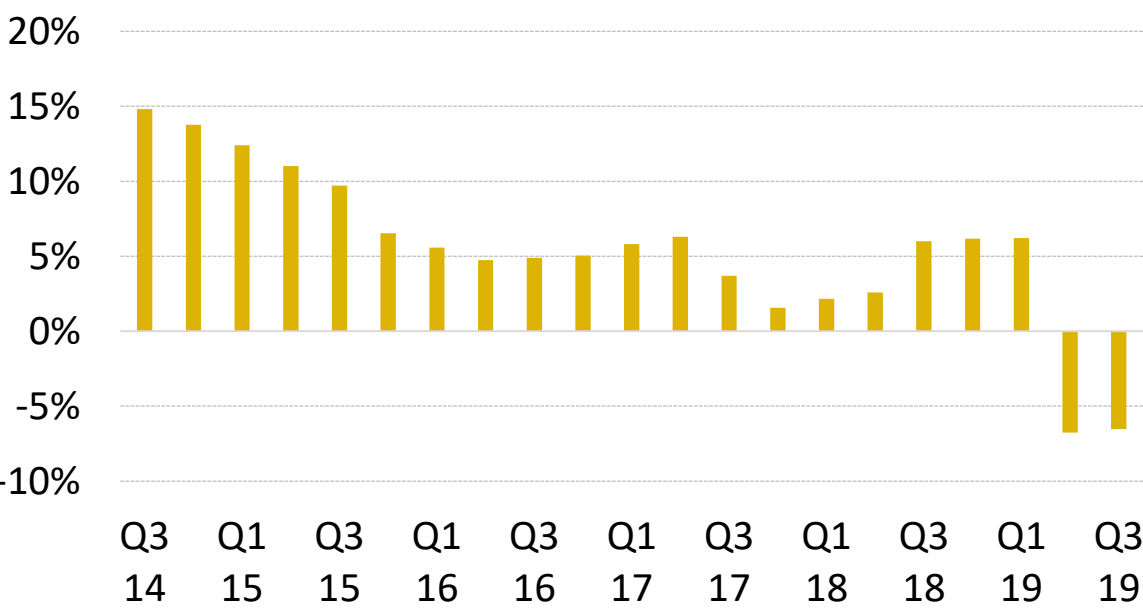


DIGITAL MEDIA – SEGMENT ANALYSIS

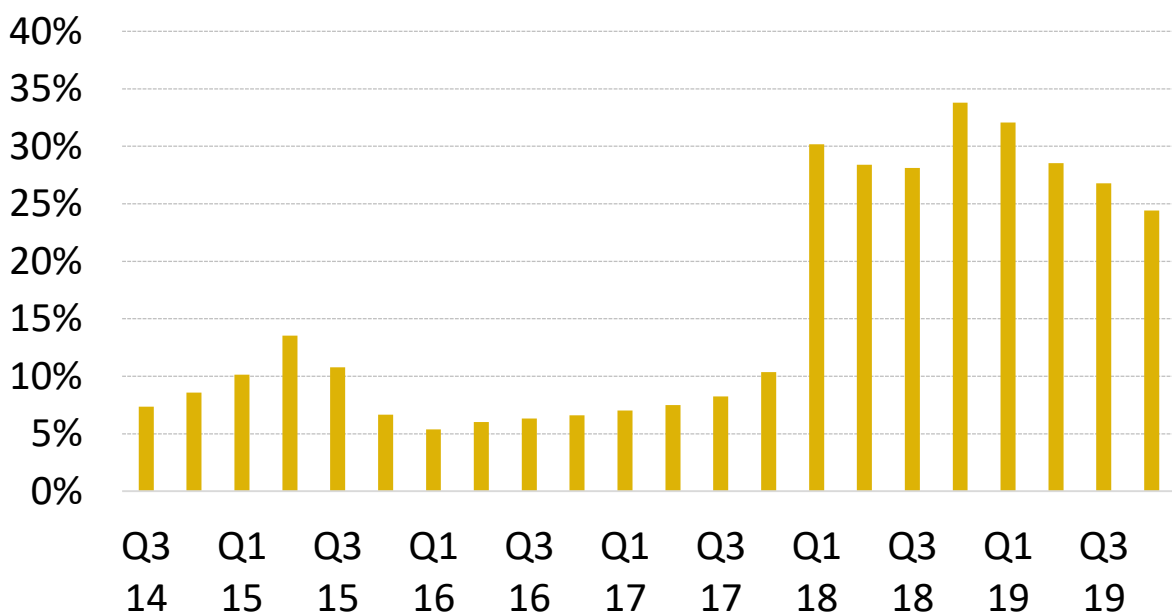
	Share Price	% of 52 Week High	Market Cap (\$M)	Net Debt (\$M)	Ent. Value (\$M)	LTM Revenues (\$M)	LTM EBITDA (\$M)	Ent. Value /						Net Debt / EBITDA	3 Year Revenue CAGR	EBITDA Margin	Gross Margin
								LTM	2019E	2020E	LTM	2019E	2020E				
Alphabet Inc.	\$1,405.04	100.1%	\$969,038	(\$106,304)	\$862,487	\$155,058	\$44,069	5.6x	5.3x	4.5x	19.6x	14.6x	12.5x	NM	22.2%	28.4%	55.6%
Netflix, Inc.	339.26	87.9%	148,681	9,104	157,785	18,876	2,460	8.4x	7.8x	6.5x	64.1x	50.1x	35.0x	3.7x	32.6%	13.0%	38.0%
Spotify Technology S.A.	158.78	98.4%	29,171	(805)	28,293	6,404	132	4.1x	3.7x	3.0x	214.3x	NM	NM	NM	39.4%	2.1%	25.7%
IAC/InterActiveCorp	258.86	96.3%	21,900	254	23,140	4,643	782	5.0x	4.9x	4.2x	29.6x	23.4x	19.3x	0.3x	9.7%	16.8%	76.7%
Tencent Music Entertainment	12.49	62.5%	20,423	(20,546)	17,562	23,538	3,795	5.3x	4.8x	3.8x	4.6x	25.7x	20.0x	NM	0.0%	16.1%	34.1%
Pinterest, Inc.	19.72	53.5%	11,008	(1,565)	9,444	1,016	(1,277)	9.3x	8.5x	6.4x	NM	NM	151.7x	NM	0.0%	(125.7%)	67.4%
Akazoo S.A.	5.30	70.8%	263	(45)	213	130	9	1.5x	1.4x	0.9x	22.9x	17.3x	10.4x	NM	0.0%	7.2%	23.6%
Leaf Group Ltd.	3.25	35.4%	85	(3)	82	155	(16)	0.5x	0.5x	0.5x	NM	NM	NM	NM	7.2%	(10.5%)	39.4%
TheMaven, Inc.	0.82	82.0%	27	5	32	0	(11)	84.4x	NA	NA	NM	NA	NA	NM	0.0%	NM	NA

Mean	13.8x	4.6x	3.7x	59.2x	26.2x	41.5x	2.0x	12.3%	(6.6%)	45.1%
Median	5.3x	4.8x	4.0x	26.3x	23.4x	19.7x	2.0x	7.2%	10.1%	38.7%

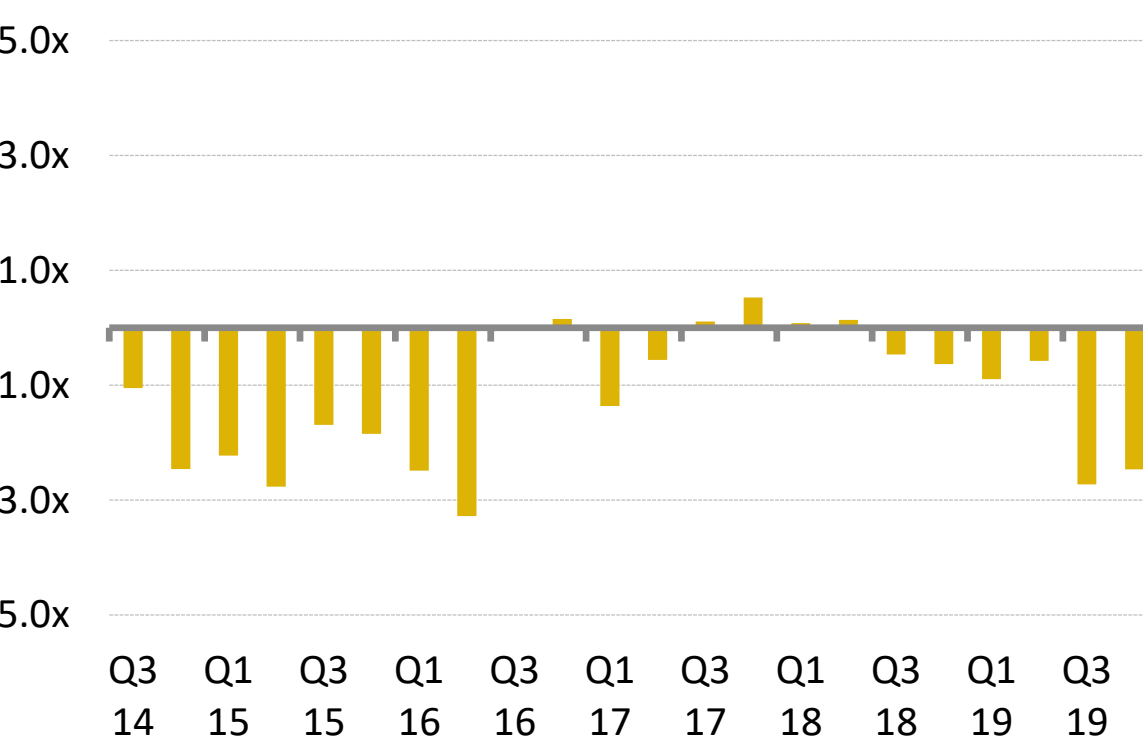
LTM EBITDA MARGIN



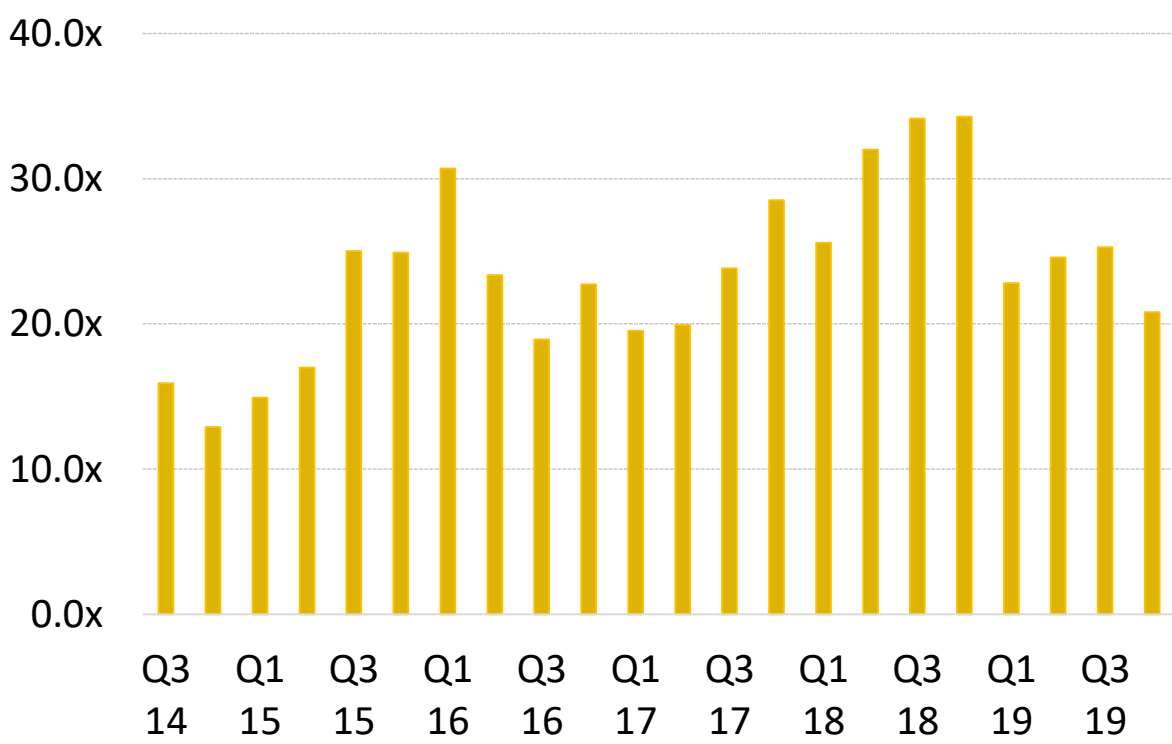
REVENUE GROWTH



NET DEBT / LTM EBITDA



EV / EBITDA

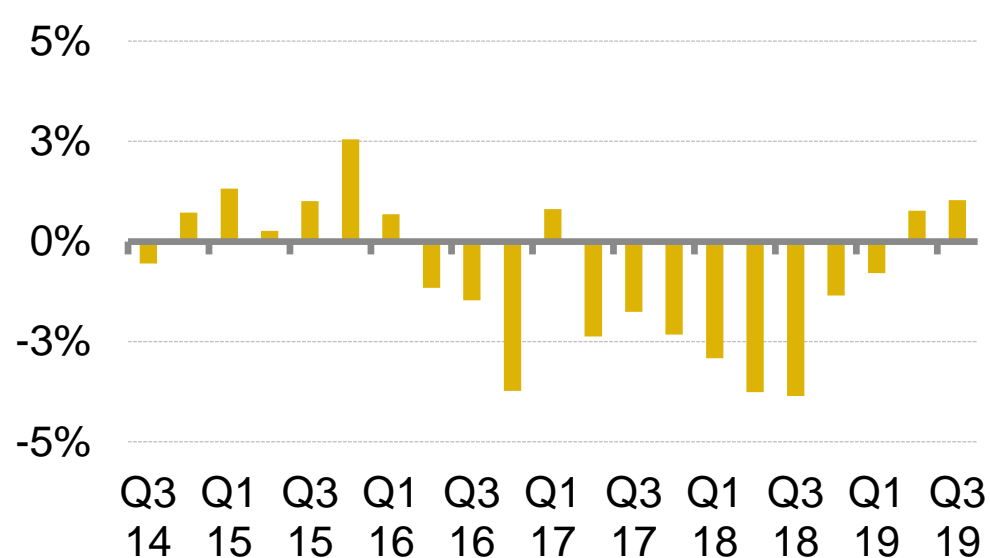


ADVERTISING TECHNOLOGY – SEGMENT ANALYSIS

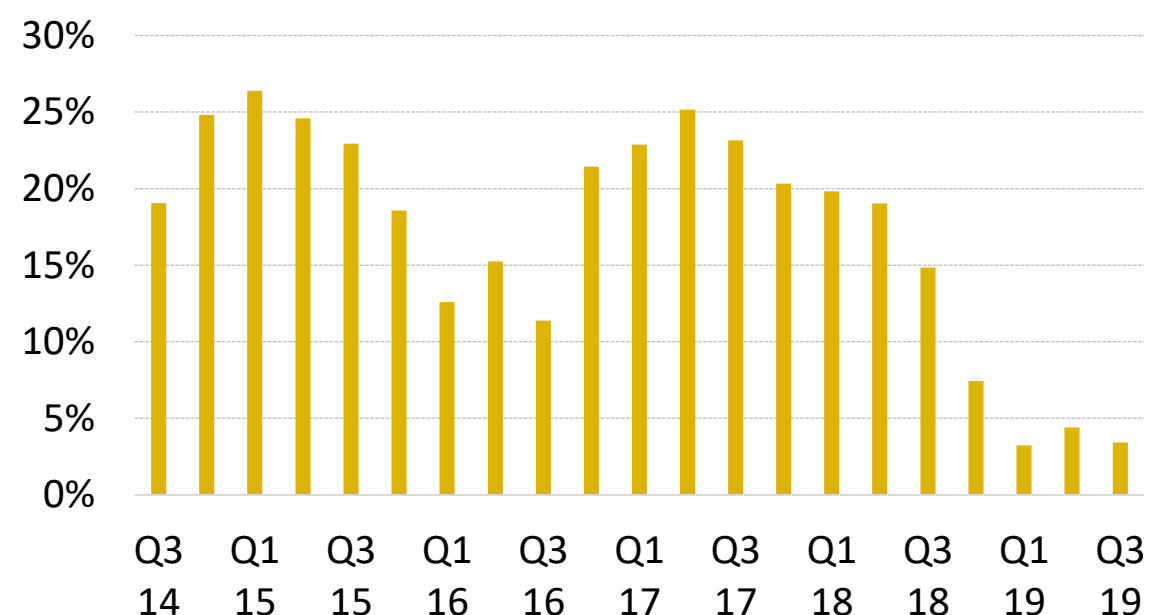
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								LTM	2019E	2020E	LTM	2019E	2020E				
The Trade Desk, Inc.	\$285.20	98.5%	\$12,872	(\$113)	\$12,759	\$606	\$124	21.1x	19.4x	14.8x	103.0x	60.9x	47.8x	NM	61.3%	20.5%	76.2%
Criteo S.A.	17.46	56.6%	1,119	(220)	930	2,279	217	0.4x	1.0x	1.0x	4.3x	3.2x	3.2x	NM	20.2%	9.5%	36.3%
QuinStreet, Inc.	14.78	73.8%	757	(55)	702	469	24	1.5x	1.5x	1.3x	29.7x	20.7x	12.1x	NM	15.2%	5.0%	12.6%
The Rubicon Project, Inc.	10.52	97.0%	558	(62)	497	149	(4)	3.3x	3.2x	2.8x	NM	20.7x	14.6x	NM	(20.5%)	(3.0%)	60.1%
Telaria, Inc.	11.33	98.7%	528	(36)	492	68	(12)	7.2x	7.0x	6.1x	NM	190.1x	69.3x	NM	79.0%	(17.4%)	82.1%
iClick Interactive	3.28	55.6%	188	45	236	182	(15)	1.3x	1.2x	1.0x	NM	73.6x	27.4x	NM	34.9%	(8.2%)	28.1%
Fluent, Inc.	2.24	29.9%	172	41	213	272	25	0.8x	0.8x	0.8x	8.5x	7.6x	6.6x	1.7x	160.9%	9.2%	32.1%
Perion Network Ltd.	8.28	105.4%	214	(9)	205	255	24	0.8x	0.8x	0.8x	8.5x	6.9x	6.6x	NM	4.6%	9.5%	38.7%
Tremor International Ltd	1.74	67.0%	214	(67)	162	278	28	0.7x	0.5x	0.5x	5.7x	3.5x	2.8x	NM	54.0%	10.1%	40.1%
Synacor, Inc.	1.50	77.3%	59	(5)	54	134	2	0.4x	0.4x	0.5x	23.1x	6.3x	7.2x	NM	9.3%	1.7%	48.5%
SRAX, Inc.	2.39	40.9%	33	(2)	31	4	(16)	8.7x	NA	NA	NM	NA	NA	NM	(31.2%)	(458.1%)	62.6%
Inuvo, Inc.	0.31	17.7%	15	2	17	60	(6)	0.3x	0.3x	0.2x	NM	NM	28.3x	NM	1.4%	(9.4%)	58.1%
Matomy Media Group Ltd.	0.04	30.8%	4	13	15	68	10	0.3x	NA	NA	1.5x	NA	NA	1.4x	(31.1%)	14.1%	22.6%
SITO Mobile, Ltd.	0.29	11.9%	7	1	8	42	(12)	0.2x	NA	NA	NM	NA	NA	NM	45.9%	(28.3%)	40.6%

Mean	3.4x	3.3x	2.7x	23.1x	39.3x	20.5x	1.5x	28.8%	(31.8)%	45.6%
Median	0.8x	1.0x	1.0x	8.5x	14.1x	12.1x	1.5x	17.7%	3.4%	40.4%

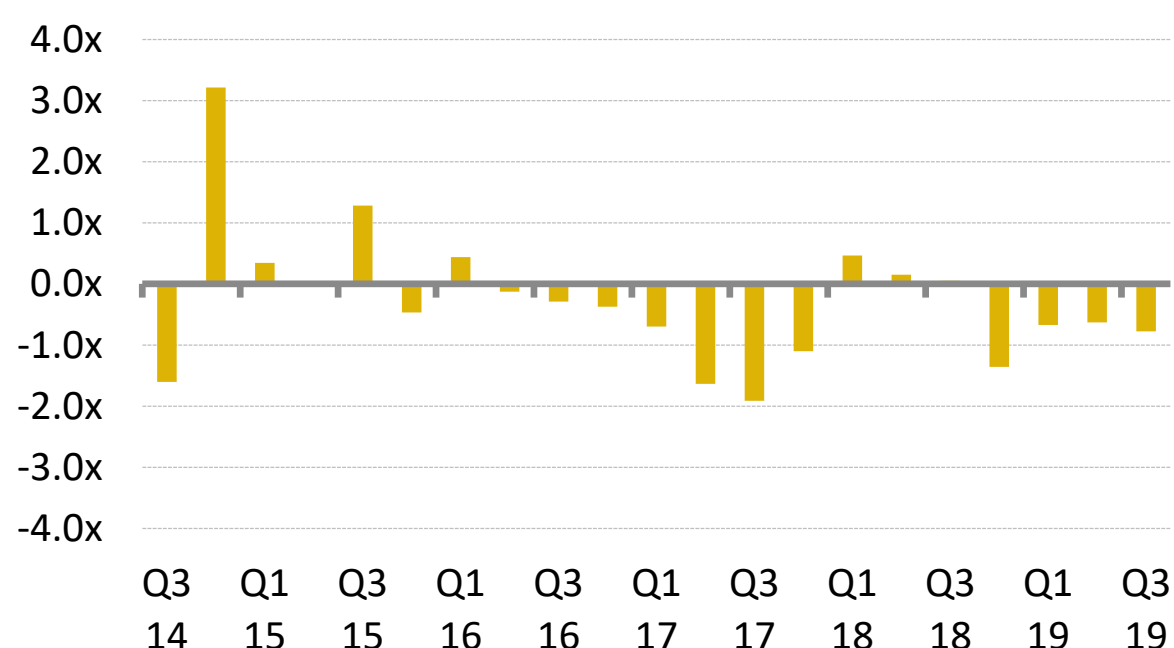
LTM EBITDA MARGIN



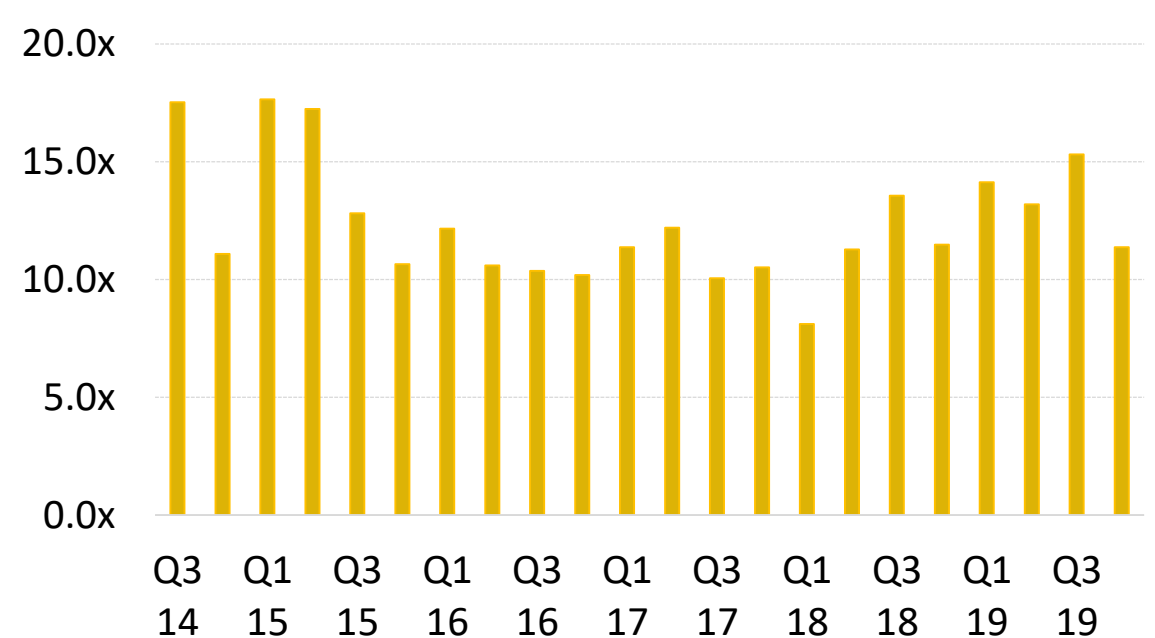
REVENUE GROWTH



NET DEBT / LTM EBITDA



EV / EBITDA



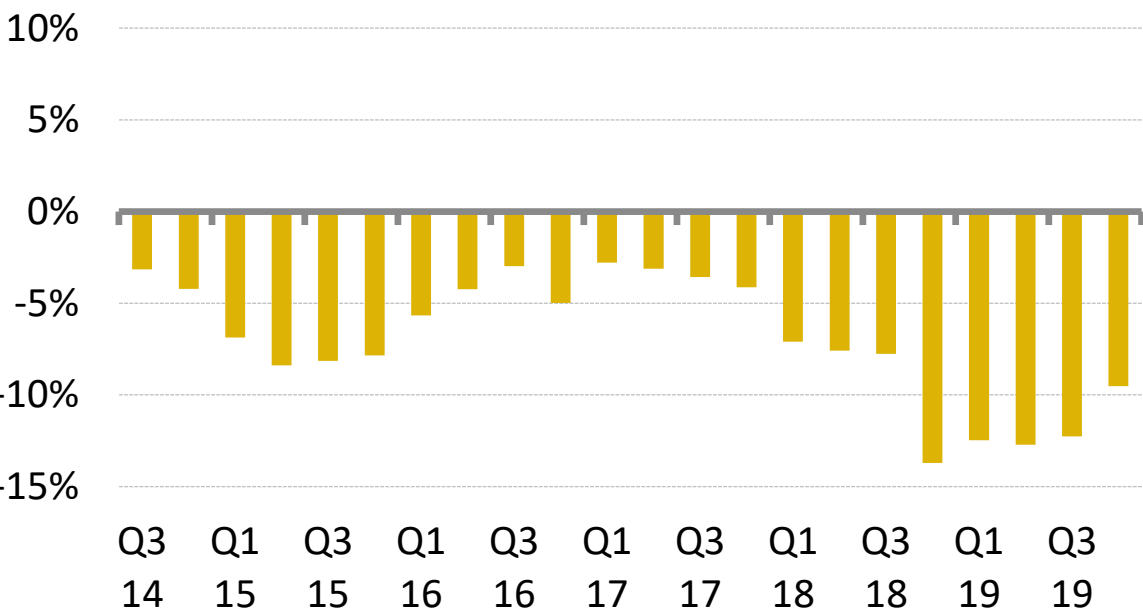


MARKETING TECHNOLOGY – SEGMENT ANALYSIS

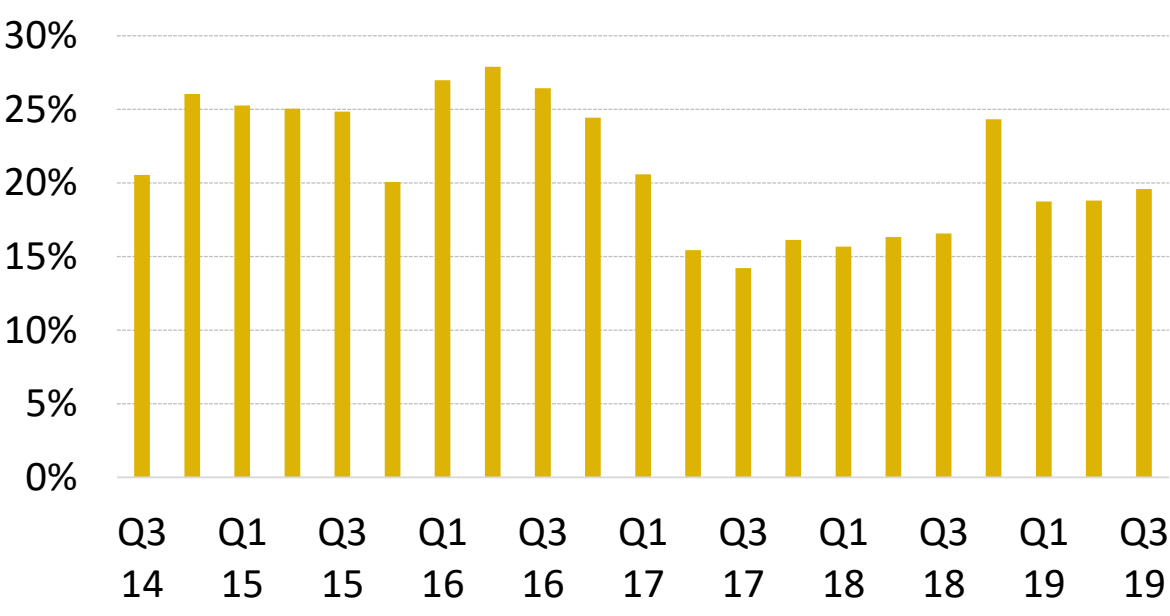
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						Revenues (\$M)	EBITDA (\$M)	Revenues LTM	2019E	2020E	Revenues LTM	2019E	2020E				
Adobe Inc.	\$337.87	100.9%	\$162,968	(\$39)	\$162,929	\$11,171	\$3,856	14.6x	NA	12.4x	42.3x	NA	26.6x	NM	24.0%	34.5%	85.0%
salesforce.com, inc.	177.33	100.3%	157,292	(36)	157,256	15,850	2,293	9.9x	9.2x	7.5x	68.6x	32.1x	26.5x	NM	25.8%	14.5%	75.0%
Shopify Inc.	418.10	99.0%	48,465	(2,556)	45,909	1,417	(96)	32.4x	29.5x	21.7x	NM	NM	NM	NM	73.6%	(6.7%)	55.6%
Akamai Technologies, Inc.	91.40	98.2%	14,770	637	15,407	2,835	805	5.4x	5.4x	5.0x	19.1x	12.8x	11.7x	0.8x	7.3%	28.4%	65.6%
HubSpot, Inc.	173.00	83.2%	7,408	(372)	7,036	633	(32)	11.1x	10.5x	8.5x	NM	83.9x	67.2x	NM	41.3%	(5.1%)	80.8%
SVMK Inc.	18.74	94.6%	2,523	193	2,715	291	(39)	9.3x	8.9x	7.3x	NM	70.3x	58.2x	NM	0.0%	(13.3%)	74.2%
LivePerson, Inc.	38.48	89.8%	2,443	(10)	2,433	278	(43)	8.7x	8.3x	6.9x	NM	NM	253.9x	NM	1.5%	(15.6%)	73.5%
LiveRamp Holdings, Inc.	44.66	70.6%	3,023	(755)	2,268	331	(185)	6.9x	6.4x	4.9x	NM	NM	NM	NM	(30.5%)	(55.8%)	54.5%
Cardlytics, Inc.	67.09	99.7%	1,725	(95)	1,630	189	(25)	8.6x	8.1x	6.1x	NM	NM	133.4x	NM	24.7%	(13.4%)	37.5%
Yext, Inc.	14.77	63.3%	1,696	(126)	1,569	281	(97)	5.6x	5.3x	4.1x	NM	NM	NM	NM	36.5%	(34.6%)	74.5%
Sprout Social, Inc.	17.44	93.0%	835	9	947	97	(21)	9.8x	9.3x	7.2x	NM	NM	NM	NM	0.0%	(21.7%)	74.5%
Brightcove Inc.	8.84	68.6%	343	(6)	337	178	(2)	1.9x	1.8x	1.7x	NM	37.6x	21.7x	NM	7.0%	(1.3%)	59.0%
ChannelAdvisor Corporation	9.49	68.6%	266	(32)	235	130	7	1.8x	1.8x	1.7x	33.2x	12.9x	10.9x	NM	9.3%	5.4%	77.5%
SharpSpring, Inc.	11.29	53.5%	130	(8)	122	22	(8)	5.6x	5.4x	4.1x	NM	NM	NM	NM	26.6%	(37.7%)	70.4%
Marin Software Incorporated	1.44	19.5%	10	2	11	53	(12)	0.2x	NA	NA	NM	NA	NA	NM	(18.6%)	(22.9%)	56.1%

Mean	8.8x	8.5x	7.1x	40.8x	41.6x	67.8x	0.8x	15.2%	(9.7)%	67.6%
Median	8.6x	8.1x	6.5x	37.7x	34.8x	26.6x	0.8x	9.3%	(13.3)%	73.5%

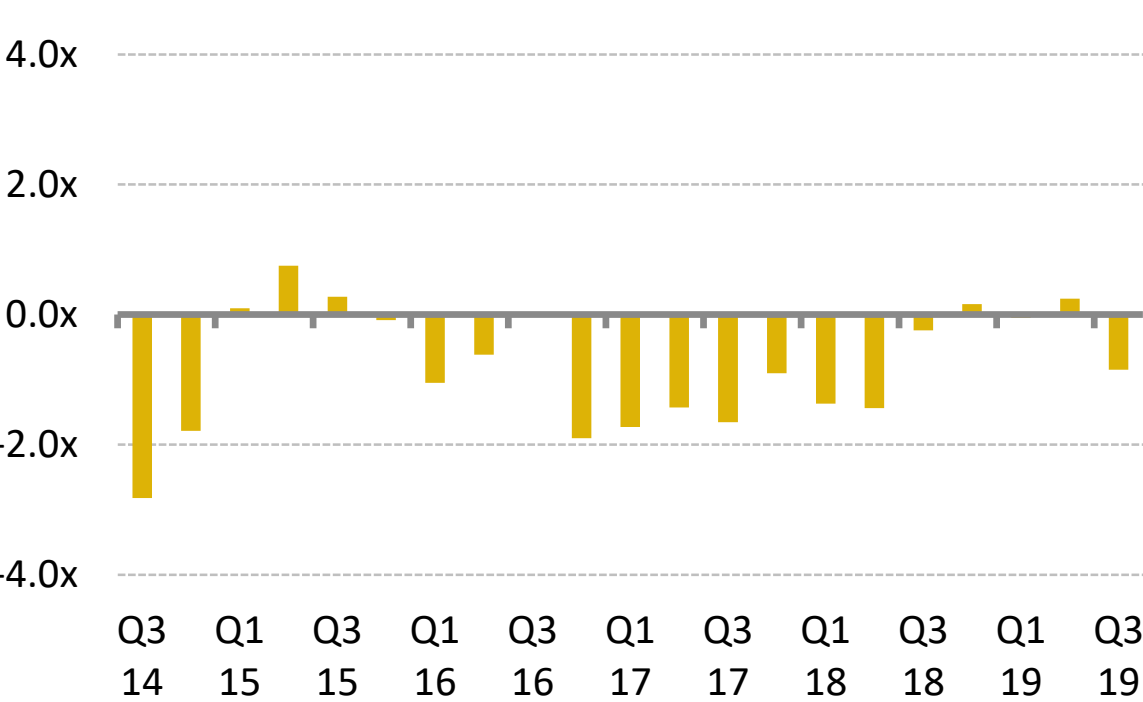
LTM EBITDA MARGIN



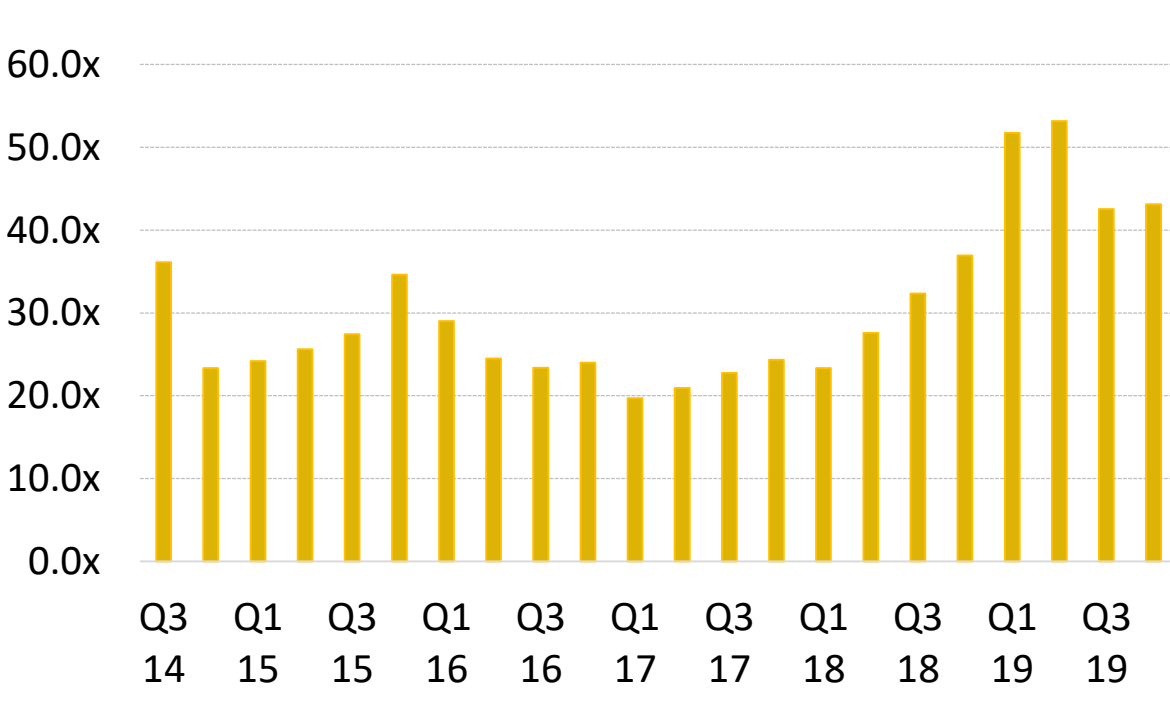
REVENUE GROWTH



NET DEBT / LTM EBITDA



EV / EBITDA

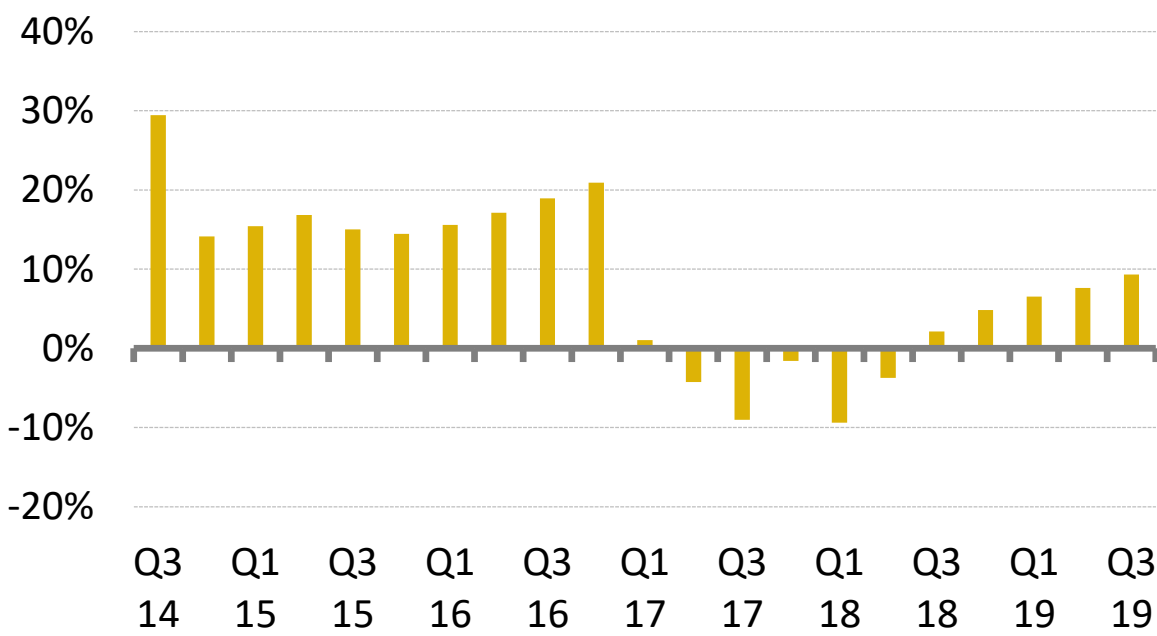




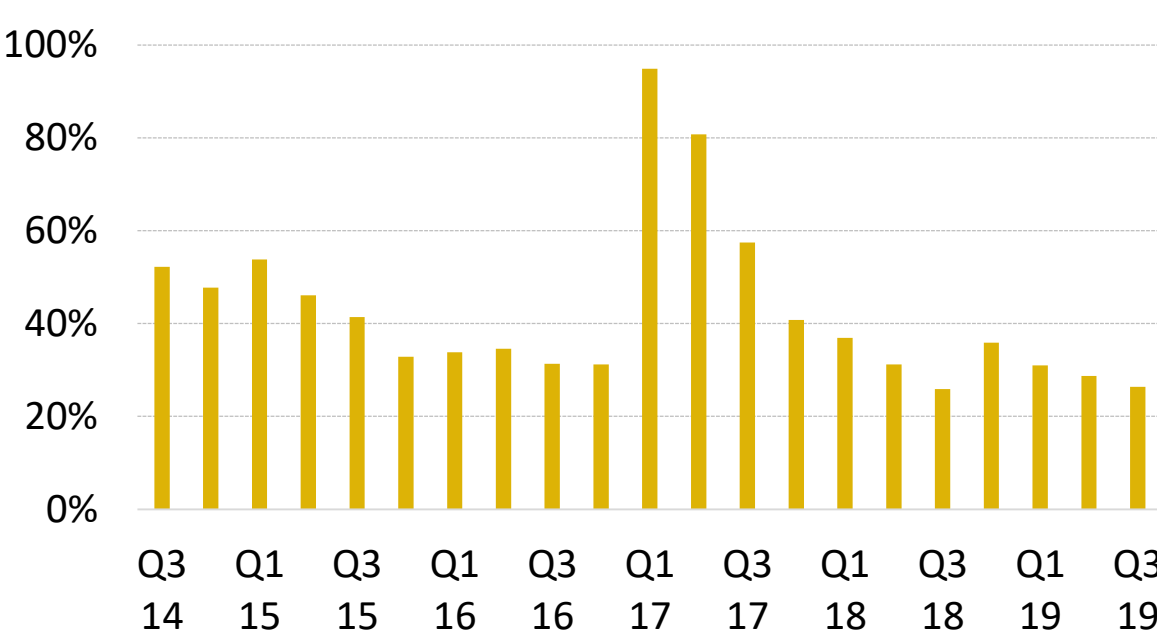
SOCIAL MEDIA– SEGMENT ANALYSIS

	Share Price	% of 52 Week High	Market Cap (\$M)	Net Debt (\$M)	Ent. Value (\$M)	LTM		Ent. Value /						Net Debt / EBITDA	3 Year Revenue CAGR	EBITDA Margin	Gross Margin	
						Revenues (\$M)	EBITDA (\$M)	Revenues			EBITDA							
								LTM	2019E	2020E	LTM	2019E	2020E					
Facebook, Inc.	\$215.22	100.3%	\$613,753	(\$43,137)	\$570,616	\$66,529	\$28,446	8.6x	8.1x	6.6x	20.1x	15.2x	13.1x	NM	46.0%	42.8%	81.9%	
Match Group, Inc.	85.05	89.2%	23,812	1,287	25,099	1,961	653	12.8x	12.2x	10.4x	38.5x	32.3x	27.4x	2.0x	23.9%	33.3%	74.8%	
Twitter, Inc.	33.05	72.1%	25,609	(3,271)	22,338	3,361	773	6.6x	6.5x	5.6x	28.9x	18.2x	16.0x	NM	11.1%	23.0%	67.5%	
Snap Inc.	16.67	90.8%	23,337	(1,046)	22,292	1,544	(957)	14.4x	13.0x	9.5x	NM	NM	214.7x	NM	172.0%	(62.0%)	44.6%	
The Meet Group, Inc.	5.13	81.8%	368	12	380	207	29	1.8x	1.8x	1.6x	13.2x	9.1x	7.8x	0.4x	46.4%	13.9%	100.0%	
Spark Networks SE	4.65	26.4%	121	(2)	119	101	5	1.0x	0.6x	0.5x	23.3x	5.9x	2.3x	NM	20.0%	5.1%	35.1%	
								Mean	7.6x	7.0x	5.7x	24.8x	16.1x	46.9x	1.2x	53.2%	9.3%	67.3%
								Median	7.6x	7.3x	6.1x	23.3x	15.2x	14.6x	1.2x	35.0%	18.5%	71.2%

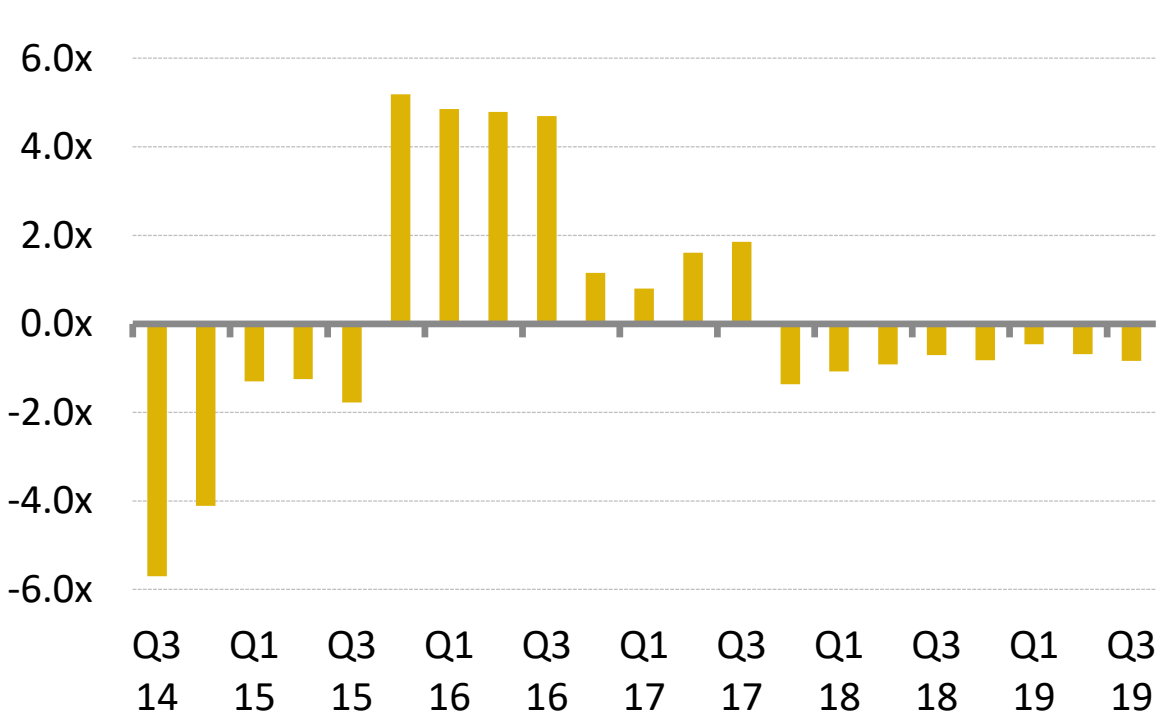
LTM EBITDA MARGIN



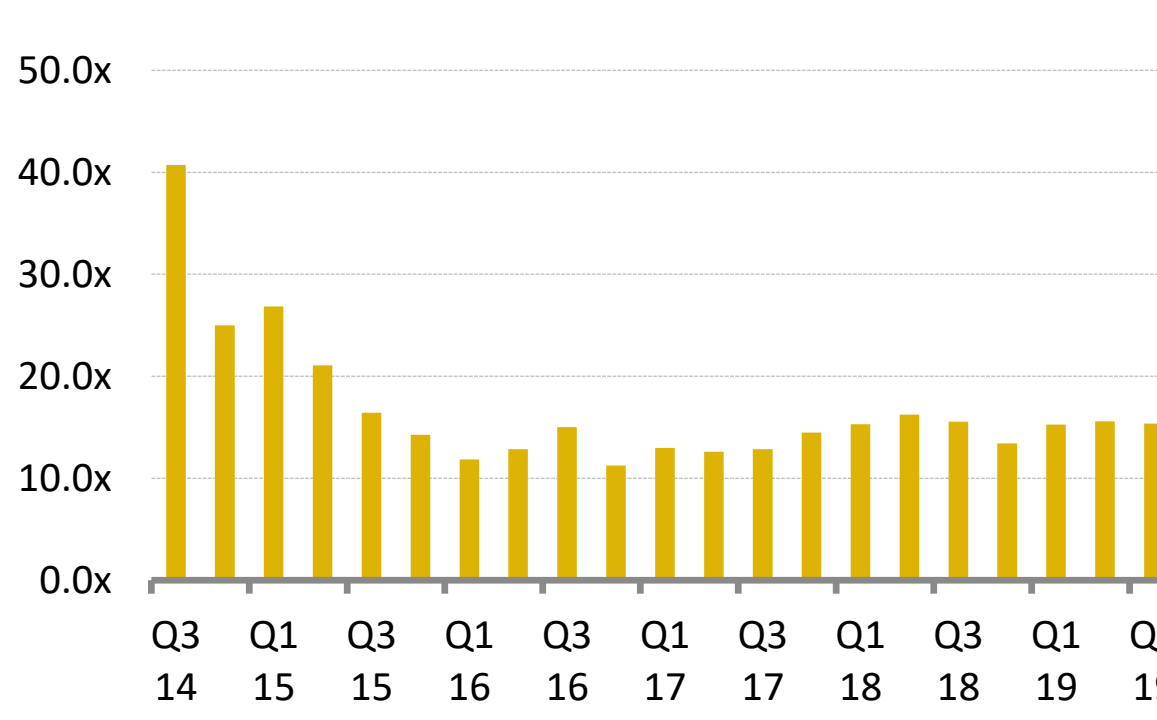
REVENUE GROWTH



NET DEBT / LTM EBITDA



EV / EBITDA





INTERNET AND DIGITAL MEDIA M&A ACTIVITY

Date	BUYER	TARGET	TRANSACTION VALUE (\$M)	EV / REVENUE	EV/ EBITDA	CLASSIFICATION
12/23/2019	DraftKings & SBTech	Diamond Eagle Acquisition Corp.	NA	NA	NA	Games; Fantasy Sports
12/20/2019	IAC/InterActiveCorp	Care.com, Inc.	\$561.2	2.7x	55.7x	Ecommerce; Healthcare Marketplace
12/20/2019	Carlyle Group L.P. (nka:The Carlyle Group Inc.);	Dept Holding B.V.	NA	NA	NA	Digital Agency
12/20/2019	J.D. Power	Trilogy Automotive	NA	NA	NA	Lead Gen
12/19/2019	Google LLC	Typhoon Studios Inc.	NA	NA	NA	Games
12/19/2019	The Rubicon Project, Inc.	Telaria, Inc.	\$375.6	5.5x	NA	SSP; Video; Connected TV
12/19/2019	Gumtree AU Pty Limited	Cox Australia Media Solutions Pty Ltd	NA	NA	NA	Classifieds; Information; Auto
12/18/2019	Facebook, Inc.	PlayGiga S.L.	NA	NA	NA	Cloud; Games; VR
12/18/2019	Providence Equity Partners L.L.C.	Smartly.io Inc.	NA	NA	NA	Ad Tech; Social; Dynamic Creative;
12/18/2019	Forward3D Limited	The Search Agency, Inc.	NA	NA	NA	SEO;
12/17/2019	Marchex, Inc.	Sonar Technologies, Inc.	\$13.7	NA	NA	SMS/MMS; Customer Engagement
12/17/2019	Attention Capital	Girldboss Media, Inc.	NA	NA	NA	Publishing
12/16/2019	Atrium Sports, Inc.	Synergy Sports Technology, LLC	NA	NA	NA	Data; Analytics; eSports
12/16/2019	Loop Media, Inc.	Interlink Plus, Inc.	NA	NA	NA	DOOH; Streaming Media
12/16/2019	Bruin Sports Capital LLC	Two Circles Limited	NA	NA	NA	Marketing; Sports; Consumer Data
12/16/2019	Atrium Sports, Inc.	Synergy Sports Technology, LLC	NA	NA	NA	Data; Sports; Analytics
12/13/2019	HYPR Corp.	SociallyMined	NA	NA	NA	Digital Agency
12/12/2019	NA	Conductor, LLC	NA	NA	NA	SEO; Organic Search
12/10/2019	Bloomberg Media	CityLab website from The Atlantic	NA	NA	NA	Publishing
12/11/2019	Acquia Inc.	AgilOne Inc.	NA	NA	NA	Ad Tech; Customer Data Platform (CDP)
12/10/2019	Hawke Media, LLC	Artemis Digital Media, LLC	NA	NA	NA	Digital Agency; Influencer; Affiliate Mktg
12/10/2019	dovetail solutions, Inc.	Modamedia Communications, Inc./Stryker Munley Group	NA	NA	NA	IR/PR
12/9/2019	JustWatch GmbH	GoWatchIt	NA	NA	NA	Guides; Streaming Video Guide
12/9/2019	Bisnow LLC	SelectLeaders, LLC	NA	NA	NA	Classifieds; Jobs
12/5/2019	Story Worldwide LLC	Story Worldwide	NA	NA	NA	Digital Agency
12/5/2019	WTWH Media, LLC	Robotics Division of EH Publishing Inc.	NA	NA	NA	Publishing
12/5/2019	Continuum Media Partnership, Inc.	Continuum Media Network, Inc.	\$6.2	NA	NA	Media Buying; TV
12/4/2019	Women In Their Prime, LLC	Website Content of The Fine Line	NA	NA	NA	Publishing
12/3/2019	Dolphin Entertainment, Inc.	Shore Fire Media, Ltd.	\$3	NA	NA	Talent mgmt; Music
12/3/2019	Sprinklr, Inc.	Social Advertising Business of Nanigans, Inc.	NA	NA	NA	Ad Tech; Social Media
12/3/2019	Enlighten Technologies	Media Assets of Cannabis Club TV	NA	NA	NA	In-Store; OTT; DOOH
12/2/2019	Forbes Media LLC	Quantalytics Research, LLC	NA	NA	NA	Research; Information
12/2/2019	EducationDynamics, LLC	Key Assets of Thruline Marketing	NA	NA	NA	Digital Agency; Lead Gen; Call Centers
12/2/2019	New Wave Esports Corp.	Even Matchup Gaming Inc.	NA	NA	NA	Video; eSports; Events
12/2/2019	Fantasy Sports Enterprises	FFStatistics.com	NA	NA	NA	Data
12/2/2019	Connect Meetings, LLC	BizBash Media Inc.	NA	NA	NA	Publishing; Trade Shows
11/28/2019	Codemasters Group Holdings Plc	Slightly Mad Studios Limited	\$196.1	20.8x	NA	Games; Studio
11/26/2019	Weyland Tech Inc.	All Assets of Push Holdings, Inc.	\$16	NA	NA	eCommerce; Platform
11/26/2019	Ashfield Healthcare Communications Ltd	Canale Communications Inc.	\$31	NA	NA	IR/PR
11/25/2019	viagogo AG	StubHub, Inc.	\$4,050	NA	NA	eCommerce; Online Ticketing
11/22/2019	Engine Media Holdings, Inc.	Torque Esports Corp.	NA	NA	NA	CMS; eSports; Video
11/21/2019	SPORTORITY UK Ltd	The Players' Tribune, Inc.	NA	NA	NA	Publishing; Sports
11/21/2019	SharpSpring, Inc.	Perfect Audience Business of Marin Software	\$4.6	NA	NA	Ad Tech; Retargeting; Cloud
11/21/2019	Vision Integrated Graphics Group, LLC	SourceLink, LLC	NA	NA	NA	Database; Marketing Services; Analytics
11/20/2019	Integral Ad Science, Inc.	ADmantX SpA	\$17.7	8.0x	NA	Ad Tech; Contextual Targeting
11/20/2019	Aon plc	CoverWallet, Inc.	NA	NA	NA	B2B; Insurance; Comparison Shopping
11/20/2019	MediaMonks B.V.	MediaMonks India	NA	NA	NA	Media Services; Video Production;
11/20/2019	Moburst Ltd.	Clutch Studios	NA	NA	NA	Marketing; Content Marketing
11/19/2019	Branigan Communications, Inc.	Anthologie, Inc.	NA	NA	NA	Digital Agency; Creative
11/19/2019	HomeServe USA Corp.	eLocal USA LLC	\$177.2	NA	NA	Ad Tech; Lead Gen
11/19/2019	Wondr Gaming	Rival.ai Inc.	NA	NA	NA	Data; eSports
11/18/2019	Google LLC	CloudSimple, Inc.	NA	NA	NA	Cloud; Workload Migration to Cloud
11/18/2019	Episerver UK Limited	idio Ltd.	NA	NA	NA	Customer Experience; Personalization
11/14/2019	Beasley Media Group, Inc.	Houston Outlaws	NA	NA	NA	Games; eSports; Overwatch team
11/12/2019	Uploadcare, Inc.	Blinkloader	NA	NA	NA	CDN; Content Optimization
11/11/2019	W2O Group	Radius Medical Animation LLC	NA	NA	NA	Digital Agency; Creative
11/8/2019	The Blackstone Group Inc.	MagicLab	\$3,000	NA	NA	Social Media; Dating Apps

*Source: Capital IQ as of 12/31/2019



INTERNET AND DIGITAL MEDIA M&A ACTIVITY

Date	BUYER	TARGET	TRANSACTION VALUE (\$M)	EV / REVENUE	EV/ EBITDA	CLASSIFICATION
11/8/2019	Finn Partners, Inc.	ZPR Limited	NA	NA	NA	IR/PR
11/7/2019	DoubleVerify, Inc.	Ad-Juster, Inc.	NA	NA	NA	Ad Operations; Discrepancy Mgmt
11/7/2019	Lieberman Research Worldwide, Inc.	T3	NA	NA	NA	Digital Agency
11/7/2019	Infutor Data Solutions, Inc.	Dunn DataCo, Inc.	NA	NA	NA	Data; Marketing Intelligence
11/6/2019	Acceleration Community of Companies	MKG Productions, Inc./ Pink Sparrow	NA	NA	NA	Digital Agency
11/6/2019	Quotient Technology Inc.	Ubimo Ltd.	NA	NA	NA	Ad Tech; Location Intelligence; Targeting
11/5/2019	Amperity, Inc.	Custora, Inc. (nka:Amperity Insights)	NA	NA	NA	Marketing; Personalization
11/5/2019	F. Marc de Lacharrière (Fimalac) S.A.	Jellyfish Group Limited	NA	NA	NA	Digital Agency; Google Marketing Partner
11/4/2019	Viant Technology Inc.	Viant Technology Holding Inc.	NA	NA	NA	Ad Tech; Data; Customer ID
11/4/2019	Emerald Expositions Events, Inc.	G3 Communications, Inc.	\$12.8	NA	NA	Content Mgmt
11/1/2019	Lamark Media	SocialWithin	NA	NA	NA	Digital Agency; Facebook; Social Agency
10/31/2019	Haivision Network Video Inc.	LightFlow Media Technologies S. L.	NA	NA	NA	CDN; Streaming Optimization
10/30/2019	TapClicks, Inc.	Digital Brand Mine LLC	NA	NA	NA	Analytics; Reporting Tools
10/29/2019	RockBridge Growth Equity, LLC	ProSites Inc.	NA	NA	NA	SEO; Reputation Mgmt
10/28/2019	Kubient, Inc.	Fidelity Media, LLC	NA	NA	NA	SSP; Yield Optimization
10/28/2019	TTEC Holdings	FCR	\$159.8	NA	NA	Customer Experience
10/24/2019	BuySellAds.com, Inc.	Pando Media	NA	NA	NA	Publishing
10/24/2019	Falls Digital, LLC	Wyse Advertising, Inc.	NA	NA	NA	Media Buying; Creative
10/23/2019	Target Data, Inc.	Social Fulcrum LLC	NA	NA	NA	Digital Agency; Social; Facebook Ads
10/22/2019	MJ23 UK Acquisition Limited	Cision Ltd.	\$2,782.8	3.7x	12.5x	Media Monitoring
10/22/2019	Inmar, Inc.	ownerIQ, Inc.	NA	NA	NA	Ad Tech; DMP; DSP; Ad Network
10/22/2019	Ad Practitioners LLC	MONEY.COM	NA	NA	NA	Digital Content; Finance Vertical
10/22/2019	Mastercard Incorporated	SessionM, Inc.	215	NA	NA	Data; Customer Data Platform (CDP)
10/21/2019	Roku, Inc.	dataxu, inc.	\$149.3	1.0x	NA	DSP
10/21/2019	The Rubicon Project, Inc.	RTK.IO, INC	11	NA	NA	Ad Tech; Header Bidding Mgmt
10/18/2019	Xandr, Inc.	clypd, Inc.	NA	NA	NA	Ad Tech; Advanced TV Advertising
10/17/2019	Power Digital Marketing, Inc.	Factorial Digital, Inc.	NA	NA	NA	SEO
10/12/2019	NIKE, Inc.	TraceMe Inc.	NA	NA	NA	Digital Content; Sports
10/10/2019	Kibo Software, Inc	Monetate, Inc.	NA	NA	NA	Marketing; Personalization; A/B Testing
10/8/2019	MediaMonks B.V.	Firewood Marketing, Inc.	\$150	2.6x	14.6x	Digital Agency
10/7/2019	Group Nine Media, Inc.	PopSugar, Inc.	\$300	NA	NA	Publishing; Women's Lifestyle
10/4/2019	Go Global Retail	Assets of ModCloth, Inc.	NA	NA	NA	eCommerce
10/3/2019	Whistle Sports, Inc.	Vertical Networks	NA	NA	NA	Digital Content; Vertical Video
10/3/2019	Taboola, Inc.	Outbrain Inc.	\$850	NA	NA	Digital Content; Content Discovery
10/3/2019	Samba TV	Wove Technologies, Inc.	NA	NA	NA	Data; Onboarding; Connected TV
10/2/2019	Oracle Corporation	CrowdTwist, Inc.	\$130	NA	NA	Loyalty; Cloud; Customer Retention
10/2/2019	Vice Media, LLC	Refinery 29 Inc. (nka:Refinery29, Inc.)	\$400	NA	NA	Digital Content
10/1/2019	About, Inc.	Liquor.com, Inc.	NA	NA	NA	Digital Content
10/1/2019	System1 LLC	Mapquest (from Verizon)	NA	NA	NA	Digital Content; Maps
10/1/2019	M Booth & Associates, Inc.	Health Unlimited Limited (nka:M Booth Health)	\$45	2.6x	NA	IR/PR; Communications Agency
10/1/2019	Gartner, Inc.	TOPO Inc	NA	NA	NA	Research; Market Research; Events

*Source: Capital IQ as of 12/31/2019



OUTLOOK - TRADITIONAL MEDIA

Overview

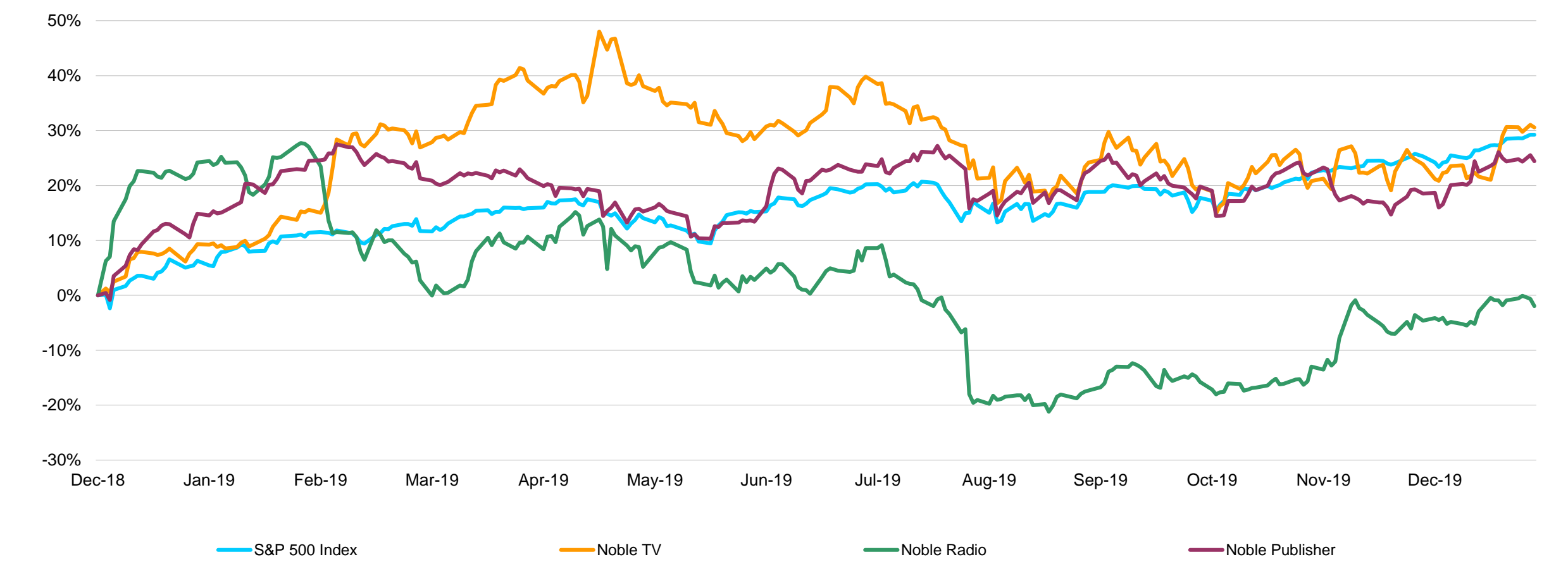
The Internet Takes Over The World

As we noted at the top of this newsletter, according to several advertising prognosticators, online advertising accounted for slightly more than 50% of total US advertising spend in 2019, more than triple from 15% just 10 years earlier. Despite losing share over the last decade, not all traditional media sectors performed poorly in the public markets. While it is difficult to determine with complete accuracy the performance of the sectors over the past 10 years, given mergers, spin-offs, and bankruptcies, the Television sector was the only traditional media sector to outperform the general market over the past decade. The TV stocks were up 736% from 2009 to 2019 versus 189% gain for the general market as measured by the S&P 500 Index over the comparable period. The TV companies benefited from a brand new and highly profitable revenue stream, Retransmission revenues, and significant industry consolidation. Many of the largest TV consolidators, including Nexstar (+2,783%), Sinclair (+723%), and Gray Television (+1,338%), outperformed the rest of the group. In contrast, there were very few Digital Media companies public 10 years ago and, as such, we do not have an Index to compare.

The significance of the stock performance for the past 10 years, as it was in 2019 for all media companies, including Digital Media, is that the stock valuations were influenced by M&A activity. This is true for the Publishing stocks in 2019 (discussed later in this report), which had one of its best performances in years. But, the momentum of the Internet and Digital Media appear to be hard to stop. In 2019, Noble's Ad Tech (+75%), Social Media (+58%), and MarTech (+43%) Indices all significantly outperformed the S&P 500 (+29%) for the year, while Noble's Digital Media Index (+26%) performed in-line with the broader market.

As we look into our crystal ball, there will be some favorable fundamental tailwinds in 2020, given the expected influx of Political advertising and the expectation of an expanding general economy. In addition, we expect many media companies to repair debt heavy balance sheets, which has been a result of recent acquisitions. As such, we anticipate that media stocks, in general, should have a favorable 2020. We encourage investors to be selective, however, given the late stage economic cycle and the secular headwinds from the Internet. This report highlights some of the challenges and opportunities by sector and some of our current favorites for 2020.

STOCK MARKET PERFORMANCE: TRADITIONAL MEDIA





OUTLOOK - TRADITIONAL MEDIA

TELEVISION BROADCASTING

Is The Golden Age of TV Stocks Over?

The TV sector slightly under performed in the fourth quarter 2019, up a 7% versus a 10% gain in the S&P 500. But, more importantly the TV stocks performed in line with a strong general market in 2019, up 28% versus the general market, which was up nearly 29% as measured by the S&P 500. This market weighted index was led by the shares of Sinclair Broadcasting (up 62%), Tegna (up 43%), and Nexstar (up 30%). Others lagged the industry and the market, including Gray Television (up 11%) and E.W. Scripps (down 16%). The increase in broadcast TV stocks also outperformed the industry's average 22% increase in off election years, which goes back roughly 30 years. The question on everyone's mind, "Has the long period of out-performance ended?"

Broadcast television stocks were the darlings of Wall Street over the past decade, increasing 736% versus a gain of 189% in the S&P 500 in the comparable period from 2009 to 2019. Leading industry consolidators in the M&A fueled decade outperformed most in the group. The shares of Nexstar, which led the industry's performance, increased a stunning 2,782%, followed by Gray Television, which increased 1,338%, and Sinclair Broadcasting, up 723%. Several factors influenced the strong performance including the increasing importance of Retransmission revenue.

Total Retransmission revenue for the industry was a modest \$760 million in 2009, or 4% of total broadcast revenue, and grew at a compound annual rate of 30% to an estimated \$10.8 billion in 2019. In 2019, Retransmission revenue accounted for roughly 33% of total Broadcast TV revenue. This high margin and predictable revenue stream became a ballast to support a heightened M&A environment. Having scale was important to protect and to grow Retransmission revenue when negotiating the fees with cable and satellite operators. But, this revenue stream has become largely exploited by the end of the decade. Retransmission revenues grew an estimated 6% in 2019 and is projected to grow in the low single digits for the foreseeable future.

Furthermore, the M&A environment has cooled. A number of broadcasters have reached the ownership cap of 39% of US total TV households and it appears unlikely that the FCC will make a move to lift it. In addition, a number of TV broadcasters are shoring up balance sheets as a result of recent acquisitions, which has taken several broadcasters out of the M&A market for now. But, importantly, there is a smaller pool of attractive stations left to buy.

We believe that the strong Retransmission revenue and Political advertising growth has masked some of the underlying issues over broadcast TV advertising. The Internet has recently taken share from the Broadcasters, with the total share of advertising expected to dip to 28% in 2019, the first time the industry has been below 30% of total advertising. In addition, the growth of OTT platforms could pose an even bigger problem. While net Retransmission revenue may not be affected, given that Broadcasters make the same economics on the OTT platforms as it does on cable, there is a substantial risk that continued audience fragmentation as consumers shift to paid content service providers, like Netflix, could lead to lower ad rates, or CPMs. There may not be enough viewers that are attractive to advertisers.

Competitive pressures from the Internet were the concerns in 2009. At that time, analysts under estimated the growth of Retransmission revenue and had dire forecasts for the next decade for the Broadcasters. However, at this point, there does not appear to be a growth driver as important as Retransmission revenue. A new broadcast TV standard, ATCS 3.0, is still in its infancy and significant revenue opportunities have not yet been determined. We believe that there will be significant pressure for Broadcast TV executives to seek new revenue streams from the new broadcast standard in coming years.



OUTLOOK - TRADITIONAL MEDIA

TELEVISION BROADCASTING (Continued)

Consequently, it is very likely that the next decade will be far different than the roll-up strategy of the past in terms of what will drive stock valuations. The wild card is a possible shift in the Political will to lift onerous ownership caps, which does not appear to be likely currently. The Broadcast TV stocks likely will find it difficult to climb the wall of worry over the secular challenges in advertising. It is not surprising that many group TV station owners are looking for growth outside of TV stations, such as Sinclair and CBS. We believe that there will be increasing attention on content creation to be competitive with the likes of Netflix and Amazon. Nonetheless, the fundamentals of the industry appear favorable in 2020, a function of favorable Retransmission revenue growth, the influx of Political advertising, and a favorable general economy.

How should investors play the industry? We favor companies that are below the ownership cap and have the ability to make acquisitions, like Gray Television. In addition, we favor Broadcasters that have a developed business strategy into faster revenue growth areas, like E.W. Scripps. Its growth businesses include Podcasting and OTT broadcast Networks.

RADIO BROADCASTING

Is Radio Attractive Again?

It has been nearly 2 years since John Malone, the CEO of Liberty Media, the owner of Sirius XM and Pandora, tried to increase its stake in iHeartMedia. Those efforts were repeatedly rebuffed by bondholders. But, recently, Liberty Media, which currently owns 4.8% of iHeart, asked the Justice Department for approval to increase its equity stake in an effort to determine any roadblocks. The Justice Department likely will have some concerns regarding the need for competition between Sirius XM and terrestrial radio. The conditions that the Justice Department may set could determine the economic value of pursuing a move to increase the stake. Why would John Malone seek to own a terrestrial radio company when he is already invested in two of the fastest growing segments of the audio industry, streaming and subscription audio? What are the implications should the Justice Department allow Liberty to increase its stake in iHeart?

First, one of the most attractive attributes of terrestrial radio is the reach. While time spent listening has declined (as it has for most mediums), radio still reaches roughly 92% of the US households, which has been relatively stable over the past 10 years. Furthermore, radio still has a significant amount of engagement with its audience. Consequently, radio is a megaphone that could potentially drive business. iHeart has effectively done this through the development of its podcasting business, for instance. It uses its own air time to promote it. Streaming audio companies, like Akazoo, uses free radio stations to drive its premium subscriptions, which is one of the reasons its customer acquisition costs are low. Similarly, iHeart would be able to use its megaphone to drive subscriptions to Pandora or Sirius XM. But, importantly, iHeart's platform is not just the terrestrial radio audience, but includes roughly 100 million users from its Digital businesses and an estimated 200 million from its social media presence.

Yet another reason for Malone's interest in iHeart is that advertisers seek a multi platform buy that delivers a significant audience. In our view, this has been one of the gating factors for the likes of Pandora and Sirius XM. There are very few people that listen to a particular station at any given time. Consequently, a combination of Pandora and Sirius XM, with a large terrestrial radio platform, a digital presence, concerts and social media presence, could offer compelling advertising platform opportunities. iHeart management has stated that advertisers may come in its door for one of its offerings and then expand into other platforms.

Finally, we believe that John Malone likes cash flow businesses. The radio industry, in general, and iHeart, in particular, is a cash generating machine. iHeart is expected to generate \$375 million to \$400 million in free cash flow in 2019. The company is expected to pare down debt in 2020, allowing it to reduce its debt leverage into the 4s by the end of the year.

What are the implications for the radio industry if the Justice Department grants Liberty approval to increase its stake? Such a move would be a "cattle call" for the industry to consolidate. Scale would be important to compete with the audience levels that iHeart delivers. There will be a need to compete against the potential increased competitive threats from the likes of Pandora or Sirius XM. But, radio companies need to consolidate smartly, without significantly leveraging up balance sheets, especially given the late stage of this economic cycle.



OUTLOOK - TRADITIONAL MEDIA

RADIO BROADCASTING (Continued)

The Radio stocks had a nice bounce recently. The stocks outperformed the general market in the fourth quarter 2019, up 18% versus the market's 10% advance. The gains in the fourth quarter, however, were not enough to offset the year earlier declines. As a result, the Radio stocks under performed the general market for the full year 2019, down 6% versus the market up 29%. This market cap weighted index masks some poor performances, like Entercom (down 41% for the year) and Beasley Broadcasting (down 17%). The strongest performer in the sector was Cumulus Media, up 35%. The company had a series of favorable quarters following the emergence from bankruptcy. The radio stocks performed poorly over the past decade, as well. Over the past decade, the radio stocks on average was up an estimated 9% versus a general market gains of 189% in the comparable period. This is an estimate given bankruptcies in the industry.

So, what does the future hold for radio? We believe that the heightened interest in radio by a proven value creator, like John Malone, should provide a reason for radio investors to take notice. The fundamentals in 2020 appear favorable, which should allow radio broadcasters to aggressively pare down debt. Furthermore, many in the industry have restructured balance sheets, providing more financial flexibility should the economy turn sour. Companies like Townsquare Media, which have a compelling, fast growing digital media business, stand apart from the pack in terms of growth and stock valuation. As such, it remains our favorite in the sector. In addition, we believe that there is still a favorable risk/reward relationship with Cumulus Media, as that company continues to execute on an aggressive debt reduction strategy.

PUBLISHING

In A Precarious Spot

Publishing stocks had a good 2019, but lagged the performance of the other traditional media companies in the fourth quarter. In the fourth quarter, the group was up a modest 5% versus a 10% increase for the general market. But, for 2019, the Noble Publishing Index increased a strong 24%, slightly under performing the 29% increase for the general market. The favorable performance for the year was bolstered by a good showing by the New York Times and the merger between Gannett and New Media.

New York Times has successfully pursued a digital business model and its shares outperformed the sector. The company set a goal of delivering \$800 million in digital revenue, roughly 50% of its total revenue by the end of 2020, and it appears to be well on its way toward that goal. The shares of New York Times increased 13% in the fourth quarter, outperforming the market's 10% advance. In addition, the shares increased 28% for the year roughly in line with the 29% growth for the general market. The New York Times shares increased a solid 160.4% for the past 10 years, but that increase was below the general market's increase of 188.5%.

The digital strategy of the New York Times and the revenue growth that the company exhibited over the past several years were inspiration to the rest of the publicly traded publishing companies to pursue a digital strategy. Certainly, the NYT shares reflected tangible benefits to its shareholders for executing on its digital strategy. The question is whether or not the New York Times model can be replicated by other publishers?

At this point, the rest of the industry is disheveled. Certain private equity firms are seeking an exit strategy from its investments in the industry, some of which appear to be milking cash flow and not investing into a digital future. Others are seeking scale to provide more opportunity for operating synergies and for an improved digital footprint. Finally, many in the industry are burdened with a significant amount of debt, which limits the ability to invest in a digital future. These are issues weighing on investors in the sector.

In our view, financial restructurings are likely and necessary. We agree that there are benefits from scale, but it is important that balance sheets are not burdened with a significant amount of debt. As such, we encourage investors to be selective and view investments in the industry as speculative. Our favorite in the industry is Tribune Publishing, which currently has no debt and a sizable cash position. We would note that the company's current largest shareholder owns newspaper assets and its interests may not be aligned with all shareholders. Finally, we view the shares of McClatchy as a option towards that company's financial restructuring.

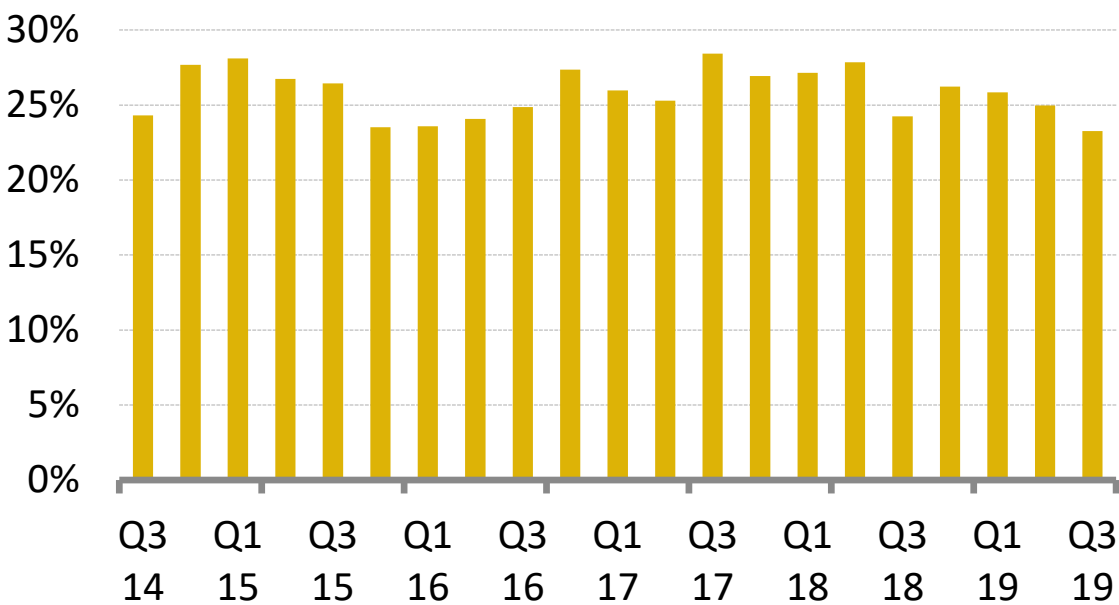
*Source: Noble Capital Markets Equity Research Report; Director of Research: Michael Kupinski



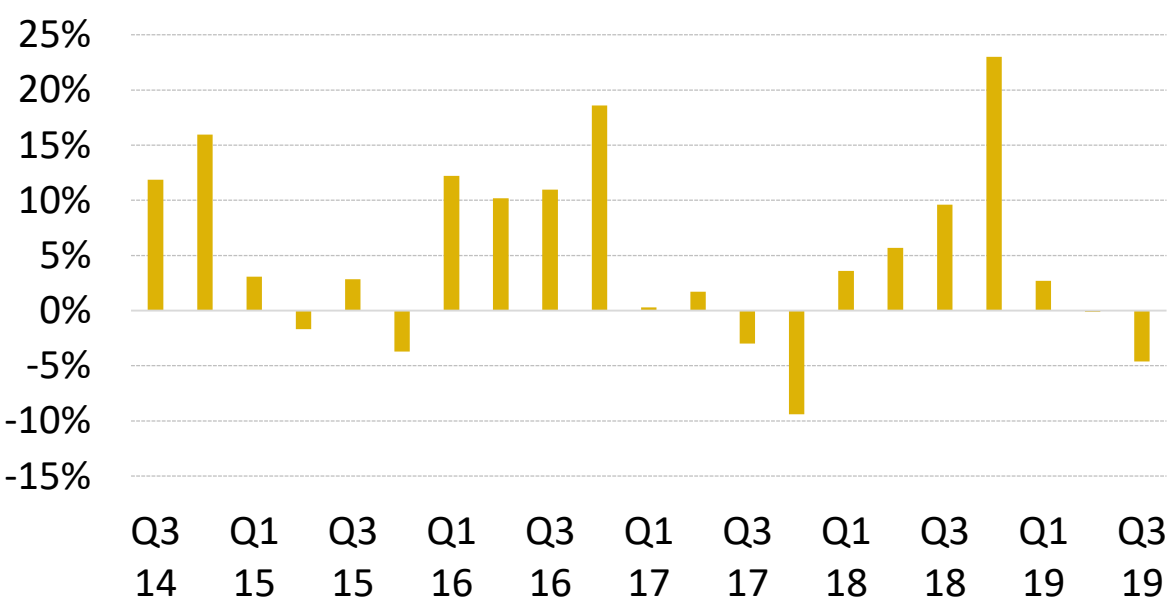
TV – SEGMENT ANALYSIS

	Share Price	% of 52 Week High	Market Cap (\$M)	Net Debt (\$M)	Ent. Value (\$M)	LTM		Ent. Value /						Net Debt / EBITDA	3 Year Revenue CAGR	EBITDA Margin	Dividend Yield	
						Revenues (\$M)	EBITDA (\$M)	Revenues			EBITDA							
								LTM	2019E	2020E	LTM	2019E	2020E					
ViacomCBS Inc.	\$41.87	78.0%	\$25,750	\$10,303	\$36,247	\$15,295	\$2,957	2.4x	1.3x	1.2x	12.3x	6.1x	5.8x	3.5x	4.6%	19.3%	2.3%	
Fox Corporation	37.11	88.5%	23,034	4,017	27,084	11,515	2,776	2.4x	2.3x	2.1x	9.8x	11.0x	9.4x	1.4x	8.6%	24.1%	1.2%	
Sinclair Broadcast Group, Inc.	31.88	47.9%	2,937	11,315	15,794	3,511	722	4.5x	3.7x	2.3x	21.9x	13.7x	7.6x	15.7x	11.2%	20.6%	2.5%	
Nexstar Media Group, Inc.	125.51	101.1%	5,791	8,457	14,269	2,737	975	5.2x	4.7x	3.1x	14.6x	14.1x	7.3x	8.7x	45.6%	35.6%	1.5%	
TEGNA Inc.	17.09	99.1%	3,707	4,282	7,989	2,248	748	3.6x	3.5x	2.8x	10.7x	11.6x	8.0x	5.7x	7.7%	33.3%	1.7%	
Gray Television, Inc.	22.00	86.9%	2,181	3,623	6,443	1,871	644	3.4x	3.1x	2.7x	10.0x	9.3x	7.4x	5.6x	22.0%	34.4%	0.0%	
The E.W. Scripps Company	16.06	68.6%	1,299	1,983	3,282	1,348	202	2.4x	2.3x	1.7x	16.2x	18.8x	8.3x	9.8x	22.7%	15.0%	1.3%	
Entravision Communications	2.54	62.0%	215	137	351	285	53	1.2x	1.3x	1.2x	6.6x	8.8x	7.3x	2.6x	5.4%	18.6%	7.9%	
								Mean	3.1x	2.8x	2.1x	12.8x	11.7x	7.6x	6.6x	16.0%	25.1%	2.3%
								Median	2.9x	2.7x	2.2x	11.5x	11.3x	7.5x	5.7x	9.9%	22.3%	1.6%

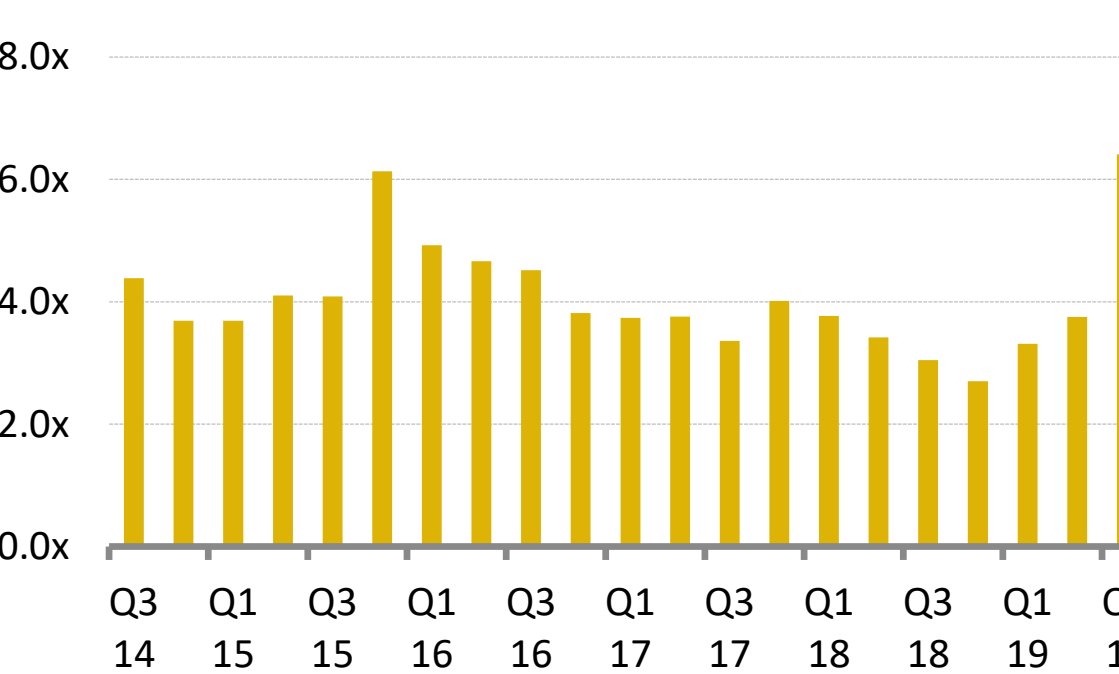
LTM EBITDA MARGIN



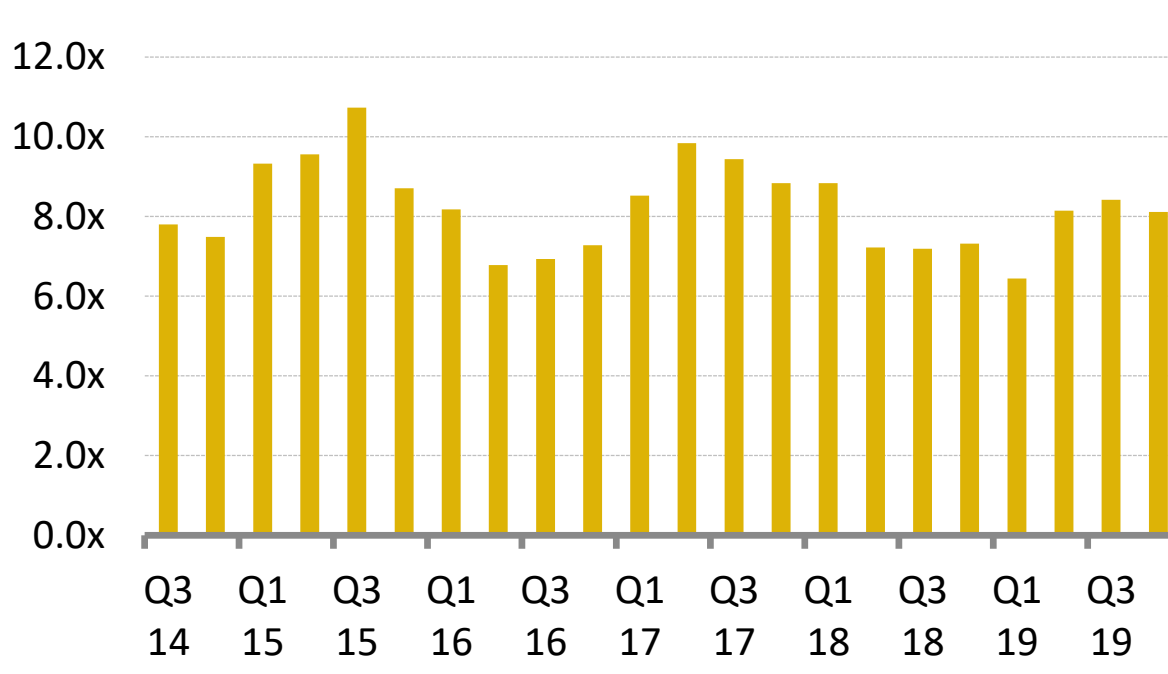
REVENUE GROWTH



NET DEBT / LTM EBITDA



EV / EBITDA



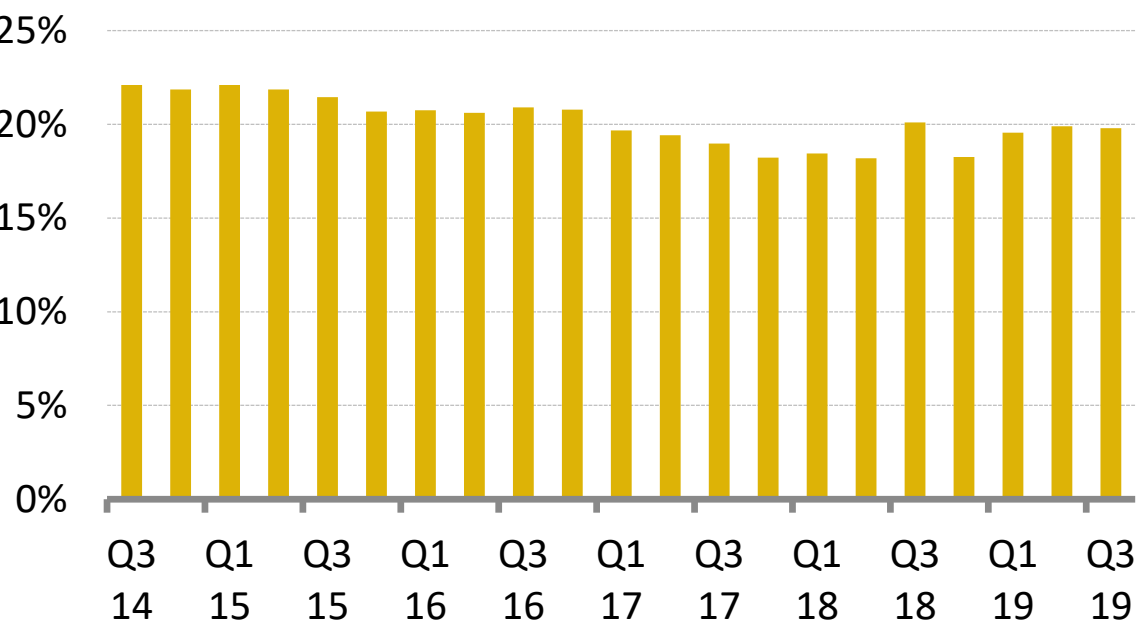


RADIO – SEGMENT ANALYSIS

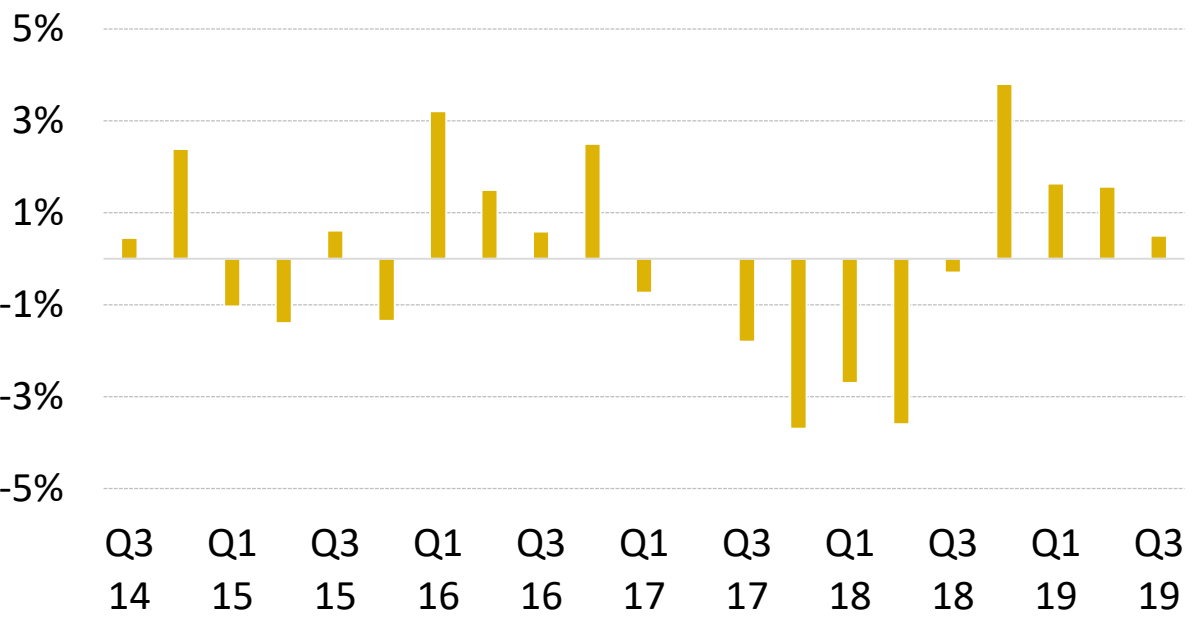
	Share Price	% of 52 Week High	Market Cap (\$M)	Net Debt (\$M)	Ent. Value (\$M)	LTM Revenues (\$M)	LTM EBITDA (\$M)	Revenues LTM	2019E	2020E	Ent. Value / LTM	EBITDA 2019E	EBITDA 2020E	Net Debt / EBITDA	3 Year Revenue CAGR	EBITDA Margin	Dividend Yield
iHeartMedia, Inc.	\$16.97	89.3%	\$1,094	\$6,464	\$7,567	\$6,398	\$1,556	1.2x	2.1x	2.0x	4.9x	7.6x	7.0x	4.2x	0.4%	24.3%	NA
Entercom Communications Corp.	4.51	56.8%	621	1,979	2,600	1,487	320	1.7x	1.7x	1.7x	8.1x	7.6x	7.1x	6.2x	52.2%	21.5%	1.8%
Cumulus Media Inc.	16.46	82.3%	289	1,155	1,444	1,137	213	1.3x	1.3x	1.3x	6.8x	7.0x	7.0x	5.4x	(0.8%)	18.7%	NA
Urban One, Inc.	1.95	81.6%	86	900	996	445	132	2.2x	NA	NA	7.6x	NA	NA	6.8x	(0.9%)	29.6%	NA
Townsquare Media, Inc.	9.75	96.2%	185	530	717	451	102	1.6x	1.7x	1.6x	7.0x	7.0x	6.5x	5.2x	(0.8%)	22.6%	3.1%
Beasley Broadcast Group, Inc.	3.31	64.6%	92	277	369	265	45	1.4x	1.4x	1.4x	8.2x	8.2x	7.6x	6.2x	34.4%	16.9%	6.1%
Salem Media Group, Inc.	1.73	53.1%	46	311	357	256	34	1.4x	1.4x	1.4x	10.5x	11.7x	9.3x	9.1x	(0.4%)	13.3%	6.2%
Emmis Communications	3.60	53.4%	47	87	162	113	16	1.4x	NA	NA	10.2x	NA	NA	5.5x	(21.0%)	14.2%	NA
Saga Communications, Inc.	30.74	83.1%	182	(25)	158	124	27	1.3x	NA	NA	5.9x	NA	NA	NM	3.7%	21.4%	4.0%

Mean	1.5x	1.6x	1.6x	7.7x	8.2x	7.4x	6.1x	7.4%	20.3%	4.2%
Median	1.4x	1.5x	1.5x	7.6x	7.6x	7.1x	5.8x	(0.4%)	21.4%	4.0%

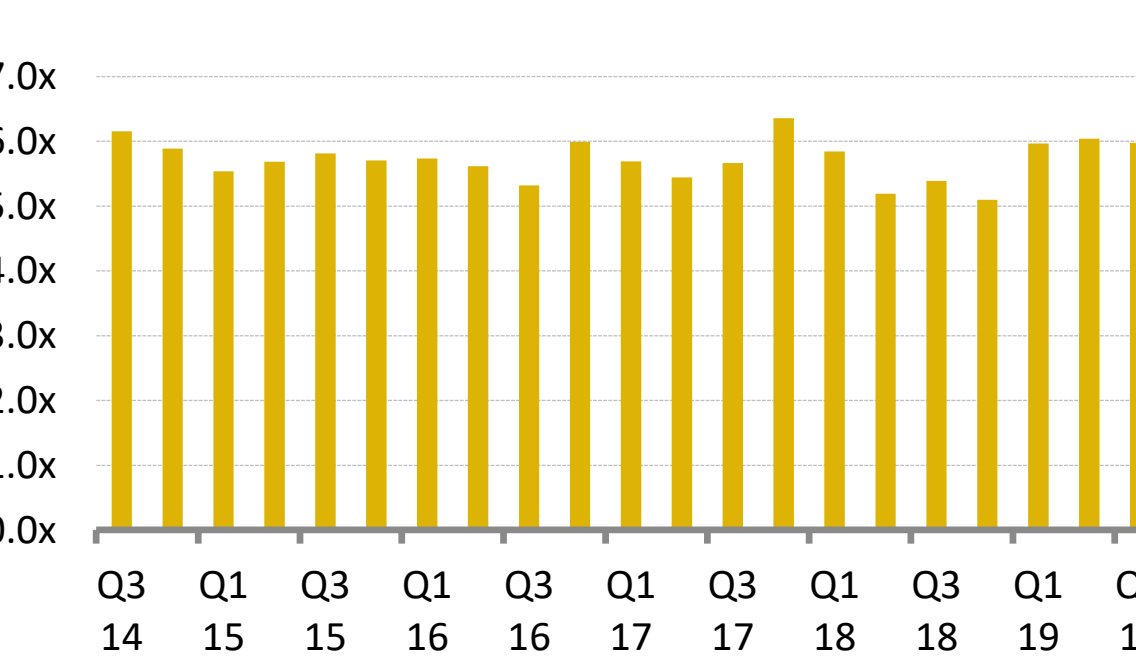
LTM EBITDA MARGIN



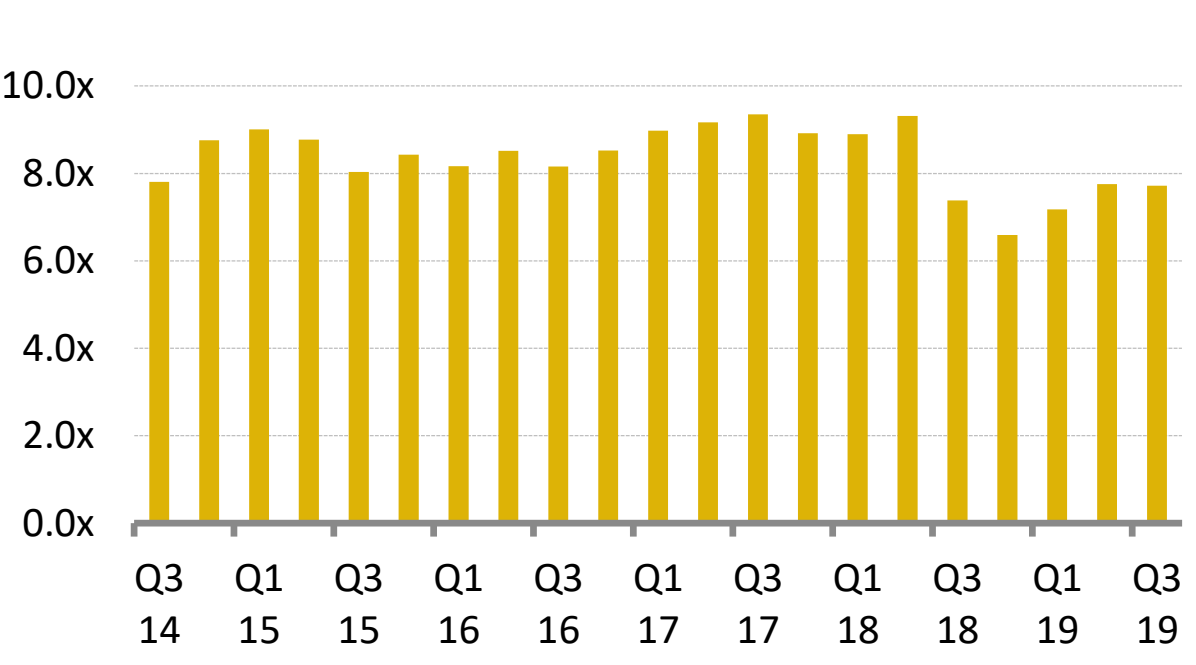
REVENUE GROWTH



NET DEBT / LTM EBITDA



EV / EBITDA



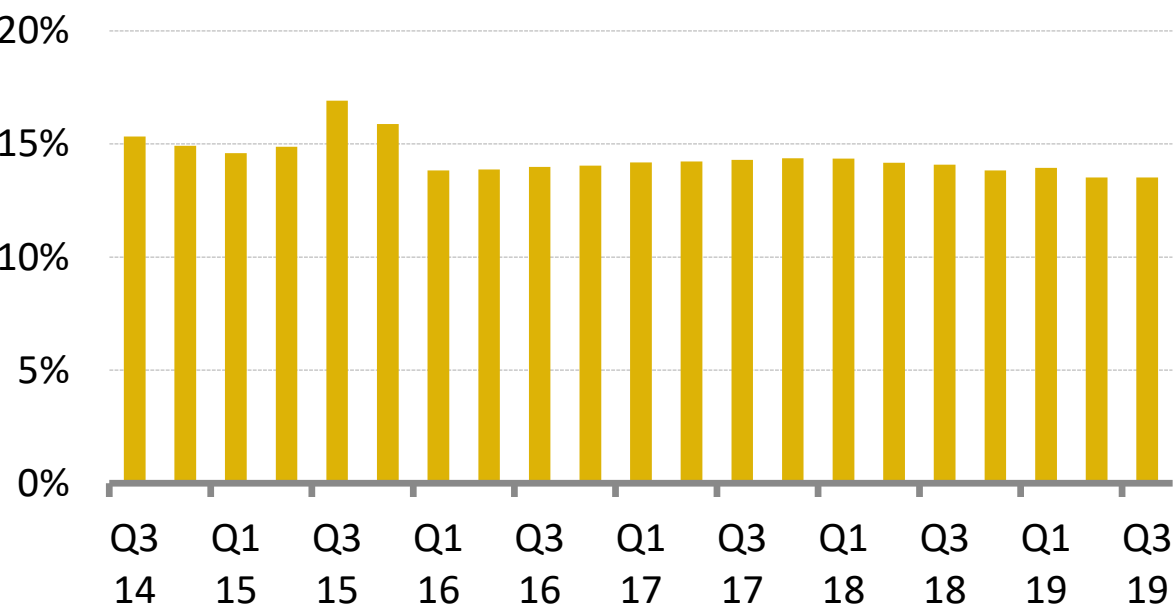


PUBLISHING – SEGMENT ANALYSIS

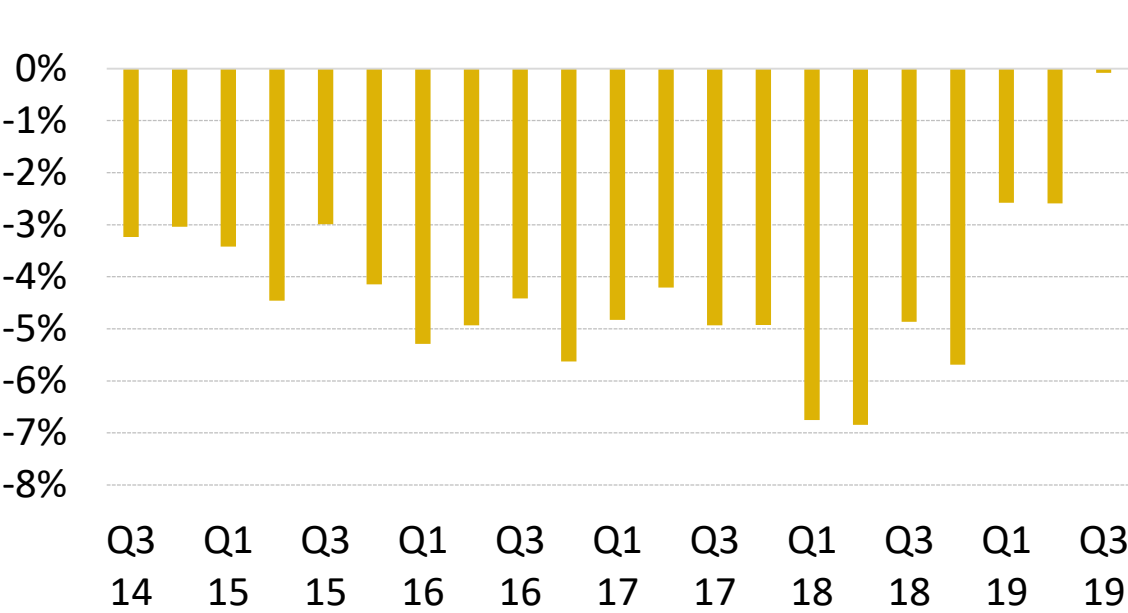
	Share Price	% of 52 Week High	Market Cap (\$M)	Net Debt (\$M)	Ent. Value (\$M)	LTM Revenues (\$M)	EBITDA (\$M)	Ent. Value /						Net Debt / EBITDA	3 Year Revenue CAGR	EBITDA Margin	Dividend Yield
								LTM	2019E	2020E	LTM	2019E	2020E				
News Corporation	\$14.54	99.2%	\$8,556	\$1,436	\$11,192	\$9,890	\$903	1.1x	1.1x	1.1x	12.4x	10.5x	9.6x	1.6x	6.7%	9.1%	NA
The New York Times Company	32.54	89.8%	5,403	(351)	5,054	1,778	216	2.8x	2.8x	2.7x	23.5x	21.7x	20.2x	NM	3.4%	12.1%	0.6%
Gannett Co., Inc.	6.09	43.2%	747	526	1,274	1,585	152	0.8x	NA	NA	8.4x	NA	NA	3.5x	8.5%	9.6%	NA
The McClatchy Company	0.43	5.4%	3	801	804	739	70	1.1x	1.1x	1.2x	11.4x	8.5x	10.6x	11.4x	(8.6%)	9.5%	NA
Tribune Publishing Company	12.66	91.3%	456	78	588	1,014	98	0.6x	0.6x	0.6x	6.0x	5.6x	5.9x	0.8x	(14.9%)	9.6%	7.8%
Lee Enterprises, Incorporated	1.37	37.1%	79	424	504	510	114	1.0x	NA	NA	4.4x	NA	NA	3.7x	(6.0%)	22.3%	NA
A.H. Belo Corporation	2.89	64.7%	62	(27)	35	196	4	0.2x	NA	NA	8.0x	NA	NA	NM	(9.4%)	2.3%	NA

Mean	1.1x	1.4x	1.4x	10.6x	11.6x	11.6x	4.2x	(2.9%)	10.7%	4.2%
Median	1.0x	1.1x	1.2x	8.4x	9.5x	10.1x	3.5x	(6.0%)	9.6%	4.2%

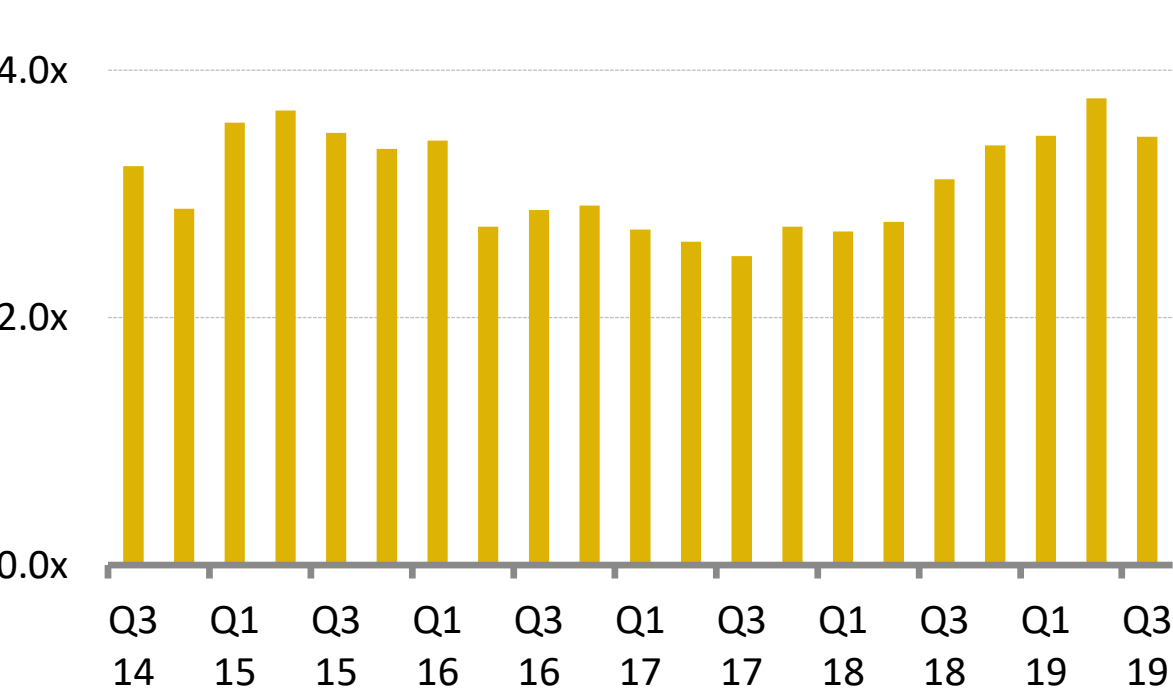
LTM EBITDA MARGIN



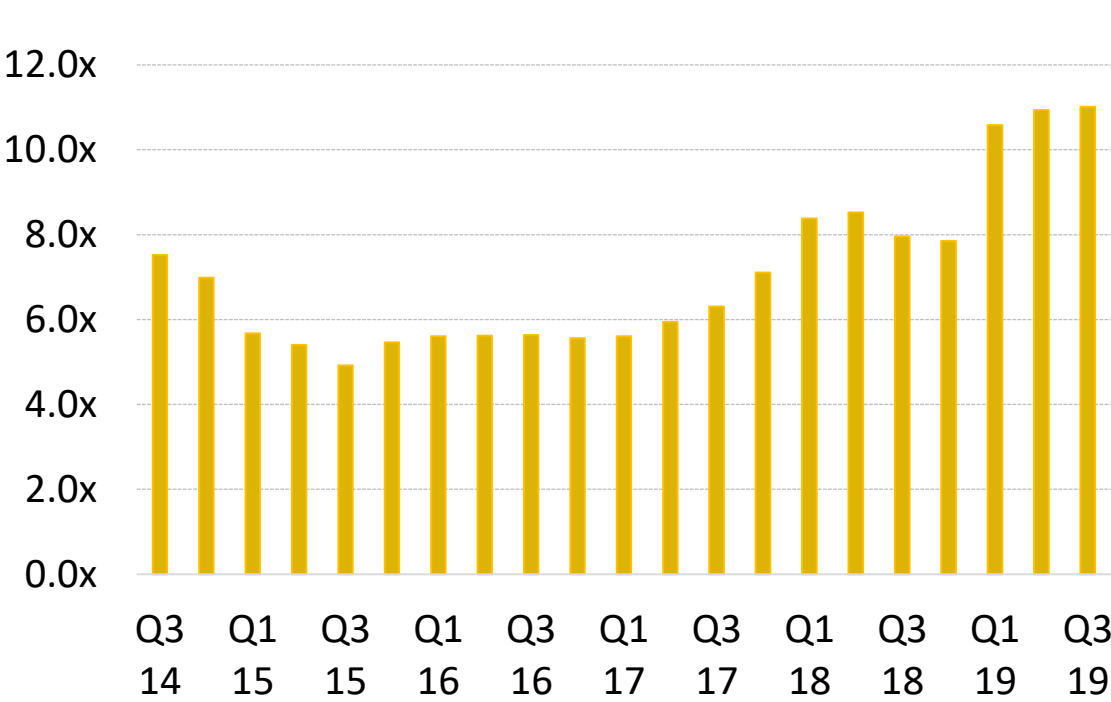
REVENUE GROWTH



NET DEBT / LTM EBITDA



EV / EBITDA





TRADITIONAL MEDIA M&A ACTIVITY

Date	BUYER	TARGET	TRANSACTION VALUE (\$M)	EV / REVENUE	EV/ EBITDA	CLASSIFICATION
12/31/2019	Urban One, Inc.	WQMC-LD Columbus	NA	NA	NA	Lower Power TV Station
12/30/2019	Local Media San Diego	2 Radio Stations from Tegna (KFMB-AM/FM)	\$5.0	NA	NA	Radio Stations
12/27/2019	Sonoma Media Investments, LLC	Vesta Publishing, LLC	NA	NA	NA	Magazine
12/17/2019	Discovery, Inc.	Latin American Golf, S.L.	NA	NA	NA	Cable Network
12/16/2019	Cineworld Group plc	Cineplex Inc.	\$4,171.1	2.5x	15.5x	Movie Theaters
12/10/2019	Sony Pictures Television, Inc.	Silvergate Media Holdings Limited	\$195.0	NA	NA	TV Production
12/9/2019	WRNN-TV Associates Limited Partnership	7 Full Power And One Class A Station of NRJ TV LLC	\$81.2	NA	NA	TV Stations
12/4/2019	Palm Beach Media Group Inc.	Gulfstream Media Group, Inc.	NA	NA	NA	Magazine
11/29/2019	dmg media limited	JPIMedia Publications Limited	\$49.6	1.5x	NA	Newspaper (UK)
11/25/2019	Standard Media Group LLC	Nine Television Stations Across Six Markets	\$59.2	NA	NA	TV Stations
11/19/2019	Lilly Broadcasting LLC	WCVI-TV	NA	NA	NA	TV Station
11/18/2019	Sadow Media LLC	Metropolis	NA	NA	NA	Magazine
11/18/2019	Sony Pictures Entertainment Inc.	Game Show Network, LLC	\$904.8	NA	NA	Cable Network
11/14/2019	Wheelhouse Investment Partners LLC	Campfire Film & Television LLC	NA	NA	NA	TV Production
11/11/2019	Endeavor Business Media, LLC	Industry & Infrastructure Intelligence and Auto Aftermarket Media Brands	NA	NA	NA	Trade Publications
11/5/2019	Fox Television Stations, LLC	Tribune Television Northwest, Inc./KZJO Station/WITI Station	\$350.0	NA	NA	TV Stations
11/5/2019	Nexstar Media Group, Inc.	Two Television Stations of Fox Television Stations, LLC	\$45.0	NA	NA	TV Stations
10/29/2019	Horne Broadcasting, LLC	Hog Radio, Inc.	\$3.4	NA	NA	Radio Stations
10/27/2019	TV Bermuda Ltd.	Central European Media Enterprises Ltd.	\$2,102.3	3.0x	8.6x	TV Stations
10/26/2019	Banjay Group S.A.S	Endemol Group B.V. (a Walt Disney Co.)	\$2,200.0	NA	NA	TV Production
10/17/2019	Christian Television Corporation, Inc.	KWHB TV-47	\$2.1	NA	NA	TV Station
10/15/2019	Big Horn Television	Mark III Media (3 TV stations in Wyoming)	\$10.7	NA	NA	TV Stations
10/8/2019	Direct Response Media Group Inc.	Valassis Canada Inc.	NA	NA	NA	Direct Mail
10/4/2019	Princeton University Press	Wild Nature Press Ltd	NA	NA	NA	Book Publishing
10/1/2019	Allen Media Broadcasting LLC	Eleven Television Stations of USA Television	\$290.0	NA	NA	TV Stations

*Source: Capital IQ though 12/31/2019

$$R + (e^2 + p^2) = \pi$$

NOBLE CAPITAL MARKETS

NOBLE CAPITAL MARKETS

NOBLE CAPITAL MARKETS is a research-driven investment and merchant bank focused on small cap, emerging growth companies in the healthcare, technology, media and natural resources sectors. That's what we are. Who we are is what makes us different.

Our people are talented, dedicated, experienced professionals who come together with a common cause; advising on long-term client solutions by employing innovative, collaborative and responsive strategies. We're passionate and personable. We approach things from our clients' perspective.

We know that developing lasting relationships is reliant upon putting our clients' interests before ours. We understand the impact of our services. Insightful advisory and effective capital procurement can change lives. Empowering our clients to create employment, engineer technological and medical breakthroughs, producing products and services that lay the foundation for the future. For more than 30 years these have been our guiding principles. While much has changed over the three decades since we began, these core values and our reputation have not. Our clients must know what to expect from us. Then we can strive to exceed expectations.

A SIMPLE FORMULA OUR VALUE PROPOSITION.

It starts with research With a fundamental belief that information guides the management process, NOBLE understands that there is no short-path to success. With this as a solid foundation, apply experience and execution delivered by people with passion. This is our formula to add value to your creation.

Research + Experience & Execution + People with Passion = Value

FULL-SERVICE INVESTMENT BANK

- Established 1984.
- Private firm, employee owned.
- Built on commitment to provide value and support for our clients.

FOCUSED INSTITUTIONAL SALES AND TRADING

- Seasoned sales and sales trading team.
- Long standing relationships with premier growth-focused investors.

RESEARCH DRIVEN CAPITAL MARKETS PLATFORM

- Experience team of Research Analysts covering approximately 100 companies.
- Focus on Technology, Media, Healthcare and Natural Resources.
- Strong Institutional Sponsorship.

INVESTMENT BANKING COMMITMENT

- Proven track record.
- Senior level attention to every client and transaction.
- Ability to deliver complete "mind share" of NOBLE on all transactions.

$$R + (e^2 + p^2) = \text{Tr}$$

INVESTMENT BANKING

Our investment banking team, together with our well-recognized equity research analysts and the equity capital markets group, provide our clients with fundamental capital markets advisory and support - prior, during and most importantly, after a transaction. NOBLE's investment banking team works closely with the management and Board of our corporate clients in order to fully understand operational and financial objectives. With this knowledge our banking team will develop an efficient and effective advisory program which offers a variety of services including:

EQUITY CAPITAL MARKETS

- Secondary and Follow-on Offerings
- Registered Direct Offerings
- Initial Public Offerings
- At the market Offerings (ATM's)
- PIPEs/Private Sale Offerings

DEBT CAPITAL MARKETS

- Senior Debt
- Mezzanine
- Convertible Debt
- Bridge Financings

ADVISORY SERVICES

- Merger & Acquisitions
- Fairness Opinions
- Valuation Services

SELECT MEDIA TRANSACTIONS




(PRIVATE)

Convertible Notes

Private Placement -
Placement Agent




November 2019



(MNI)

Valuation Services

ASC 350 Analysis



November 2019




PIPE acquisition financing for Akazoo
(SONG)

\$55,000,000

Co-Placement Agent



September 2019




(SRAX)

Valuation Services

ASC 350 Analysis




May 2019




(SEAC)

Valuation Services

ASC 350 Analysis




April 2019



(CMLS)

Valuation Services

ASC 350 Analysis



April 2019




(SRAX)

M&A Advisory

\$43,500,000 Sale of SRAXmd
to Halyard Capital



August 2018



(BBGI)

\$23,500,000

Secondary Offering
Co-manager



July 2018

$$R + (e^2 + p^2) = \hbar c$$

VALUATION SERVICES

NOBLE's Valuation and Advisory Services team specializes in providing business and intangible asset valuations, fairness opinions, financial and strategic analysis, and transaction support services covering a broad spectrum of industries and situations from early stage, middle market and Fortune 500 companies and capital market constituents. NOBLE's team is made up of professionals with numerous accreditations and bring excellence in accounting, taxation, and financial due diligence to provide companies with valuation advice for a multitude of purposes.

Valuation – NOBLE's professionals have significant experience in the valuation of privately owned and public businesses across a wide range of industries. We perform an extensive analysis of the business as well as evaluate industry trends and various other factors in order to inform our clients as to the likely range of value they can expect. Our services are characterized by intellectual and analytical rigor and our conclusions are backed by thorough documentation.

Chief Accounting Officers, Corporate Controllers, CFOs, and Corporate Boards rely on Noble's experienced valuation professionals to produce sophisticated, supportable, and timely valuations to assist in complying with financial reporting requirements, including:

- Purchase price allocation and fresh start accounting
- Goodwill and long-lived asset impairment testing
- Tangible asset valuation
- Fair Value measurement of financial assets & liabilities

Opinions - Whether our clients are looking to fulfill their fiduciary duties, mitigate risk or determine corporate value, we are there throughout the transaction process to offer objective advice based on rigorous analysis. We work on behalf of boards of directors, investors, trustees and other corporate leaders to advise and provide opinions on a wide range of transactions.

We have advised Corporate Boards, special transaction committees, independent trustees, management and other fiduciaries of middle market public and private companies on the financial aspects of a transaction. Our independent advice withstands scrutiny from shareholders, bondholders, the SEC, IRS, or counterparties to a transaction

MERCHANT BANKING

Our Principal Investment focus is primarily on private and small-cap public (\$10mill to \$50mill market caps) companies in industries within NOBLE's research verticals. Investments are made directly by NOBLE and its affiliates and may also involve syndicate participants. We work to identify those companies with game-changing or superior products and technologies that have management teams with proven track-records of success. NOBLE structures investments to meet a company's capital needs whether its growth capital, liquidity or debt repayment. Capital commitment ranges from \$200k to \$2million principal and \$2million above with syndicate.

The scope of our Merchant Banking activities includes:

- Targeting domestic companies within our areas of focus and expertise
- Analyzing a company's opportunities and assessing its risks within their respective industry
- Structuring, negotiating and executing the transaction
- Work in assessing the appropriate time and manner in which to harvest the investment

NOBLE's Merchant Banking Team works continuously with our portfolio companies to assist the management team and Board of Directors to create value and grow their businesses to facilitate long-term shareholder value. Through our extensive sector research coverage, institutional investor non-deal road shows, equity conferences and market making, we blend a powerful mix of capital markets acumen to procure success.

$$R + (e^2 + p^2) = \pi$$

INVESTMENT BANKING TEAM

Richard Giles, Managing Director

rgiles@noblecapitalmarkets.com – (617) 692-9346

- Joined NOBLE in 2010 as Head of the Technology, Media & Telecommunications Investment Banking Group.
- 25 years of investment banking experience.
- Executed more than 100 M&A and capital raising transactions totaling \$10+ billion.
- Former head of Stifel Nicolaus' Technology Group.
- Former head of A.G. Edwards' Emerging Growth. Group and member of Investment Committee for A.G. Edwards Capital.
- A.B., Harvard College; M.B.A., Harvard Business School.

Christopher Ensley, Managing Director

censley@noblecapitalmarkets.com – (917) 970-8850

- Joined Noble in 2016
- 20 years of equity capital market expertise
- Previous experience at Salomon Brother, Lazard, Bear Stearns, Coady Diemar Partners
- Participated in \$16+ billion transactions over his tenure on Wall Street
- M.B.A., Vanderbilt University - Owen Graduate School of Management
- B.S., William & Mary

Mark Suarez, Managing Director

msuarez@noblecapitalmarkets.com – (917) 810-5378

- Joined Noble as a Managing Director in 2017
- Over 12 years of investment banking and equity research experience
- Prior experience holding senior positions at McQuilling Partners and Euro Pacific Capital
- B.Com McGill University with concentrations in Economics and Finance; M.S. in Economics University of Toronto
- Holds a CFA and various FINRA licenses

Francisco Penafiel, Managing Director, Investment Banking Operations

fpenafiel@noblecapitalmarkets.com – (561) 994-5740

- Executed M&A and capital raising transactions totaling over \$1 billion dollars in value.
- 7 years of sell side equity research experience, covering enterprise & infrastructure software, business services, media, communications, and banks.
- 6 years of portfolio managing experience.
- Manage the business development efforts in LATAM for NOBLE.
- Engineering, IT & Statistics, Escuela Superior Politecnica (Guayaquil, Ecuador); M.S. Economics, Florida Atlantic University.

Stevan Grubic, Director - Valuation Services

sgrubic@noblecapitalmarkets.com – (323) 578-4936

- 15 years of middle-market investment banking experience
- Expertise in valuations, including business valuations, fairness opinions, litigation, and valuations for financial and tax reporting purposes (ASC805, ASC350, 123R, 409A).
- Accredited Senior Appraiser with the American Society of Appraisers (ASA) and has completed over 100 valuation engagements representing well over \$1.0 billion in asset values.
- Prior experience includes Orion Valuation Group, Singer Lewak, B. Riley & Co., L.H. Friend Weinress, Frankson & Presson and North American Capital Partners

Stephen McGee, Investment Banking Intern

smcgee@noblecapitalmarkets.com – (561) 994-5726

- Recently joined Noble and is assisting the IB team in a broad range of capacities
- Previously spent 6+ years in the MLB for various affiliated teams
- B.S. Hospitality Management FSU
- Level I CFA candidate

$$R + (e^2 + p^2) = \text{Noble logo}$$

RESEARCH – MEDIA & ENTERTAINMENT

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David Lean,
Head Trader, Director of Institutional Sales & Trading
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