



TECHNOLOGY, MEDIA & TELECOM

INTERNET & DIGITAL MEDIA SECTOR REVIEW | 2Q 2019

HW Harris Williams

HARRIS WILLIAMS OVERVIEW

HARRIS WILLIAMS ("HW") GLOBAL ADVISORY PLATFORM

KEY FACTS

- Founded in 1991
- 340+ professionals across eight offices globally
- 21st record year in 2018
- 10 industry groups



HW TECHNOLOGY, MEDIA & TELECOM ("TMT") GROUP FOCUS AREAS

VERTICAL FOCUS AREAS

- Compliance Software
- CRM and Member Management Software
- Data and Analytics
- Enterprise Software
- Human Capital Management
- Infrastructure and Security Software
- IT and Tech Enabled Services
- Managed Services, Hosting, Data Center Solutions
- Online Marketing, Data, and Research

HORIZONTAL FOCUS AREAS

- Architecture, Engineering, and Construction
- eCommerce and Retail Software
- Education Technology
- Energy Technology
- Facilities and Real Estate Technology
- Financial Technology
- Government Technology
- Healthcare IT
- Industrial and Supply Chain Software

SELECT RECENT HW TMT TRANSACTIONS

 has received a significant growth investment from 	 has been acquired by 	 has been acquired by 	 has acquired 	 has been acquired by 	 has acquired 	 has received a strategic investment from 	 has been acquired by 	 has acquired 	 has been acquired by 	 has acquired 	 has been acquired by
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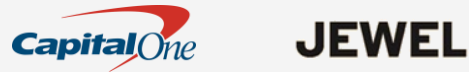
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SELECT IDM M&A TRANSACTIONS – 2Q 2019¹

Closed June 19, 2019



Capital One's acquisition of Jewel Commerce

- Jewel Commerce provides an online platform designed to make luxury fashion accessible to fashion lovers.
- The Company has contracts with 100+ retailers and has issued \$100,000+ in rebates to customers, helping them effortlessly save both time and money.
- The acquisition of Jewel enhances Capital One's toolset, which helps its customers simplify their lives and make smart financial decisions; with Jewel, customers are more confident that they are getting a great value.

Announced 6/10/2019



Salesforce's acquisition of Tableau

- Tableau provides a self-service analytics platform, enabling individuals within an organization to gain rapid insights, and make impactful, data-driven decisions.
- Tableau's data analytics platform allows companies to make better decisions in order to more efficiently serve their customers and move their business forward.
- The acquisition will allow Salesforce to help its customers make smarter decisions and provide cross-selling opportunities to customers that currently only have either platform.

Closed May 23, 2019



Shopify's acquisition of Handshake

- Handshake provides a B2B ecommerce platform for businesses to sell wholesale goods to one another.
- The platform enables merchants to handle purchases and sales of goods directly, rather than handing it off to a third-party purchaser.
- The acquisition expands the services that Shopify provides to its customers and further enhances its abilities to facilitate eCommerce.

Closed May 16, 2019



SugarCRM's acquisition of Salesfusion

- SalesFusion provides an enterprise-grade marketing automation platform designed to streamline marketing campaigns.
- SalesFusion deploys a curated toolset that includes highly intuitive campaign builders, advanced automation, and superior reporting that understands the online behaviors of prospects to nurture relationships.
- The acquisition allows SugarCRM to harness Salesfusion's advanced marketing automation capabilities to streamline campaign management and drive personalized engagement to optimize customer experience.

Closed April 10, 2019



GoDaddy's acquisition of Sellbrite

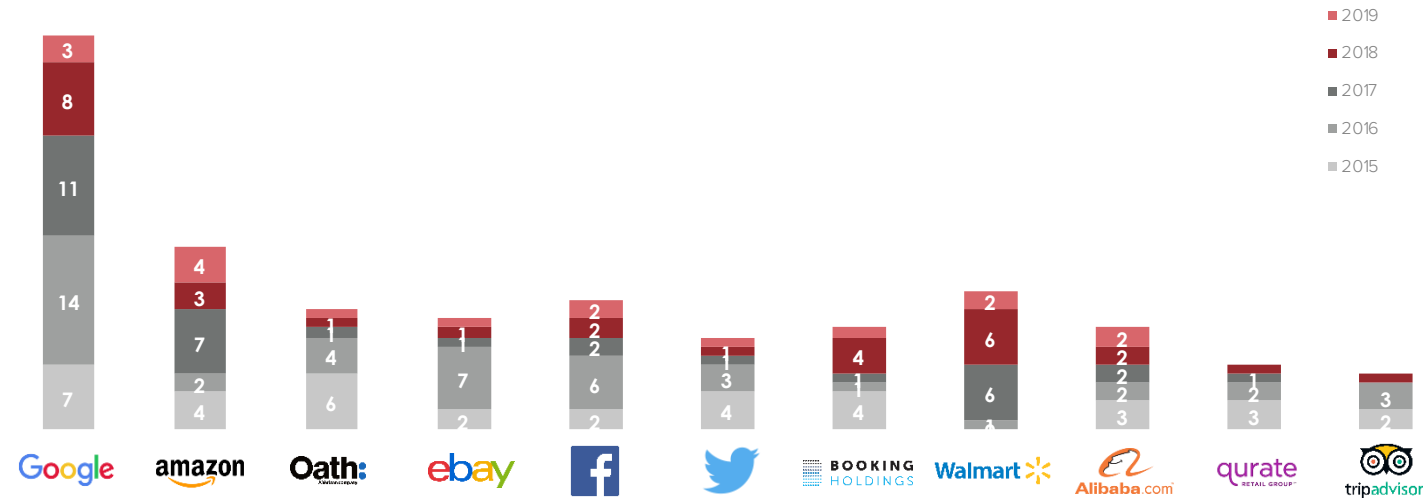
- Sellbrite provides a web-based platform that helps online retailers sell across multiple eCommerce sales channels.
- Sellbrite's multichannel selling platform provides online marketplaces, shopping carts, and Web applications, enabling online retailers to increase product distribution and expand customer reach across multiple channels.
- The acquisition will enable Sellbrite to continue to execute on their product roadmap within the broader SMB market while leveraging the GoDaddy's customer and product experience.

IDM ACQUISITION ACTIVITY

MOST ACTIVE STRATEGIC ACQUIRERS OF IDM ASSETS BY VOLUME²

- Activity increased slightly in 2Q 2019 from Q1 2019 due in part to a lower interest rate environment and easing fears of market volatility.
- Strategics are continuing to pay a premium for assets that align with their corporate strategies; notably Salesforce's acquisition of Tableau.
- The most active strategic acquirers of IDM assets made a combined ten acquisitions in 2Q 2019, the annualized 2019 total of 34 is just ahead of the 30 acquisitions made in 2018.
- Amazon and Alibaba outpaced all other notable strategic buyers, carrying out four and two acquisitions, respectively, in 2Q 2019.

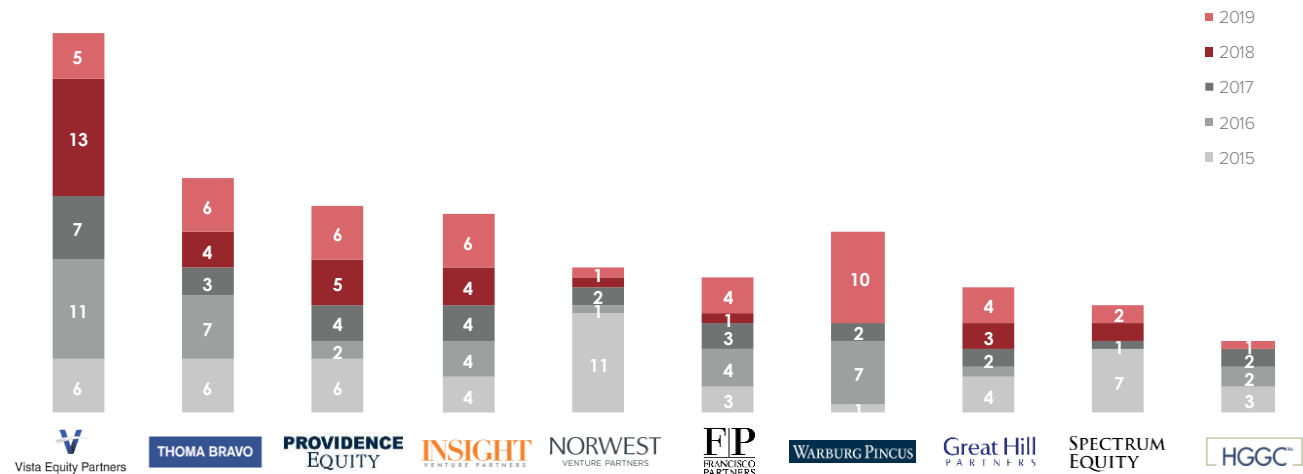
(# of Transactions)



MOST ACTIVE PRIVATE EQUITY BUYERS OF NEW IDM PLATFORMS BY VOLUME²

- The 10 most active private equity investors in IDM assets remained very active with 28 acquisitions completed in 2Q 2019 up from 17 acquisitions in 1Q 2019.
- Warburg Pincus remains one of the more prolific acquirers of new IDM platforms, logging 10 additional IDM acquisitions in Q2 2019.

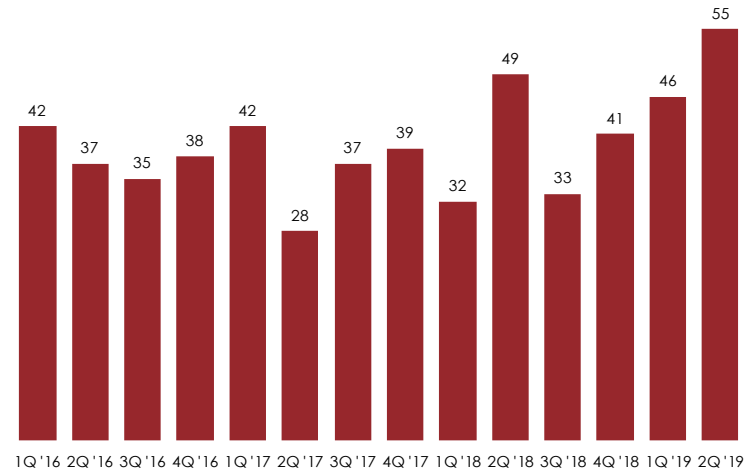
(# of Platform Transactions)



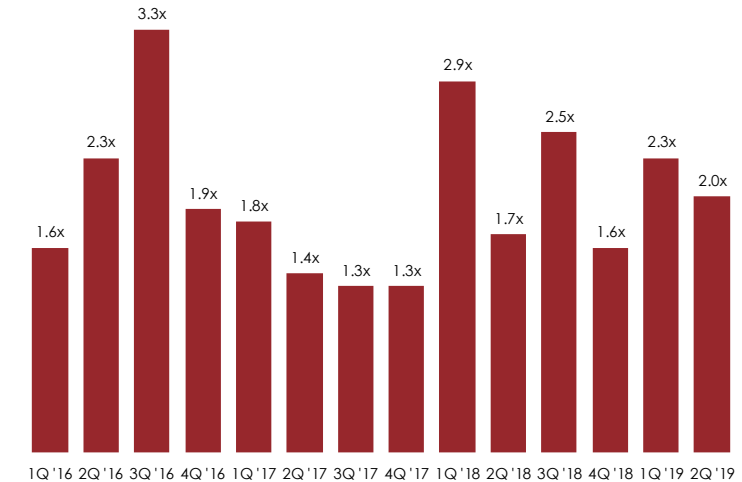
Note: Includes control investments only.

ONLINE MARKETING – M&A MARKET SUMMARY

ONLINE MARKETING M&A VOLUME² (GLOBAL)



MEDIAN M&A REVENUE MULTIPLES² (REPORTED)



- Online Marketing M&A significantly increased in volume from the previous quarter.
- Median multiples decreased 70% quarter-over-quarter falling below the historical mean.
- M&A activity reached a high point for the past three years, signaling continued market strength.

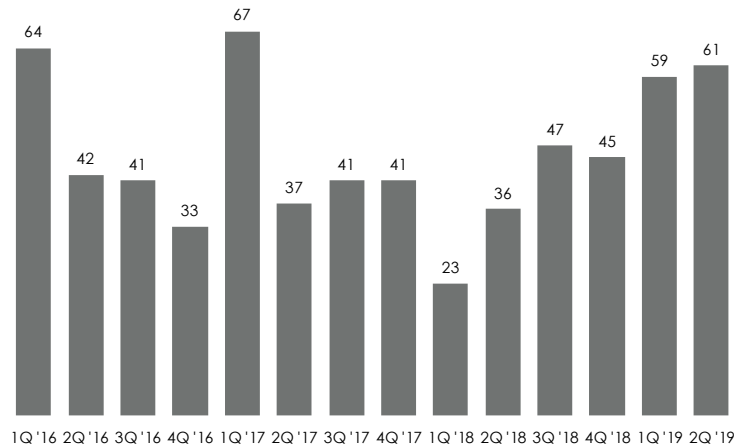
NOTABLE ONLINE MARKETING M&A TRANSACTIONS^{2,3}

- Accenture's \$207 M acquisition of Droga5, a digital marketing service, demonstrates the willingness of large enterprises to adjust their strategies as they continue to adapt to the changing digital advertising sphere.
- Foursquare Labs acquired Placed, the industry's number one location based advertisement measurement product, greatly expanding Foursquare's expertise in the mobile location based segment.

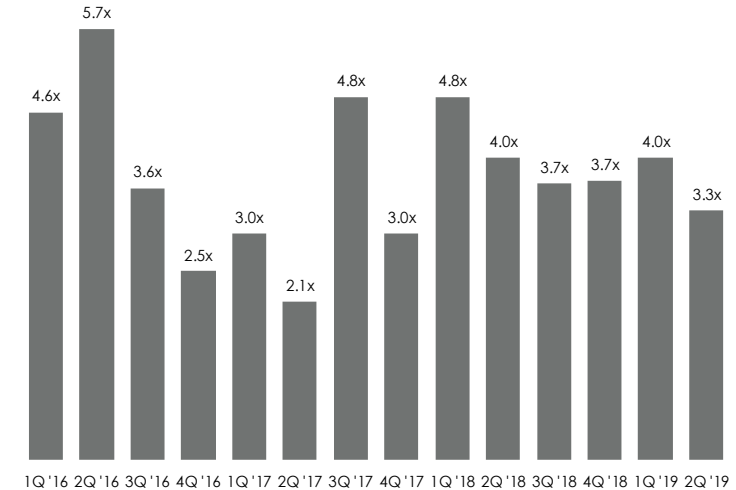
DATE CLOSED	ACQUIRER	TARGET	DESCRIPTION	ENTERPRISE VALUE (MM)	REVENUE MULTIPLE
Online Marketing					
6/12/2019	New Mountain Capital	W2O Group	Provides digital, marketing, and communications services	NA	NA
5/31/2019	Validity	Return Path	Provides data solutions to various companies worldwide	NA	NA
5/30/2019	Foursquare Labs	Placed	Provides location-driven insights and mobile advertising intelligence	NA	NA
5/24/2019	Upland Software	Daily Inches	Provides content marketing solutions	\$50	NA
5/16/2019	SugarCRM	Salesfusion	Provides an email and marketing automation platform	NA	NA
5/13/2019	Nimble communications	Rainmaker Digital Services	Provides digital marketing services	NA	NA
5/10/2019	Bain & Company	FRWD	Provides digital media, talent development, and incubation services	NA	NA
5/09/2019	Prodege	CotterWeb Enterprises	Provides online loyalty marketing services	NA	NA
5/01/2019	Accenture Interactive	Droga5	Provides advertising services	\$207	NA
4/25/2019	Digital PI	RevEngine Marketing	Provides digital marketing services and consulting	NA	NA
4/18/2019	Upland Software	PostUp	Provides email, mobile, and social media marketing services	\$35	NA
4/01/2019	Taptica International	RhythmOne	Provides online digital advertising services	\$162	0.5x
5/28/2019	Cult Collective	Red Dragon Marketing	Provides digital and traditional marketing services for healthcare	NA	NA
6/19/2019	ENTtech Media Group	Paper Communications	Provides website and marketing services	NA	NA
4/30/2019	Aware Ads	adMob	Provides digital advertising specialized for mobile	NA	NA
MEDIAN				\$106	0.5x

DATA ANALYTICS – M&A MARKET SUMMARY

DATA ANALYTICS M&A VOLUME² (GLOBAL)



MEDIAN M&A REVENUE MULTIPLES² (REPORTED)



- Data Analytics M&A volume increased from the prior quarter, with activity nearing levels seen in only 2 quarters during the past four years.
- Volume of Data Analytics transactions has nearly tripled from 1Q 2018.
- Median revenue multiples in the sector decreased to 2.2x, down from the prior seven quarters.

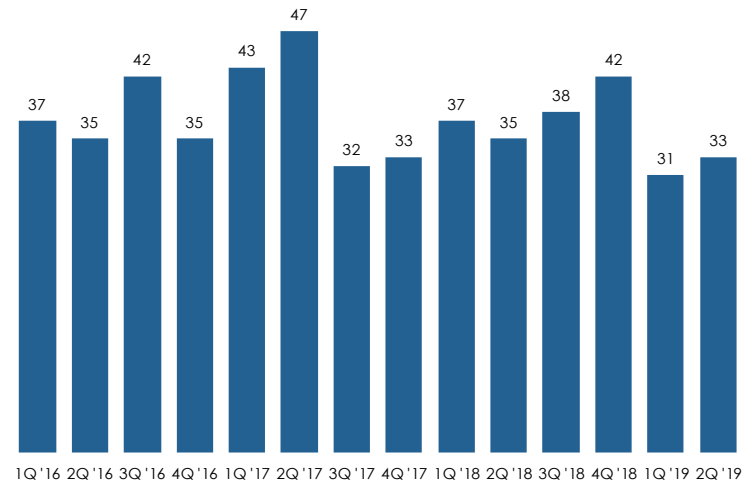
NOTABLE DATA ANALYTICS M&A TRANSACTIONS^{2,3}

- PayFi acquired Payment Relationship Management, enhancing its ability to better support their bank customers by unifying messaging and payments to advance real-time payments and relationship banking.
- Alteryx acquired ClearStory, enabling Alteryx to provide customers with advanced business analytics that support them in their digital transformation initiatives through an end-to-end, self-service data science and analytics platform.

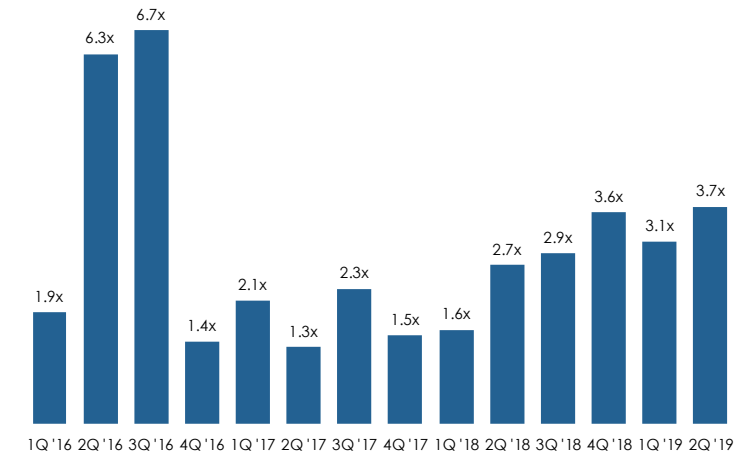
DATE CLOSED	ACQUIRER	TARGET	DESCRIPTION	ENTERPRISE VALUE (MM)	REVENUE MULTIPLE
Data Analytics					
6/25/2019	Mill Point Capital	Anexinet	Provides digital platforms for customer intelligence	NA	NA
6/25/2019	Validity	Primal Cause	Provides web based data management	NA	NA
6/10/2019	salesforce.com	Tableau	Provides business analytics software products	\$15,528	NA
4/15/2019	PayFi	Payment Relationship Management	Provides strategic payment consulting and data analytics	NA	NA
5/31/2019	salesforce.com	MapAnything	Provides geo-productivity software solutions	\$262	NA
5/30/2019	Foursquare Labs	Placed	Provides location-driven insights and mobile advertising intelligence	NA	NA
5/09/2019	Lightspeed POS	Chronogolf	Provides cloud-based CRM software for golf courses and players	\$14	NA
5/07/2019	Audax Group	The Chartis Group	Provides advisory and analytics services to healthcare providers	NA	NA
5/07/2019	Principal Real Estate Investors	ByteGrid Holdings	Provides data centers, managed services, and cloud hosting services	NA	NA
4/24/2019	Equifax	Knowledge Works	Provides credit ratings for small businesses	NA	NA
4/04/2019	Tally Energy Services	ReStream Solutions	Provides data collection, analysis, and optimization services to oil and gas companies	NA	NA
6/10/2019	Logi Analytics	Zoomdata	Provides data visualization and analytics systems for big data	NA	NA
5/22/2019	Woolpert	Geomatics Data Solutions	Provides geospatial data processing and analysis services	NA	NA
4/04/2019	Alteryx	ClearStory Data	Provides business oriented data analytics	\$20	NA
4/01/2019	Healthaxis Group	Analytics Partners	Provides various solutions for the healthcare industry	NA	NA
MEDIAN				\$141	NA

ECOMMERCE – M&A MARKET SUMMARY

ECOMMERCE M&A VOLUME² (GLOBAL)



MEDIAN M&A REVENUE MULTIPLES² (REPORTED)
















- eCommerce M&A volume in 2Q 2019 remained relatively flat at 33 deals.
- The median of the reported multiples for 2Q 2019 increased slightly to 3.7x.

NOTABLE ECOMMERCE M&A TRANSACTIONS²

- i3-SDCR's acquisition of Pace Payment Systems will allow i3-SDCR to utilize Pace's leadership team and their capabilities with utility districts to expand their offerings in the Public Sector vertical.
- Square's purchase of Eloquent Labs, a conversational artificial intelligence services business, allows Square to better respond to customer questions and feedback through AI.

DATE CLOSED	ACQUIRER	TARGET	DESCRIPTION	ENTERPRISE VALUE (MM)	REVENUE MULTIPLE
eCommerce					
06/19/19	Capital One Financial Corporation	Jewel Commerce	Provides an e-commerce marketplace	NA	NA
06/10/19	Clearspring Capital Partners	Voyages Traditours	Provides an online travel agency	NA	NA
05/31/19	i3-SDCR	Pace Payment Systems	Provides payment and transaction solutions for businesses	\$135	4.6x
5/07/2019	Square	Eloquent Labs	Provides artificial intelligence technology for e-commerce platforms	NA	NA
4/12/2019	PayU Group	Wibmo	Provides payment solutions and processing services	\$70	NA
4/10/2019	GoDaddy	Sellbrite	Provides web-based applications for online retailers	NA	NA
4/03/2019	Reach Marketing	UnReal Web Marketing	Provides search engine optimization services	NA	NA
4/01/2019	Mill Point Capital	KEMP Technologies	Provides application-centric load-balancer solutions	NA	NA
6/18/2019	Cloud Equity Group	CoolHandle Hosting	Provides on-demand web hosting solutions	NA	NA
5/06/2019	Digital Management	PRAGITI	Provides e-commerce solutions and services	NA	NA
4/24/2019	Port Logistics Group	Whiplash Merchandising	Provides storage and shipping services for e-commerce companies	NA	NA
4/23/2019	Modo Labs	Ulyngo	Provides e-commerce transaction services for college campuses	NA	NA
4/19/2019	Cyber Apps World	SavinstUltra	Provides a broad online shopping platform	\$3	NA
4/16/2019	Billtrust	Second Phase	Provides e-commerce and PIM solutions for wholesale distributors	NA	NA
4/11/2019	Heartbeat Technologies	Iconery	Provides an online marketplace for jewelry fanatics	NA	NA
MEDIAN				\$70	4.6x

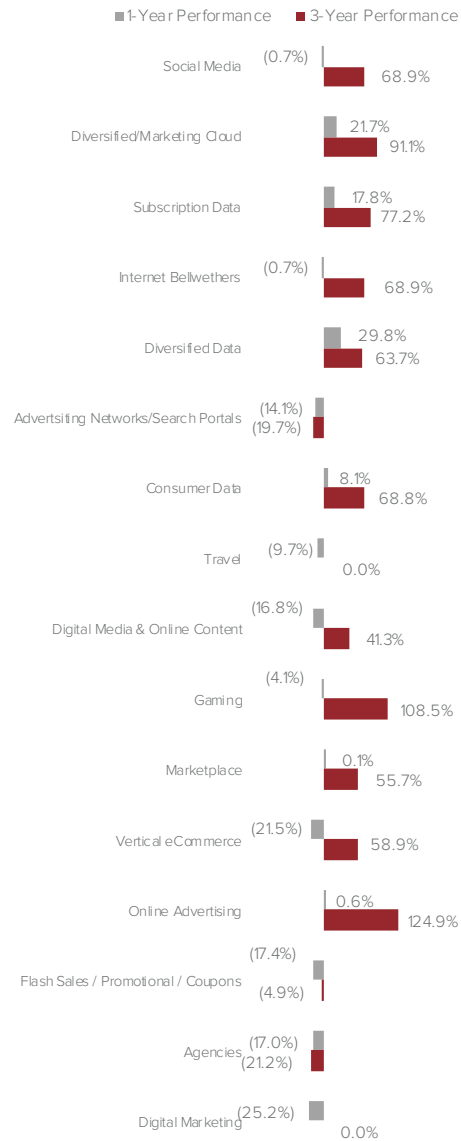
SELECT RECENT IDM PRIVATE PLACEMENTS^{1,2}

DATE	COMPANY	SECTOR	ROUND	ROUND SIZE (\$MM)	TOTAL RAISED (\$MM)	INVESTORS (CURRENT ROUND)	DESCRIPTION
4/2/19		eCommerce	B	\$220	\$270	Firstmark Capital, Accomplish, Juxtapose and other undisclosed investors	Operator of a direct home buyer company, transforming the way people buy and sell their homes.
4/5/19		eCommerce	C	\$30	\$102	WI Harper Group, Digital Garage, Arancia, University Growth Fund, ACE & Company, Fusion Fund, Bascom Ventures, Alumni Ventures Group, Evolv Ventures, GGV Capital and CentreGold Capital	Provider of an online food marketplace designed to make fresh and healthy food accessible to everyone.
4/24/19		Logistics	C	\$100	\$150	Tiger Global Management, Qualcomm Ventures, Neoplux, Trifecta Capital Partners, Mistletoe, Nandan Nilekani, Individual Investor, HR Capital, NRJN Family Trust and Accel India Ventures	Developer of an agricultural marketing and delivery platform intended to simplify agricultural supply chain.
5/1/19		Online Marketing	D	\$70	\$124	The Raine Group and Ankona Capital	Developer of an integrated screen optimization platform designed to bring television and digital video advertising together.
5/8/19		Data Analytics	Late Stage	\$110	\$346	Battery Ventures, Tiger Global Management, Wing Venture Capital and Franklin Templeton Investments	Provider of a cloud based machine data analytics platform designed to deliver real-time continuous intelligence.
5/10/19		eCommerce	Late Stage	\$1,000	\$1,000	Baring Private Equity Asia, CITIC Capital and China International Capital Corporation	Operator of an e-commerce platform designed to offer pharmaceutical products.
5/14/19		eCommerce	C	\$75	\$288	University Growth Fund, TriplePoint Venture Growth and Riverwood Capital	Developer of a personal e-commerce platform designed to change the way people buy and experience electronic products and gadgets.
5/20/19		Application Software	Late Stage	\$575	\$1,520	Fidelity Investments, Greenoaks Capital Partners, The Strand Partners and T. Rowe Partners	Developer of an online food delivery platform intended to help users order restaurant meals.
5/21/19		eCommerce	E	\$30	\$140	PivotNorth Capital, Unilever Ventures, Accolade Partners, Sapphire Ventures, August Capital, Baseline Ventures, Correlation Ventures, Relevance Capital and Founders Circle Capital	Provider of a healthy meal kit subscription service designed to save time in planning and shopping for ingredients and recipes.
5/23/19		Online Marketing	Late Stage	\$600	\$1,970	Sands Capital Ventures and Darsana Capital Partners	Developer of a food delivery application intended to provide on-demand food-ordering and delivery services.
5/30/19		Business Productivity Software	Late Stage	\$150	\$394	The Raine Group	Developer of a location technology platform designed to offer business solutions and consumer products through a deep understanding of location.
6/12/19		Media, Content & Gaming	Late Stage	\$40	\$111	Hamilton Lane, Maor Investments, Qumra Capital and The Goldman Sachs Group	Operator of a sports and media technology platform designed to offer authentic and socially driven gaming content.
6/26/19		eCommerce	C	\$110	\$162	DST Global, General Atlantic, GGV Capital, GV and Battery Ventures	Provider of an online marketplace designed to trade high-demand and limited edition sneakers.

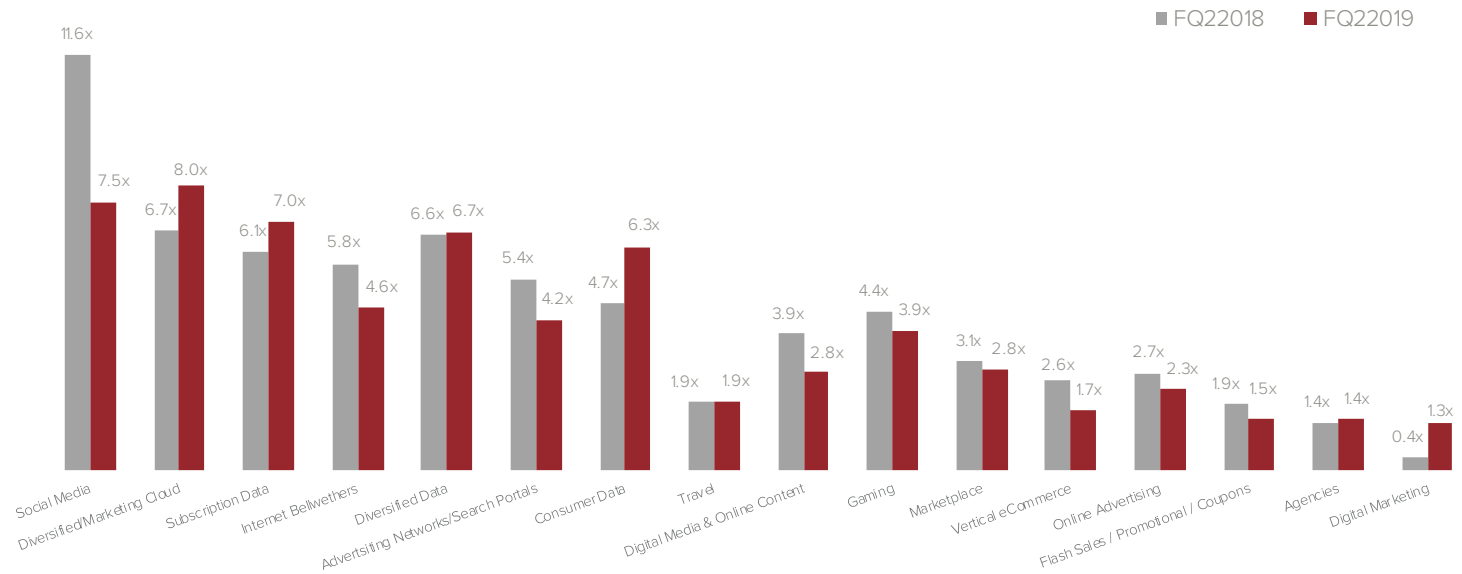
Note: Financial information presented above represents reported capital raised only.

PUBLIC IDM VALUATION MULTIPLES BY SECTOR²

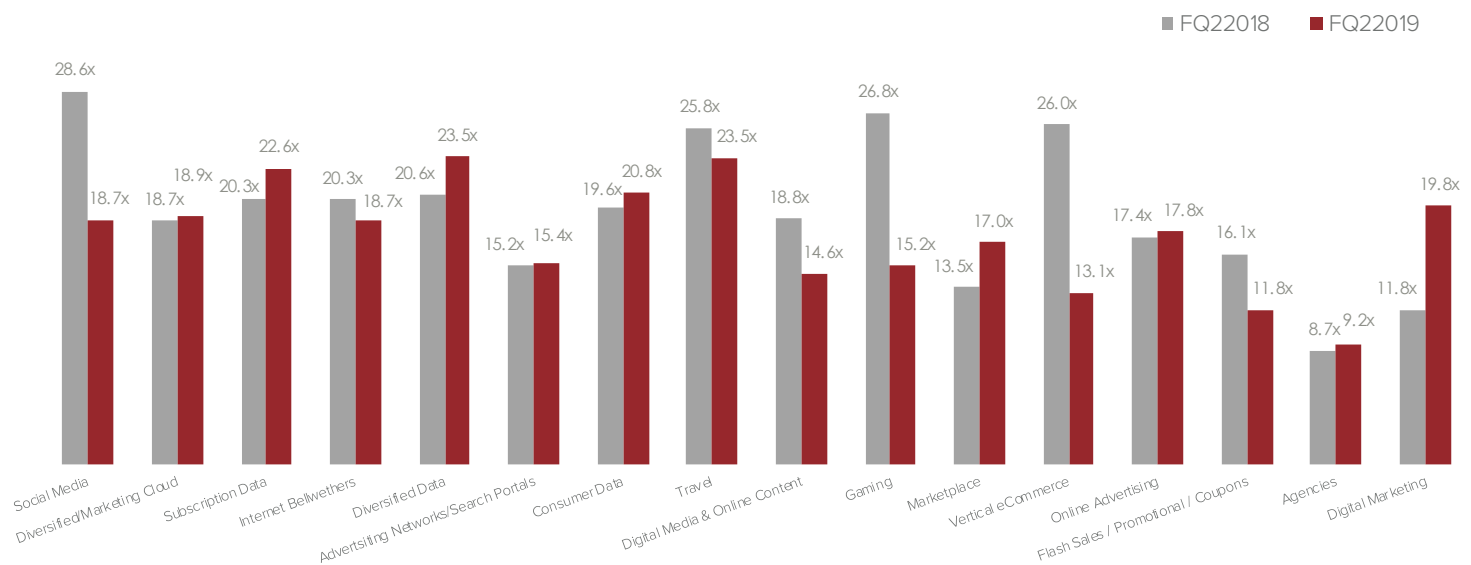
STOCK PERFORMANCE (1- & 3-YEAR)



REVENUE MULTIPLE COMPARISON 2Q 2018 VS. 2Q 2019



EBITDA MULTIPLE COMPARISON 2Q 2018 VS. 2Q 2019

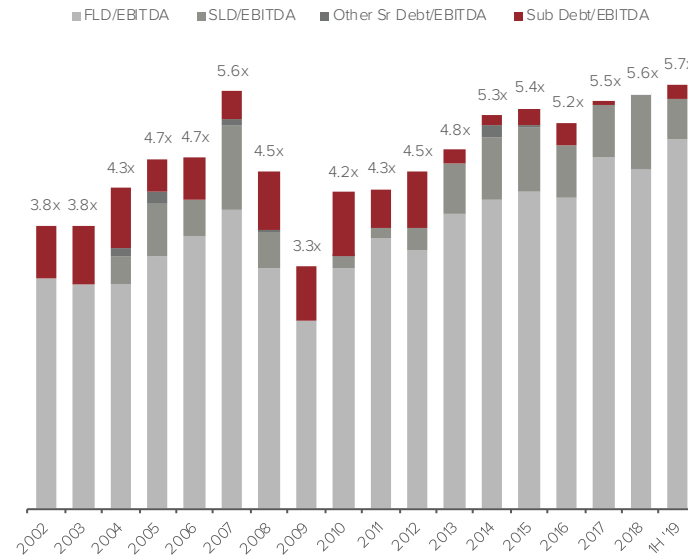


DEBT MARKET OVERVIEW

MIDDLE MARKET LBO LOAN MULTIPLES^{4,5}

Defined as Issuers with EBITDA of \$50 Million or Less

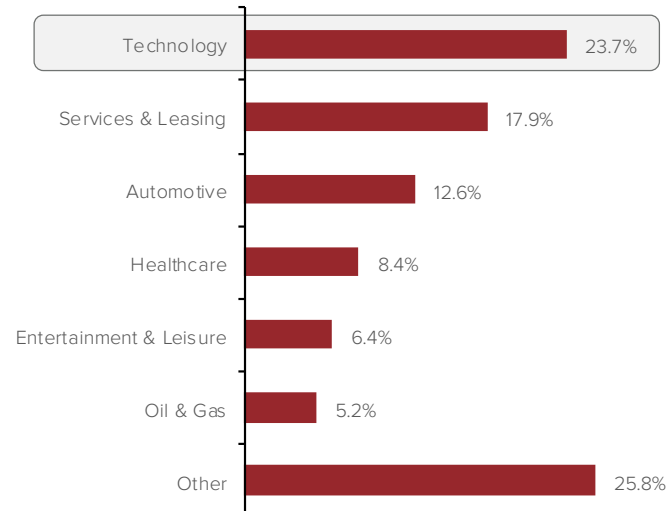
- Median middle market LBO loan multiples in 1H 2019 increased slightly to 5.7x leverage.
- Middle market LBO loan volume increased to \$1.4 billion in 2Q 2019, rebounding after a downward trend the past three quarters.



LBO LOAN VOLUME BY INDUSTRY^{4,5}

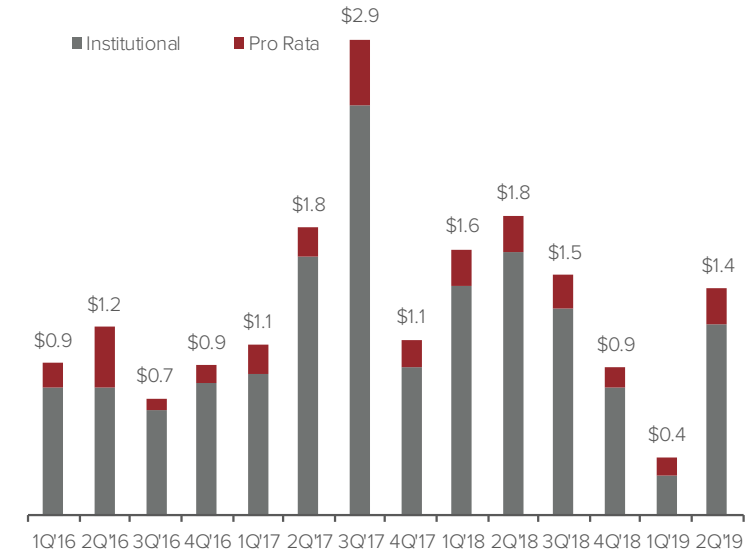
YTD New Issue LBO Loans

- Technology companies were the largest recipients of middle market LBO loans in 1H 2019, representing 23.7% of new issuance.
- Median LBO debt percentages decreased slightly to 49% of total purchase price in 1H 2019.



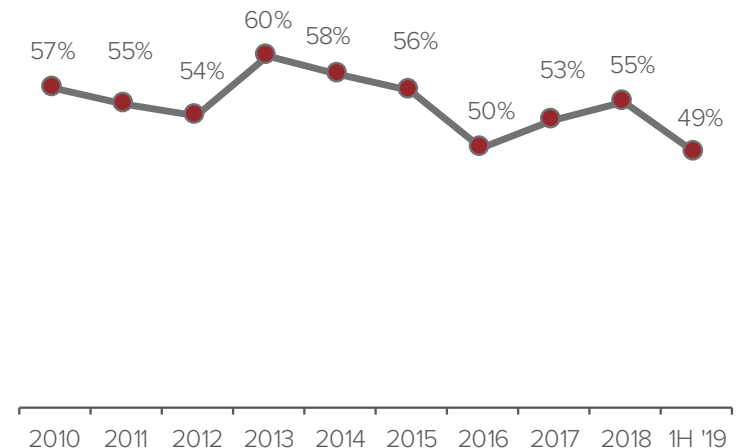
MIDDLE MARKET LBO VOLUME BY QUARTER^{4,5}

Defined as Issuers with EBITDA of \$50 Million or Less
(\$ in billions)



MEDIAN LBO DEBT PERCENTAGES^{1,5}

Percentage of Total Purchase Price



SELECT HW TMT TRANSACTIONS

 significant growth investment from THOMABRAVO	 acquired by eSolutions	 acquired by Datix	 has acquired CALIBER SOFTWARE	 acquired by pec	 acquired mailgun	 strategic investment from INSIGHT PARTNERS	 acquired by DiscoverOrg	 acquired combell.group	 acquired by DASSAULT SYSTEMES	 acquired Wrike	 acquired by CUBIC	 acquired by WCAS	 acquired sympplr	 acquired by BERTELSMANN
 acquired by LIGHTYEAR CAPITAL & OAK HC/FT	 acquired PIXOMONDO	 acquired by illuminate education	 acquired by GENSTAR	 acquired by THE JORDAN COMPANY	 acquired Relation	 a wholly-owned affiliate of acquired by imprivata & inspirata	 invested in Datix	 majority investment from Hg	 acquired by GI PARTNERS	 acquired by BDT CAPITAL PARTNERS	 acquired by PAMPONA CAPITAL MANAGEMENT	 acquired by EQUIAN	 acquired by PROVIDENCE EQUITY & GSV	 investment from INSIGHT PARTNERS
 acquired PERFORCE	 acquired by CAPITAL	 merged with research now	 investment from bv	 acquired by accruent	 acquired by MSOUTH	 acquired Healthlogistics	 acquired by Riverside PARTNERS	 investment from INSIGHT PARTNERS	 acquired by amazon	 acquired by intelligent	 acquired by Vista Equity Partners	 acquired by Itron	 acquired abila	 majority investment from GENSTAR
 growth investment from PAMLICO CAPITAL	 acquired by Ministry Brands	 majority investment from INSIGHT PARTNERS	 acquired by exponent	 majority investment from THE CARLYLE GROUP	 recapitalized by GI PARTNERS	 acquired by PHILIPS	 acquired MedHOK	 acquired by WorkForce SOFTWARE	 acquired by WASSERSTEIN & CO.	 acquired by SYKES	 acquired by RPX	 acquired by GENSTAR	 recapitalized by GENSTAR	 acquired by HLG
 acquired by BIOCLINICA	 acquired by technicolor	 acquired by CIP CAPITAL	 acquired by ParkerGale	 acquired by kpn	 acquired by Sotera	 acquired by ROPER	 acquired a majority stake in access	 acquired by GI PARTNERS	 majority investment from HGGC	 minority investment from SUNPOWER	 acquired by blackbaud	 acquired by YASKAWA	 acquired by emdeon	 acquired by THE CARLYLE GROUP
 strategic investment from TCV	 merged with Accellos	 acquired by Automic	 acquired by THE CARLYLE GROUP	 acquired by HEARST	 acquired by inVentiv Health	 acquired by RELIAS LEARNING	 acquired by GENPACT	 acquired by TDX	 acquired by PAREXEL	 acquired by G&B	 acquired by HEARST	 acquired by Vista Equity Partners	 acquired by SUMMIT PARTNERS	 acquired by Intech
 acquired by Aresenal Capital Partners	 majority recapitalization by PAMLICO CAPITAL	 recapitalized by Goldman Sachs	 acquired by THOMSON REUTERS	 acquired by EQUISTONE	 acquired gateway	 acquired by KPMG	 acquired by DELL	 acquired by FFL	 acquired by GFI Energy Group a division of OAKTREE	 acquired by Affinion	 significant equity investment from Goldman Sachs	 acquired by SFW	 acquired by TransUnion	 minority investment from JMI

APPENDIX: IDM SECTOR PUBLIC COMPANY UNIVERSE²

	Internet Bellwethers	Alphabet	Amazon.com	Facebook							
Online Marketing	Diversified / Marketing Cloud	Microsoft	Oracle	IBM	SAP	Adobe	salesforce.com	HubSpot			
	Agencies	WPP	Omnicom Group	Publicis Groupe	Dentsu	Interpublic Group					
	Online Advertising	GoDaddy	Wix.com	Endurance International	Web.com	Tucows	Marchex				
	Advertising Networks / Search Portals	Alphabet	Baidu	Yahoo	NAVER	Yandex					
Data & Analytics	Consumer Data	Experian	Nielsen	Equifax	Alliance Data	TransUnion	Fair Isaac	Dun & Broadstreet	Axiom		
	Diversified Data	Thomson Reuters	IHS Markit	Verisk Analytics	Informa	Dun & Bradstreet					
	Subscription Data	S&P Global	Moody's	Wolters Kluwer	Gartner	MSCI	FactSet	Morningstar	Forrester		
eCommerce	Marketplace	Amazon.com	Alibaba Group	JD.com	eBay	Rakuten	Liberty Interactive	MercadoLibre	Shopify	58.com	Wayfair
	Marketplace (cont'd)	LendingClub	Overstock.com								
	Travel	Priceline	Ctrip.com	Expedia	TripAdvisor	MakeMyTrip	Trivago	Travelzoo			
	Flash Sales / Promotional / Coupons	Groupon	Quotient Technology								
	Vertical eCommerce	GrubHub	Cimpress	Stamps.com	Etsy	Shutterfly	Chegg	Shutterstock	PetMed Express	1-800-FLOWERS.COM	eHealth
Media / Content / Gaming	Digital Media & Online Content	Tencent	Netflix	IAC	SINA Corporation	Sohu.com	Pandora	Blucora	TechTarget	Leaf Group	Townsquare Media
	Social Media	Facebook	Twitter	Snapchat	Weibo	Momo	Match Group	Spark			
	Gaming	Nintendo Co.	Activision Blizzard	NetEase	Electronic Arts	Take-Two Interactive	Ubisoft Entertainment	Zynga	GREE	Glu Mobile	

APPENDIX: IDM SECTOR PUBLIC COMPANY METRICS²

		Enterprise	Market	% of 52	1-Year Stock	3-Year Stock	Revenue Growth		LTM EBITDA	Enterprise Value /			Price /
Company	Ticker	Value	Capitalization	Week High	Performance	Performance	LTM	NTM	Margin	LTM Rev.	NTM Rev.	LTM EBITDA	Earnings
Internet Bellwethers													
Amazon.com, Inc.	AMZN	\$964,279	\$932,294	92.3%	11.4%	164.6%	25.0%	18.6%	13.0%	4.0x	4.1x	30.7x	79.1x
Alphabet Inc.	GOOGL	649,853	751,069	83.5%	(4.1%)	53.9%	21.1%	17.5%	29.7%	4.6x	4.8x	15.4x	27.2x
Facebook, Inc.	FB	513,087	550,916	88.3%	(0.7%)	68.9%	32.2%	23.5%	46.6%	8.7x	9.3x	18.7x	28.6x
Median		\$649,853	\$751,069	88.3%	(0.7%)	68.9%	25.0%	18.6%	29.7%	4.6x	4.8x	18.7x	28.6x

Internet Bellwethers

Diversified / Marketing Cloud

Agencies

Diversified/Marketing Cloud													
Microsoft Corporation	MSFT	\$981,318	\$1,026,511	96.8%	35.8%	161.8%	14.0%	7.0%	43.4%	7.8x	8.3x	18.0x	29.8x
Oracle Corporation	ORCL	213,450	190,042	99.1%	29.3%	39.2%	0.3%	2.3%	40.7%	5.4x	5.4x	13.3x	19.2x
SAP SE	SAP	171,427	163,618	100.0%	21.7%	78.0%	10.6%	6.8%	25.0%	5.8x	6.1x	23.0x	44.1x
International Business Machines Corporation	IBM	159,491	122,268	89.3%	(1.3%)	(9.1%)	(3.6%)	(1.2%)	21.4%	2.0x	2.0x	9.6x	14.5x
Adobe Inc.	ADBE	143,692	143,035	96.9%	20.9%	207.6%	24.4%	20.5%	33.3%	14.2x	16.0x	42.7x	NM
salesforce.com, inc.	CRM	119,951	117,825	90.6%	11.2%	91.1%	25.7%	21.2%	12.6%	8.6x	9.1x	NM	NM
HubSpot, Inc.	HUBS	7,311	7,179	88.6%	36.0%	292.7%	34.9%	26.5%	NM	13.3x	14.4x	NM	NM
Median		\$159,491	\$143,035	96.8%	21.7%	91.1%	14.0%	7.0%	29.2%	7.8x	8.3x	18.0x	24.5x

Online Advertising

Advertising Networks/Search Portals

Consumer Data

Diversified Data

Agencies													
Omnicom Group Inc.	OMC	\$22,543	\$18,043	97.2%	7.4%	0.6%	(2.6%)	0.9%	15.5%	1.5x	1.5x	9.7x	14.0x
WPP plc	WPP	21,522	15,878	74.8%	(17.0%)	(36.2%)	(1.3%)	0.0%	11.8%	1.1x	1.1x	9.2x	11.7x
Publicis Groupe S.A.	ENXTPA:PUB	14,290	12,251	76.1%	(21.2%)	(23.3%)	(2.0%)	6.4%	19.2%	1.4x	1.3x	7.2x	11.8x
The Interpublic Group of Companies, Inc.	IPG	13,758	8,743	90.0%	(3.6%)	(2.2%)	9.1%	6.2%	15.8%	1.7x	1.7x	10.5x	14.0x
Dentsu Inc.	4324	13,387	9,834	65.8%	(28.4%)	(21.2%)	9.1%	8.5%	16.2%	1.4x	1.5x	8.9x	13.8x
Median		\$14,290	\$12,251	76.1%	(17.0%)	(21.2%)	(1.3%)	6.2%	15.8%	1.4x	1.5x	9.2x	13.8x

Subscription Data

Marketplace

Travel

Flash Sales / Promotional / Coupons

Online Advertising													
GoDaddy Inc.	GDDY	\$14,250	\$12,319	82.6%	(0.6%)	124.9%	15.2%	12.0%	13.3%	5.2x	5.4x	39.2x	NM
Wix.com Ltd.	WIX	6,744	7,085	95.0%	41.7%	368.2%	36.0%	26.3%	NM	10.5x	11.2x	NM	NM
Endurance International Group Holdings, Inc.	EIGI	2,535	701	43.8%	(51.8%)	(46.6%)	(3.3%)	(0.8%)	26.4%	2.2x	2.2x	8.5x	NM
Tucows Inc.	TCX	755	650	67.6%	0.6%	150.5%	(7.4%)	13.1%	12.9%	2.3x	2.2x	17.8x	40.7x
Marchex, Inc.	MCHX	154	197	84.4%	53.6%	47.8%	2.2%	12.7%	NM	1.7x	1.8x	NM	NM
Median		\$2,535	\$701	82.6%	0.6%	124.9%	2.2%	12.7%	13.3%	2.3x	2.2x	17.8x	40.7x

Vertical eCommerce

Digital Media & Online Content

Social Media

Gaming

Note: Not Meaningful (NM) represents multiples above 50.0x; Not Available (NA) means the data is unavailable.

APPENDIX: IDM SECTOR PUBLIC COMPANY METRICS (CONT'D) ²

Company	Ticker	Enterprise Value	Market Capitalization	% of 52 Week High	1-Year Stock Performance	3-Year Stock Performance	Revenue Growth		LTM EBITDA Margin	Enterprise Value /			Price / Earnings
							LTM	NTM		LTM Rev.	NTM Rev.	LTM EBITDA	
Advertising Networks/Search Portals													
Alphabet Inc.	GOOGL	\$649,853	\$751,069	83.5%	(4.1%)	53.9%	21.1%	17.5%	29.7%	4.6x	4.8x	15.4x	27.2x
Baidu, Inc.	BIDU	32,585	41,078	42.8%	(51.7%)	(28.9%)	18.0%	3.1%	27.0%	2.0x	2.2x	7.6x	13.5x
Yandex N.V.	YNDX	25,392	12,412	95.1%	5.8%	73.9%	38.4%	34.7%	25.1%	12.0x	14.0x	47.8x	17.1x
NAVER Corporation	A035420	21,489	14,329	72.9%	(25.3%)	(19.7%)	18.0%	14.9%	20.1%	4.2x	4.3x	210x	27.2x
Yahoo Japan Corporation	4689	11,737	13,958	72.3%	(14.1%)	(30.1%)	6.4%	9.8%	20.1%	1.4x	1.4x	6.8x	21.4x
Median		\$25,392	\$14,329	72.9%	(14.1%)	(19.7%)	18.0%	14.9%	25.1%	4.2x	4.3x	15.4x	21.4x
Consumer Data													
Experian plc	EXPN	\$30,579	\$27,328	96.8%	27.2%	68.8%	6.0%	7.3%	31.0%	6.3x	6.3x	20.3x	40.9x
Alliance Data Systems Corporation	ADS	27,927	7,341	56.0%	(39.9%)	(28.5%)	5.4%	(23.4%)	21.8%	3.6x	3.6x	16.7x	7.9x
Equifax Inc.	EFX	19,184	16,340	97.5%	8.1%	5.3%	(0.1%)	3.6%	20.2%	5.7x	5.6x	28.0x	NM
TransUnion	TRU	17,958	13,766	92.5%	2.6%	119.8%	19.0%	11.0%	35.2%	7.5x	7.7x	213x	50.3x
Nielsen Holdings plc	NLSN	16,924	8,034	70.5%	(26.9%)	(56.5%)	(2.8%)	0.8%	22.3%	2.6x	2.6x	11.8x	NM
Fair Isaac Corporation	FICO	10,071	9,103	98.0%	62.4%	177.9%	11.5%	9.3%	23.0%	9.3x	9.5x	40.4x	NM
LiveRamp Holdings, Inc.	RAMP	2,332	3,347	76.7%	61.9%	120.5%	29.8%	28.3%	NM	8.2x	3.0x	NM	NM
Median		\$17,958	\$9,103	92.5%	8.1%	68.8%	6.0%	7.3%	22.6%	6.3x	5.6x	20.8x	40.9x
Diversified Data													
Thomson Reuters Corporation	TSX:TRI	\$33,768	\$32,351	95.1%	44.6%	46.7%	4.9%	6.3%	18.6%	6.0x	6.1x	32.4x	NM
IHS Markit Ltd.	INFO	31,217	25,552	99.8%	23.5%	96.0%	12.2%	7.4%	34.0%	7.3x	7.8x	216x	NM
Verisk Analytics, Inc.	VRSK	27,274	23,970	99.0%	36.1%	80.6%	9.7%	7.0%	44.0%	11.2x	11.4x	25.4x	40.9x
Informa plc	INF	16,932	13,277	96.0%	NA	14.6%	34.9%	19.0%	31.1%	5.6x	5.7x	18.0x	42.4x
Median		\$29,245	\$24,761	97.5%	29.8%	63.7%	10.9%	7.2%	32.5%	6.7x	6.9x	23.5x	41.6x
Subscription Data													
S&P Global Inc.	SPGI	\$61,056	\$56,055	96.7%	11.7%	112.4%	1.4%	6.0%	48.9%	9.8x	9.6x	19.9x	30.6x
Moody's Corporation	MCO	42,359	37,031	97.0%	14.5%	108.4%	2.4%	7.0%	46.8%	9.5x	9.4x	20.3x	28.9x
MSCI Inc.	MSCI	22,368	20,220	97.0%	44.3%	209.6%	9.8%	8.5%	52.1%	15.4x	15.6x	29.6x	36.8x
Wolters Kluwer N.V.	WKL	22,032	19,724	97.1%	32.7%	75.1%	(2.5%)	6.3%	27.4%	4.5x	4.5x	16.5x	27.2x
Gartner, Inc.	IT	17,601	14,499	98.9%	21.1%	65.2%	9.1%	9.7%	15.0%	4.4x	4.5x	29.5x	NM
FactSet Research Systems Inc.	FDS	11,575	10,958	93.8%	44.7%	77.5%	6.5%	5.0%	35.0%	8.2x	8.4x	23.4x	33.7x
Morningstar, Inc.	MORN	5,970	6,170	96.6%	12.8%	76.9%	9.5%	(100.0%)	26.3%	5.8x	NA	21.9x	35.8x
Forrester Research, Inc.	FORR	1,029	867	90.9%	12.1%	27.6%	12.5%	27.4%	8.3%	2.7x	2.9x	32.6x	NM
Median		\$19,816	\$17,111	96.8%	17.8%	77.2%	7.8%	6.6%	31.2%	7.0x	8.4x	22.6x	32.1x

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APPENDIX: IDM SECTOR PUBLIC COMPANY METRICS (CONT'D) ²

		Enterprise	Market	% of 52	1-Year Stock	3-Year Stock	Revenue Growth		LTM EBITDA	Enterprise Value /			Price /	
Company	Ticker	Value	Capitalization	Week High	Performance	Performance	LTM	NTM	Margin	LTM Rev.	NTM Rev.	LTM EBITDA	Earnings	
Marketplace														Internet Bellwethers
Amazon.com, Inc.	AMZN	\$964,279	\$932,294	92.3%	11.4%	164.6%	25.0%	18.6%	13.0%	4.0x	4.1x	30.7x	79.1x	
Alibaba Group Holding Limited	BABA	448,946	441,175	85.4%	(8.7%)	113.1%	50.6%	31.4%	26.1%	8.0x	8.9x	30.6x	34.1x	Diversified / Marketing Cloud
JD.com, Inc.	JD	43,913	44,169	75.6%	(22.2%)	42.7%	24.7%	16.7%	0.8%	0.6x	0.7x	NM	NM	
eBay Inc.	EBAY	39,959	34,425	97.4%	8.9%	68.7%	4.1%	15%	28.9%	3.7x	3.7x	12.7x	14.4x	Agencies
Shopify Inc.	SHOP	33,087	33,694	88.6%	105.7%	875.8%	55.1%	37.1%	NM	28.1x	31.3x	NM	NM	
MercadoLibre, Inc.	MELI	29,051	30,172	91.0%	104.7%	334.9%	25.6%	45.7%	1.3%	18.2x	20.5x	NM	NM	
Rakuten, Inc.	4755	19,455	16,065	97.5%	70.8%	16.1%	17.0%	14.2%	21.4%	1.9x	2.0x	8.9x	7.6x	
Wayfair Inc.	W	14,321	13,379	84.0%	22.9%	274.4%	41.7%	34.3%	NM	2.0x	2.1x	NM	NM	Online Advertising
Qurate Retail, Inc.	QRTEA	12,916	5,321	49.5%	(41.6%)	NA	23.2%	(1.7%)	14.0%	0.9x	0.9x	6.6x	9.6x	
58.com Inc.	WUBA	8,754	9,237	80.1%	(10.3%)	35.5%	29.8%	14.9%	20.5%	4.3x	4.6x	20.9x	24.8x	Advertising Networks/Search Portals
LendingClub Corporation	LC	1,570	1,417	72.1%	(13.5%)	(23.7%)	2.1%	12.4%	NM	2.2x	2.3x	NM	NM	
Overstock.com, Inc.	OSTK	480	480	28.3%	(59.6%)	(15.6%)	(0.8%)	(5.6%)	NM	0.3x	0.3x	NM	NM	
Median		\$24,253	\$23,119	84.7%	0.1%	55.7%	24.9%	15.8%	17.3%	2.9x	3.0x	16.8x	19.6x	
Travel														Consumer Data
Booking Holdings Inc.	BKNG	\$86,769	\$81,159	87.9%	(7.5%)	50.2%	9.4%	8.3%	39.0%	6.0x	6.0x	15.4x	21.2x	
Ctrip.com International, Ltd.	CTRP	22,498	20,430	77.7%	(22.5%)	(10.4%)	17.9%	14.7%	12.0%	4.7x	5.0x	38.7x	30.1x	Diversified Data
Expedia Group, Inc.	EXPE	21,983	19,790	95.2%	10.7%	25.1%	9.1%	9.5%	11.5%	1.9x	2.0x	16.9x	45.8x	
TripAdvisor, Inc.	TRIP	5,797	6,436	67.1%	(16.9%)	(28.0%)	3.3%	6.1%	15.3%	3.6x	3.6x	23.5x	48.7x	Subscription Data
MakeMyTrip Limited	MMYT	2,248	2,553	64.0%	(31.4%)	66.9%	(28.0%)	58.6%	NM	4.6x	3.5x	NM	NM	
trivago N.V.	TRVG	1,379	1,481	55.8%	(7.3%)	NA	(15.9%)	4.5%	3.9%	1.4x	1.3x	36.0x	NM	
Travelzoo	TZOO	186	183	67.6%	(9.7%)	92.5%	2.1%	5.1%	10.0%	1.7x	1.7x	16.8x	36.2x	
Median		\$5,797	\$6,436	67.6%	(9.7%)	25.1%	3.3%	8.3%	11.8%	3.6x	3.5x	20.2x	36.2x	
Flash Sales / Promotional / Coupons														Marketplace
Groupon, Inc.	GRPN	\$1,759	\$2,034	64.9%	(16.7%)	10.2%	(7.4%)	(5.0%)	5.7%	0.7x	0.7x	11.8x	NM	
Quotient Technology Inc.	QUOT	889	1,006	67.2%	(18.0%)	(19.9%)	18.4%	19.9%	4.0%	2.2x	2.3x	NM	NM	Travel
Median		\$1,324	\$1,520	66.0%	(17.4%)	(4.9%)	5.5%	7.5%	4.9%	1.5x	1.5x	11.8x	NM	
Vertical eCommerce														Flash Sales / Promotional / Coupons
Etsy, Inc.	ETSY	\$7,623	\$7,376	83.7%	45.5%	539.9%	40.2%	27.6%	18.3%	11.7x	12.7x	NM	NM	
Grubhub Inc.	GRUB	7,454	7,111	52.2%	(25.7%)	151.0%	44.6%	32.5%	12.7%	6.8x	7.4x	NM	NM	Vertical eCommerce
Chegg, Inc.	CHGG	4,688	4,575	92.6%	38.9%	671.8%	26.8%	22.0%	6.2%	13.7x	14.8x	NM	NM	
Cimpress N.V.	CMPR	4,125	2,791	58.4%	(37.3%)	(1.7%)	7.2%	3.7%	10.7%	1.5x	1.5x	14.2x	NM	Digital Media & Online Content
Shutterfly, Inc.	SFLY	2,601	1,734	54.8%	(43.9%)	8.5%	74.2%	4.2%	10.4%	1.2x	1.3x	12.0x	NM	
eHealth, Inc.	EHTH	1,903	1,950	99.8%	289.6%	514.1%	44.2%	20.6%	11.0%	6.9x	7.6x	NM	NM	
Shutterstock, Inc.	SSTK	1,198	1,380	70.3%	(17.4%)	(14.4%)	9.3%	11.4%	8.8%	1.9x	1.9x	21.4x	47.1x	
1-800-FLOWERS.COM, Inc.	FLWS	1,129	1,214	86.7%	50.4%	109.3%	5.0%	6.0%	6.4%	0.9x	0.9x	14.5x	35.7x	Social Media
Stamps.com Inc.	STMP	768	784	15.9%	(82.1%)	(48.2%)	18.5%	(11.9%)	33.4%	1.3x	1.3x	3.9x	6.1x	
PetMed Express, Inc.	PETS	212	313	35.1%	(64.4%)	(16.5%)	3.5%	0.6%	17.1%	0.7x	0.7x	4.4x	8.5x	Gaming
Median		\$2,252	\$1,842	64.4%	(21.5%)	58.9%	22.7%	8.7%	10.8%	1.7x	1.7x	13.1x	22.1x	
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APPENDIX: IDM SECTOR PUBLIC COMPANY METRICS (CONT'D) ²

		Enterprise	Market	% of 52	1-Year Stock	3-Year Stock	Revenue Growth		LTM EBITDA	Enterprise Value /			Price /
Company	Ticker	Value	Capitalization	Week High	Performance	Performance	LTM	NTM	Margin	LTM Rev.	NTM Rev.	LTM EBITDA	Earnings
Digital Media & Online Content													
Netflix, Inc.	NFLX	173,965	160,600	87.5%	(6.2%)	301.5%	27.0%	22.1%	11.1%	9.9x	11.0x	NM	NM
Sirius XM Holdings Inc.	SIRI	33,605	25,709	76.5%	(17.6%)	41.3%	11.5%	28.2%	34.7%	5.5x	5.8x	15.8x	23.8x
IAC/InterActiveCorp	IAC	20,361	18,294	89.6%	42.7%	286.4%	23.5%	13.4%	18.5%	4.7x	4.8x	25.1x	32.1x
Pandora A/S	PNDORA	5,205	3,465	49.5%	(47.6%)	(74.3%)	(1.1%)	(3.0%)	31.4%	1.5x	1.5x	4.9x	5.2x
SINA Corporation	SINA	3,186	3,000	50.2%	(49.1%)	(16.8%)	22.7%	6.3%	25.5%	1.5x	1.5x	5.8x	24.2x
Blucora, Inc.	BCOR	1,630	1,470	73.4%	(17.9%)	193.1%	8.8%	34.3%	20.9%	2.8x	2.9x	13.5x	24.6x
TechTarget, Inc.	TTGT	606	586	61.6%	(25.2%)	162.3%	10.4%	9.5%	18.5%	4.9x	5.0x	26.3x	42.5x
Leaf Group Ltd.	LEAF	182	192	61.5%	(31.7%)	43.3%	14.6%	9.8%	NM	1.2x	1.2x	NM	NM
Leaf Group Ltd.	DMD	NA	192	NA	NA	NA	14.6%	9.8%	NM	NA	NA	NM	NM
Townsquare Media, Inc.	TSQ	694	102	55.0%	(16.8%)	(31.8%)	5.3%	(1.5%)	21.9%	1.6x	1.6x	7.3x	NM
Median		\$3,186	\$3,000	67.5%	(17.6%)	43.3%	14.6%	9.8%	21.9%	2.8x	2.9x	14.6x	24.4x

Internet
BellwethersDiversified /
Marketing Cloud

Agencies

Online
AdvertisingAdvertising
Networks/Search
Portals

Consumer Data

Diversified Data

Subscription Data

Marketplace

Travel

Flash Sales /
Promotional /
CouponsVertical
eCommerceDigital Media &
Online Content

Social Media

Gaming

Social Media													
Facebook, Inc.	FB	\$513,087	\$550,916	88.3%	(0.7%)	68.9%	32.2%	23.5%	46.6%	8.7x	9.3x	18.7x	28.6x
Twitter, Inc.	TWTR	23,881	26,759	74.4%	(20.1%)	106.4%	23.6%	15.5%	25.5%	7.5x	8.0x	29.6x	20.2x
Match Group, Inc.	MTCH	21,366	18,911	89.4%	73.6%	346.2%	24.2%	18.1%	33.2%	12.0x	12.4x	36.0x	39.7x
Snap Inc.	SNAP	18,532	19,366	95.3%	9.2%	NA	40.2%	34.4%	NM	14.6x	15.9x	NM	NM
Weibo Corporation	WB	9,216	9,800	46.8%	(50.9%)	53.3%	35.9%	11.0%	37.0%	5.2x	5.4x	14.1x	15.9x
Momo Inc.	MOMO	6,839	7,423	72.5%	(17.7%)	254.1%	43.9%	14.7%	20.9%	3.2x	3.4x	15.3x	22.6x
Spark Networks SE	LOV	289	153	66.8%	9.5%	NA	22.1%	1.5%	4.2%	2.4x	2.3x	NM	NM
Median		\$18,532	\$18,911	74.4%	(0.7%)	68.9%	32.2%	15.5%	29.3%	7.5x	8.0x	18.7x	22.6x

Gaming													
Activision Blizzard, Inc.	ATVI	\$34,536	\$36,156	55.7%	(38.2%)	19.1%	1.4%	(12.4%)	33.6%	4.7x	4.6x	14.0x	20.7x
Nintendo Co., Ltd.	7974	33,644	43,645	92.8%	9.1%	170.8%	13.7%	12.1%	21.6%	3.1x	3.2x	14.4x	24.4x
NetEase, Inc.	NTES	28,060	32,729	88.3%	12%	32.4%	30.6%	14.6%	17.4%	2.6x	2.9x	15.2x	28.5x
Electronic Arts Inc.	EA	25,655	30,009	66.9%	(28.2%)	33.7%	(3.9%)	4.9%	23.3%	5.2x	5.2x	22.3x	30.4x
Take-Two Interactive Software, Inc.	TTWO	10,517	12,088	81.1%	(4.1%)	199.4%	48.8%	0.8%	10.2%	3.9x	3.8x	38.6x	39.1x
Ubisoft Entertainment SA	ENXTPA:UBI	8,960	8,625	63.8%	(26.8%)	108.5%	6.6%	19.5%	13.3%	4.3x	4.1x	32.5x	NM
Zynga Inc.	ZNGA	5,734	5,733	93.6%	50.6%	146.2%	10.2%	34.5%	0.8%	5.9x	6.3x	NM	NM
Glu Mobile Inc.	GLUU	1,054	1,043	61.1%	12.0%	226.4%	22.3%	25.5%	1.7%	2.8x	2.8x	NM	NM
Gree, Inc.	3632	299	1,096	78.6%	(15.5%)	(13.3%)	(7.3%)	0.4%	9.1%	0.5x	0.4x	5.0x	49.9x
Median		\$10,517	\$12,088	78.6%	(4.1%)	108.5%	10.2%	12.1%	13.3%	3.9x	3.8x	15.2x	29.5x

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OUR FIRM

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SOURCES

1. Pitchbook.
2. Factset.
3. HW Proprietary transaction information.
4. PNC Capital Markets.
5. S&P LCD Stats.

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