



TECHNOLOGY, MEDIA & TELECOM

INTERNET & DIGITAL MEDIA SECTOR REVIEW | 1Q 2019

HW Harris Williams

HARRIS WILLIAMS OVERVIEW

HARRIS WILLIAMS (“HW”) GLOBAL ADVISORY PLATFORM

KEY FACTS

- Founded in 1991
- 330+ 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 acquired 	 has received a strategic investment from 	 has been acquired by 	 has acquired 	 has been acquired by 	 has acquired 	 has been acquired by 	 has acquired 	 has been acquired by 	 has been acquired by 	 has been acquired by LIGHTYEAR CAPITAL & 	 has merged with
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SELECT IDM M&A TRANSACTIONS – 1Q 2019

Announced March 25, 2019



Enterprise Value: \$300M EV / Rev: NA
Rev: NA EV / EBITDA: NA

McDonald's acquisition of Dynamic Yield

- Dynamic Yield provides an AI-powered personalization platform intended to deliver individualized experiences at every customer touchpoint.
- The Company integrates data from all touchpoints in real-time to offer customer data management, personalization, predictive targeting, recommendations, optimization, and behavioral messaging across web, mobile, apps, and email.
- The acquisition will enable McDonald's to provide a more personalized customer experience by varying outdoor digital Drive Thru menu displays to show food based on time of day, weather, current restaurant traffic and trending menu items.

Announced February 6, 2019



Enterprise Value: NA EV / Rev: NA
Rev: NA EV / EBITDA: NA

Unilever's acquisition of graze

- graze provides an online food platform designed to offer healthy and nutritionally balanced food products.
- The Company specializes in a service that delivers customized snack mixes to consumers and has expanded into the retail, eCommerce, and direct-to-consumer channels.
- The acquisition strengthens the commitment to Unilever's Sustainable Living Plan (USLP), which aims to help more than a billion people take action to improve their health and well-being by 2020.

Announced February 4, 2019



Enterprise Value: \$800 M EV / Rev: NA
Rev: NA EV / EBITDA: NA

DiscoverOrg's acquisition of ZoomInfo

- ZoomInfo provides a subscription-based SaaS platform designed to provide business-information.
- The Company's platform optimizes sales and marketing channels for professionals in order to identify business opportunities, locate talent, and conduct research. Its semantic search engine scours the business web to catalog information which it then organizes into comprehensive profiles.
- The acquisition will help sales, marketing, and recruiting professionals access the most trusted and comprehensive B2B data available in the market.

Announced March 18, 2019



Enterprise Value: \$544 EV / Rev: NA
Rev: NA EV / EBITDA: NA

Roper Technologies' acquisition of Foundry

- Foundry provides software technologies used to deliver award-winning visual effects and 3D content for the digital design, visualization, and entertainment industries.
- The Company is deeply embedded across the creative pipeline to support a large ecosystem of users across the globe. Clients include Pixar, ILM, MPC, Walt Disney Animation, Mercedes, Adidas, and Google.
- The acquisition enhances Roper's long term commitment to serve the complex needs of its customers through continued product improvement, R&D and technological innovation, and partnerships with global leaders in the industry.

Announced January 22, 2019



Enterprise Value: NA EV / Rev: NA
Rev: NA EV / EBITDA: NA

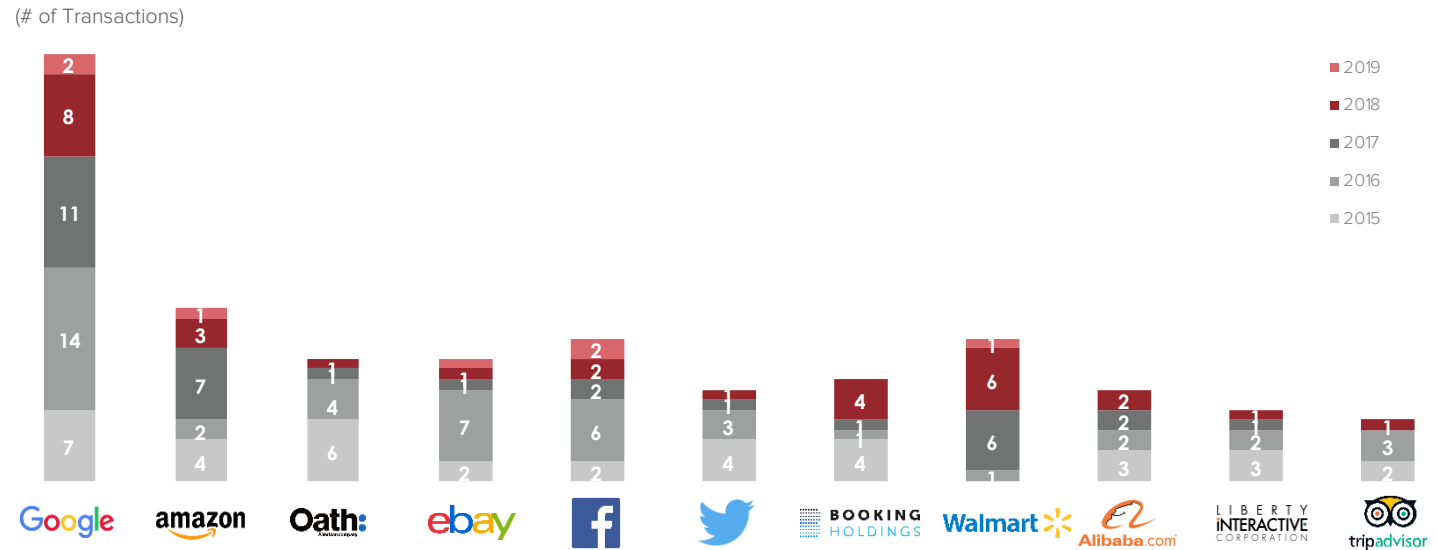
ShopRunner's acquisition of Precognitive

- Precognitive provides a SaaS-based platform designed to detect and prevent fraud in online retail.
- The Company's platform integrates device intelligence, advanced behavioral analytics, and a real-time decision engine, enabling organizations to identify and stop fraud at the time of each transaction.
- The acquisition leverages industry-leading algorithms to combat what has been a pressing issue that has taken a toll on eCommerce revenue and interfered with retailers' ability to offer a seamless and safe shopping experience for customers.

IDM ACQUISITION ACTIVITY – STRATEGIC ACQUIRERS

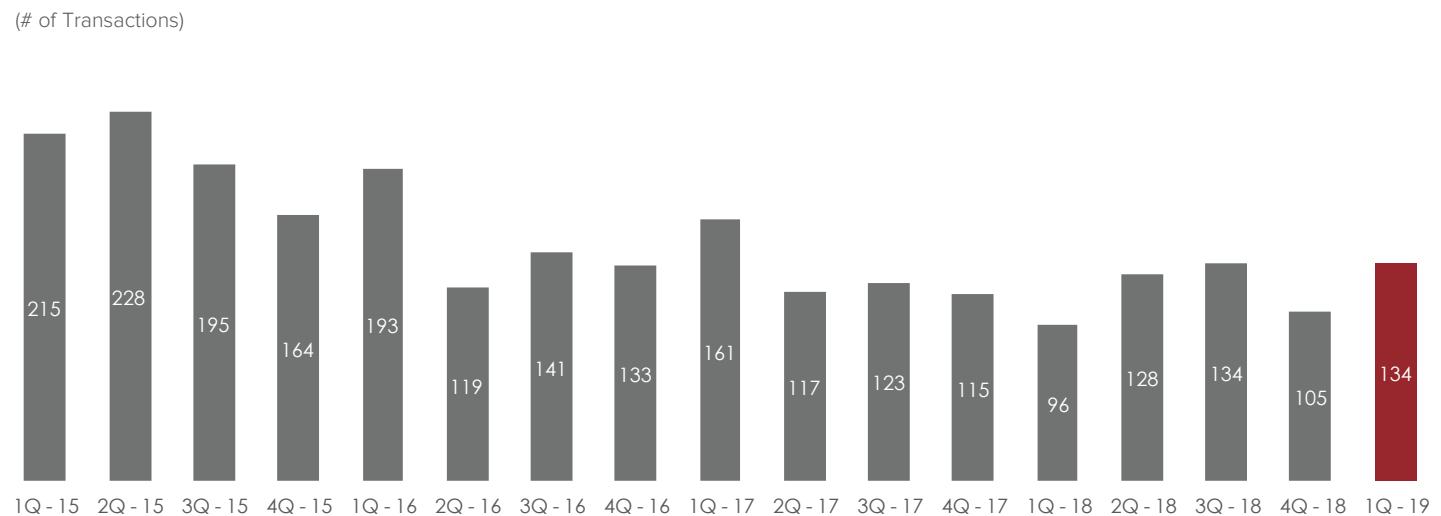
MOST ACTIVE STRATEGIC ACQUIRERS OF IDM ASSETS BY VOLUME¹

- Activity increased slightly in 1Q 2019 from Q4 2018 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.
- The most active strategic acquirers of IDM assets made a combined seven acquisitions in 1Q 2019, the annualized 2019 total of 28 is just shy of the 30 acquisitions made in 2018.
- Google (Alphabet) and Facebook outpaced all other notable strategic buyers, Google and Facebook both adding two acquisitions in 1Q 2019.



GLOBAL STRATEGIC ACQUIRER IDM M&A ACTIVITY BY VOLUME¹

- 1Q 2019 saw a significant increase in M&A activity from the prior quarter with strategic M&A activity increasing by 29 transactions quarter-over-quarter.
- In addition to continued expansion, 1Q 2019 activity experienced a volume increase of 40% from 1Q 2018.
- However, 1Q 2019 activity is still down 41.2% from the four-year high of 228 deals back in 2Q 2015.



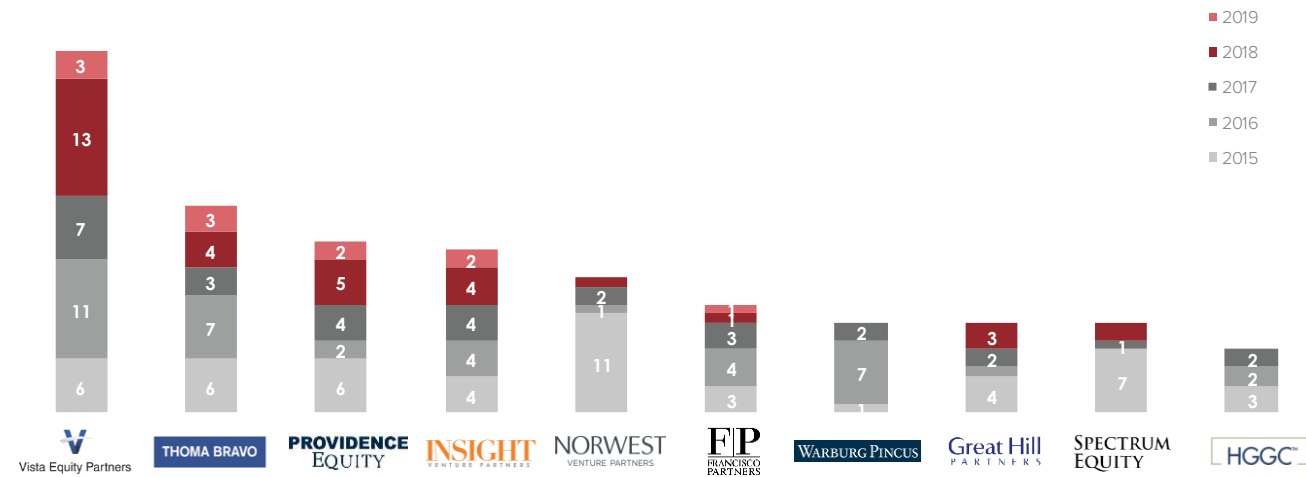
Note: Includes control investments only.

IDM ACQUISITION ACTIVITY – PRIVATE EQUITY

MOST ACTIVE PRIVATE EQUITY BUYERS OF NEW IDM PLATFORMS BY VOLUME¹

- The 10 most active private equity investors in IDM assets remained very active with 15 acquisitions completed in 1Q 2019 up from 11 acquisitions in 4Q 2018.
- Vista Equity Partners remains one of the more prolific acquirers of new IDM platforms, logging three additional IDM acquisitions in 1Q 2019.

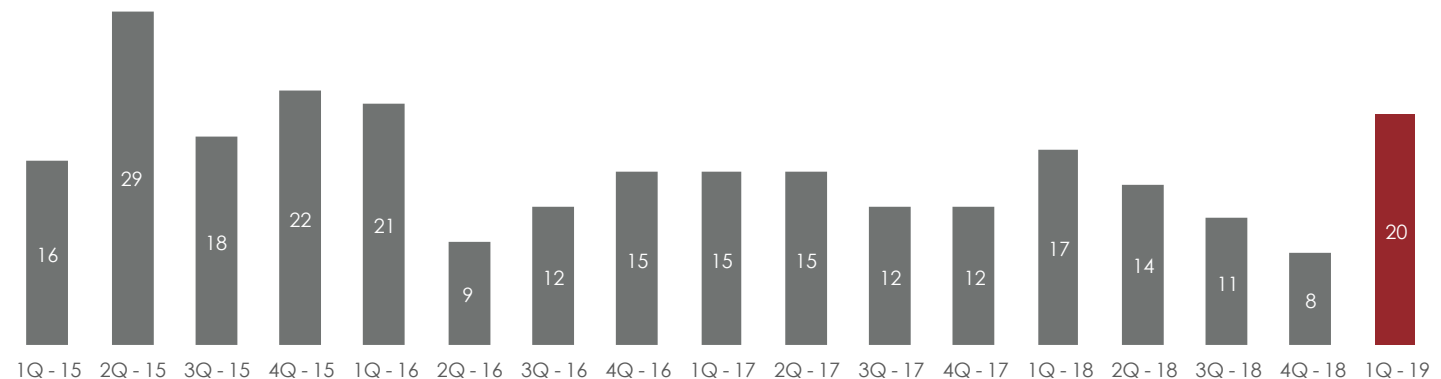
(# of Platform Transactions)



GLOBAL PRIVATE EQUITY NEW IDM PLATFORMS M&A ACTIVITY BY VOLUME¹

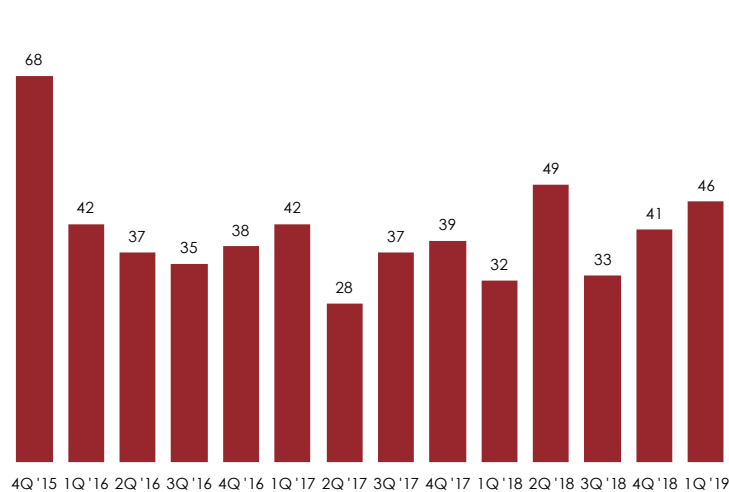
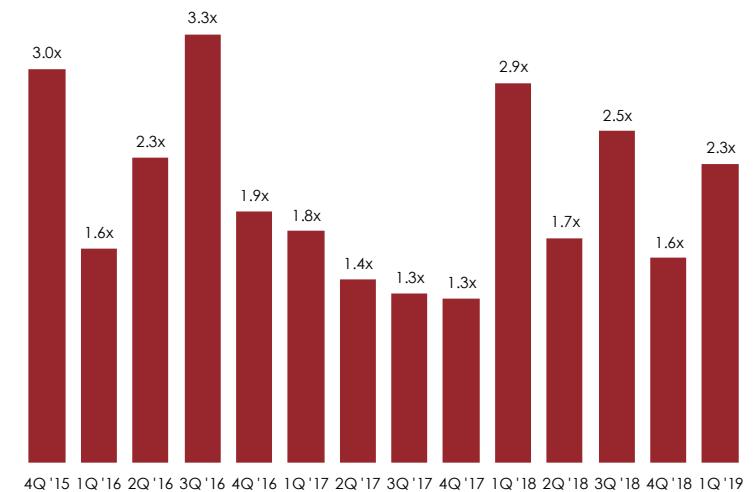
(# of Platform Transactions)

- IDM M&A volume increased significantly in 1Q 2019 more than doubling the eight deals from 4Q 2018.
- While private equity IDM M&A volume increased significantly from the prior quarter it remains consistent to slightly above other Q1's over the past four years, indicating that financial sponsors remain active and aggressive.



Note: Includes control new platform investments only. Excludes add-on acquisitions.

ONLINE MARKETING – M&A MARKET SUMMARY

ONLINE MARKETING M&A VOLUME¹ (GLOBAL)

MEDIAN M&A REVENUE MULTIPLES¹ (REPORTED)


- Online Marketing M&A moderately increased in volume from the previous quarter.
- Strategics again dominated M&A activity in the sector, but had a consistent number of transactions, financial sponsors more than doubled their activity from 3 deals to 8 deals.
- Median multiples increased 43% quarter-over-quarter rising above the historical mean.

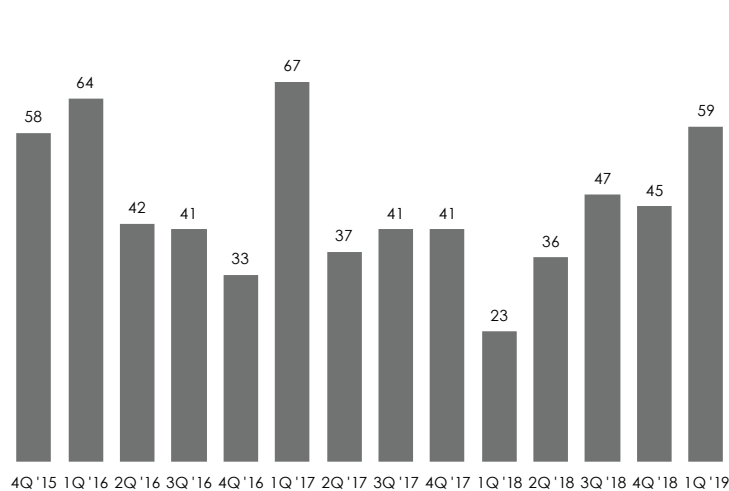
NOTABLE ONLINE MARKETING M&A TRANSACTIONS^{1,5}

- Thoma Bravo's \$3.7 B acquisition of Ellie Mae, a real estate software company which aims to automate the mortgage industry, demonstrates the willingness of private equity firms to make big bets on the digital transformation.
- DiscoverOrg acquired Zoom Information for \$800M, which greatly increases the quality, quantity, and depth of sales and marketing data that it can provide to its customers.

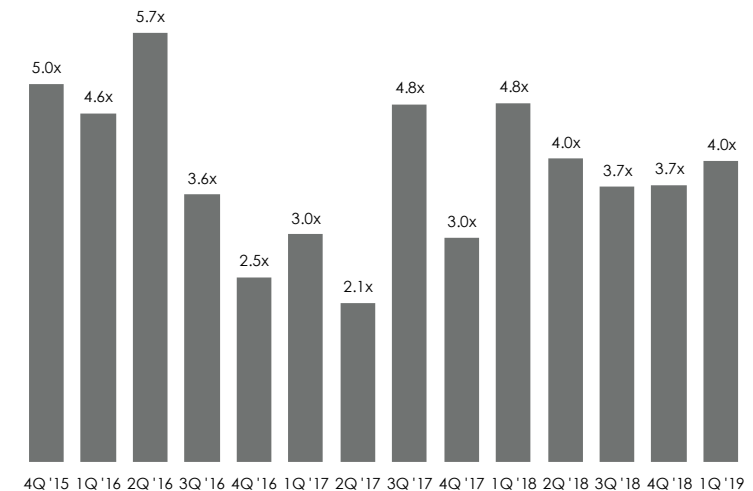
DATE CLOSED	ACQUIRER	TARGET	DESCRIPTION	ENTERPRISE VALUE (MM)	REVENUE MULTIPLE
Online Marketing					
Pending	McDonald's	Dynamic Yield	Provider of an AI-powered personalization platform.	\$300	NA
Pending	Dentsu Aegis Network	BJL Group	Provider of marketing, advertising and public relation services.	NA	NA
Pending	Thoma Bravo	Ellie Mae	Provider of on-demand software solutions and services for the residential mortgage industry.	\$3,700	7.7x
Pending	Taptica International	RhythmOne	Provider of a platform that connects consumers and brands through premium content online.	\$176	0.6x
2/26/2019	Walmart	Aspectiva	Provider of a content analysis platform.	NA	NA
2/19/2019	Kibo Software	Certona	Provider of an omnichannel personalization and revenue optimization platform for online retailers.	NA	NA
2/08/2019	Facebook	GrokStyle	Provider of a AI marketing platform that assists in finding a consumer's desired product.	NA	NA
2/06/2019	Publicis Groupe	Soft Computing	Provider of customer relationship management solutions.	\$54	1.0x
2/04/2019	DiscoverOrg	Zoom Information	Provider of a SaaS platform that helps sales marketing professionals identify opportunities.	\$800	NA
1/28/2019	j2 Global	iContact	Provider of cloud-based contract management and compliance services.	\$49	NA
1/23/2019	Cision	TrendKite	Provider of a Public Relations (PR) analytics software.	\$225	NA
1/17/2019	Dentsu Aegis Network	FILTER	Provider of digital experience design services.	NA	NA
1/14/2019	Salesforce Ventures	roundCorner	Provider of a customer relationship management (CRM) software to streamline business processes.	NA	NA
1/08/2019	LRW	Killer Infographics	Provider of visual communication services that enable clients to create custom marketing campaigns.	NA	NA
1/02/2019	Proxibid	Wavebid	Provider of a cloud-based auction management platform.	NA	NA
MEDIAN				\$225	1.0x

DATA ANALYTICS – M&A MARKET SUMMARY

DATA ANALYTICS M&A VOLUME¹ (GLOBAL)



MEDIAN M&A REVENUE MULTIPLES¹ (REPORTED)



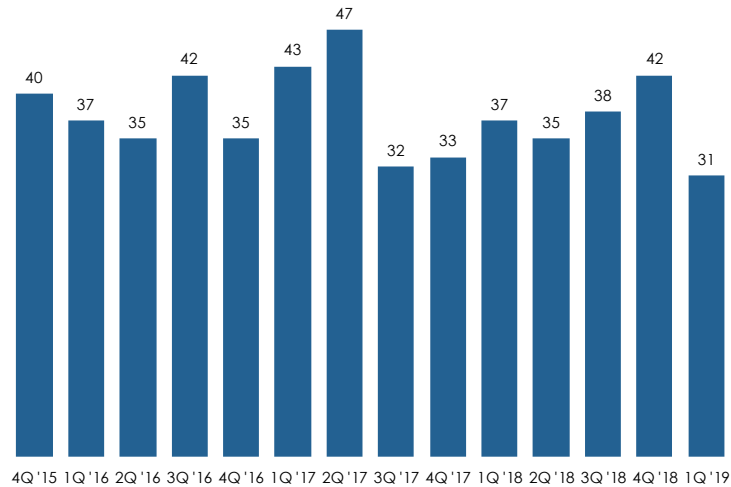
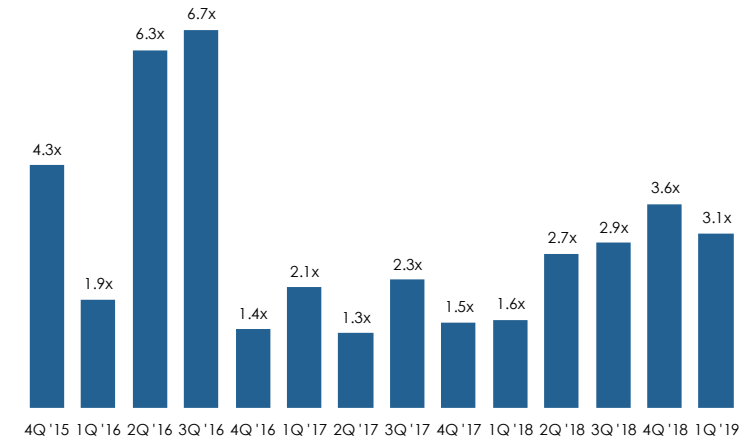
- Data Analytics M&A volume increased from the prior quarter, with activity nearing levels seen in only three quarters during the past four years.
- Volume of Data Analytics transactions has nearly tripled from 1Q 2018.
- Median revenue multiples in the sector increased to 4.0x, up from the prior two quarters.

NOTABLE DATA ANALYTICS M&A TRANSACTIONS^{1,5}

- Microsoft acquired Citus Data, enhancing its ability to better support customers' data analytics needs for their cloud based operations. The acquisition keeps Microsoft on the leading edge of cloud data capabilities
- Informatica acquired Allsight, enabling Informatica to provide customers with AI-enabled insights, which improves their user experience and drives customer loyalty.

DATE CLOSED	ACQUIRER	TARGET	DESCRIPTION	ENTERPRISE VALUE (MM)	REVENUE MULTIPLE
Data Analytics					
Pending	QlikTech International	Attunity	Provider of information availability software solutions.	\$560	6.5x
Pending	Apax Partners	Alooma	Provider of a data platform to build data pipelines.	\$150	NA
Pending	Berkshire Partners	Teraco Data Environments	Provider of a neutral colocation data center.	NA	NA
3/31/2019	General Atlantic	Rubicon Research	Provider of research-based services to the healthcare industry.	NA	NA
3/28/2019	Palo Alto Networks	Demisto	Provider of an automated incident response and security orchestration platform.	\$560	NA
2/28/2019	Apax Partners	Fractal Analytics	Provider of artificial intelligence, data analytics, data analysis and management consulting services.	\$200	NA
2/28/2019	Tyler Technologies	MicroPact	Provider of a web-based, commercial off the shelf (COTS) software.	\$195	2.8x
2/07/2019	The Riverside Company	Praetorian Digital	Provider of a data marketing platform to promote local government into a digital platform.	NA	NA
1/29/2019	Mimecast	Simply Migrate	Provider of an archive data migration solution in London, England.	NA	NA
1/24/2019	Microsoft	Citus Data	Provider of a database-as-a-service based platform.	NA	NA
1/22/2019	Qlik Technologies	CrunchBot AI	Provider of a business intelligence software.	NA	NA
1/15/2019	Thomas H. Lee Partners	MineralSoft	Provider of a platform to manage oil and gas investments.	NA	NA
1/08/2019	Healthgrades	Influence Health	Provider of healthcare engagement platform that offers information services to patients.	NA	NA
1/07/2019	Alibaba Group Holding	Data Artisans	Provider of a data stream processing platform.	\$105	NA
1/03/2019	Google	Superpod	Provider of a mobile based question and answer solution platform.	\$60	NA
MEDIAN				\$195	4.6x

ECommerce – M&A MARKET SUMMARY

ECOMMERCE M&A VOLUME¹ (GLOBAL)

MEDIAN M&A REVENUE MULTIPLES¹ (REPORTED)


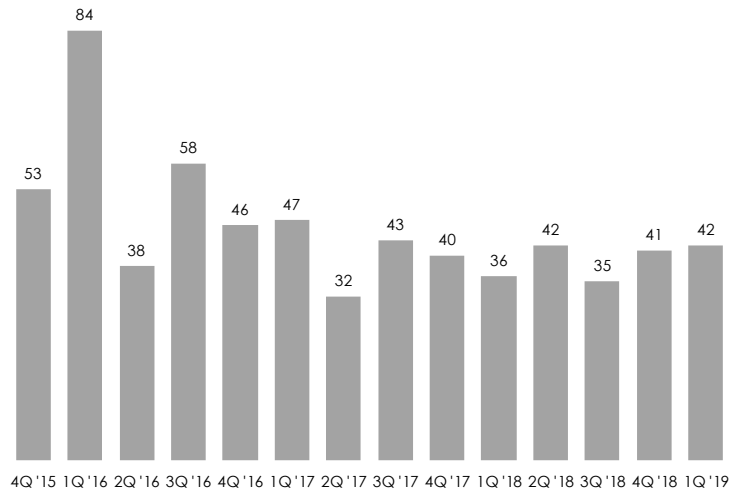
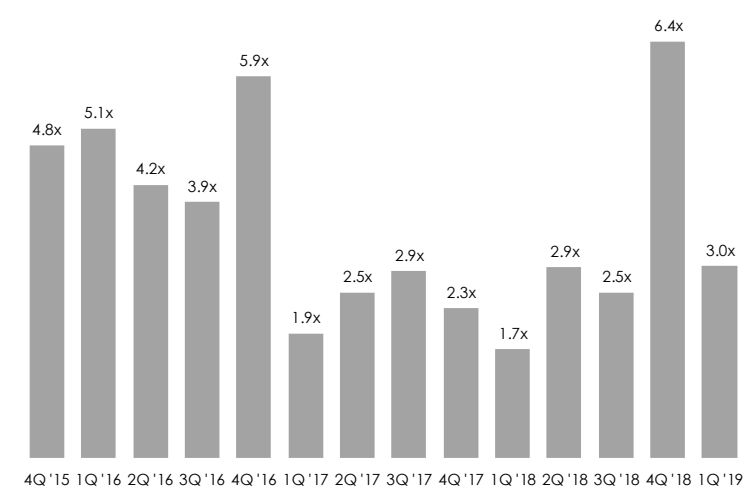
- eCommerce M&A volume in 1Q 2019 fell from a recent high of 42 deals in 4Q 2018 to 31 deals.
- The median of the reported multiples for 1Q 2019 is hovering right above the historical mean of 3.0x.

NOTABLE ECOMMERCE M&A TRANSACTIONS¹

- In its largest acquisition to date, Airbnb acquired HotelTonight, which will enable Airbnb to cater to growing demand for same-day bookings while bolstering the Company's footprint in the broader hospitality industry.
- eBay's purchase of Motors.co.uk expands the company's presence in the automotive sector and provides significantly more viewers to the listings on the site.

DATE CLOSED	ACQUIRER	TARGET	DESCRIPTION	ENTERPRISE VALUE (MM)	REVENUE MULTIPLE
eCommerce					
Pending	Ebix	Yatra Online	Provider of consumer travel platform in India.	\$390	2.6x
Pending	Airbnb	Hotel Tonight	Provider of a hotel booking application for last-minute online bookings for hotels.	NA	NA
Pending	American Express	LoungeBuddy	Provider of a mobile lounge booking platform.	\$225	NA
Pending	Viome	Habit	Provider of a personalized nutrition recommendation platform.	NA	NA
Pending	Pine Labs	QwikSilver Solutions	Provider of an online payment and loyalty platform.	\$110	NA
Pending	Uber Technologies	Careem Networks	Provider of a car booking platform to connect passengers with local drivers.	\$3,100	NA
Pending	Apax Partners	Trade Me Group	Provider of an online consumer goods marketplace in New Zealand.	\$1,792	10.0x
3/06/2019	Veritas Technologies	APTARE	Provider of a data protection and management software.	NA	NA
2/28/2019	TicketMaster	MoshTix	Provider of a portal which offers online ticketing services	NA	NA
2/25/2019	Marlin Management	Worksoft	Provider of an automation software for high-velocity business process discovery and testing.	NA	NA
2/15/2019	eBay	Motors.Co.uk	Provider of a used car sales platform across the UK.	NA	NA
1/31/2019	Shopify	Tictail	Provider of a DIY e-commerce platform that connects independent designers with shoppers.	NA	NA
1/10/2019	Vista Equity Partners	Apptio	Provider of cloud-based platform and SaaS applications.	\$1,940	8.6x
1/08/2019	Hosting.com	Hostway Services	Provider of hosted information technology services.	NA	NA
1/05/2019	ClassPass	GuavaPass	Provider of a fitness class platform to connect people with gyms.	NA	NA
MEDIAN				\$1,091	8.6x

MEDIA, CONTENT & GAMING – M&A MARKET SUMMARY

MEDIA, CONTENT & GAMING M&A VOLUME¹ (GLOBAL)

MEDIAN M&A REVENUE MULTIPLES¹ (REPORTED)


- There was a slight increase in the level of M&A activity in the Media, Content and Gaming from 4Q 2018 with strategics continuing to represent the majority of acquirers.
- The median reported revenue multiple decreased to 3.0x, which is more in line with the historical mean than the spike quarter in 4Q 2018.

NOTABLE MEDIA, CONTENT & GAMING M&A TRANSACTIONS¹

- In January 2019, Epic Games acquired two businesses, Agog Labs and 3lateral, both of which bring more of the game development and creation processes in-house.
- Spark Networks' acquisition of Zoosk greatly expands its user base and provides significant cost saving opportunities. The scale of the combined entity and the diversity of its brands will place Spark Networks in a dominant market position.

DATE CLOSED	ACQUIRER	TARGET	DESCRIPTION	ENTERPRISE VALUE (MM)	REVENUE MULTIPLE
Media, Content & Gaming					
Pending	Spark Networks	Zoosk	Provider of a dating application to connect people worldwide.	\$255	NA
Pending	New York Yankees	YES Network	Provider of a sports and entertainment television network.	\$4,375	NA
Pending	Roper Technologies	Vidpresso	Provider of a graphics platform that creates interactive live streaming.	\$544	NA
Pending	Cinedigm	Future Today	Provider of a monetization platform for content creators on OTT devices.	\$91	NA
3/21/2019	24i Unit Media	Streamone	Provider of online video streaming services in Utrecht, the Netherlands.	NA	NA
3/13/2019	Spotify Technology	Gimlet Media	Provider of a digital media network platform.	\$230	NA
3/04/2019	Viacom	Pluto	Provider of a free video streaming service.	\$340	NA
2/21/2019	Hiberus Tecnologías	Sorenson Media	Provider of video encoding services.	\$11	NA
2/13/2019	Koch Media	Warhorse Studios	Provider of a game development studio.	\$48	1.0x
2/11/2019	Apollo Global Management	Cox Communications - TV Stations	Provider of cable television and broadband products and services.	\$3,000	NA
2/05/2019	Live Nation Canada	Embrace Entertainment	Provider of live music events and associated services.	NA	NA
1/25/2019	Airbnb	Gaest.com	Provider of an online community marketplace.	NA	NA
1/23/2019	Epic Games	3lateral	Provider of a 3D visual design platform.	NA	NA
1/23/2019	Epic Games	Agog Labs	Provider of a premier programming language and tool suite.	NA	NA
1/22/2019	Vox Media	The Coral Project	Provider of an open-source publishing platform.	NA	NA
MEDIAN				\$243	1.0x

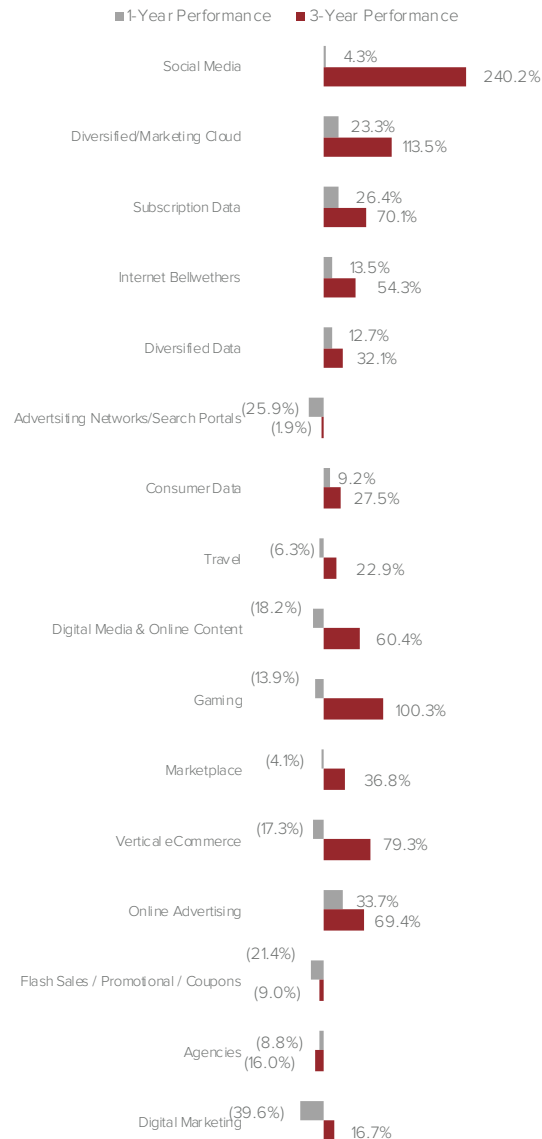
SELECT RECENT IDM PRIVATE PLACEMENTS^{1,4}

DATE	COMPANY	SECTOR	ROUND	ROUND SIZE (\$MM)	TOTAL RAISED (\$MM)	INVESTORS (CURRENT ROUND)	DESCRIPTION
3/27/19		eCommerce	D	\$51	\$100	Target, IVP, Norwest Venture Partners, New Enterprise Associates	Provider of online store for bedding products.
3/21/19		eCommerce	F	\$125	\$875	Franklin Templeton, Bain Capital	Provider of an online platform for renting dresses and accessories.
3/20/19		eCommerce	Late Stage	\$175	\$1,320	General Atlantic, Eurazeo, Kernel Investissements, Accel, Bpifrance	Provider of an online healthcare platform.
3/20/19		eCommerce	Late Stage	\$300	\$3,800	Access Technology Ventures, GV, Lennar	Provider of an online real estate marketplace that simplifies home buying and selling.
3/19/19		eCommerce	D	\$100	\$1,200	Sequoia Capital, Thrive Capital, Forerunner Ventures, IVP, Index Ventures, Spark Capital	Provider of online platform that offers a variety of personal care products.
2/28/19		Online Marketing	F	\$70	\$2,400	Undisclosed Investors	Provider of a cloud-based customer experience management software.
2/25/19		Data Analytics	B	\$20	\$39	8VC, Prologis, Engage Ventures, Fontinalis Partners, Story Ventures	Provider of a data and content forum platform.
2/21/19		Online Marketing	F	\$400	\$7,100	Dragoneer Investment Group, Temasek Holdings, SoftBank Group, Sequoia Capital	Provider of a food delivery application.
2/11/19		Media, Content & Gaming	D	\$300	\$3,000	Tencent Holdings, Andreessen Horowitz, Sequoia Capital, Vy Capital, Quiet Capital	Provider of a social media sharing platform.
2/11/19		Media, Content & Gaming	Late Stage	\$140	\$140	Blum Capital Partners, TimesSquare Capital Management	Provider of a live video streaming platform.
2/7/19		eCommerce	D	\$100	\$500	Foot Locker Foundation	Provider of an online footwear marketplace.
1/16/19		Data Analytics	Late Stage	\$500	\$500	Insight Venture Partners, Canada Pension Plan Investment Board	Provider of intelligent data management software.
1/16/19		Data Analytics	Late Stage	\$200	\$500	Khazanah Nasional, TA Associates Management	Provider of artificial intelligence and data analytics services.

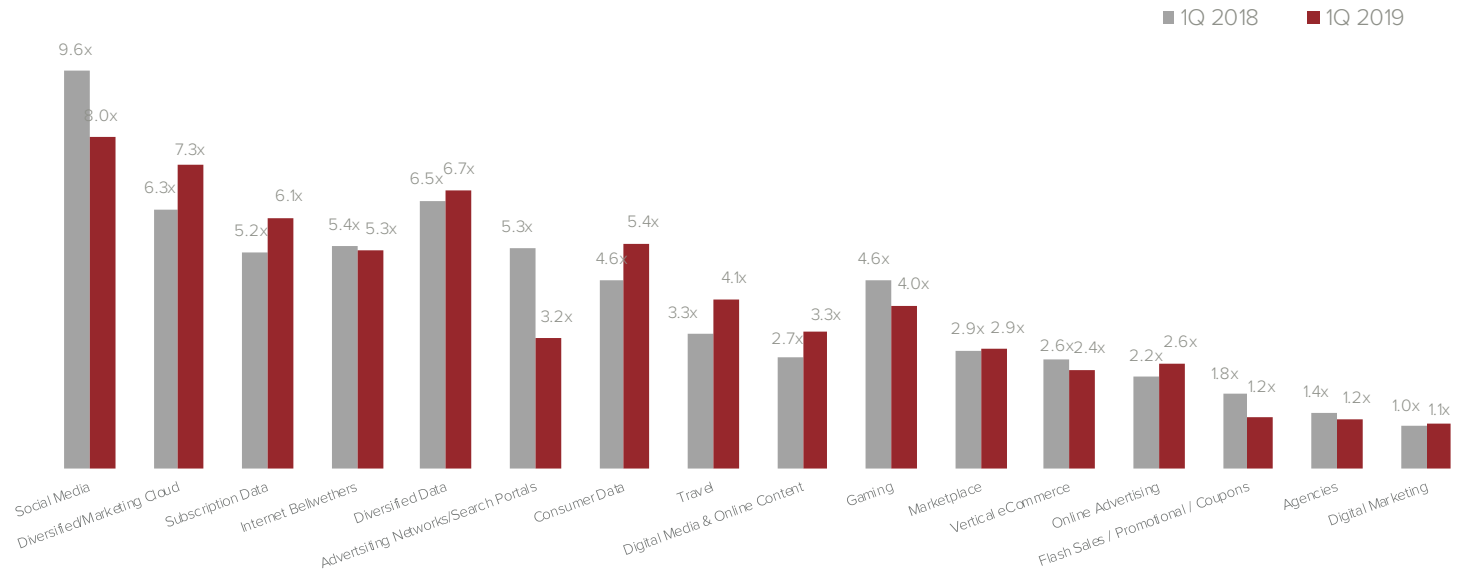
Note: Financial information presented above represents reported capital raised only.

PUBLIC IDM VALUATION MULTIPLES BY SECTOR¹

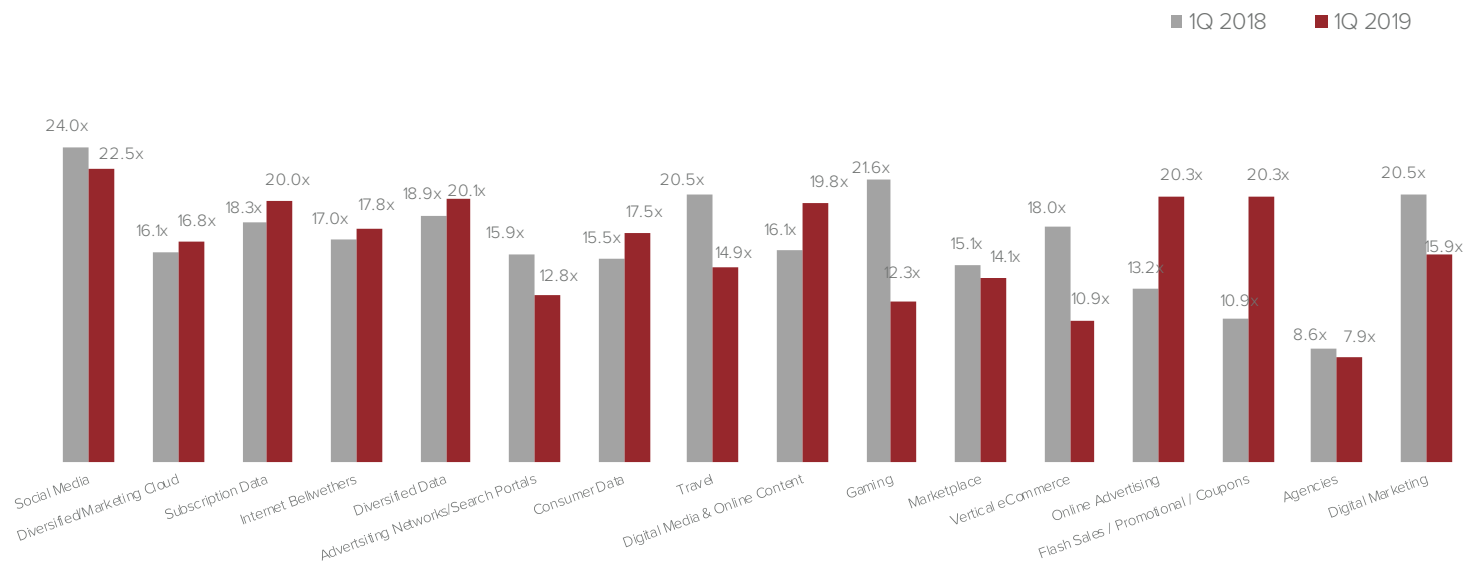
STOCK PERFORMANCE (1- & 3-YEAR)



REVENUE MULTIPLE COMPARISON 1Q 2018 VS. 1Q 2019



EBITDA MULTIPLE COMPARISON 1Q 2018 VS. 1Q 2019

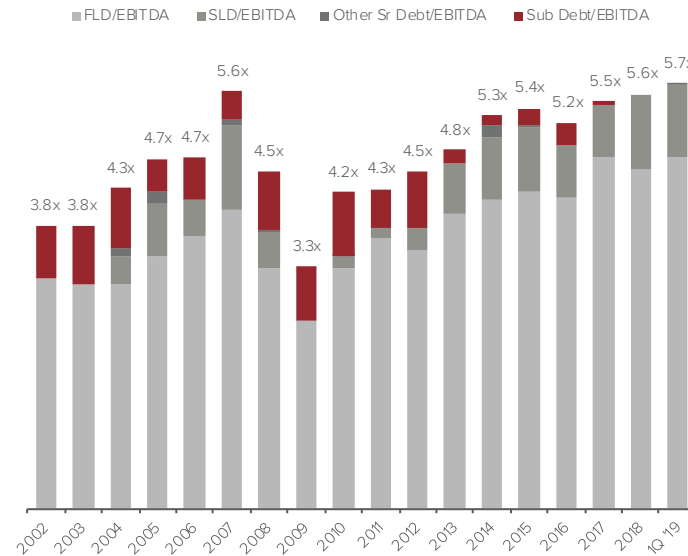


DEBT MARKET OVERVIEW

MIDDLE MARKET LBO LOAN MULTIPLES^{2,3}

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

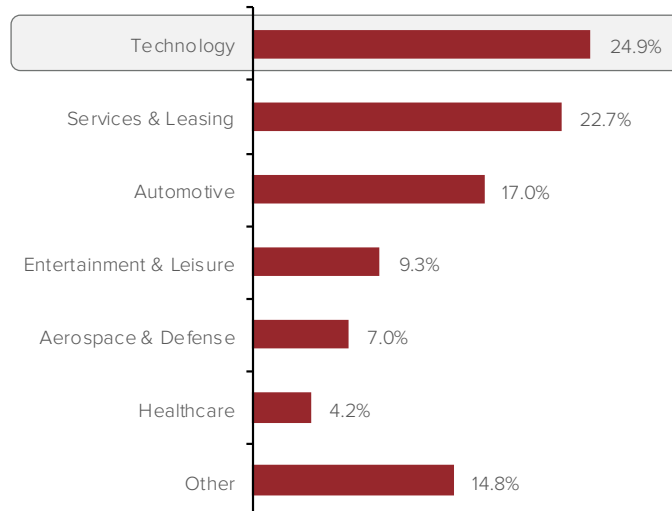
- Median middle market LBO loan multiples in 1Q 2019 increased slightly to 5.7x leverage.
- Middle market LBO loan volume decreased to \$0.6 billion in 1Q 2019, continuing a downward trend over the past two quarters.



LBO LOAN VOLUME BY INDUSTRY^{2,3}

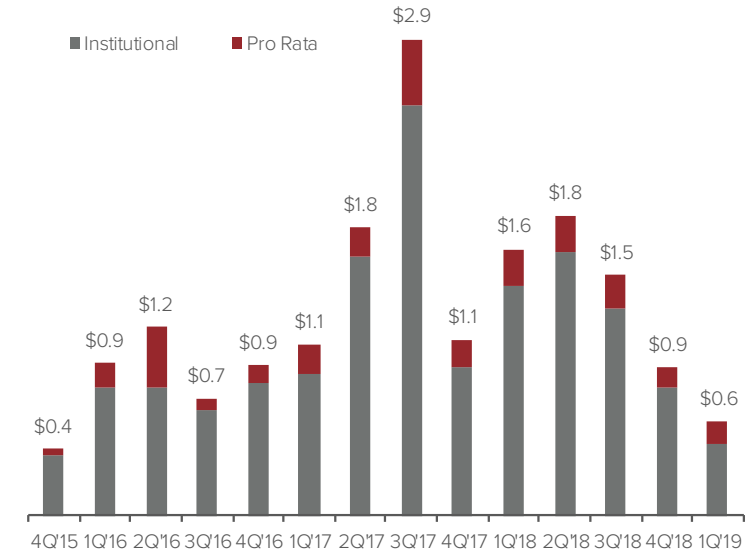
YTD 2019 New Issue LBO Loans

- Technology companies were the largest recipients of middle market LBO loans in 1Q 2019, representing 24.9% of new issuance.
- Median LBO debt percentages decreased slightly to 50% of total purchase price in 1Q 2019.



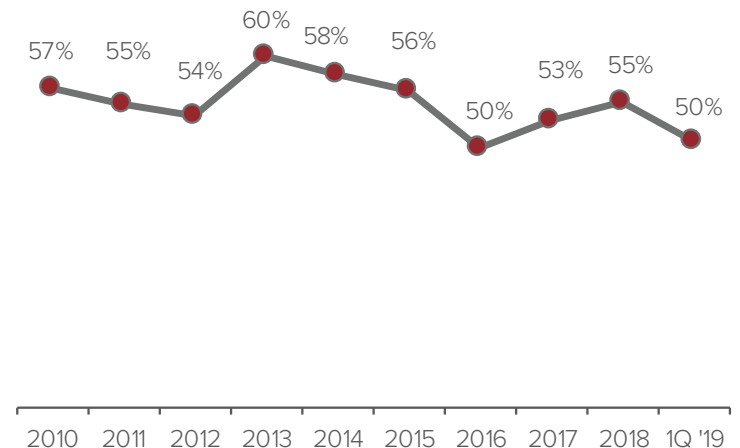
MIDDLE MARKET LBO VOLUME BY QUARTER^{2,3}

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



MEDIAN LBO DEBT PERCENTAGES^{3,4}

Percentage of Total Purchase Price



SELECT HW TMT TRANSACTIONS

 acquired DiscoverOrg	 pending acquisition of 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 TRelation	 a wholly-owned affiliate of 360i-robotics acquired by imprivata & inspirata
 invested in Datix Software by Takeda Ono	 majority investment from Hq	 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 VENTURE PARTNERS	 acquired PERFORCE	 acquired by HIG CAPITAL	 merged with research now	 investment from bv	 acquired by accruent	 acquired by MSOUTH	 acquired Healthlogics
 acquired by Riverside PARTNERS	 investment from INSIGHT VENTURE 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 VENTURE 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 SILVER CHAIR	 recapitalized by GENSTAR	 acquired by HIG CAPITAL	 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 IC&B	 acquired by HEARST	 acquired by Vista Equity Partners	 acquired by SUMMIT PARTNERS	 acquired by Intech	 acquired by Artemis 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 Aflinon	 significant equity investment from Goldman Sachs	 acquired by SFW CAPITAL PARTNERS	 acquired by TransUnion	 acquired by inovation	 minority investment from JMI EQUITY	 minority investment from ABRY PARTNERS	 acquired by Vista Equity Partners	 acquired by Johnson & Johnson	 strategic investment from LAKE CAPITAL	 acquired by redhat	 acquired by BainCapital and JMI EQUITY

APPENDIX: IDM SECTOR PUBLIC COMPANY UNIVERSE¹

Online Marketing	Internet Bellwethers	Alphabet	Amazon.com	Facebook						
	Digital Marketing	Bazaarvoice	TechTarget	QuinStreet, Inc.	Matomy Media	Harte-Hanks				
	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	Sohu.com	Pandora	Blucora	XO Group TechTarget
	Digital Media & Online Content (cont'd)	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 METRICS¹

Company	Ticker	Enterprise	Market	% of 52	1-Year Stock	3-Year Stock	Revenue Growth		LTM EBITDA	Enterprise Value /			Price /	
		Value	Capitalization	Week High	Performance	Performance	LTM	NTM	Margin	LTM Rev.	NTM Rev.	LTM EBITDA	Earnings	
Internet Bellwethers														Internet Bellwethers
Alphabet Inc.	GOOGL	\$722,561	\$762,140	91.1%	13.5%	54.3%	23.4%	23.7%	29.6%	5.3x	4.4x	17.8x	24.8x	
Amazon.com, Inc.	AMZN	897,988	874,710	86.8%	23.0%	200.0%	30.9%	23.2%	10.9%	3.9x	3.3x	35.5x	NM	Digital Marketing
Facebook, Inc.	FB	446,277	397,645	76.2%	4.3%	46.1%	37.4%	29.9%	52.3%	8.0x	6.5x	15.3x	18.0x	
Median		\$722,561	\$762,140	86.8%	13.5%	54.3%	30.9%	23.7%	29.6%	5.3x	4.4x	17.8x	21.4x	Diversified / Marketing Cloud
Digital Marketing														
BrightView Holdings, Inc.	BV-US	\$2,608	\$1,511	61.5%	NA	NA	3.3%	5.3%	11.0%	1.1x	1.1x	10.2x	NM	Agencies
TechTarget, Inc.	TTGT-US	456	452	47.2%	(18.2%)	119.3%	11.8%	12.5%	17.4%	3.8x	3.4x	21.5x	25.8x	
QuinStreet, Inc.	QNST	643	667	66.9%	4.9%	291.5%	34.9%	14.5%	6.4%	1.4x	1.4x	22.6x	41.9x	Online Advertising
Matomy Media Group Ltd	MTMY-GB	22	7	8.5%	(91.7%)	(93.9%)	(65.0%)	NA	8.7%	0.3x	NA	2.9x	NM	
Harte-Hanks, Inc.	HHS	25	22	29.4%	(61.0%)	(85.9%)	(25.9%)	40.5%	NM	0.1x	0.1x	NM	1.5x	Advertising Networks/Search Portals
Median		\$456	\$452	47.2%	(39.6%)	16.7%	3.3%	13.5%	9.8%	1.1x	1.2x	15.9x	NM	
Diversified/Marketing Cloud														Consumer Data
Microsoft Corporation	MSFT-US	\$866,875	\$904,861	97.6%	29.2%	113.5%	14.7%	13.3%	41.8%	7.3x	7.0x	17.5x	NM	
Oracle Corporation	ORCL	210,922	183,562	98.8%	17.4%	31.3%	5.6%	0.6%	43.1%	5.3x	5.4x	12.3x	16.9x	Diversified Data
International Business Machines Corporation	IBM	163,016	125,560	87.1%	(8.0%)	(6.8%)	0.6%	(1.9%)	21.7%	2.0x	2.1x	9.4x	14.4x	
SAP SE Sponsored ADR	SAP	141,124	142,081	90.8%	9.8%	43.6%	10.2%	7.7%	28.8%	4.8x	4.6x	16.8x	29.5x	Subscription Data
Adobe Inc.	ADBE	132,599	130,034	96.0%	23.3%	184.1%	23.6%	24.4%	33.6%	14.0x	11.9x	41.6x	48.5x	
salesforce.com, inc.	CRM	121,771	122,103	94.8%	36.2%	114.5%	26.0%	24.5%	16.2%	9.2x	7.6x	NM	NM	Marketplace
HubSpot, Inc.	HUBS	6,125	6,843	92.3%	53.5%	281.0%	36.6%	34.3%	NM	11.9x	9.4x	NM	NM	
Median		\$141,124	\$130,034	94.8%	23.3%	113.5%	14.7%	13.3%	31.2%	7.3x	7.0x	16.8x	23.2x	Travel
Agencies														
WPP Plc	WPP-GB	\$18,981	\$13,331	57.2%	(33.5%)	(54.8%)	2.2%	(17.5%)	14.3%	0.9x	1.1x	6.4x	9.4x	Flash Sales / Promotional / Coupons
Omnicom Group Inc	OMC	18,778	16,327	92.7%	0.4%	(12.3%)	0.1%	(0.8%)	15.5%	1.2x	1.2x	7.9x	12.3x	
Publicis Groupe SA	PUB-FR	16,005	12,608	71.1%	(23.0%)	(23.8%)	(0.4%)	(5.8%)	18.4%	1.5x	1.6x	7.9x	13.0x	Vertical eCommerce
Dentsu Inc.	4324-JP	13,627	12,182	83.4%	(3.4%)	(16.0%)	9.7%	6.7%	16.7%	1.5x	1.4x	8.9x	14.9x	
Interpublic Group of Companies, Inc.	IPG	11,441	8,087	81.5%	(8.8%)	(8.5%)	7.4%	(9.7%)	12.4%	1.2x	1.3x	9.5x	13.1x	Digital Media & Online Content
Median		\$16,005	\$12,608	81.5%	(8.8%)	(16.0%)	2.2%	(5.8%)	15.5%	1.2x	1.3x	7.9x	13.0x	
Social Media														Gaming
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APPENDIX: IDM SECTOR PUBLIC COMPANY METRICS (CONT'D) ¹

		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	
Online Advertising														Internet Bellwethers
GoDaddy, Inc. Class A	GDDY	\$15,147	\$13,042	88.5%	22.4%	132.6%	19.3%	15.3%	14.9%	5.7x	5.1x	38.1x	NM	
Wix.com Ltd.	WIX	5,436	6,025	96.0%	51.9%	496.1%	41.8%	33.0%	NM	9.0x	7.1x	NM	NM	Digital Marketing
Endurance International Group Holdings, Inc.	EIGI	2,776	1,044	66.2%	(2.0%)	(31.1%)	(2.7%)	(0.2%)	26.4%	2.4x	2.4x	9.2x	NM	
Web.com Group, Inc.	WEB	NA	NA	NA	(100.0%)	(100.0%)	5.5%	NA	20.5%	NA	NA	NM	NM	Diversified / Marketing Cloud
Tucows Inc.	TCX	928	864	98.1%	45.0%	261.6%	5.0%	9.3%	13.2%	2.7x	2.5x	20.3x	NM	
Marchex, Inc. Class B	MCHX	156	175	95.7%	73.3%	6.3%	(5.6%)	16.5%	NM	1.8x	1.6x	NM	NM	Agencies
Median		\$1,852	\$954	92.1%	33.7%	69.4%	5.2%	15.3%	17.7%	2.6x	2.5x	20.3x	NA	
Advertising Networks/Search Portals														Online Advertising
Alphabet Inc. Class A	GOOGL	\$722,561	\$762,140	91.1%	13.5%	54.3%	23.4%	23.7%	29.6%	5.3x	4.4x	17.8x	24.8x	
Baidu, Inc. Sponsored ADR Class A	BIDU	48,702	45,720	58.0%	(26.1%)	(13.6%)	23.2%	19.8%	31.0%	3.2x	2.7x	10.2x	11.0x	Advertising Networks/Search Portals
NAVER Corp.	035420-KR	14,012	18,004	72.1%	(25.9%)	(1.9%)	19.4%	16.1%	21.5%	2.8x	2.5x	12.8x	30.8x	
Yahoo Japan Corporation	4689-JP	10,225	12,613	51.7%	(47.3%)	(42.5%)	5.1%	6.5%	21.1%	1.2x	1.2x	5.6x	14.1x	Consumer Data
Yandex NV Class A	YNDX-US	11,004	9,850	85.1%	(13.0%)	124.2%	26.0%	47.4%	25.9%	6.0x	4.3x	23.0x	13.0x	
Median		\$14,012	\$18,004	72.1%	(25.9%)	(1.9%)	23.2%	19.8%	25.9%	3.2x	2.7x	12.8x	14.1x	Diversified Data
Consumer Data														
Experian PLC	EXPN-GB	\$28,158	\$24,653	97.5%	25.6%	51.4%	5.7%	10.4%	34.5%	6.0x	5.9x	17.5x	29.2x	Subscription Data
Nielsen Holdings Plc	NLSN	16,476	8,413	67.9%	(25.5%)	(55.1%)	(0.9%)	0.1%	26.9%	2.5x	2.5x	9.4x	NM	
Equifax Inc.	EFX	16,846	14,382	85.4%	0.6%	3.7%	1.5%	3.7%	23.6%	4.9x	4.8x	20.9x	48.0x	Marketplace
Alliance Data Systems Corporation	ADS	30,342	9,274	69.9%	(17.8%)	(20.5%)	0.9%	5.2%	30.6%	3.9x	3.8x	12.7x	9.6x	
TransUnion	TRU	16,686	12,517	84.1%	17.7%	142.1%	19.8%	14.9%	35.4%	7.2x	6.4x	20.4x	45.0x	Travel
Fair Isaac Corporation	FICO	8,992	7,897	99.9%	60.4%	156.0%	10.8%	10.0%	23.4%	8.5x	8.0x	36.1x	NM	
Dun & Bradstreet Corporation	DNB	6,526	NA	NA	(100.0%)	(100.0%)	2.3%	(0.6%)	32.5%	3.6x	3.7x	11.2x	NM	Flash Sales / Promotional / Coupons
LiveRamp Holdings, Inc.	ACXM	2,677	3,738	86.3%	140.3%	154.5%	4.2%	(19.6%)	NM	5.9x	9.4x	NM	NM	
Median		\$16,581	\$8,844	84.8%	9.2%	27.5%	3.2%	4.4%	30.6%	5.4x	5.4x	17.5x	29.2x	Vertical eCommerce
Diversified Data														
Thomson Reuters Corporation	TRI-CA	\$40,168	\$29,663	99.6%	39.1%	32.1%	3.7%	7.7%	27.1%	7.3x	6.8x	26.9x	NM	Digital Media & Online Content
IHS Markit Ltd.	INFO-US	27,668	21,738	97.1%	12.7%	53.8%	5.0%	10.0%	33.3%	6.7x	6.2x	20.1x	NM	
Verisk Analytics Inc	VRSK-US	24,933	21,747	99.7%	27.9%	66.4%	11.6%	8.6%	47.3%	10.4x	9.7x	22.0x	36.3x	Social Media
Informa Plc	INF-GB	13,884	12,139	84.5%	(3.8%)	5.6%	34.8%	17.5%	33.1%	4.4x	3.8x	13.3x	43.8x	
Dun & Bradstreet Corporation	DNB	6,526	NA	NA	(100.0%)	(100.0%)	2.3%	(0.6%)	32.5%	3.6x	3.7x	11.2x	NM	Gaming
Median		\$24,933	\$21,738	97.1%	12.7%	32.1%	5.0%	8.6%	33.1%	6.7x	6.2x	20.1x	36.3x	
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APPENDIX: IDM SECTOR PUBLIC COMPANY METRICS (CONT'D) ¹

		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	
Subscription Data														Internet Bellwethers
S&P Global, Inc.	SPGI	\$56,673	\$51,812	96.9%	10.2%	112.7%	3.2%	5.9%	48.3%	9.1x	8.7x	18.7x	26.5x	
Moody's Corporation	MCO	39,259	34,192	96.3%	12.3%	87.5%	5.7%	6.6%	47.7%	8.8x	8.4x	18.5x	26.1x	Digital Marketing
Wolters Kluwer NV	WKL-NL	21,304	19,065	100.0%	28.3%	70.5%	(2.5%)	2.4%	28.7%	4.2x	4.2x	14.8x	24.6x	
Gartner, Inc.	IT	16,096	13,608	94.1%	29.0%	69.8%	20.1%	10.2%	15.7%	4.0x	3.8x	25.9x	NM	Diversified / Marketing Cloud
MSCI Inc. Class A	MSCI	19,507	16,767	99.7%	33.0%	168.4%	12.5%	9.4%	53.9%	13.6x	12.7x	25.3x	33.0x	
FactSet Research Systems Inc.	FDS	9,917	9,494	99.8%	24.5%	63.8%	10.6%	6.3%	33.4%	7.1x	6.9x	21.3x	30.4x	Agencies
Morningstar, Inc.	MORN	5,092	5,366	87.3%	31.9%	42.7%	11.9%	NA	30.6%	5.0x	NA	16.3x	29.3x	
Forrester Research, Inc.	FORR	748	890	94.5%	16.6%	43.9%	5.9%	34.1%	9.9%	2.1x	1.6x	21.2x	NM	Online Advertising
Median		\$17,802	\$15,187	96.6%	26.4%	70.1%	8.2%	6.6%	32.0%	6.1x	6.9x	20.0x	27.9x	
Marketplace														Advertising Networks/Search Portals
Amazon.com, Inc.	AMZN	\$897,988	\$874,710	86.8%	23.0%	200.0%	30.9%	23.2%	10.9%	3.9x	3.3x	35.5x	NM	
Alibaba Group	BABA	483,137	472,944	86.2%	(0.6%)	130.9%	60.5%	46.2%	26.9%	9.3x	8.6x	34.6x	45.3x	Consumer Data
JD.com, Inc.	JD	43,173	43,632	66.7%	(25.5%)	13.8%	30.2%	27.0%	0.2%	0.6x	0.5x	NM	NM	
eBay Inc.	EBAY	41,122	33,979	86.4%	(7.7%)	55.7%	8.0%	2.5%	27.1%	3.8x	3.8x	14.1x	13.4x	Diversified Data
Liberty Interactive	QVCA	14,264	6,952	61.7%	(36.5%)	(36.7%)	35.2%	2.7%	14.2%	1.0x	1.0x	7.2x	9.0x	
Rakuten, Inc.	4755-JP	14,403	13,583	97.8%	15.4%	(2.0%)	16.6%	16.7%	13.3%	1.4x	1.3x	10.9x	10.5x	Subscription Data
MercadoLibre, Inc.	MELI	22,418	22,951	98.6%	42.5%	330.8%	58.0%	54.5%	NM	15.6x	11.1x	NM	NM	
58.com Inc.	WUBA	9,153	8,076	73.1%	(17.8%)	18.0%	33.3%	28.5%	17.5%	4.9x	3.9x	27.7x	25.1x	Marketplace
Shopify, Inc.	SHOP	19,864	20,266	98.6%	65.8%	632.4%	59.4%	49.6%	NM	18.5x	13.3x	NM	NM	
Wayfair, Inc.	W	13,317	9,357	85.5%	119.8%	243.5%	43.6%	43.7%	NM	2.0x	1.5x	NM	NM	Travel
LendingClub Corp	LC	764	1,328	67.9%	(11.7%)	(62.8%)	3.0%	(33.4%)	31.9%	0.6x	1.0x	2.0x	NM	
Overstock.com, Inc.	OSTK	435	536	34.6%	(54.2%)	15.6%	4.4%	(7.2%)	NM	0.2x	0.3x	NM	NM	Flash Sales / Promotional / Coupons
Median		\$17,134	\$16,924	85.8%	(4.1%)	36.8%	32.1%	25.1%	15.8%	2.9x	2.4x	14.1x	13.4x	
Travel														Vertical eCommerce
Booking Holdings Inc.	PCLN	\$86,129	\$78,544	79.2%	(16.1%)	35.4%	14.6%	9.7%	39.7%	5.9x	5.5x	14.9x	19.6x	
Ctrip.com	CTRP	24,739	24,182	84.2%	(6.3%)	(1.3%)	18.0%	22.4%	11.6%	5.3x	4.5x	45.7x	NM	Digital Media & Online Content
Expedia Group, Inc.	EXPE	20,758	15,992	85.1%	7.8%	10.4%	11.6%	12.6%	15.5%	1.8x	1.7x	11.9x	39.4x	
TripAdvisor, Inc.	TRIP	6,616	6,449	74.6%	25.8%	(22.6%)	3.8%	9.9%	18.5%	4.1x	3.8x	22.1x	NM	Social Media
MakeMyTrip Ltd.	MMYT	2,515	1,638	66.2%	(20.5%)	52.6%	50.9%	55.8%	NM	4.9x	3.8x	NM	NM	
trivago N.V. Sponsored ADR Class A	TRVG	1,330	184	57.3%	(37.8%)	NA	(8.5%)	(3.4%)	NM	1.2x	1.3x	NM	NM	Gaming
Travelzoo	TZOO	150	159	63.4%	84.2%	65.0%	4.5%	7.5%	9.0%	1.3x	1.3x	14.9x	34.1x	
Median		\$6,616	\$6,449	74.6%	(6.3%)	22.9%	11.6%	9.9%	15.5%	4.1x	3.8x	14.9x	34.1x	
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APPENDIX: IDM SECTOR PUBLIC COMPANY METRICS (CONT'D) ¹

		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	
Flash Sales / Promotional / Coupons														Internet Bellwethers
Groupon, Inc.	GRPN	\$1,399	\$2,025	64.3%	(18.2%)	(11.0%)	(7.3%)	(7.8%)	6.5%	0.5x	0.6x	8.2x	NM	
Quotient Technology Incorporated	QUOT	758	928	61.8%	(24.7%)	(6.9%)	20.1%	25.3%	6.0%	2.0x	1.6x	32.4x	NM	
Median		\$1,079	\$1,476	63.1%	(21.4%)	(9.0%)	6.4%	8.8%	6.3%	1.2x	1.1x	20.3x	NM	
Vertical eCommerce														Diversified / Marketing Cloud
GrubHub, Inc.	GRUB	\$6,531	\$6,322	46.5%	(31.5%)	176.4%	47.5%	44.6%	17.7%	6.5x	4.8x	36.7x	NM	Agencies
Cimpress N.V.	CMPR	3,756	2,472	48.9%	(48.2%)	(11.6%)	21.4%	6.4%	13.0%	1.4x	1.4x	10.9x	NM	
Stamps.com Inc.	STMP	1,498	1,427	28.5%	(59.5%)	(23.4%)	25.2%	(3.6%)	37.2%	2.6x	2.7x	6.9x	8.5x	
Etsy, Inc.	ETSY	8,261	8,037	91.6%	139.6%	672.6%	36.8%	38.6%	16.8%	13.7x	10.4x	NM	NM	
Chegg, Inc.	CHGG	4,133	4,417	91.4%	84.5%	754.7%	25.9%	29.1%	5.8%	12.9x	10.5x	NM	NM	Online Advertising
Shutterfly, Inc.	SFLY	2,070	1,384	40.5%	(50.0%)	(12.4%)	64.8%	10.4%	14.6%	1.1x	1.0x	7.2x	27.5x	Advertising Networks/Search Portals
Shutterstock, Inc.	SSTK	1,421	1,636	83.6%	(3.2%)	27.0%	11.9%	12.9%	12.5%	2.3x	2.1x	18.2x	29.9x	
PetMed Express, Inc.	PETS	374	471	48.6%	(45.4%)	27.2%	9.9%	3.9%	19.1%	1.3x	1.3x	6.8x	11.4x	
1-800-FLOWERS.COM, Inc.	FLWS	1,046	649	95.7%	54.5%	131.3%	(3.5%)	6.2%	6.6%	0.9x	0.8x	13.2x	15.9x	
eHealth, Inc.	EHTH	1,264	1,406	92.4%	335.6%	563.9%	45.9%	25.8%	NM	5.0x	4.2x	NM	NM	Consumer Data
Median		\$1,784	\$1,531	66.3%	(17.3%)	79.3%	25.6%	11.7%	14.6%	2.4x	2.4x	10.9x	15.9x	Diversified Data
Digital Media & Online Content														Subscription Data
Tencent Holdings Ltd.	700-HK	\$446,354	\$437,819	83.6%	(11.9%)	125.2%	35.1%	34.0%	35.3%	9.4x	7.5x	26.8x	36.8x	Marketplace
Netflix, Inc.	NFLX	167,489	155,674	84.3%	20.7%	248.8%	35.1%	35.8%	58.6%	10.6x	8.3x	18.1x	NM	
IAC	IAC	19,964	16,386	93.5%	34.4%	346.3%	28.9%	15.7%	17.7%	4.7x	4.2x	26.5x	26.1x	
SINA Corp.	SINA	3,853	4,234	57.6%	(43.2%)	44.2%	33.1%	30.9%	25.3%	2.0x	1.6x	7.8x	33.7x	
Sohu.com Limited Sponsored ADR	SOHU	175	650	39.4%	(46.4%)	(66.5%)	0.8%	1.8%	NM	0.1x	0.1x	NM	NM	Travel
Pandora Media, Inc.	P	2,627	NA	NA	(100.0%)	(100.0%)	5.9%	21.0%	NM	1.7x	1.5x	NM	NM	
Blucora, Inc.	BCOR	1,848	1,609	80.7%	35.7%	546.9%	10.0%	12.0%	18.9%	3.3x	3.0x	17.4x	36.0x	
XO Group Inc.	XOXO	787	NA	NA	(100.0%)	(100.0%)	5.5%	NA	16.7%	4.8x	NA	28.7x	NM	
TechTarget, Inc.	TTGT	456	452	47.2%	(18.2%)	119.3%	11.8%	12.5%	17.4%	3.8x	3.4x	21.5x	34.9x	Flash Sales / Promotional / Coupons
Leaf Group Ltd.	DMD	166	207	66.6%	13.8%	60.4%	20.2%	15.3%	NM	1.1x	1.0x	NM	NM	Vertical eCommerce
Townsquare Media, Inc.	TSQ	601	81	58.4%	(27.9%)	(49.0%)	4.7%	5.7%	22.0%	1.4x	1.3x	6.3x	NM	
Median		\$1,848	\$650	58.4%	(18.2%)	60.4%	11.8%	15.5%	20.5%	3.3x	2.3x	19.8x	33.7x	
														Digital Media & Online Content
														Social Media
														Gaming
Note: Not Meaningful (NM) represents multiples above 50.0x; Not Available (NA) means the data is unavailable.														

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APPENDIX: IDM SECTOR PUBLIC COMPANY METRICS (CONT'D) ¹

Company	Ticker	Enterprise Value	Market Capitalization	% of 52 Week High	1-Year Stock Performance	3-Year Stock Performance	Revenue Growth		LTM EBITDA	Enterprise Value /			Price / Earnings
							LTM	NTM	Margin	LTM Rev.	NTM Rev.	LTM EBITDA	
Social Media													
Facebook, Inc.	FB	\$446,277	\$397,645	76.2%	4.3%	46.1%	37.4%	29.9%	52.3%	8.0x	6.5x	15.3x	18.0x
Twitter, Inc.	TWTR	21,916	25,213	68.8%	13.3%	98.7%	24.5%	18.6%	28.7%	7.2x	6.3x	25.1x	20.9x
Snap, Inc. Class A	SNAP	13,070	11,514	69.1%	(30.6%)	NA	43.1%	39.0%	NM	11.1x	8.5x	NM	NM
Weibo Corp	WB	13,485	7,524	48.4%	(48.1%)	245.3%	48.8%	33.8%	37.2%	8.4x	6.5x	22.5x	13.2x
Momo Inc	MOMO	7,347	6,152	70.5%	2.3%	240.2%	47.3%	37.0%	26.3%	4.0x	3.0x	15.1x	15.0x
Match Group, Inc.	MTCH	18,129	3,879	92.9%	27.4%	411.8%	30.0%	19.8%	34.0%	10.5x	9.1x	30.8x	8.1x
Spark Networks SE Sponsored ADR	LOV	213	206	90.2%	6.7%	NA	178.9%	2.3%	NM	1.6x	1.6x	NM	NM
Median		\$13,485	\$7,524	70.5%	4.3%	240.2%	43.1%	29.9%	34.0%	8.0x	6.5x	22.5x	15.0x
Gaming													
Nintendo Co., Ltd.	7974-JP	\$25,669	\$37,543	63.2%	(35.0%)	100.3%	115.8%	12.4%	20.9%	2.4x	2.3x	11.3x	23.8x
Activision Blizzard, Inc.	ATVI	33,550	34,777	53.8%	(32.5%)	34.5%	6.8%	(11.4%)	39.7%	4.5x	5.2x	11.3x	19.2x
NetEase, Inc.	NTES	26,344	31,709	83.4%	(13.9%)	68.2%	26.8%	34.7%	13.8%	2.8x	2.2x	20.1x	34.1x
Electronic Arts Inc.	EA	26,729	30,448	67.2%	(16.2%)	53.7%	7.3%	(3.5%)	32.4%	5.0x	5.6x	15.5x	21.5x
Take-Two Interactive Software, Inc.	TTWO	8,987	10,679	67.5%	(3.5%)	150.5%	0.7%	9.5%	19.0%	3.5x	3.0x	18.3x	29.0x
Ubisoft Entertainment SA	UBI-FR	11,038	9,931	70.9%	5.7%	183.3%	18.6%	25.3%	44.2%	5.5x	4.7x	12.3x	NM
Zynga Inc.	ZNGA	4,225	4,946	97.4%	45.6%	133.8%	5.3%	53.7%	5.7%	4.7x	3.1x	NM	NM
GREE, Inc.	3632-JP	184	989	66.9%	(28.6%)	(25.7%)	19.2%	0.8%	11.2%	0.3x	0.3x	2.5x	23.2x
Glu Mobile Inc.	GLUU	1,449	1,577	95.5%	190.2%	287.9%	27.8%	27.6%	1.9%	4.0x	3.2x	NM	NM
Median		\$11,038	\$10,679	67.5%	(13.9%)	100.3%	18.6%	12.4%	19.0%	4.0x	3.1x	12.3x	23.5x
Subscription Data													
Marketplace													
Travel													
Flash Sales / Promotional / Coupons													
Vertical eCommerce													
Digital Media & Online Content													
Social Media													
Gaming													

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SOURCES

1. FactSet.
2. PNC Capital Markets.
3. S&P LCD stats.
4. PitchBook.
5. HW proprietary transaction information.

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