



# Global Technology, Media and Telecom (TMT) M&A Quarterly

Q4'2018



# Selected Recent Transactions <sup>(1)</sup>

Communication Technology and Electronics	  <p><b>Ubisense</b></p> <p>KPMG CF United States</p> <p>advised Ubisense on the sale of its SmartSpace division to Investcorp Technology Partners</p> <p>\$44.8 million<sup>(2)</sup> December 2018</p>	  <p><b>GCI</b></p> <p>KPMG CF United Kingdom</p> <p>advised GCI on its sale to Mayfair Equity Partners</p> <p>\$284.2 million May 2018</p>	  <p><b>TRS Technologies</b></p> <p>KPMG CF United States</p> <p>advised TRS Technologies, Inc. on its sale to Tayca Corporation</p> <p>Value not disclosed January 2018</p>	  <p><b>Vitruvian Partners</b></p> <p>KPMG CF Sweden</p> <p>advised Vitruvian Partners on its acquisition of The EasyPark Group</p> <p>Value not disclosed December 2017</p>
	  <p><b>BeneSys</b></p> <p>KPMG CF United States</p> <p>advised BeneSys on its sale from The Riverside Company to Tenex Capital Management</p> <p>Value not disclosed October 2018</p>	  <p><b>Eze Castle Integration</b></p> <p>KPMG CF United States</p> <p>advised Eze Castle Integration on raising an investment from H.I.G. Capital</p> <p>Value not disclosed May 2018</p>	  <p><b>PRIME Research</b></p> <p>KPMG CF United Kingdom</p> <p>advised PRIME Research on its sale to Cision Ltd.</p> <p>Value not disclosed January 2018</p>	  <p><b>Logiq<sup>3</sup></b></p> <p>KPMG CF Canada</p> <p>advised Logiq3 on its sale to Reinsurance Group of America</p> <p>Value not disclosed December 2017</p>
	  <p><b>Ink</b></p> <p>KPMG CF United Kingdom</p> <p>advised the shareholders of Volanti Media (Holdings) Limited (Ink) on its sale to The Stagwell Group</p> <p>Value not disclosed October 2018</p>	  <p><b>ReachLocal Japan</b></p> <p>KPMG CF United States &amp; Japan</p> <p>advised ReachLocal Japan on its sale to New Horizon Capital</p> <p>Value not disclosed September 2018</p>	  <p><b>RIBA Enterprises</b></p> <p>KPMG CF United Kingdom</p> <p>advised RIBA Enterprises in raising a minority investment of 42.5% from LDC</p> <p>Value not disclosed June 2018</p>	  <p><b>LCL</b></p> <p>KPMG CF Japan</p> <p>advised LCL on its sale to Kakaku.com</p> <p>Value not disclosed December 2017</p>
	  <p><b>TVcN</b></p> <p>KPMG CF Netherlands</p> <p>advised ManpowerGroup Netherlands B.V. on the sale of TVcN B.V. to Opportunity Partners</p> <p>Value not disclosed January 2019</p>	  <p><b>ProActive Software</b></p> <p>KPMG CF Netherlands</p> <p>advised ProActive Software on its sale to Visma Group</p> <p>Value not disclosed November 2018</p>	  <p><b>Tenzing Private Equity</b></p> <p>KPMG CF United Kingdom</p> <p>advised Tenzing Private Equity LLP on the acquisition of Corvia Ltd (TICKETER)</p> <p>Value not disclosed October 2018</p>	  <p><b>tCell.io</b></p> <p>KPMG CF United States</p> <p>advised tCell.io on its sale to Rapid7</p> <p>Value not disclosed October 2018</p>

2014-2018 Advisor Rankings <sup>(3)</sup>		# of Deals	2018 Advisor Rankings <sup>(3)</sup>		# of Deals	2018 TMT Advisor Rankings <sup>(3)</sup>		# of Deals
1.	KPMG <sup>(1)</sup>	2,260	1.	KPMG <sup>(1)</sup>	464	1.	KPMG <sup>(1)</sup>	70
2.	PwC	2,066	2.	PwC	365	2.	Deloitte	62
3.	Ernst & Young LLP	1,426	3.	Deloitte	339	3.	BDO	53
4.	Rothschild & Co.	1,402	4.	Rothschild & Co.	313	4.	PwC	52
5.	Deloitte	1,393	5.	Houlihan Lokey	261	5.	Raymond James Financial	51
6.	Houlihan Lokey	1,274	6.	Ernst & Young LLP	235	6.	Rothschild & Co.	48
7.	BDO	1,100	7.	BDO	229	7.	Ernst & Young LLP	47
8.	Lazard	922	8.	Lazard	201	8.	Oaklins	46
9.	IMAP	854	9.	Sumitomo Mitsui Financial	184	9.	Houlihan Lokey	44
10.	Oaklins	832	10.	Oaklins	173	10.	Sumitomo Mitsui Financial	38

(1) Represents the Corporate Finance practices of KPMG International's network of independent member firms.

(2) Using conversion rate as on November 21, 2018 (1 GBP = 1.279 USD).

(3) League tables include completed deals which have value between \$0 to \$500mm and also where deal value is not disclosed.

Source: Thomson Reuters SDC



# KPMG CF Transaction Spotlight



Acted as the financial advisor to



on the sale of its SmartSpace division to



\$44.8 million<sup>(2)</sup>  
December 2018

Buyer	Seller
 	  

## Overview:

- A global team of KPMG Corporate Finance professionals from KPMG Corporate Finance LLC in the U.S. and KPMG Corporate Finance UK (collectively “KPMG Corporate Finance”) acted as the exclusive financial advisor to Ubisense on the sale of its SmartSpace division to Investcorp Technology Partners, an affiliate of Investcorp Bank B.S.C., for an enterprise value of £35.0 million (\$44.8 million)<sup>(2)</sup>.
- SmartSpace provides an Industrial Internet of Things (“I-IoT”) platform for real-time linkage of customers’ information technology and discrete manufacturing activities.
- SmartSpace’s solution includes a highly scalable, modular software platform and Real-Time Location System (“RTLS”) sensing hardware. The SmartSpace platform converts dynamic location data into actionable information in order to form a digital twin, enabling enhanced optimization, visualization, analytics and control of industrial processes.

## Engagement:

- The key factors leading to KPMG Corporate Finance’s selection as advisor were our industry knowledge of I-IoT technology and business models, our history as a leading IoT transaction advisor, our knowledge of key strategic and financial buyers, the team’s carve out transaction expertise, as well as our ability to present a world class, cross-border investment banking team to the client’s board.
- KPMG US originated the opportunity and partnered closely with the UK Technology Investment Banking team who were integral in winning the engagement and supporting the sell side process
- Additionally, the FDD team in London was brought in to deliver a seller’s QoE report.




Acted as the lead financial advisor to



on its sale to



Value not disclosed  
October 2018

Buyer	Seller
 	 

## Overview:

- KPMG Corporate Finance LLC (“KPMG CF”) acted as the exclusive investment banking advisor to tCell on its sale to Rapid7.
- tCell is a best-in-class security platform designed to protect web applications in the cloud. tCell combines the best features of web application firewalls and runtime application self-protection, and is the only next generation web application firewall designed for cloud deployment in production environments.

## Engagement:

- KPMG CF’s deep industry knowledge, effective positioning, strong relationships with strategic and financial acquirers, and ability to drive a competitive process resulted in a successful outcome for all parties.

(1) Represents the Corporate Finance practices of KPMG International’s network of independent member firms.  
 (2) Using conversion rate as on November 21, 2018 (1 GBP = 1.279 USD).

# Global TMT Sector M&A Activity

- Driven by a wave of mega deals announced by the likes of IBM, HCL, and SAP, the TMT sector registered 2,298 deals aggregating \$200.6 billion in the last quarter of 2018, making 2018 a record year in terms of deal value, surpassing the previous record set in 2015.
- The largest deal announced in the quarter was IBM's \$33.6 billion acquisition of Red Hat. Once completed, this will represent the largest software deal and the third largest technology acquisition.
- On similar lines, deal value in the mid-market segment (<\$500 million) witnessed a Y-o-Y growth of ~23% with deal value increasing from \$39.5 billion in Q4'2017 to \$48.6 billion in Q4'2018.
- Supported by continued high volume of dry powder, private equity activity picked up in the quarter, reaching a total of 208 deals, compared to 174 deals in Q3'2018.
- Strengthened by continued activity in the machine learning, cloud computing, IoT, converged IT infrastructure, and big data space, both financial and strategic players are expected to carry the momentum in deal volume through the coming year.

## Sub-sector M&A activity

(Aggregate values in \$ billions) <sup>(5)</sup>



### Communications Technology and Electronics <sup>(1)</sup>

	Total Deals		<\$500 mm Deals	
	Value	# of Deals	Value	# of Deals
Q4'18	\$80.7	571	\$15.2	546
Q4'17	\$49.1	519	\$12.5	501



### IT Services and BPO <sup>(2)</sup>

	Total Deals		<\$500 mm Deals	
	Value	# of Deals	Value	# of Deals
Q4'18	\$8.3	423	\$6.2	421
Q4'17	\$10.4	431	\$5.1	426



### Internet and Media <sup>(3)</sup>

	Total Deals		<\$500 mm Deals	
	Value	# of Deals	Value	# of Deals
Q4'18	\$32.4	564	\$11.1	548
Q4'17	\$117.5	673	\$9.7	661



### Software <sup>(4)</sup>

	Total Deals		<\$500 mm Deals	
	Value	# of Deals	Value	# of Deals
Q4'18	\$79.1	740	\$16.0	723
Q4'17	\$43.9	767	\$12.2	751

Notes: We have sourced the sub-sector classifications from Capital IQ as below:

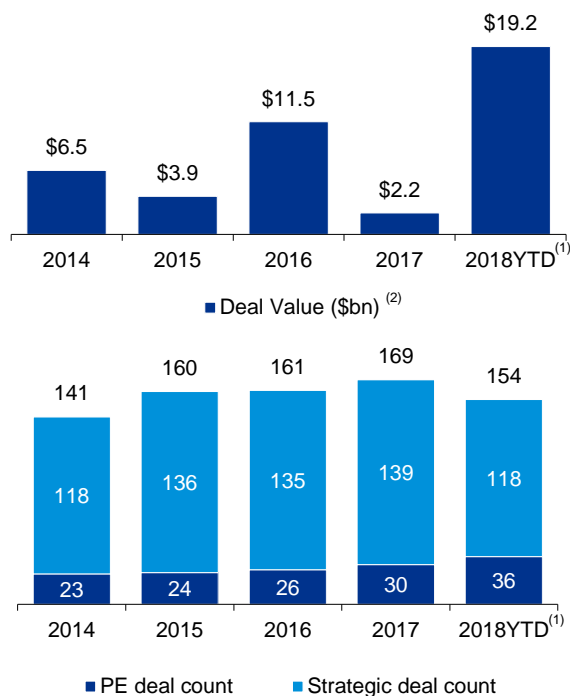
- (1) Communications Technology and Electronics: Computers & Peripherals; Electronics; Semiconductors; Space and Satellites; Telecommunications Equipment; Telecommunications Services; Wireless; and Other Telecom.
- (2) IT Services and BPO: Companies/targets with primary industry classification as IT Consulting & Services.
- (3) Internet and Media: Advertising & Marketing; Broadcasting; Cable; Casinos & Gaming; E-commerce / B2B; Internet and Catalog Retailing; Internet Infrastructure; Motion Pictures / Audio Visual; Publishing; and Other Media & Entertainment.
- (4) Software: Companies/targets with primary industry classification as Internet Software & Services; Software; and Other High Technology.
- (5) Deal Values are based on transactions with disclosed deal values only.

Sources: Thomson One and other publicly available information.



# Country Spotlight: KPMG CF's Technology Practice in Nordics

- Fueled by stable political climate and positive policy framework, TMT M&A activity in the Nordics region has posted strong numbers and overall growth in 2018.
- Some of the key trends observed in the Nordics M&A space are:
  - Pushed by two megadeals: Danish telecom operator, TDC's \$6.7 billion take-private deal, and the \$4.2 billion<sup>(2)</sup> acquisition of Sweden based Com Hem Holding by Tele2 AB, Nordic TMT M&A saw a 780% increase in value, with the total deal value amounting from \$2.2 billion<sup>(2)</sup> in 2017 to \$19.1 billion<sup>(2)</sup> till YTD 2018<sup>(1)</sup>.
  - In terms of deal value, TMT deals constituted ~30% of all the deals in the region for YTD 2018<sup>(1)</sup>.
  - Private and venture capital investment scaled their highest levels in terms of volume, with PE players showing interest in both small and large IT companies.
  - Nordic private equity saw 36 TMT deals in YTD 2018<sup>(1)</sup> – a 20% increase in volume compared to 2017.
  - In the last few years, the region has witnessed large scale consolidation in the telecom sector. This can be highlighted through the recent acquisition of TDC Group and the merger of several regional telecom businesses.



## Recent Transactions

<p><b>Project Gold</b> KPMG</p> <p>Acting as financial adviser to a managed service provider on an ongoing deal</p> <p>Value Undisclosed Ongoing</p>	<p><b>Kinnevik and IAG</b> KPMG</p> <p>Provided FDD and TDD assistance to Kinnevik and IAG in connection with their investment in Monese Limited</p> <p>Value Undisclosed September 2018</p>	<p><b>Procuritas Partners Ab</b> KPMG</p> <p>Acted as financial adviser to Procuritas Partners Ab in the acquisition of NetcontrolOy</p> <p>Value Undisclosed August 2018</p>	<p><b>Kinnevik</b> KPMG</p> <p>Provided FDD and TDD assistance to Kinnevik on the acquisition of Kolonial.no</p> <p>Value Undisclosed August 2018</p>	<p><b>Forskringens Datacenter A/S</b> KPMG</p> <p>Provided sell-side assistance on the sale of the company to Total Specific Solutions B.V</p> <p>Value Undisclosed August 2018</p>	<p><b>Viria Oyj</b> KPMG</p> <p>Provided FDD and TDD assistance to Viria Oyj on their acquisition of Ymon Oy.</p> <p>Value Undisclosed August 2018</p>
<p><b>Kinnevik</b> KPMG</p> <p>Provided FDD assistance to Kinnevik on the acquisition of Swedish start-up Karma</p> <p>Value Undisclosed August 2018</p>	<p><b>Siili Solutions Oyj</b> KPMG</p> <p>Provided FDD and TDD assistance to Siili Solutions Oyj on their acquisition of Vala Group Oy.</p> <p>Value Undisclosed August 2018</p>	<p><b>Axcel</b> KPMG</p> <p>Provided due diligence services to Axcel on their acquisition of Loopia &amp; Active 24 from Visma</p> <p>Value Undisclosed June 2018</p>	<p><b>Administer Oy</b> KPMG</p> <p>Acted as financial adviser to Administer Oy in raising acquisition and growth capital from Bocap and in their acquisition of Silta Oy</p> <p>Value Undisclosed May 2018</p>	<p><b>Vitruvian</b> Deal Advisory</p> <p>Provided FDD assistance to Vitruvian on the acquisition of parking app EasyPark</p> <p>Value Undisclosed December 2017</p>	<p><b>Nordea</b> KPMG</p> <p>Provided financial, tax, technology due diligence and valuation services to Nordea on the acquisition of Tink</p> <p>Value Undisclosed October 2017</p>

## Key TMT Team Members

The Nordics TMT team comprises of approximately 35 professionals across Deal Advisory and is led by the following:



**Martin Ericsson**  
Partner CF  
KPMG, Sweden



**Nigel Rouse**  
Partner TS, Head of TMT sector  
KPMG, Sweden



**Tom Nyman**  
Partner CF, Head of TMT sector  
KPMG, Finland



**Stian Thyness**  
Senior Manager, Head of TMT sector  
KPMG, Norway

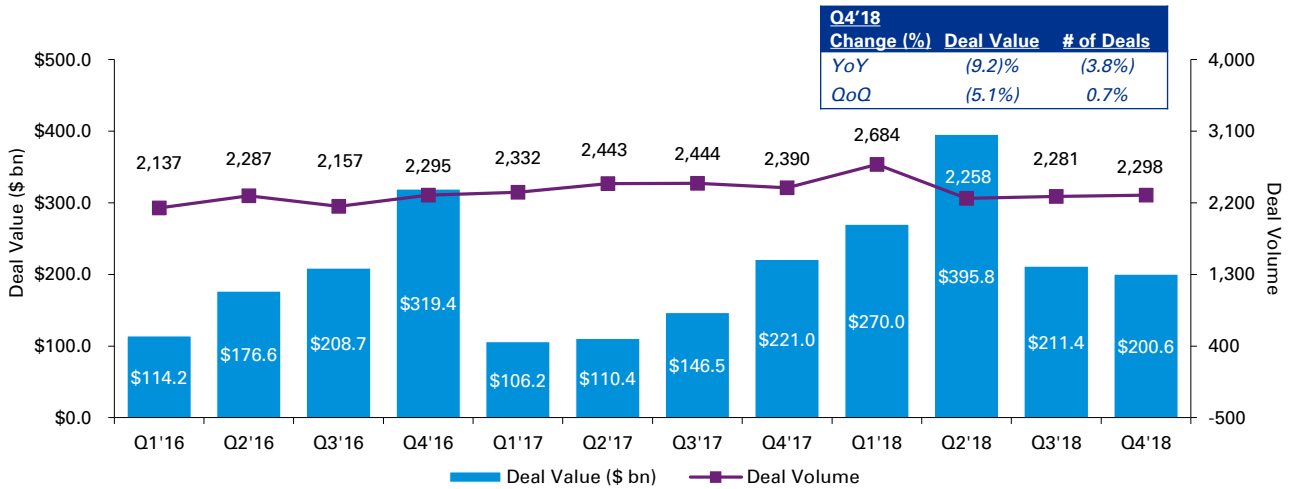


**Eric Bots-Bjerre**  
Director, Head of TMT sector  
KPMG, Denmark

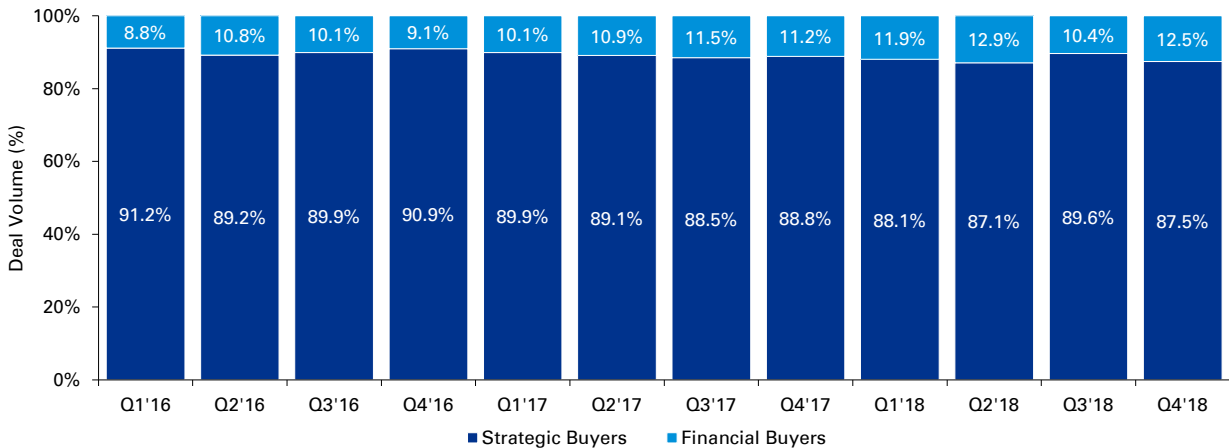
(1) As of October 15, 2018.

(2) Using conversion rate as on January 14, 2019 (1 Euro = 1.146 USD).

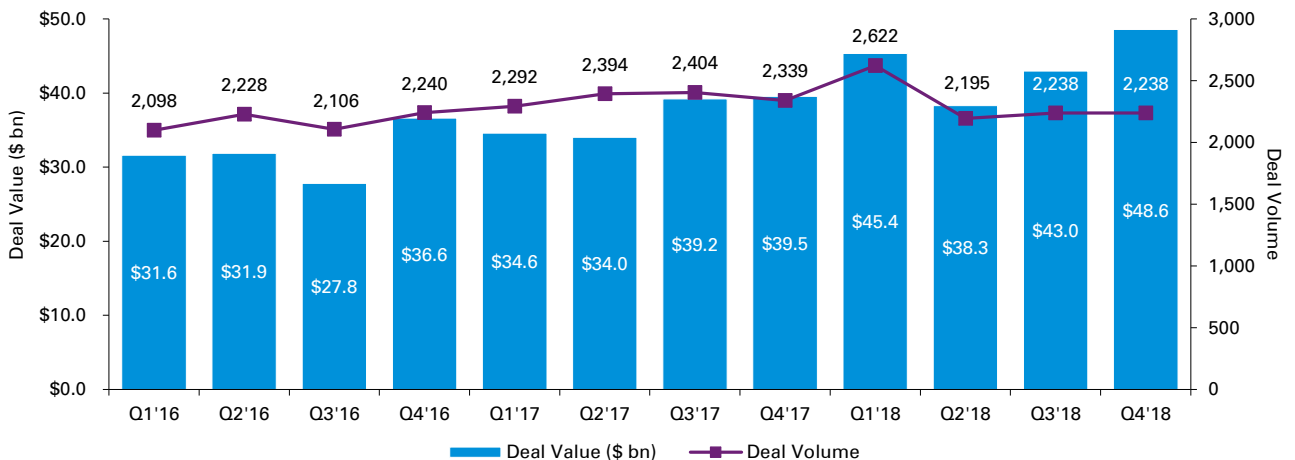
## Global TMT M&A Trend: Q1'16 – Q4'18



## Global TMT M&A Trend by Buyer Type: Q1'16 – Q4'18



## Global TMT Mid-Market M&A Trend (<\$500 mm) <sup>(1)</sup>: Q1'16 – Q4'18



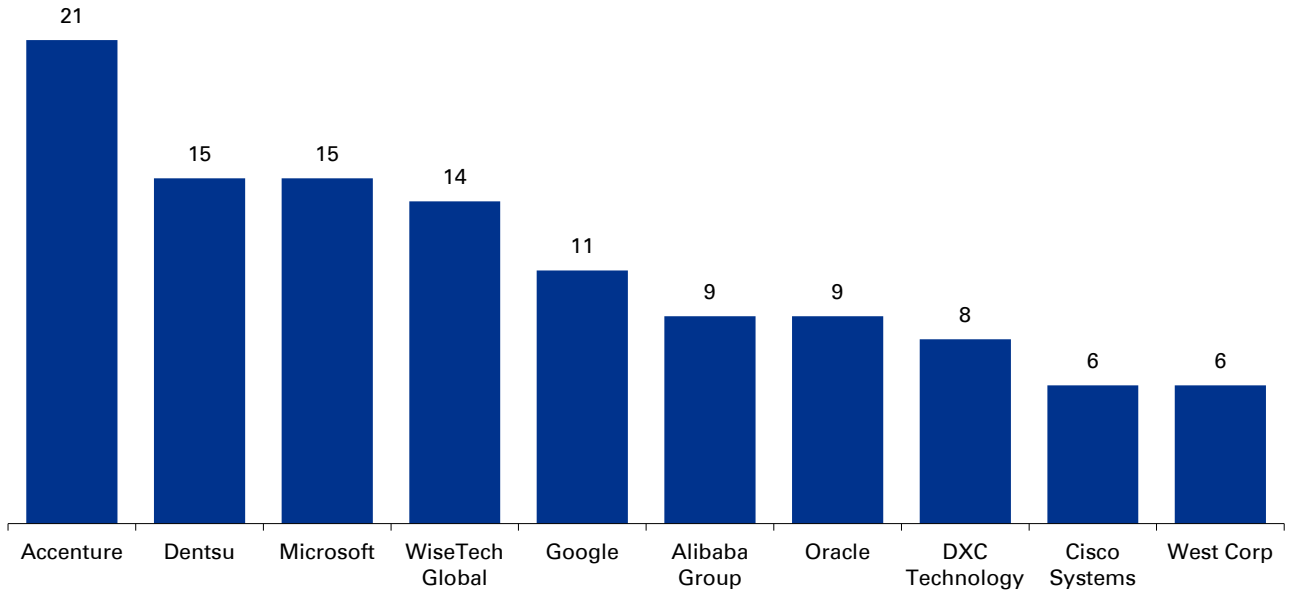
(1) Based on deals with disclosed deal values only.

Source: Thomson One



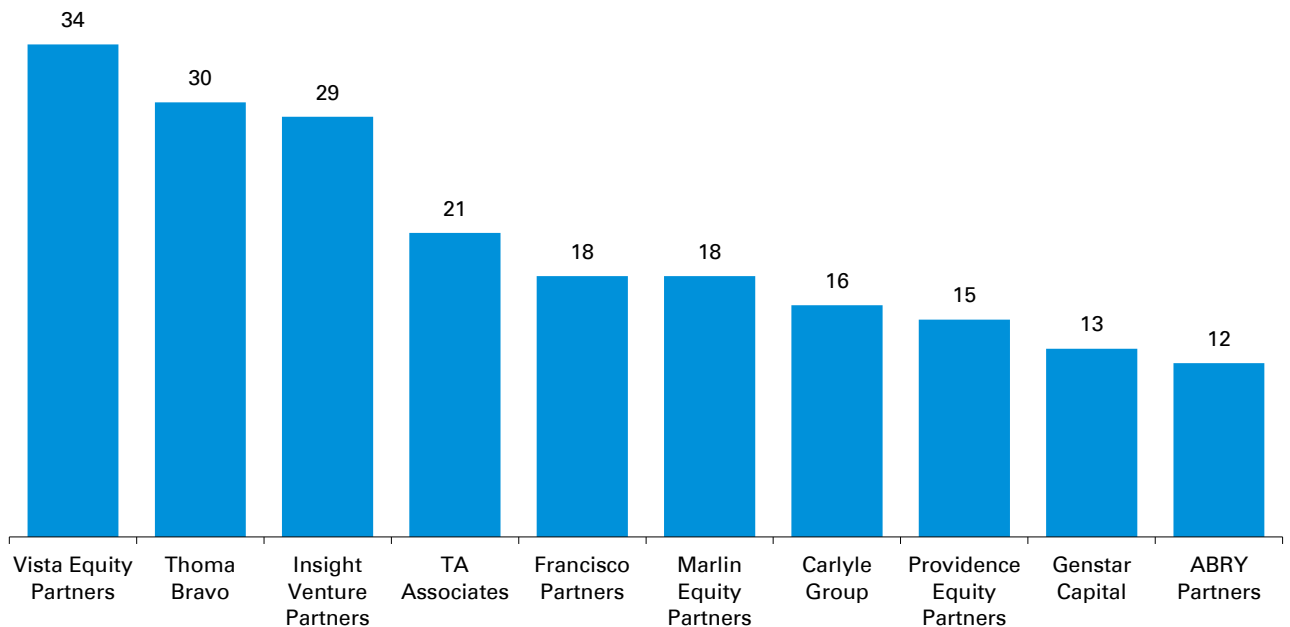
## Top 10 Active Global TMT Strategic Buyers: TTM Q4'18

Number of acquisitions in the period



## Top 10 Active Global TMT Financial Buyers: TTM Q4'18 <sup>(1)</sup>

Number of acquisitions in the period

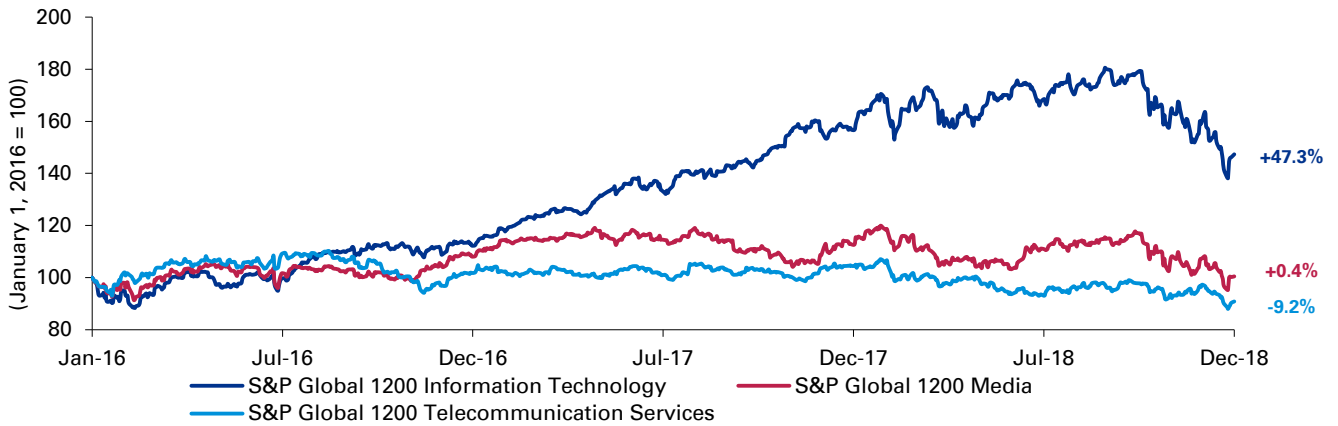


Note: 1. PE deals include bolt-on acquisitions to existing portfolio companies.

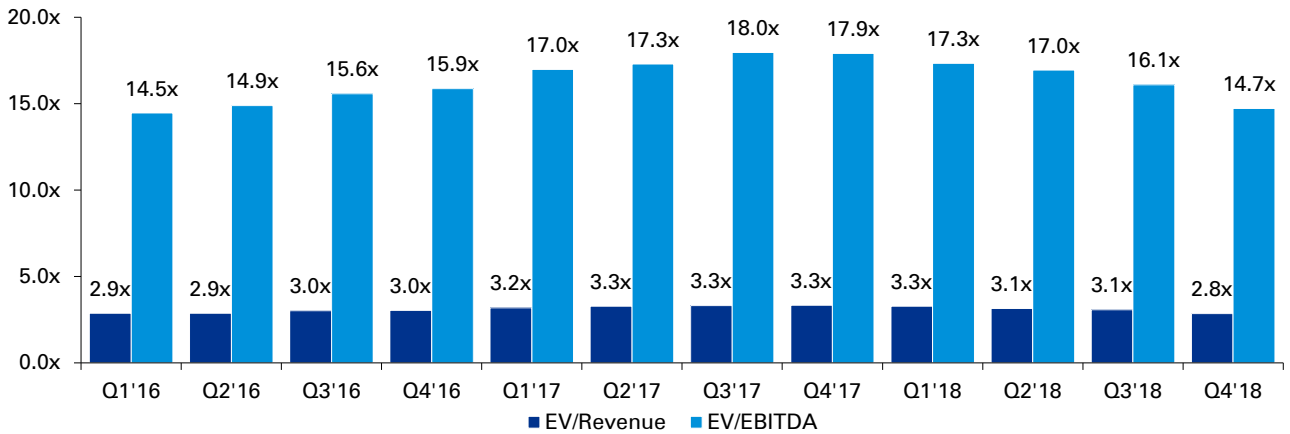
Source: 451 Research



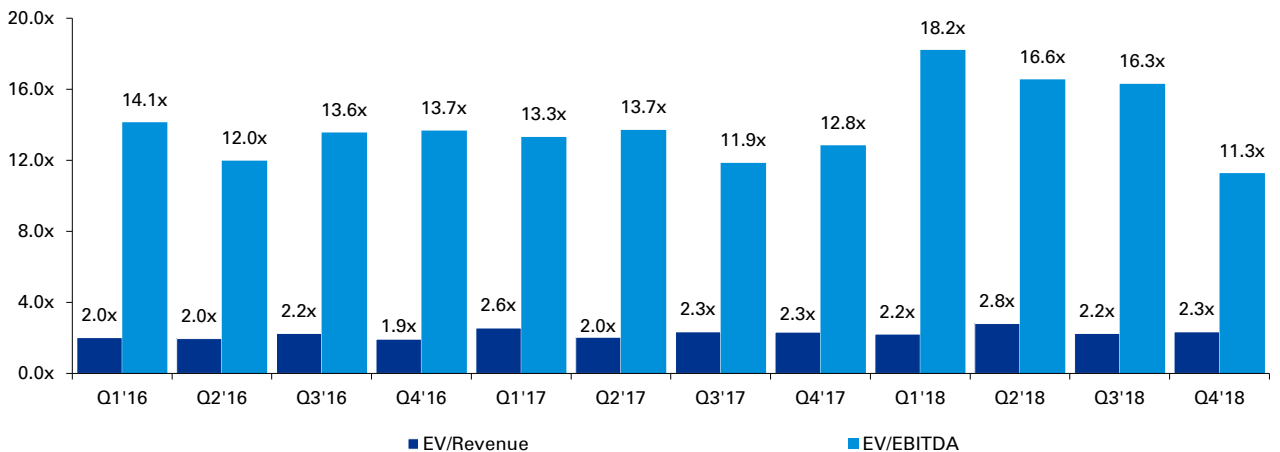
## S&P Global TMT Index Price Performance: Q1'16 – Q4'18



## Global TMT Public LTM Multiples <sup>(1,2)</sup>: Q1'16 – Q4'18



## Global TMT M&A Transactions LTM Multiples <sup>(2)</sup>: Q1'16 – Q4'18



(1) Trading multiples include average multiples calculated for all the 'Public Companies' operating in the TMT space (with market capitalization of at least \$500mm) classified under the primary industry classifications listed on all major exchanges globally.

(2) EV/Revenue and EV/EBITDA multiples greater than 10.0x and 50.0x, respectively, were excluded from the analysis.

Source: Thomson One, Capital IQ.





# Global TMT Selected Public Comps: Communications Technology & Electronics

Market Data						Operating Metrics							Valuation Multiples																
\$ value millions, except per share	Latest Quarter Ending	Share Price	% of 52 Week High	Market Cap. <sup>(1)</sup>	Enterprise Value <sup>(2)</sup>	Revenue			Revenue Growth <sup>(3)</sup>		LTM Gross	LTM EBITDA	EV / Revenue			EV / EBITDA													
						LTM	2018E	2019E	2017-2018E	2018E-2019E	Margin%	Margin%	LTM	2018E	2019E	LTM	2018E	2019E											
<b>Communication Services</b>																													
Verizon	Sep-18	\$56.22	91.3%	\$232,302	\$345,611	\$130,537	\$130,927	\$132,346	4.6%	1.1%	58.8%	36.5%	2.6x	2.6x	2.6x	7.3x	7.3x	7.1x											
AT&T	Sep-18	\$28.54	72.6%	\$207,714	\$385,258	\$164,439	\$174,040	\$185,421	8.7%	6.5%	52.8%	31.2%	2.3x	2.2x	2.1x	7.5x	6.8x	6.3x											
China Mobile	Sep-18	\$9.62	89.6%	\$197,007	\$129,304	\$107,545	\$108,335	\$111,226	(5.4%)	2.7%	67.9%	39.9%	1.2x	1.2x	1.2x	3.0x	3.2x	3.2x											
Deutsche Telekom	Sep-18	\$16.95	94.7%	\$80,324	\$158,485	\$89,425	\$86,041	\$89,898	(4.6%)	4.5%	31.0%	27.6%	1.8x	1.8x	1.8x	6.4x	6.0x	5.7x											
NTT	Sep-18	\$40.85	82.2%	\$77,950	\$129,818	\$104,874	NA	\$108,373	NA	NA	51.1%	26.6%	1.2x	NA	1.2x	4.7x	NA	4.5x											
Vodafone	Sep-18	\$1.95	63.8%	\$52,069	\$89,575	\$52,622	\$52,884	\$52,856	(11.0%)	(0.1%)	30.0%	26.5%	1.7x	1.7x	1.7x	6.4x	5.4x	5.3x											
Telefónica	Sep-18	\$8.40	85.3%	\$43,076	\$107,843	\$57,804	\$55,804	\$56,060	(10.7%)	0.5%	59.9%	34.1%	1.9x	1.9x	1.9x	5.5x	5.9x	5.9x											
Orange S.A.	Jun-18	\$16.21	92.8%	\$42,990	\$81,686	\$48,151	\$47,181	\$48,235	(4.1%)	2.2%	39.1%	30.4%	1.7x	1.7x	1.7x	5.6x	5.5x	5.4x											
SingTel	Sep-18	\$2.15	80.3%	\$35,108	\$42,410	\$12,814	\$12,698	\$12,861	(3.0%)	1.3%	29.4%	28.2%	3.3x	3.3x	3.3x	11.7x	11.6x	11.7x											
Telstra	Jun-18	\$2.01	75.3%	\$23,864	\$35,593	\$19,239	\$19,942	\$19,269	(11.1%)	(3.4%)	47.1%	25.4%	1.9x	1.8x	1.8x	7.3x	5.3x	5.7x											
<b>Comm. Services Upper Quartile</b>			<b>90.9%</b>									<b>2.2x</b>			<b>2.2x</b>			<b>2.0x</b>			<b>7.3x</b>			<b>6.8x</b>			<b>6.2x</b>		
<b>Comm. Services Median</b>			<b>83.8%</b>									<b>1.8x</b>			<b>1.8x</b>			<b>1.8x</b>			<b>6.4x</b>			<b>5.9x</b>			<b>5.6x</b>		
<b>Comm. Services Lower Quartile</b>			<b>76.5%</b>									<b>1.7x</b>			<b>1.7x</b>			<b>1.7x</b>			<b>5.5x</b>			<b>5.4x</b>			<b>5.4x</b>		
<b>Communication Technology</b>																													
Cisco Systems	Oct-18	\$43.33	87.6%	\$194,810	\$177,862	\$50,266	\$50,802	\$52,285	5.8%	2.9%	62.2%	30.0%	3.5x	3.5x	3.4x	11.8x	9.9x	9.6x											
TSMC	Sep-18	\$7.37	84.1%	\$191,026	\$176,243	\$33,428	\$33,678	\$36,225	2.3%	7.6%	48.9%	65.9%	5.3x	5.2x	4.9x	8.0x	8.0x	7.4x											
Broadcom	Nov-18	\$254.28	92.7%	\$103,561	\$116,762	\$20,848	\$21,388	\$24,985	13.5%	16.8%	66.3%	45.9%	5.6x	5.5x	4.7x	12.2x	8.2x	7.7x											
Keyence	Sep-18	\$507.50	76.9%	\$61,541	\$52,887	\$5,069	\$5,329	\$5,856	22.6%	9.9%	82.4%	56.3%	NM	9.9x	9.0x	18.5x	17.9x	16.1x											
Nokia	Sep-18	\$5.76	93.4%	\$32,211	\$29,851	\$25,963	\$25,588	\$26,547	(7.1%)	3.7%	39.6%	10.4%	1.1x	1.2x	1.1x	11.0x	9.4x	7.6x											
Foxconn (Hon Hai)	Sep-18	\$2.31	58.2%	\$32,061	\$35,384	\$171,005	\$166,401	\$167,732	6.1%	0.8%	6.0%	3.1%	0.2x	0.2x	0.2x	6.6x	6.3x	5.8x											
Ericsson	Sep-18	\$8.77	91.0%	\$28,863	\$27,948	\$22,592	\$23,389	\$23,428	(5.3%)	0.2%	32.7%	3.2%	1.2x	1.2x	1.2x	38.5x	13.2x	9.1x											
FleetCor Technologies	Sep-18	\$185.72	80.7%	\$16,464	\$20,012	\$2,400	\$2,412	\$2,585	7.4%	7.2%	79.2%	53.8%	8.3x	8.3x	7.7x	15.5x	14.7x	13.5x											
Citrix	Sep-18	\$102.46	87.7%	\$13,808	\$14,131	\$2,950	\$2,963	\$3,085	4.9%	4.1%	86.9%	30.9%	4.8x	4.8x	4.6x	15.5x	12.9x	12.6x											
ZTE	Sep-18	\$2.85	50.4%	\$11,218	\$12,683	\$13,248	\$12,597	\$14,938	(26.1%)	18.6%	31.2%	(0.8%)	1.0x	1.0x	0.8x	NM	15.2x	9.3x											
Juniper Networks	Sep-18	\$26.91	87.4%	\$9,288	\$8,037	\$4,706	\$4,691	\$4,787	(6.6%)	2.0%	59.1%	17.9%	1.7x	1.7x	1.7x	9.6x	7.7x	7.4x											
Amdocs	Sep-18	\$58.58	81.7%	\$8,176	\$7,700	\$3,975	\$4,006	\$4,125	2.9%	3.0%	34.7%	18.2%	1.9x	1.9x	1.9x	10.6x	9.6x	8.9x											
<b>Comm. Technology Upper Quartile</b>			<b>88.5%</b>									<b>5.0x</b>			<b>5.3x</b>			<b>4.8x</b>			<b>15.5x</b>			<b>13.5x</b>			<b>10.4x</b>		
<b>Comm. Technology Median</b>			<b>85.8%</b>									<b>1.9x</b>			<b>2.7x</b>			<b>2.6x</b>			<b>11.8x</b>			<b>9.8x</b>			<b>9.0x</b>		
<b>Comm. Technology Lower Quartile</b>			<b>79.7%</b>									<b>1.2x</b>			<b>1.2x</b>			<b>1.2x</b>			<b>10.1x</b>			<b>8.2x</b>			<b>7.6x</b>		
<b>Electronics</b>																													
Apple	Sep-18	\$157.74	67.6%	\$748,539	\$796,721	\$265,595	\$268,531	\$280,447	12.6%	4.4%	38.3%	30.8%	3.0x	3.0x	2.8x	9.7x	9.7x	9.6x											
Samsung	Sep-18	\$34.76	71.5%	\$230,997	\$171,905	\$225,656	\$223,134	\$221,427	(0.7%)	(0.8%)	46.5%	35.2%	0.8x	0.8x	0.8x	2.2x	2.2x	2.4x											
Sony Corporation	Sep-18	\$48.54	76.4%	\$61,616	\$57,522	\$77,106	\$80,010	\$80,824	7.5%	1.0%	27.7%	12.7%	0.7x	0.7x	0.7x	5.9x	5.1x	5.0x											
Canon	Sep-18	\$27.35	68.3%	\$29,534	\$31,106	\$35,369	\$36,549	\$36,743	0.8%	0.5%	47.2%	15.5%	0.9x	0.9x	0.8x	5.7x	5.8x	5.8x											
Panasonic Corporation	Sep-18	\$9.03	56.9%	\$21,058	\$23,163	\$71,661	\$74,796	\$77,509	8.1%	3.8%	28.6%	8.0%	0.3x	0.3x	0.3x	4.1x	3.7x	3.3x											
LG Electronics Inc.	Sep-18	\$55.96	54.4%	\$9,522	\$17,556	\$56,334	\$55,822	\$59,641	(1.4%)	6.8%	24.4%	7.9%	0.3x	0.3x	0.3x	4.0x	4.0x	3.7x											
Lenovo	Sep-18	\$0.68	88.2%	\$8,116	\$11,604	\$48,869	\$49,939	\$51,877	13.9%	3.9%	13.8%	3.7%	0.2x	0.2x	0.2x	6.5x	6.7x	6.2x											
<b>Electronics Upper Quartile</b>			<b>73.9%</b>									<b>0.8x</b>			<b>0.8x</b>			<b>0.8x</b>			<b>6.2x</b>			<b>6.2x</b>			<b>6.0x</b>		
<b>Electronics Median</b>			<b>68.3%</b>									<b>0.7x</b>			<b>0.7x</b>			<b>0.7x</b>			<b>5.7x</b>			<b>5.2x</b>			<b>5.0x</b>		
<b>Electronics Lower Quartile</b>			<b>62.2%</b>									<b>0.3x</b>			<b>0.3x</b>			<b>0.3x</b>			<b>4.0x</b>			<b>3.8x</b>			<b>3.6x</b>		

Source: Capital IQ. Financials are calendarized to December year-end.

(1) Market Data including Market Capitalization amounts are based on closing share prices as of December 31, 2018.

(2) Enterprise Value (EV) equals Market Capitalization plus Debt, Preferred Equity, and Minority Interest, minus Cash and Cash Equivalents.

(3) EBITDA equals Earnings before Interest, Taxes, Depreciation, and Amortization.

## Global TMT Selected Transactions <sup>(1)</sup>: Communications Technology & Electronics

Announced Date	Target Name	Target Country	Acquirer Name	Deal Value (\$ mm)	EV / Revenue	EV / EBITDA
26-Dec-2018	Frontline P.C.B. Solutions	Israel	Orbotech Ltd.	\$95	-	-
20-Dec-2018	Small Giant Games Oy	Finland	Zynga Inc.	\$560	-	-
19-Dec-2018	WirelessCar [Volvo Group]	Sweden	Volkswagen AG	\$121	2.2x	-
18-Dec-2018	Luxtera Inc.	U.S.	Cisco Systems Inc.	\$660	-	-
14-Dec-2018	Antelliq Group [BC Partners]	U.S.	Merck & Co. Inc.	\$2,400	8.9x	-
12-Dec-2018	Sparton Corporation	U.S.	Cerberus Capital Management	\$182	0.5x	6.9x
12-Dec-2018	Kcell JSC [Telia Company/Fintur Holdings]	Kazakhstan	Kazakhtelecom JSC	\$446	1.0x	2.7x
07-Dec-2018	Pioneer Corp.	Japan	Baring Private Equity Partners	\$902	0.2x	3.2x
03-Dec-2018	Reciprocal Labs Corp.	U.S.	ResMed Inc.	\$225	-	-
27-Nov-2018	SSI Controls Technologies	U.S.	Amphenol Corporation	\$400	2.2x	-
26-Nov-2018	E2M Technologies B.V.	Netherlands	MTS Systems Corporation	\$80	-	-
21-Nov-2018	Ubisense Group (RTLS SmartSpace business unit)	U.K.	Investcorp Technology Partners	\$45	3.2x	-
14-Nov-2018	Astronics Corporation	U.S.	Advantest Corporation	\$185	-	-
12-Nov-2018	Sillectra GmbH [MIG AG]	Germany	Infineon Technologies AG	\$142	-	-
09-Nov-2018	Finisar Corporation	U.S.	II-VI Incorporated	\$3,200	2.6x	-
09-Nov-2018	Amimon Inc.	U.S.	The Vitec Group PLC	\$55	-	-
08-Nov-2018	ARRIS International plc	U.S.	CommScope Inc.	\$7,400	1.3x	14.4x
30-Oct-2018	Electro Scientific Industries	U.S.	MKS Instruments Inc.	\$1,041	2.4x	8.8x
29-Oct-2018	Alpha Technologies Inc.	U.S.	EnerSys	\$750	1.3x	-
26-Oct-2018	Clarion Co. Ltd. [Hitachi]	Japan	Faurecia SA	\$1,256	0.7x	8.9x
24-Oct-2018	Advanced Traffic Solutions	U.S.	Cubic Corporation	\$236	-	-
24-Oct-2018	Tactilis Sdn Bhd	Malaysia	Global Invacom Group Ltd.	\$198	-	-
22-Oct-2018	Suzhou Huaqi Intelligent Technology Co. [NetPosa]	China	BII Railway Transportation Technology Holdings Co. Ltd.	\$159	-	-
14-Oct-2018	L3 Technologies Inc.	U.S.	Harris Corporation	\$15,640	1.8x	-
11-Oct-2018	Dialog Semiconductor	Germany	Apple Inc.	\$300	-	-
11-Oct-2018	Spireon Inc. [Bertram Capital]	U.S.	Greenbriar Equity Group LLC	\$350	-	-
10-Oct-2018	Esterline Technologies	U.S.	TransDigm Group Incorporated	\$3,607	1.9x	9.7x
08-Oct-2018	Cable Onda S.A.	Panama	Millicom International Cellular	\$1,002	3.1x	7.3x
08-Oct-2018	Asia Pacific Data Centre	Australia	NEXTDC Ltd.	\$148	3.1x	-
02-Oct-2018	Starhome BV [Fortissimo Capital]	Switzerland	Vista Equity Partners Management	\$100	-	-

**Upper Quartile**

**2.7x 9.1x**

**Median**

**2.1x 8.1x**

**Lower Quartile**

**1.2x 6.0x**

(1) Top M&A transactions on the basis of disclosed deal value in Q4'18.

Source: 451research.



## Global TMT Selected Public Comps: IT Services and BPO (1/2)

Market Data						Operating Metrics							Valuation Multiples					
\$ value millions, except per share	Latest Quarter Ending	Share Price	% of 52 Week High	Market Cap. <sup>(1)</sup>	Enterprise Value <sup>(2)</sup>	Revenue			Revenue Growth <sup>(3)</sup>		LTM Gross	LTM EBITDA	EV / Revenue			EV / EBITDA		
						LTM	2018E	2019E	2017-2018E	2018E-2019E	Margin%	Margin%	LTM	2018E	2019E	LTM	2018E	2019E
<b>IT Commercial Services</b>																		
Accenture	Nov-18	\$141.01	80.3%	\$89,887	\$85,921	\$40,295	\$40,590	\$43,454	14.1%	7.1%	31.5%	16.3%	2.1x	2.1x	2.0x	13.1x	12.5x	11.8x
CGI Group	Sep-18	\$61.19	95.7%	\$16,915	\$18,154	\$8,902	\$8,529	\$8,803	(2.3%)	3.2%	30.6%	16.8%	2.0x	2.1x	2.1x	12.2x	11.6x	11.0x
Cappgemini	Jun-18	\$99.38	72.5%	\$16,134	\$18,900	\$15,143	\$15,067	\$16,149	(1.7%)	7.2%	26.3%	12.4%	1.2x	1.3x	1.2x	10.0x	9.0x	8.2x
DXC Technology	Sep-18	\$53.17	49.3%	\$14,894	\$19,478	\$24,162	\$21,746	\$20,818	7.9%	(4.3%)	29.0%	22.6%	0.8x	0.9x	0.9x	3.6x	4.0x	4.1x
Atos <sup>(4)</sup>	Jun-18	\$81.84	54.6%	\$8,739	\$12,723	\$14,805	\$14,108	\$15,632	(7.8%)	10.8%	14.5%	12.6%	0.9x	0.9x	0.8x	6.8x	6.7x	5.5x
Virtusa	Sep-18	\$42.59	72.7%	\$1,274	\$1,501	\$1,151	\$1,200	\$1,363	24.9%	13.6%	29.3%	7.5%	1.3x	1.3x	1.1x	17.3x	16.1x	11.1x
Perficient	Sep-18	\$22.26	71.6%	\$739	\$813	\$488	\$495	\$525	9.4%	6.1%	35.3%	11.7%	1.7x	1.6x	1.5x	14.3x	10.9x	9.6x
Unisys	Sep-18	\$11.63	55.5%	\$593	\$760	\$2,809	\$2,815	\$2,852	4.2%	1.3%	23.2%	10.3%	0.3x	0.3x	0.3x	2.6x	1.9x	1.8x

<b>IT Commercial Svs Upper Quartile</b>	<b>74.6%</b>	<b>1.8x</b>	<b>1.8x</b>	<b>1.7x</b>	<b>13.4x</b>	<b>11.8x</b>	<b>10.8x</b>
<b>IT Commercial Svs Median</b>	<b>72.0%</b>	<b>1.3x</b>	<b>1.3x</b>	<b>1.1x</b>	<b>11.1x</b>	<b>9.9x</b>	<b>8.9x</b>
<b>IT Commercial Svs Lower Quartile</b>	<b>55.3%</b>	<b>0.8x</b>	<b>0.9x</b>	<b>0.9x</b>	<b>6.0x</b>	<b>5.9x</b>	<b>5.1x</b>

<b>Government Consulting</b>																		
Tyler Technologies	Sep-18	\$185.82	73.6%	\$7,214	\$6,942	\$911	\$938	\$1,039	11.2%	10.8%	47.1%	21.3%	7.6x	7.4x	6.7x	35.8x	24.7x	21.7x
Booz Allen Hamilton	Sep-18	\$45.07	85.2%	\$6,415	\$7,857	\$6,367	\$6,500	\$6,971	5.9%	7.2%	23.8%	9.9%	1.2x	1.2x	1.1x	12.4x	12.2x	11.6x
MAXIMUS	Sep-18	\$65.09	89.5%	\$4,174	\$3,807	\$2,392	\$2,441	\$3,023	(1.1%)	23.8%	24.8%	14.7%	1.6x	1.6x	1.3x	10.9x	10.8x	9.3x
CACI International	Sep-18	\$144.03	71.7%	\$3,579	\$4,599	\$4,548	\$4,637	\$4,923	5.6%	6.2%	33.6%	9.7%	1.0x	1.0x	0.9x	10.4x	10.3x	10.2x
Science Applications International	Nov-18	\$63.70	68.3%	\$2,710	\$3,554	\$4,595	\$4,587	\$4,728	4.8%	3.1%	9.8%	7.5%	0.8x	0.8x	0.8x	10.3x	10.5x	9.9x
ManTech International	Sep-18	\$52.30	76.8%	\$2,078	\$2,063	\$1,924	\$1,955	\$2,102	13.9%	7.5%	14.5%	8.4%	1.1x	1.1x	1.0x	12.8x	12.3x	11.1x
ICF International	Sep-18	\$64.78	78.8%	\$1,221	\$1,448	\$1,281	\$1,314	\$1,421	8.2%	8.1%	36.3%	8.7%	1.1x	1.1x	1.0x	13.0x	11.8x	10.6x

<b>Govt. Consulting Upper Quartile</b>	<b>82.0%</b>	<b>1.4x</b>	<b>1.4x</b>	<b>1.2x</b>	<b>12.9x</b>	<b>12.2x</b>	<b>11.4x</b>
<b>Govt. Consulting Median</b>	<b>76.8%</b>	<b>1.1x</b>	<b>1.1x</b>	<b>1.0x</b>	<b>12.4x</b>	<b>11.9x</b>	<b>10.6x</b>
<b>Govt. Consulting Lower Quartile</b>	<b>72.7%</b>	<b>1.0x</b>	<b>1.0x</b>	<b>1.0x</b>	<b>10.6x</b>	<b>10.6x</b>	<b>10.2x</b>

<b>Offshore Consulting</b>																		
Wipro	Sep-18	\$4.74	96.0%	\$21,366	\$18,299	\$7,713	\$8,260	\$8,898	(3.5%)	7.7%	29.3%	17.4%	2.4x	2.2x	2.1x	13.6x	12.2x	10.7x
Tech Mahindra	Sep-18	\$10.39	92.6%	\$9,194	\$8,132	\$4,513	\$4,880	\$5,423	3.2%	11.1%	34.2%	17.0%	1.8x	1.7x	1.5x	10.6x	9.2x	8.1x
Infosys	Sep-18	\$9.47	87.3%	\$41,163	\$37,506	\$11,313	\$11,361	\$12,784	4.3%	12.5%	34.7%	26.5%	3.3x	3.3x	2.9x	12.5x	12.6x	11.6x
HCL Technologies	Sep-18	\$13.86	85.7%	\$19,296	\$18,941	\$8,179	\$8,336	\$9,432	5.5%	13.2%	34.8%	23.2%	2.3x	2.3x	2.0x	10.0x	9.8x	8.5x
Tata Consultancy Services	Sep-18	\$27.20	83.2%	\$102,061	\$97,337	\$18,484	\$20,250	\$22,814	7.0%	12.7%	44.7%	27.1%	5.3x	4.8x	4.3x	19.5x	17.5x	15.5x
Mphasis	Sep-18	\$14.57	79.3%	\$2,818	\$2,526	\$984	\$1,077	\$1,244	9.5%	15.5%	43.0%	17.3%	2.6x	2.3x	2.0x	14.8x	13.5x	11.5x
Cognizant	Sep-18	\$63.48	74.6%	\$36,757	\$32,718	\$15,824	\$16,112	\$17,355	8.8%	7.7%	39.0%	20.9%	2.1x	2.0x	1.9x	9.9x	9.8x	8.7x
Mindtree	Sep-18	\$12.40	73.0%	\$2,039	\$1,925	\$860	\$959	\$1,121	15.2%	17.0%	32.0%	15.0%	2.2x	2.0x	1.7x	14.9x	13.1x	10.8x
Hexaware Technologies	Sep-18	\$4.78	59.7%	\$1,422	\$1,320	\$607	\$670	\$786	8.5%	17.3%	23.7%	15.6%	2.2x	2.0x	1.7x	13.9x	12.1x	10.2x

<b>Offshore Consulting Upper Quartile</b>	<b>87.3%</b>	<b>2.6x</b>	<b>2.4x</b>	<b>2.1x</b>	<b>14.8x</b>	<b>13.2x</b>	<b>11.8x</b>
<b>Offshore Consulting Median</b>	<b>83.2%</b>	<b>2.3x</b>	<b>2.2x</b>	<b>2.1x</b>	<b>13.6x</b>	<b>12.1x</b>	<b>10.9x</b>
<b>Offshore Consulting Lower Quartile</b>	<b>74.6%</b>	<b>2.2x</b>	<b>2.0x</b>	<b>1.8x</b>	<b>10.6x</b>	<b>9.9x</b>	<b>8.7x</b>

Source: Capital IQ. Financials are calendarized to December year-end.

(1) Market Data including Market Capitalization amounts are based on closing share prices as of December 31, 2018.

(2) Enterprise Value (EV) equals Market Capitalization plus Debt, Preferred Equity, and Minority Interest, minus Cash and Cash Equivalents.

(3) EBITDA equals Earnings before Interest, Taxes, Depreciation, and Amortization.

(4) Atos is adjusted for Syntel's acquisition.



## Global TMT Selected Public Comps: IT Services and BPO (2/2)

Market Data						Operating Metrics							Valuation Multiples					
\$ value millions, except per share	Latest Quarter Ending	Share Price	% of 52 Week High	Market Cap. <sup>(1)</sup>	Enterprise Value <sup>(2)</sup>	Revenue			Revenue Growth <sup>(3)</sup>		LTM Gross	LTM EBITDA	EV / Revenue			EV / EBITDA		
						LTM	2018E	2019E	2017-2018E	2018E-2019E	Margin%	Margin%	LTM	2018E	2019E	LTM	2018E	2019E
<b>Management Consulting</b>																		
FTI Consulting	Sep-18	\$66.64	81.4%	\$2,471	\$2,525	\$1,991	\$1,977	\$2,037	10.4%	3.0%	34.9%	13.2%	1.3x	1.3x	1.2x	9.6x	9.9x	10.1x
Huron Consulting	Sep-18	\$51.31	90.0%	\$1,109	\$1,416	\$776	\$784	\$822	6.6%	4.8%	35.5%	12.0%	1.8x	1.8x	1.7x	15.3x	15.7x	13.2x
Navigant Consulting	Sep-18	\$24.05	92.1%	\$1,024	\$751	\$957	\$692	\$731	(27.4%)	5.6%	30.4%	12.9%	0.8x	1.1x	1.0x	6.1x	11.6x	8.9x
The Hackett Group	Sep-18	\$16.01	70.1%	\$473	\$471	\$270	\$290	\$301	2.0%	3.9%	38.2%	15.6%	1.7x	1.6x	1.6x	11.2x	9.5x	8.8x
Resources Connection	Aug-18	\$14.20	72.8%	\$448	\$479	\$692	\$719	\$745	22.6%	3.6%	38.1%	8.3%	0.7x	0.7x	0.6x	8.4x	11.0x	9.2x
CRA International	Sep-18	\$42.55	72.4%	\$345	\$338	\$406	\$414	\$446	14.0%	7.8%	30.6%	7.5%	0.8x	0.8x	0.8x	11.1x	NA	NA
Information Services Group	Sep-18	\$4.24	77.7%	\$192	\$277	\$274	\$281	\$297	3.0%	6.0%	42.0%	8.9%	1.0x	1.0x	0.9x	11.4x	7.9x	7.2x

<b>Mgmt. Consulting Upper Quartile</b>	<b>85.7%</b>	<b>1.5x</b>	<b>1.5x</b>	<b>1.4x</b>	<b>11.3x</b>	<b>11.4x</b>	<b>9.8x</b>
<b>Mgmt. Consulting Median</b>	<b>77.7%</b>	<b>1.0x</b>	<b>1.1x</b>	<b>1.0x</b>	<b>11.1x</b>	<b>10.5x</b>	<b>8.9x</b>
<b>Mgmt. Consulting Lower Quartile</b>	<b>72.6%</b>	<b>0.8x</b>	<b>0.9x</b>	<b>0.8x</b>	<b>8.6x</b>	<b>9.6x</b>	<b>8.2x</b>

<b>BPO</b>																		
ADP	Sep-18	\$131.12	85.4%	\$57,395	\$58,233	\$13,572	\$13,766	\$14,575	8.1%	5.9%	43.7%	22.5%	4.3x	4.2x	4.0x	19.1x	19.0x	16.2x
Paychex	Nov-18	\$65.15	85.7%	\$23,395	\$22,693	\$3,507	\$3,461	\$3,997	7.0%	15.5%	69.6%	41.1%	6.5x	6.6x	5.7x	15.8x	16.2x	14.2x
Willis Towers Watson	Sep-18	\$151.86	92.0%	\$19,732	\$23,626	\$8,133	\$8,519	\$8,871	5.0%	4.1%	39.3%	16.8%	2.9x	2.8x	2.7x	17.3x	11.2x	10.6x
Iron Mountain	Sep-18	\$32.41	85.4%	\$9,276	\$17,406	\$4,156	\$4,234	\$4,401	11.5%	3.9%	57.5%	34.1%	4.2x	4.1x	4.0x	12.3x	12.1x	11.3x
Teleperformance	Jun-18	\$159.84	81.3%	\$9,232	\$10,701	\$4,864	\$5,070	\$5,876	0.4%	15.9%	33.9%	15.2%	2.2x	2.1x	1.8x	14.5x	12.1x	10.3x
Genpact	Sep-18	\$26.99	77.6%	\$5,130	\$6,073	\$2,900	\$2,977	\$3,282	9.2%	10.2%	36.4%	14.1%	2.1x	2.0x	1.9x	14.9x	12.6x	11.0x
WNS	Sep-18	\$41.26	75.9%	\$2,060	\$2,053	\$790	\$785	\$846	14.2%	7.8%	34.9%	16.1%	2.6x	2.6x	2.4x	16.1x	13.9x	13.3x
ExlService	Sep-18	\$52.62	78.5%	\$1,803	\$1,861	\$846	\$882	\$999	16.2%	13.2%	33.9%	13.9%	2.2x	2.1x	1.9x	15.9x	12.5x	10.6x
TTEC	Sep-18	\$28.57	67.5%	\$1,320	\$1,507	\$1,517	\$1,500	\$1,563	4.8%	4.2%	23.7%	11.5%	1.0x	1.0x	1.0x	8.6x	7.6x	7.0x
CSG Systems	Sep-18	\$31.77	65.1%	\$1,059	\$1,220	\$833	\$864	\$942	10.3%	9.0%	49.7%	18.6%	1.5x	1.4x	1.3x	7.9x	6.2x	6.0x
Sykes Enterprises	Sep-18	\$24.73	76.9%	\$1,055	\$980	\$1,630	\$1,628	\$1,693	3.2%	4.0%	36.8%	9.5%	0.6x	0.6x	0.6x	6.3x	6.0x	5.3x
Firstsource Solutions	Sep-18	\$0.67	55.8%	\$465	\$522	\$504	\$539	\$603	(2.0%)	11.8%	30.6%	13.1%	1.0x	1.0x	0.9x	7.9x	6.8x	6.5x
StarTek	Jun-18	\$6.65	80.9%	\$249	\$461	\$270	\$532	\$659	NA	24.0%	9.8%	1.8%	1.7x	0.9x	0.7x	NM	NA	8.1x

<b>BPO Upper Quartile</b>	<b>85.4%</b>	<b>3.2x</b>	<b>2.8x</b>	<b>2.7x</b>	<b>15.9x</b>	<b>13.0x</b>	<b>11.3x</b>
<b>BPO Median</b>	<b>78.5%</b>	<b>2.2x</b>	<b>2.1x</b>	<b>1.8x</b>	<b>14.7x</b>	<b>12.1x</b>	<b>10.5x</b>
<b>BPO Lower Quartile</b>	<b>75.9%</b>	<b>1.4x</b>	<b>1.0x</b>	<b>1.0x</b>	<b>8.4x</b>	<b>7.4x</b>	<b>7.0x</b>

<b>Managed Services</b>																		
Equinix	Sep-18	\$352.56	76.4%	\$28,342	\$38,827	\$5,022	\$5,070	\$5,576	16.2%	10.0%	49.1%	44.9%	7.7x	7.7x	7.0x	17.2x	16.1x	14.4x
CenturyLink	Sep-18	\$15.15	62.6%	\$16,372	\$52,509	\$22,988	\$23,460	\$22,943	32.4%	(2.2%)	55.8%	36.2%	2.3x	2.2x	2.3x	6.3x	5.8x	5.8x
Teradata	Sep-18	\$38.36	86.7%	\$4,534	\$4,263	\$2,202	\$2,142	\$2,153	0.1%	0.5%	47.5%	7.0%	1.9x	2.0x	2.0x	27.7x	12.9x	10.9x
Internap	Sep-18	\$4.15	23.0%	\$101	\$788	\$309	\$322	\$328	15.2%	2.0%	55.4%	30.0%	2.5x	2.5x	2.4x	8.5x	7.0x	6.4x

<b>Managed Services Upper Quartile</b>	<b>78.9%</b>	<b>3.8x</b>	<b>3.8x</b>	<b>3.5x</b>	<b>19.8x</b>	<b>13.7x</b>	<b>11.8x</b>
<b>Managed Services Median</b>	<b>69.5%</b>	<b>2.4x</b>	<b>2.3x</b>	<b>2.3x</b>	<b>12.9x</b>	<b>9.9x</b>	<b>8.7x</b>
<b>Managed Services Lower Quartile</b>	<b>52.7%</b>	<b>2.2x</b>	<b>2.2x</b>	<b>2.2x</b>	<b>7.9x</b>	<b>6.7x</b>	<b>6.3x</b>

Source: Capital IQ. Financials are calendarized to December year-end.

(1) Market Data including Market Capitalization amounts are based on closing share prices as of December 31, 2018.

(2) Enterprise Value (EV) equals Market Capitalization plus Debt, Preferred Equity, and Minority Interest, minus Cash and Cash Equivalents.

(3) EBITDA equals Earnings before Interest, Taxes, Depreciation, and Amortization.



## Global TMT Selected Transactions <sup>(1)</sup>: IT Services and BPO

Announced Date	Target Name	Target Country	Acquirer Name	Deal Value (\$ mm)	EV / Revenue	EV / EBITDA
27-Dec-2018	KMD A/S [Advent International]	Denmark	NEC Corporation	\$1,221	1.4x	-
18-Dec-2018	Orbis Education Services	U.S.	Grand Canyon Education Inc.	\$363	-	-
18-Dec-2018	4Degrees Colocation Inc. [Quebecor]	Canada	Vantage Data Centers [Digital Bridge Holdings / PSP Investments / TIAA Investments]	\$193	-	-
11-Dec-2018	intive S.A. [Enterprise Investors]	Germany	Mid Europa Partners	\$114	1.2x	-
26-Nov-2018	Oasis Outsourcing [MBO]	U.S.	Paychex Inc.	\$1,200	0.1x	-
09-Nov-2018	MC Assembly Holdings Inc.	U.S.	SMTC Corporation	\$65	0.4x	6.2x
08-Nov-2018	PlumChoice Inc.	U.S.	Allstate Corporation	\$30	-	-
08-Nov-2018	Stelligent Systems LLC [Hosting.com]	U.S.	MphasiS Ltd. [Blackstone Group]	\$25	-	-
06-Nov-2018	ConvergeOne Holdings Inc.	U.S.	CVC Capital Partners Limited	\$1,800	1.3x	21.2x
22-Oct-2018	JetPay Corp.	U.S.	NCR Corp.	\$184	2.4x	30.8x
22-Oct-2018	Symphony Ventures Limited	U.K.	Sykes Enterprises Inc.	\$69	-	-
10-Oct-2018	Impakt Holdings LLC [Graycliff Partners]	U.S.	Celestica Inc.	\$329	-	-
09-Oct-2018	Learning House Inc., The [Weld North]	U.S.	John Wiley & Sons Inc.	\$200	-	-
09-Oct-2018	General Dynamics Information Technology Inc.	U.S.	MAXIMUS Inc.	\$400	-	-
04-Oct-2018	Softvision Consulting [Tower Arch Capital]	U.S.	Cognizant Technology Solutions	\$550	3.7x	-
01-Oct-2018	COR Clearing LLC	U.S.	Axos Financial Inc.	\$85	-	-
01-Oct-2018	FusionStorm	U.S.	Computacenter (UK) Ltd.	\$70	-	-
<b>Upper Quartile</b>					<b>1.9x</b>	<b>26.0x</b>
<b>Median</b>					<b>1.3x</b>	<b>21.2x</b>
<b>Lower Quartile</b>					<b>0.8x</b>	<b>13.7x</b>

(1) Top M&A transactions on the basis of disclosed deal value in Q4'18.

Source: 451research.



# Global TMT Selected Public Comps: Internet and Media

Market Data						Operating Metrics							Valuation Multiples					
\$ value millions, except per share	Latest Quarter Ending	Share Price	% of 52 Week High	Market Cap. <sup>(1)</sup>	Enterprise Value <sup>(2)</sup>	Revenue			Revenue Growth <sup>(3)</sup>		LTM Gross	LTM EBITDA	EV / Revenue			EV / EBITDA		
						LTM	2018E	2019E	2017-2018E	2018E-2019E	Margin%	Margin%	LTM	2018E	2019E	LTM	2018E	2019E
<b>Internet</b>																		
Amazon.com	Sep-18	\$1,501.97	73.2%	\$734,416	\$751,870	\$220,957	\$232,378	\$280,755	31.0%	20.8%	39.9%	11.3%	3.4x	3.2x	2.7x	30.2x	22.7x	17.9x
Alphabet Inc.	Sep-18	\$1,044.96	80.9%	\$723,465	\$621,035	\$129,866	\$136,476	\$160,678	23.9%	17.7%	57.0%	30.3%	4.8x	4.6x	3.9x	15.8x	12.4x	10.4x
Tencent	Sep-18	\$40.10	65.9%	\$379,116	\$387,514	\$42,829	\$45,514	\$59,022	23.4%	29.7%	47.1%	37.5%	9.0x	8.5x	6.6x	24.1x	22.6x	19.8x
Facebook	Sep-18	\$131.09	60.0%	\$376,725	\$335,589	\$51,896	\$55,353	\$68,809	37.5%	24.3%	84.3%	54.7%	6.5x	6.1x	4.9x	11.8x	10.1x	9.1x
Alibaba	Sep-18	\$137.07	64.7%	\$352,534	\$356,970	\$45,281	\$50,452	\$70,638	46.7%	40.0%	49.4%	26.9%	7.9x	7.1x	5.1x	29.3x	21.4x	16.7x
Baidu	Sep-18	\$158.60	55.8%	\$55,262	\$49,155	\$14,418	\$14,673	\$17,140	13.2%	16.8%	58.2%	34.3%	3.4x	3.4x	2.9x	9.9x	12.7x	11.6x
eBay	Sep-18	\$28.07	59.7%	\$27,027	\$31,437	\$10,216	\$10,735	\$11,286	12.2%	5.1%	76.9%	29.2%	3.1x	2.9x	2.8x	10.5x	8.7x	8.2x
Twitter	Sep-18	\$28.74	60.1%	\$21,806	\$18,558	\$2,865	\$3,001	\$3,404	25.3%	13.4%	68.1%	23.5%	6.5x	6.2x	5.5x	27.5x	16.2x	14.2x
Snap	Sep-18	\$5.51	26.0%	\$7,135	\$5,721	\$1,076	\$1,165	\$1,534	47.1%	31.7%	31.5%	(118.3%)	5.3x	4.9x	3.7x	NM	NM	NM
Etsy	Sep-18	\$47.57	81.6%	\$5,730	\$5,426	\$540	\$598	\$777	36.8%	29.8%	67.1%	15.9%	NM	9.1x	7.0x	NM	39.6x	28.0x

<b>Internet Upper Quartile</b>	<b>71.4%</b>												<b>6.5x</b>	<b>6.9x</b>	<b>5.3x</b>	<b>28.0x</b>	<b>22.6x</b>	<b>17.9x</b>
<b>Internet Median</b>	<b>62.4%</b>												<b>5.3x</b>	<b>5.5x</b>	<b>4.4x</b>	<b>20.0x</b>	<b>16.2x</b>	<b>14.2x</b>
<b>Internet Lower Quartile</b>	<b>59.8%</b>												<b>3.4x</b>	<b>3.6x</b>	<b>3.1x</b>	<b>11.5x</b>	<b>12.4x</b>	<b>10.3x</b>

<b>Media</b>																		
Walt Disney	Sep-18	\$109.65	91.2%	\$163,233	\$185,139	\$59,434	\$59,352	\$62,780	6.3%	5.8%	44.9%	30.0%	3.1x	3.1x	2.9x	10.4x	10.7x	9.7x
Comcast Corporation	Sep-18	\$34.05	77.4%	\$154,911	\$219,318	\$88,233	\$94,280	\$110,765	11.7%	17.5%	69.0%	32.7%	2.5x	2.3x	2.0x	7.6x	7.2x	6.4x
Twenty-First Century Fox	Sep-18	\$48.12	96.0%	\$89,015	\$102,960	\$30,575	\$31,043	\$32,272	6.1%	4.0%	35.1%	22.9%	3.4x	3.3x	3.2x	14.7x	14.5x	13.6x
CBS	Sep-18	\$43.72	71.0%	\$16,365	\$26,036	\$14,411	\$14,667	\$15,668	8.8%	6.8%	37.5%	21.8%	1.8x	1.8x	1.7x	8.3x	7.9x	7.4x
REA Group	Jun-18	\$52.14	78.6%	\$6,868	\$7,091	\$642	\$612	\$704	6.6%	15.1%	72.6%	49.7%	NM	NM	NM	22.3x	20.1x	17.2x
News Corp.	Sep-18	\$11.35	65.6%	\$6,680	\$7,799	\$9,490	\$9,946	\$10,292	20.6%	3.5%	46.3%	10.7%	0.8x	0.8x	0.8x	7.7x	6.3x	5.9x
Lagardère	Jun-18	\$25.21	81.0%	\$3,231	\$5,060	\$8,546	\$8,233	\$8,558	(2.8%)	4.0%	46.9%	8.6%	0.6x	0.6x	0.6x	6.9x	6.8x	6.5x
Singapore Press	Nov-18	\$1.72	80.5%	\$2,783	\$4,170	\$708	\$707	\$727	(4.5%)	2.9%	49.2%	32.1%	5.9x	5.9x	5.7x	18.3x	18.6x	18.4x
DMGT	Sep-18	\$7.33	73.6%	\$2,596	\$2,298	\$1,861	\$1,798	\$1,776	(25.2%)	(1.2%)	38.6%	10.7%	1.2x	1.3x	1.3x	11.6x	8.7x	9.3x

<b>Media Upper Quartile</b>	<b>81.0%</b>												<b>3.2x</b>	<b>3.2x</b>	<b>3.0x</b>	<b>14.7x</b>	<b>14.5x</b>	<b>13.7x</b>
<b>Media Median</b>	<b>78.6%</b>												<b>2.1x</b>	<b>2.1x</b>	<b>1.8x</b>	<b>10.4x</b>	<b>8.7x</b>	<b>9.3x</b>
<b>Media Lower Quartile</b>	<b>73.6%</b>												<b>1.1x</b>	<b>1.2x</b>	<b>1.2x</b>	<b>7.7x</b>	<b>7.2x</b>	<b>6.5x</b>

<b>Information Services</b>																		
S&P Global	Sep-18	\$169.94	78.2%	\$42,638	\$45,679	\$6,309	\$6,334	\$6,646	6.0%	4.9%	72.4%	49.9%	7.2x	7.2x	6.9x	14.5x	14.6x	13.8x
Moody's	Sep-18	\$140.04	74.5%	\$26,833	\$30,862	\$4,548	\$4,515	\$4,712	9.7%	4.4%	71.7%	47.3%	6.8x	6.8x	6.5x	14.3x	14.3x	13.7x
Thomson Reuters	Sep-18	\$48.32	92.2%	\$24,398	\$31,356	\$11,432	\$5,512	\$5,943	(51.3%)	7.8%	27.6%	20.9%	2.7x	5.7x	5.3x	13.1x	24.3x	22.3x
Experian	Sep-18	\$24.28	95.5%	\$21,804	\$25,165	\$4,819	\$4,843	\$4,980	12.6%	2.8%	42.3%	30.5%	5.2x	5.2x	5.1x	17.1x	15.2x	14.7x
Pearson	Jun-18	\$11.96	95.6%	\$9,270	\$10,361	\$5,715	\$5,349	\$5,415	(13.7%)	1.2%	54.2%	13.1%	1.8x	1.9x	1.9x	13.8x	11.9x	10.8x

<b>Information Services Upper Quartile</b>	<b>95.5%</b>												<b>6.8x</b>	<b>6.8x</b>	<b>6.5x</b>	<b>14.5x</b>	<b>15.2x</b>	<b>14.7x</b>
<b>Information Services Median</b>	<b>92.2%</b>												<b>5.2x</b>	<b>5.7x</b>	<b>5.3x</b>	<b>14.3x</b>	<b>14.6x</b>	<b>13.8x</b>
<b>Information Services Lower Quartile</b>	<b>78.2%</b>												<b>2.7x</b>	<b>5.2x</b>	<b>5.1x</b>	<b>13.8x</b>	<b>14.3x</b>	<b>13.7x</b>

Source: Capital IQ. Financials are calendarized to December year-end.

(1) Market Data including Market Capitalization amounts are based on closing share prices as of December 31, 2018.

(2) Enterprise Value (EV) equals Market Capitalization plus Debt, Preferred Equity, and Minority Interest, minus Cash and Cash Equivalents.

(3) EBITDA equals Earnings before Interest, Taxes, Depreciation, and Amortization.



## Global TMT Selected Transactions <sup>(1)</sup>: Internet and Media

Announced Date	Target Name	Target Country	Acquirer Name	Deal Value (\$ mm)	EV / Revenue	EV / EBITDA
21-Dec-2018	Value Holding Inc.	U.S.	LendingTree Inc.	\$105	6.3x	8.8x
21-Dec-2018	Delivery Hero S.E.	Germany	Takeaway.com N.V.	\$1,060	8.9x	-
19-Dec-2018	Ourgame International Holdings Ltd.	China	Black Ridge Oil & Gas Inc.	\$118	8.0x	-
14-Dec-2018	Communis PLC	U.K.	Output Services Group Inc. [Aquiline Capital Partners]	\$201	-	-
12-Dec-2018	Stadium Goods	U.S.	Farfetch UK Limited	\$250	-	-
12-Dec-2018	Bite Squad LLC	U.S.	Waitr Holdings Inc.	\$321	-	-
05-Dec-2018	Verimatrix, Inc.	U.S.	Inside Secure S.A.	\$140	1.8x	9.7x
05-Dec-2018	The Deal LLC [TheStreet.com]	U.S.	Euromoney Institutional Investor	\$87	3.7x	52.8x
04-Dec-2018	MightyHive Inc.	U.S.	S4 Capital Limited	\$150	3.7x	13.5x
03-Dec-2018	Tribune Media Company	U.S.	Nexstar Media Group, Inc.	\$6,222	3.2x	8.6x
28-Nov-2018	CarsOnTheWeb NV	Belgium	KAR Auction Services Inc.	\$103	-	-
27-Nov-2018	Periscope Inc.	U.S.	Quad/Graphics Inc.	\$133	1.6x	-
27-Nov-2018	SiriusDecisions Inc.	U.S.	Forrester Research Inc.	\$245	2.8x	30.6x
21-Nov-2018	Trade Me Group Limited	New Zealand	Apax Partners	\$1,800	10.5x	18.5x
08-Nov-2018	Cozy Services Ltd	U.S.	CoStar Group Inc.	\$68	-	-
08-Nov-2018	EZbuy Holding Co. Ltd.	Singapore	LightInTheBox Holding Co. Ltd.	\$86	1.8x	-
04-Nov-2018	Destinations of the World JLT [Gulf Capital]	UAE	Webjet Marketing Pty. Ltd.	\$173	-	10.5x
01-Nov-2018	Flywheel Digital LLC	U.S.	Ascential PLC	\$60	2.5x	12.0x
31-Oct-2018	Mr Green & Co. AB	Sweden	William Hill PLC	\$309	-	-
29-Oct-2018	eHarmony Inc.	U.S.	PARSHIP ELITE Group [NuCom Group]	\$74	-	-
22-Oct-2018	Alliance Trust Savings Ltd	U.K.	Interactive Investor Ltd	\$52	-	-
04-Oct-2018	QuoteWizard.com LLC	U.S.	LendingTree Inc.	\$300	2.4x	-
<b>Upper Quartile</b>					<b>6.3x</b>	<b>18.5x</b>
<b>Median</b>					<b>3.2x</b>	<b>12.0x</b>
<b>Lower Quartile</b>					<b>2.4x</b>	<b>9.7x</b>

(1) Top M&A transactions on the basis of disclosed deal value in Q4'18.

Source: 451research.



# Global TMT Selected Public Comps: Software (1/2)

Market Data						Operating Metrics						Valuation Multiples						
\$ value millions, except per share	Latest Quarter Ending	Share Price	% of 52 Week High	Market Cap. (1)	Enterprise Value (2)	Revenue			Revenue Growth (3)		LTM Gross	LTM EBITDA	EV / Revenue			EV / EBITDA		
						LTM	2018E	2019E	2017-2018E	2018E-2019E	Margin%	Margin%	LTM	2018E	2019E	LTM	2018E	2019E
<b>Diversified Software</b>																		
Microsoft	Sep-18	\$101.57	87.4%	\$779,805	\$731,962	\$114,906	\$118,467	\$130,480	17.0%	10.1%	65.2%	41.4%	6.4x	6.2x	5.6x	15.4x	14.7x	13.2x
Alphabet Inc.	Sep-18	\$1,044.96	80.9%	\$723,465	\$621,035	\$129,866	\$136,639	\$160,008	24.0%	17.1%	57.0%	30.3%	4.8x	4.5x	3.9x	15.8x	12.4x	10.3x
Cisco Systems	Oct-18	\$43.33	87.6%	\$194,810	\$177,862	\$50,266	\$50,803	\$52,303	5.8%	3.0%	62.2%	30.0%	3.5x	3.5x	3.4x	11.8x	9.9x	9.6x
Oracle	Nov-18	\$45.15	84.4%	\$162,040	\$171,425	\$39,893	\$39,758	\$40,016	2.0%	0.6%	79.6%	39.9%	4.3x	4.3x	4.3x	10.8x	9.2x	9.0x
SAP	Sep-18	\$99.83	80.4%	\$119,155	\$122,564	\$27,983	\$28,103	\$30,663	(0.5)%	9.1%	69.6%	25.9%	4.4x	4.4x	4.0x	16.9x	13.3x	12.0x
Adobe Systems	Nov-18	\$226.24	81.5%	\$110,435	\$111,331	\$9,030	\$9,001	\$11,157	24.2%	23.9%	86.8%	35.0%	NM	NM	10.0x	35.2x	NA	22.6x
Salesforce.com	Oct-18	\$136.97	85.0%	\$104,782	\$105,723	\$12,484	\$13,243	\$15,991	26.8%	20.7%	74.0%	9.4%	8.5x	8.0x	6.6x	NM	33.3x	26.8x
IBM	Sep-18	\$113.67	66.4%	\$103,303	\$136,019	\$80,373	\$79,752	\$79,291	1.4%	(0.6)%	45.5%	21.1%	1.7x	1.7x	1.7x	8.0x	7.3x	6.9x

<b>Diversified Software Upper Quartile</b>	<b>85.6%</b>	<b>5.6x</b>	<b>5.4x</b>	<b>5.9x</b>	<b>16.3x</b>	<b>14.0x</b>	<b>15.5x</b>
<b>Diversified Software Median</b>	<b>83.0%</b>	<b>4.4x</b>	<b>4.4x</b>	<b>4.1x</b>	<b>15.4x</b>	<b>12.4x</b>	<b>11.1x</b>
<b>Diversified Software Lower Quartile</b>	<b>80.8%</b>	<b>3.9x</b>	<b>3.9x</b>	<b>3.8x</b>	<b>11.3x</b>	<b>9.6x</b>	<b>9.5x</b>

<b>Large-Cap SaaS (&gt; \$2B Market Cap)</b>																		
Salesforce.com	Oct-18	\$136.97	85.0%	\$104,782	\$105,723	\$12,484	\$13,243	\$15,991	26.8%	20.7%	74.0%	9.4%	8.5x	8.0x	6.6x	NM	33.3x	26.8x
Workday	Oct-18	\$159.68	92.5%	\$35,130	\$34,738	\$2,616	\$2,810	\$3,515	31.6%	25.1%	70.5%	(8.6)%	NM	NM	9.9x	NM	NM	NM
ServiceNow	Sep-18	\$178.05	86.3%	\$31,925	\$31,114	\$2,457	\$2,609	\$3,371	36.2%	29.2%	76.0%	2.4%	NM	NM	9.2x	NM	45.9x	33.2x
Atlassian	Sep-18	\$88.98	90.6%	\$21,190	\$20,223	\$946	\$1,018	\$1,326	38.9%	30.2%	81.2%	2.3%	NM	NM	NM	NM	NM	NM
Shopify	Sep-18	\$138.45	78.4%	\$15,276	\$13,697	\$952	\$1,057	\$1,473	60.0%	39.3%	55.8%	(7.0)%	NM	NM	9.3x	NM	NM	NM
Veeva Systems	Oct-18	\$89.32	81.9%	\$12,978	\$11,926	\$811	\$857	\$1,019	25.9%	18.9%	70.4%	25.3%	NM	NM	NM	NM	38.4x	32.8x
Tableau Software	Sep-18	\$120.00	91.0%	\$10,028	\$9,071	\$1,068	\$992	\$1,363	14.3%	37.3%	87.6%	(8.6)%	8.5x	9.1x	6.7x	NM	NM	42.5x
Twilio	Sep-18	\$89.30	88.9%	\$8,828	\$8,511	\$561	\$630	\$831	62.2%	31.8%	53.7%	(13.5)%	NM	NM	NM	NM	NM	NM
Dropbox, Inc.	Sep-18	\$20.43	47.0%	\$8,305	\$7,432	\$1,321	\$1,386	\$1,604	NA	15.7%	70.3%	(26.9)%	5.6x	5.4x	4.6x	NM	22.7x	19.9x
The Ultimate Software Group	Sep-18	\$244.87	73.7%	\$7,657	\$7,532	\$1,087	\$1,136	\$1,363	21.7%	19.9%	62.3%	10.7%	6.9x	6.6x	5.5x	NM	27.5x	23.2x
Okta	Oct-18	\$63.80	84.5%	\$7,046	\$6,768	\$364	\$392	\$518	51.0%	32.2%	71.3%	(31.6)%	NM	NM	NM	NM	NM	NM
DocuSign, Inc.	Oct-18	\$40.08	58.6%	\$6,623	\$5,962	\$650	\$694	\$856	NA	23.3%	73.7%	(51.7)%	9.2x	8.6x	7.0x	NM	NM	NM
RingCentral	Sep-18	\$82.44	84.0%	\$6,623	\$6,411	\$624	\$666	\$823	33.7%	23.6%	76.5%	(1.9)%	NM	9.6x	7.8x	NM	NM	NM
Zendesk	Sep-18	\$58.37	80.2%	\$6,248	\$6,249	\$549	\$592	\$779	38.8%	31.6%	69.9%	(19.4)%	NM	NM	8.0x	NM	NM	NM
Elastic N.V.	Oct-18	\$71.48	85.3%	\$5,073	\$4,752	\$211	\$233	\$324	NA	39.0%	72.3%	(33.2)%	NM	NM	NM	NM	NA	NM
HubSpot	Sep-18	\$125.73	77.5%	\$4,933	\$4,685	\$475	\$506	\$635	36.5%	25.4%	80.2%	(7.8)%	9.9x	9.3x	7.4x	NM	NM	NM
New Relic	Sep-18	\$80.97	70.5%	\$4,612	\$4,280	\$413	\$442	\$559	34.9%	26.5%	83.7%	(1.4)%	NM	9.7x	7.7x	NM	NM	NM
Proofpoint	Sep-18	\$83.81	64.3%	\$4,580	\$4,390	\$661	\$711	\$876	39.5%	23.3%	71.4%	(5.9)%	6.6x	6.2x	5.0x	NM	41.1x	33.8x
Wix.com Ltd.	Sep-18	\$90.34	74.4%	\$4,368	\$3,986	\$558	\$602	\$763	41.9%	26.9%	80.3%	(4.6)%	7.1x	6.6x	5.2x	NM	35.2x	22.6x
RealPage	Sep-18	\$48.19	72.7%	\$4,362	\$4,679	\$830	\$873	\$1,003	29.8%	15.0%	60.9%	17.0%	5.6x	5.4x	4.7x	33.1x	20.3x	16.4x
Pivotal Software, Inc.	Nov-18	\$16.35	52.3%	\$4,291	\$3,627	\$622	\$659	\$814	NA	23.6%	61.5%	(20.8)%	5.8x	5.5x	4.5x	NM	NM	NM
LogMeIn	Sep-18	\$81.57	60.5%	\$4,173	\$4,206	\$1,170	\$1,204	\$1,256	18.7%	4.4%	77.5%	29.3%	3.6x	3.5x	3.3x	12.3x	9.5x	8.9x
Xero Limited	Sep-18	\$29.62	79.9%	\$4,139	\$4,376	\$315	\$348	\$467	28.5%	34.3%	82.5%	(1.2)%	NM	NM	9.4x	NM	NM	47.5x
Medidata Solutions	Sep-18	\$67.42	75.9%	\$4,126	\$4,022	\$611	\$637	\$750	16.8%	17.8%	75.7%	14.6%	6.6x	6.3x	5.4x	45.0x	26.6x	21.7x
Coupa Software	Oct-18	\$62.86	74.4%	\$3,737	\$3,502	\$239	\$253	\$314	39.5%	23.8%	68.7%	(14.4)%	NM	NM	NM	NM	NM	NM
Alteryx	Sep-18	\$59.47	88.2%	\$3,650	\$3,493	\$182	\$201	\$272	56.8%	35.2%	87.8%	(6.8)%	NM	NM	NM	NM	NM	NM
Paylocity Holding Corporation	Sep-18	\$60.21	68.1%	\$3,179	\$3,094	\$397	\$415	\$498	24.7%	20.0%	62.1%	9.1%	7.8x	7.5x	6.2x	NM	31.3x	21.5x
Cornerstone OnDemand	Sep-18	\$50.43	85.2%	\$2,956	\$2,853	\$532	\$529	\$567	9.6%	7.1%	72.3%	0.1%	5.4x	5.4x	5.0x	NM	31.3x	22.1x
Qualys	Sep-18	\$74.74	76.0%	\$2,943	\$2,617	\$268	\$279	\$331	21.3%	18.8%	76.4%	28.3%	9.8x	9.4x	7.9x	34.5x	23.4x	20.8x
2U	Sep-18	\$49.72	50.4%	\$2,880	\$2,437	\$383	\$412	\$547	44.3%	32.9%	78.1%	(5.3)%	6.4x	5.9x	4.5x	NM	NM	NM
Smartsheet Inc.	Oct-18	\$24.86	73.2%	\$2,579	\$2,373	\$159	\$175	\$244	NA	39.1%	80.9%	(27.9)%	NM	NM	9.7x	NM	NM	NM
Five9, Inc.	Sep-18	\$43.72	88.3%	\$2,570	\$2,497	\$241	\$252	\$296	27.8%	17.4%	59.3%	4.5%	NM	9.9x	8.4x	NM	NM	49.5x
Box	Oct-18	\$16.88	56.7%	\$2,421	\$2,319	\$581	\$609	\$733	20.3%	20.4%	72.2%	(17.1)%	4.0x	3.8x	3.2x	NM	NM	44.2x
BlackLine	Sep-18	\$40.95	70.5%	\$2,238	\$2,113	\$217	\$227	\$279	30.2%	22.9%	77.9%	(4.8)%	9.7x	9.3x	7.6x	NM	NM	NM
Ellie Mae, Inc.	Sep-18	\$62.83	53.7%	\$2,189	\$1,917	\$477	\$480	\$510	16.2%	6.4%	58.3%	14.2%	4.0x	4.0x	3.8x	28.2x	15.0x	13.3x
Q2 Holdings, Inc.	Sep-18	\$49.55	73.8%	\$2,149	\$2,031	\$226	\$241	\$306	24.1%	27.3%	49.9%	(5.3)%	9.0x	8.4x	6.6x	NM	NM	NM
AppFolio	Sep-18	\$59.22	64.7%	\$2,028	\$1,983	\$178	\$188	\$238	32.4%	26.6%	62.2%	13.7%	NM	NM	8.3x	NM	44.8x	31.1x
Mimecast	Sep-18	\$33.63	71.8%	\$2,020	\$2,053	\$301	\$319	\$382	33.6%	19.9%	73.2%	6.5%	6.8x	6.4x	5.4x	NM	47.5x	31.4x

<b>Large-Cap SaaS Upper Quartile</b>	<b>84.9%</b>	<b>8.5x</b>	<b>9.2x</b>	<b>8.0x</b>	<b>34.5x</b>	<b>39.0x</b>	<b>33.4x</b>
<b>Large-Cap SaaS Median</b>	<b>75.1%</b>	<b>6.8x</b>	<b>6.6x</b>	<b>6.6x</b>	<b>33.1x</b>	<b>31.3x</b>	<b>25.0x</b>
<b>Large-Cap SaaS Lower Quartile</b>	<b>68.7%</b>	<b>5.6x</b>	<b>5.5x</b>	<b>5.0x</b>	<b>28.2x</b>	<b>23.3x</b>	<b>21.3x</b>

Source: Capital IQ. Financials are calendarized to December year-end.

(1) Market Data including Market Capitalization amounts are based on closing share prices as of December 31, 2018.

(2) Enterprise Value (EV) equals Market Capitalization plus Debt, Preferred Equity, and Minority Interest, minus Cash and Cash Equivalents.

(3) EBITDA equals Earnings before Interest, Taxes, Depreciation, and Amortization.





## Global TMT Selected Public Comps: Software (1/2)

Market Data						Operating Metrics							Valuation Multiples					
\$ value millions, except per share	Latest Quarter Ending	Share Price	% of 52 Week High	Market Cap. <sup>(1)</sup>	Enterprise Value <sup>(2)</sup>	Revenue			Revenue Growth <sup>(3)</sup>		LTM Gross	LTM EBITDA	EV / Revenue			EV / EBITDA		
						LTM	2018E	2019E	2017-2018E	2018E-2019E	Margin%	Margin%	LTM	2018E	2019E	LTM	2018E	2019E
<b>Mid-Cap SaaS (&lt; \$2B Market Cap)</b>																		
Zuora, Inc.	Oct-18	\$18.14	48.0%	\$1,968	\$1,809	\$221	\$234	\$295	NA	25.8%	50.6%	(28.3%)	8.2x	7.7x	6.1x	NM	NM	NM
Mindbody	Sep-18	\$36.40	80.0%	\$1,745	\$1,670	\$229	\$245	\$297	34.7%	21.3%	69.8%	(8.3%)	7.3x	6.8x	5.6x	NM	NM	NM
Cloudera	Oct-18	\$11.06	49.3%	\$1,698	\$1,308	\$435	\$800	\$972	120.3%	21.6%	70.5%	(32.3%)	3.0x	1.6x	1.3x	NM	NA	NA
Everbridge	Sep-18	\$56.76	90.1%	\$1,683	\$1,673	\$134	\$146	\$185	40.9%	26.7%	68.7%	(24.7%)	NM	NM	9.0x	NM	NM	NM
Workiva	Sep-18	\$35.89	87.9%	\$1,574	\$1,495	\$234	\$243	\$279	17.4%	15.0%	72.5%	(17.7%)	6.4x	6.2x	5.4x	NM	NM	NM
SVMK Inc.	Sep-18	\$12.27	61.4%	\$1,535	\$1,687	\$243	\$252	\$287	NA	13.9%	69.4%	(35.4%)	6.9x	6.7x	5.9x	NM	29.0x	31.0x
Yext	Oct-18	\$14.85	54.6%	\$1,498	\$1,391	\$213	\$228	\$298	33.8%	30.8%	74.7%	(35.3%)	6.5x	6.1x	4.7x	NM	NM	NM
Rapid7, Inc.	Sep-18	\$31.16	79.1%	\$1,473	\$1,374	\$233	\$242	\$291	20.8%	20.1%	70.4%	(19.2%)	5.9x	5.7x	4.7x	NM	NM	NM
Pluralsight, Inc.	Sep-18	\$23.55	61.4%	\$1,467	\$1,385	\$212	\$231	\$307	NA	33.1%	71.6%	(40.1%)	6.5x	6.0x	4.5x	NM	NM	NM
Benefitfocus	Sep-18	\$45.72	82.5%	\$1,461	\$1,540	\$272	\$257	\$298	0.2%	15.8%	54.1%	1.1%	5.7x	6.0x	5.2x	NM	NM	NM
SPS Commerce	Sep-18	\$82.38	81.8%	\$1,455	\$1,266	\$242	\$247	\$274	12.3%	11.1%	66.9%	12.3%	5.2x	5.1x	4.6x	42.6x	24.7x	20.3x
Instructure	Sep-18	\$37.51	76.3%	\$1,315	\$1,144	\$196	\$209	\$259	33.7%	23.8%	70.4%	(24.7%)	5.8x	5.5x	4.4x	NM	NM	NM
LivePerson	Sep-18	\$18.86	68.8%	\$1,196	\$1,130	\$242	\$249	\$284	14.3%	14.0%	75.0%	1.9%	4.7x	4.5x	4.0x	NM	NM	NM
Talend S.A.	Sep-18	\$37.08	50.4%	\$1,115	\$1,026	\$190	\$204	\$249	37.5%	21.7%	75.9%	(18.7%)	5.4x	5.0x	4.1x	NM	NM	NM
Carbon Black, Inc.	Sep-18	\$13.42	38.3%	\$911	\$748	\$199	\$208	\$256	NA	22.9%	78.3%	(30.5%)	3.8x	3.6x	2.9x	NM	NM	NM
Domo, Inc.	Oct-18	\$19.63	68.0%	\$517	\$409	\$133	\$141	\$170	NA	20.8%	63.1%	(113.9%)	3.1x	2.9x	2.4x	NM	NM	NM
MobileIron	Sep-18	\$4.59	80.4%	\$484	\$382	\$185	\$194	\$214	11.2%	10.2%	82.9%	(22.2%)	2.1x	2.0x	1.8x	NM	NM	28.9x
Castlight Health	Sep-18	\$2.17	36.5%	\$303	\$240	\$151	\$155	\$159	18.4%	2.9%	60.7%	(22.5%)	1.6x	1.6x	1.5x	NM	NM	29.2x
<b>Mid-Cap SaaS Upper Quartile</b>			<b>80.3%</b>										<b>6.5x</b>	<b>6.1x</b>	<b>5.3x</b>	<b>42.6x</b>	<b>27.9x</b>	<b>29.6x</b>
<b>Mid-Cap SaaS Median</b>			<b>68.4%</b>										<b>5.7x</b>	<b>5.5x</b>	<b>4.6x</b>	<b>42.6x</b>	<b>26.8x</b>	<b>29.0x</b>
<b>Mid-Cap SaaS Lower Quartile</b>			<b>51.5%</b>										<b>3.8x</b>	<b>3.6x</b>	<b>3.2x</b>	<b>42.6x</b>	<b>25.8x</b>	<b>26.8x</b>

Source: Capital IQ. Financials are calendarized to December year-end.

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(3) EBITDA equals Earnings before Interest, Taxes, Depreciation, and Amortization.



## Global TMT Selected Transactions <sup>(1)</sup>: Software

Announced Date	Target Name	Target Country	Acquirer Name	Deal Value (\$ mm)	EV / Revenue	EV / EBITDA
24-Dec-2018	MINDBODY Inc.	U.S.	Vista Equity Partners Management	\$1,750	8.1x	-
20-Dec-2018	BuildingConnected Inc.	U.S.	Autodesk Inc.	\$275	-	-
19-Dec-2018	M*Modal [One Equity]	U.S.	3M Company	\$1,000	5.0x	-
13-Dec-2018	Adestra Ltd.	U.K.	Upland Software Inc.	\$60	3.3x	-
12-Dec-2018	Avoka Technologies Pty Ltd.	U.S.	Temenos AG	\$245	6.4x	-
11-Dec-2018	IQMS Inc.	U.S.	Dassault Systemes S.A.	\$425	7.6x	-
10-Dec-2018	Compuscan Pty Ltd	South Africa	Experian plc	\$262	7.6x	-
10-Dec-2018	Netsmart Technologies Inc. [Allscripts / GI Partners]	U.S.	GI Partners/TA Associates	\$525	1.5x	-
10-Dec-2018	Travelport LP	U.K.	Siris Capital/Evergreen Coast	\$4,400	2.5x	10.5x
30-Nov-2018	PEC Safety Operations LLC	U.S.	Thoma Bravo LLC	\$225	9.0x	28.1x
27-Nov-2018	Spectro Scientific Inc.	U.S.	AMETEK Inc.	\$190	3.8x	-
20-Nov-2018	PlanGrid Inc.	U.S.	Autodesk Inc.	\$875	-	-
16-Nov-2018	Cylance Inc.	U.S.	BlackBerry Limited	\$1,500	11.5x	-
14-Nov-2018	Farelogix Inc.	U.S.	Sabre Corporation	\$360	-	-
12-Nov-2018	athenahealth Inc.	U.S.	Veritas Capital/Evergreen Coast	\$5,700	4.1x	17.3x
11-Nov-2018	Apptio, Inc.	U.S.	Vista Equity Partners	\$2,122	8.3x	NM
11-Nov-2018	Qualtrics International Inc.	U.S.	SAP SE	\$8,000	NM	-
06-Nov-2018	Investment Technology Group	U.S.	Virtu Financial	\$1,000	1.5x	15.9x
05-Nov-2018	Datawatch Corp.	U.S.	Altair Engineering Inc.	\$176	4.0x	-
30-Oct-2018	eVision Industry Software	Netherlands	Wolters Kluwer Legal & Regulatory Solutions	\$145	7.2x	-
28-Oct-2018	Red Hat	U.S.	IBM	\$3,360	10.7x	56.4x
22-Oct-2018	Symbility Solutions Inc.	Canada	CoreLogic Inc.	\$122	3.5x	40.2x
17-Oct-2018	Triton Digital Inc. [Vector Capital]	U.S.	E. W. Scripps Company	\$150	3.7x	-
15-Oct-2018	SendGrid	U.S.	Twilio Inc.	\$1,739	12.3x	NM
15-Oct-2018	tCell.io Inc.	U.S.	Rapid7 Inc.	-	-	-
15-Oct-2018	Cambium Learning Group	U.S.	Veritas Capital	\$685	4.7x	18.6x
10-Oct-2018	Imperva Inc.	U.S.	Thoma Bravo	\$2,119	5.2x	NM
09-Oct-2018	FNZ UK Ltd. [HIG Private Equity] [General Atlantic]	U.K.	Caisse de depot et placement du Quebec	\$1,450	-	-
08-Oct-2018	Rocket Software	U.S.	Bain Capital Private Equity	\$2,000	4.4x	-
03-Oct-2018	Hortonworks, Inc.	U.S.	Cloudera, Inc.	\$2,107	6.1x	NM
01-Oct-2018	Lumesse [HgCapital]	U.K.	Saba Software [Vector Capital]	\$100	1.3x	20.0x

**Upper Quartile**

**7.6x 31.1x**

**Median**

**5.0x 19.3x**

**Lower Quartile**

**3.7x 17.0x**

(1) Top M&A transactions on the basis of disclosed deal value in Q4'18.

Source: 451research.



# Global TMT Coverage Team

## Global Coverage. Industry Knowledge. Middle-Market Focus.

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