



May 2018

The Lighthouse

Software

Online & Digital

Tech Enabled Business Services

Pharus Observations

Artificial Intelligence and Machine Learning M&A sees bump in 2018

Deal Values Soar in Machine Learning Space: As the Internet of Things expands and the amount of data being generated and collected continues to grow exponentially, Machine Learning is becoming a crucial part of managing and analyzing that data. Artificial intelligence can allow companies with high-volume data processes to vastly improve efficiency and productivity. However, growth in the AI / machine learning space has been slow until recently. McKinsey reported that in 2017 companies spent \$39 billion on AI, three times more than in previous years. Furthermore, there has already been **70% growth in business value** in AI during the first quarter of 2018, reaching **\$1.2 trillion** (Forbes).

According to a recent survey, 61% of organizations most frequently picked “machine learning / artificial intelligence” as their company’s most significant data initiative for next year (Cloud-computing News). While market growth was slow for the past several years, 2018 is poised to be an explosive year for AI and machine learning investment. A few notable transactions indicate the recent surge in deal values during the first half of 2018:

S&P Global acquired **Kensho Technologies** for **\$550 million** in March of 2018, making it the largest AI transaction value on record. Kensho is a leading edge provider of next-generation analytics, artificial intelligence, machine learning, and data visualization systems to Wall Street's premier global banks and investment institutions, as well as the National Security community.

S&P Global

KENSHO

In May of 2018 digital identity verification company **Mitek Systems** acquired **A2iA SAS** for **\$49.7 million**. A2iAa uses artificial intelligence and machine learning to create proprietary algorithms that process millions of checks, IDs and documents each day for banks, retailers, insurance companies, mobile operators, healthcare providers and governments.

Mitek

a2ia

Other notable transactions in the AI/machine learning space include **Paypal's** acquisition of **Jetlore**, a predictive retail startup; **Microsoft's** acquisition of **Semantic Machines**, a conversational AI startup; **Intel's** acquisition of **Nervana**, a startup developing specialized AI systems ranging from software to chips; **TD Bank's** acquisition of **Layer 6**, developer of prediction engine combs through internal data sources to anticipate the needs of customers in real-time; and **Verizon's** acquisition of **Niddel Corp**, which offers a threat-hunting platform based on machine learning technology.

Big players, ranging from technology to finance, clearly see the inherent value in AI and machine learning technology, leading to the sharp uptick in volume and value of deals in the space during early 2018.



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I Capital market trends

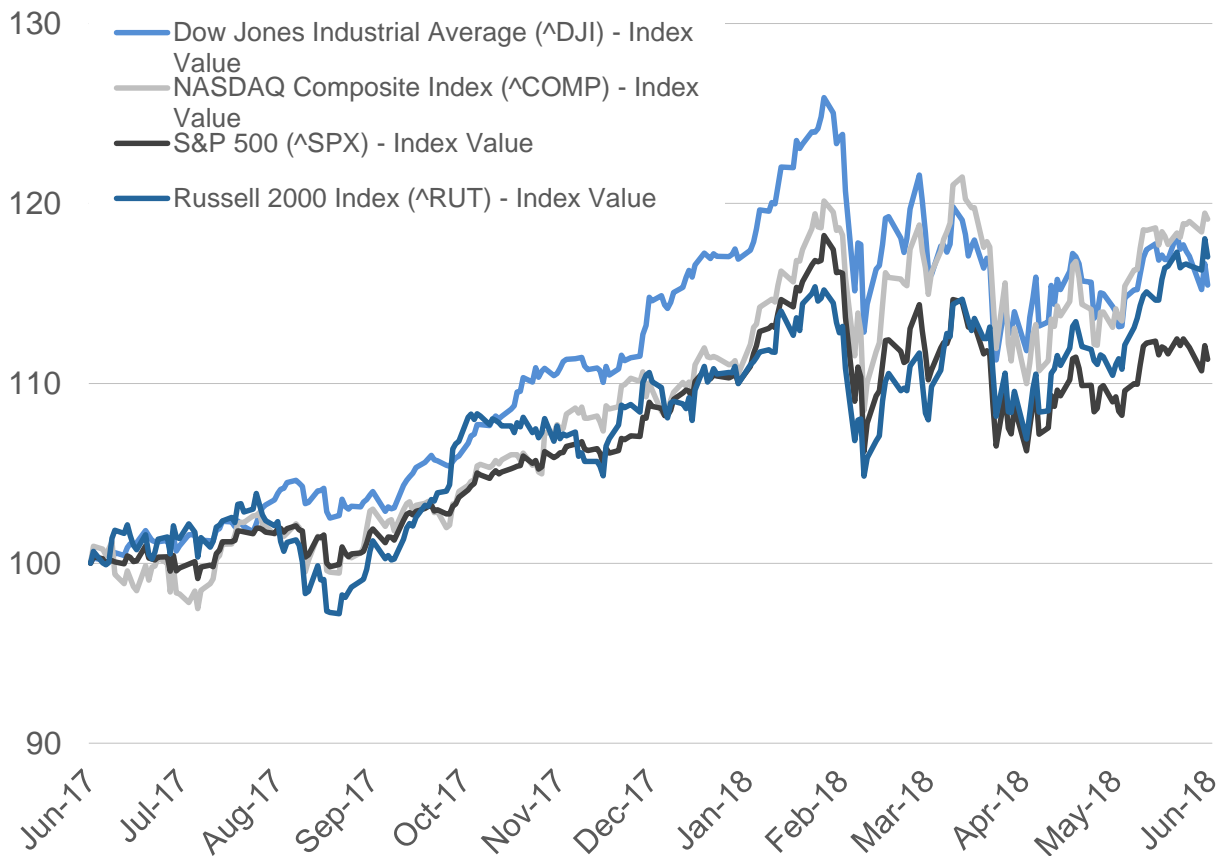


Capital market trends



Relative Performance of Major Indices

Through May 31, 2018 (Base = 100, 06/01/2018)



Index	As of 31-May-18	Change %		
		1 Year	3 Months	1 Month
Dow Jones	24,415.84	115.5%	-0.8%	1.3%
Nasdaq	7,442.12	19.3%	3.6%	4.4%
S&P 500	2,705.27	11.3%	1.0%	1.9%
Russell 2000	1,633.61	17.0%	8.4%	5.4%





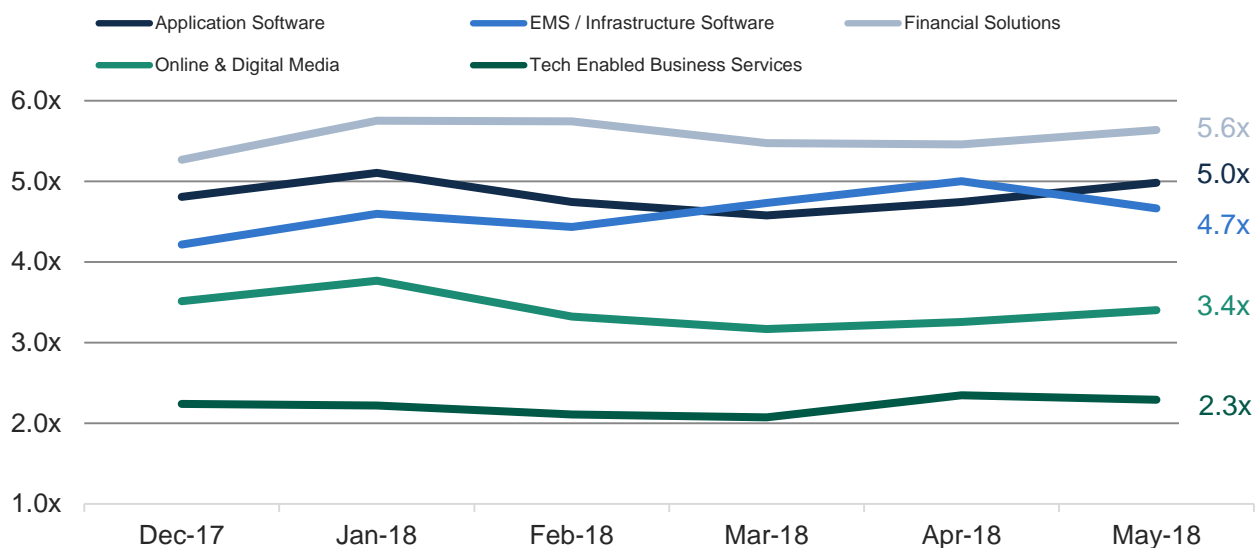
Public market valuations



Public market valuations



Historical Median TEV / Revenue Multiples



	Dec-17	Jan-18	Feb-18	Mar-18	Apr-18	May-18
Application Software						
Customer Relationship Management (CRM) & Customer Engagement	7.1x	7.6x	7.8x	7.9x	8.2x	8.4x
Accounting & Enterprise Resource Planning (ERP)	5.3x	5.2x	5.1x	4.5x	4.7x	4.9x
Supply Chain Management (SCM) & Logistics	4.3x	4.7x	4.3x	4.4x	4.6x	4.8x
HR & Workforce Management	4.3x	5.1x	4.8x	4.6x	6.3x	6.7x
Education Technology	2.1x	2.4x	2.6x	5.1x	5.0x	4.8x
Industrial & Automation Software	2.6x	2.8x	2.7x	2.8x	2.8x	2.9x
Business Intelligence & Data	5.0x	5.4x	4.7x	5.6x	4.8x	5.5x
Design & Engineering Software	5.2x	5.9x	5.7x	6.0x	6.3x	6.3x
EMS / Infrastructure Software						
Security Software	4.6x	4.6x	4.5x	5.0x	5.0x	5.2x
System and Network Management Software	4.0x	3.6x	3.5x	3.4x	3.7x	3.6x
Platform / OS	3.8x	5.1x	4.6x	4.6x	5.2x	5.3x
Financial Solutions						
Banking Solutions	6.2x	6.6x	6.2x	6.4x	6.3x	6.4x
Capital Market & Investment Solutions	5.6x	5.9x	5.2x	5.2x	5.3x	5.7x
Consumer Data & Analytics	5.3x	5.3x	5.0x	5.0x	5.3x	5.8x
Payment Processing	4.1x	4.7x	4.4x	4.5x	4.6x	4.3x
Insurance Solutions	8.2x	8.4x	8.6x	7.4x	7.7x	6.9x
Online & Digital Media						
Digital Advertising & Marketing	4.5x	4.0x	3.5x	3.0x	3.0x	2.9x
Digital Media & Video	3.3x	3.4x	3.0x	3.5x	3.7x	3.9x
Digital Advertising Agencies & Service Providers	1.3x	1.4x	1.4x	1.2x	1.4x	1.3x
Online Retail & Marketplaces	2.9x	3.1x	3.2x	3.2x	2.8x	3.4x
Digital Gaming	3.6x	3.3x	3.1x	3.0x	3.4x	3.5x
Social Media	6.0x	6.5x	6.6x	6.2x	6.2x	5.7x
Digital Commerce Solutions	1.4x	1.6x	1.7x	1.3x	1.4x	1.6x
Other Digital Companies	5.5x	4.7x	4.3x	4.7x	4.7x	5.0x
Tech Enabled Business Services						
IT Services, Integration & Consulting	1.7x	1.7x	1.6x	1.6x	1.7x	1.5x
Business Process Management (BPM)	3.6x	3.7x	3.7x	3.7x	4.6x	5.2x
Data Center Hosting & Services	4.1x	4.2x	4.5x	6.5x	6.7x	6.5x
Call Center	0.8x	0.8x	0.8x	0.8x	0.8x	0.8x



Public market valuations



Current & Forward Market Multiples

	Median TEV/Revenue		Median TEV/EBITDA	
	LTM	NTM	LTM	NTM
Application Software				
Customer Relationship Management (CRM) & Customer Engagement	8.5x	6.1x	21.7x	31.2x
Accounting & Enterprise Resource Planning (ERP)	4.8x	4.6x	27.1x	19.0x
Supply Chain Management (SCM) & Logistics	4.8x	4.8x	32.5x	24.8x
HR & Workforce Management	6.6x	6.1x	52.0x	27.7x
Education Technology	4.8x	3.0x	17.3x	10.7x
Industrial & Automation Software	2.4x	2.3x	15.2x	12.5x
Business Intelligence & Data	5.9x	5.0x	14.7x	15.3x
Design & Engineering Software	6.3x	5.7x	24.5x	17.5x
EMS / Infrastructure Software				
Security Software	5.6x	4.9x	17.0x	20.4x
System and Network Management Software	3.6x	3.3x	13.3x	13.2x
Platform / OS	5.3x	5.1x	17.5x	14.4x
Financial Solutions				
Banking Solutions	6.3x	5.9x	21.8x	17.2x
Capital Market & Investment Solutions	5.7x	5.8x	20.5x	17.9x
Consumer Data & Analytics	5.7x	5.1x	16.4x	14.5x
Payment Processing	4.3x	4.7x	11.4x	13.3x
Insurance Solutions	6.9x	7.1x	17.8x	16.5x
Online & Digital Media				
Digital Advertising & Marketing	2.9x	2.2x	16.8x	15.4x
Digital Media & Video	3.9x	4.3x	21.1x	18.0x
Digital Advertising Agencies & Service Providers	1.3x	1.2x	8.6x	8.2x
Online Retail & Marketplaces	3.4x	2.6x	37.2x	17.5x
Digital Gaming	3.4x	3.1x	17.3x	13.3x
Social Media	5.7x	4.6x	28.2x	16.4x
Digital Commerce Solutions	1.6x	1.5x	12.1x	10.9x
Other Digital Companies	5.0x	4.7x	21.7x	14.2x
Tech Enabled Business Services				
IT Services, Integration & Consulting	1.5x	1.5x	12.4x	11.1x
Business Process Management (BPM)	5.1x	4.2x	16.7x	12.4x
Data Center Hosting & Services	6.5x	5.7x	19.8x	18.2x
Call Center	0.8x	0.9x	6.8x	6.8x

Medians				
Application Software	5.0x	4.5x	18.0x	17.0x
EMS / Infrastructure Software	4.6x	4.0x	15.2x	15.5x
Financial Solutions	5.5x	5.7x	18.9x	16.2x
Online & Digital Media	3.4x	3.1x	19.9x	13.9x
Tech Enabled Business Services	2.3x	2.0x	12.6x	11.3x



Public market valuations

Application Software



(\$ in millions)		TEV	Market Cap	TEV/Revenue		TEV/EBITDA	
				LTM	NTM	LTM	NTM
Customer Relationship Management (CRM) & Customer Engagement							
Five9	NasdaqGM:FIVN	\$1,979	\$2,013	9.1x	8.0x	NM	64.7x
LivePerson	NasdaqGS:LPSN	\$1,117	\$1,175	5.0x	4.5x	NM	47.0x
MINDBODY	NasdaqGM:MB	\$1,667	\$1,870	8.5x	6.2x	NM	NM
NICE Systems	TASE:NICE	\$6,396	\$6,414	4.9x	4.3x	20.9x	14.3x
Pegasystems	NasdaqGS:PEGA	\$4,605	\$4,860	5.7x	4.7x	NM	28.0x
Salesforce.com	NYSE:CRM	\$92,910	\$96,081	8.4x	6.7x	86.1x	29.3x
SDL	LSE:SDL	\$462	\$493	1.2x	1.2x	13.7x	11.4x
Veeva	NYSE:VEEV	\$10,157	\$11,075	14.0x	11.8x	59.6x	35.5x
Zendesk	NYSE:ZEN	\$5,545	\$5,844	11.9x	9.1x	NM	NM
Median				8.4x	6.2x	40.3x	29.3x
Accounting & Enterprise Resource Planning (ERP)							
BasWare	HLSE:BAS1V	\$643	\$650	3.7x	3.8x	42.9x	NM
Blackline	NasdaqGS:BL	\$2,110	\$2,224	10.8x	8.9x	NM	NM
Coupa Software	NasdaqGS:COUP	\$2,773	\$3,023	14.7x	12.0x	NM	NM
Intuit	NasdaqGS:INTU	\$50,242	\$51,728	8.6x	7.8x	27.8x	20.9x
Kingdee International	SEHK:268	\$3,416	\$3,593	9.7x	7.8x	74.3x	26.4x
Model N	NYSE:MODN	\$547	\$545	3.7x	3.7x	NM	64.9x
Oracle	NYSE:ORCL	\$181,553	\$190,726	4.6x	4.5x	11.7x	9.5x
QAD	NasdaqGS:QADA	\$833	\$964	2.5x	2.5x	NM	47.1x
Sage	LSE:SGE	\$10,410	\$9,538	4.4x	4.1x	16.8x	14.2x
SAP	DB:SAP	\$133,511	\$133,922	4.9x	4.7x	18.1x	13.4x
Upland Software	NasdaqGM:UPLD	\$898	\$770	8.2x	6.5x	44.4x	18.0x
Median				4.9x	4.7x	27.8x	19.4x
Supply Chain Management (SCM) & Logistics							
Amber Road	NYSE:AMBR	\$260	\$247	3.3x	3.0x	NM	90.3x
Descartes Systems Group	TSX:DSG	\$2,304	\$2,289	9.7x	8.2x	29.0x	23.8x
Manhattan Associates	NasdaqGS:MANH	\$2,789	\$2,908	4.7x	5.1x	15.2x	20.8x
SPS Commerce	NasdaqGS:SPSC	\$1,126	\$1,292	4.9x	4.5x	52.6x	24.5x
Median				4.8x	4.8x	29.0x	24.1x



Public market valuations



Application Software (continued)

(\$ in millions)		TEV	Market Cap	TEV/Revenue		TEV/EBITDA	
				LTM	NTM	LTM	NTM
HR & Workforce Management							
Atlassian Corporation	NasdaqGS:TEAM	\$14,164	\$14,928	17.5x	13.6x	NM	49.7x
Benefit Focus	NasdaqGM:BNFT	\$1,134	\$1,066	4.3x	4.3x	NM	82.9x
CastLight Health	NYSE:CSLT	\$421	\$490	3.1x	2.6x	NM	NM
Ceridian HCM	NYSE:CDAY	\$6,005	\$4,719	7.8x	8.1x	52.3x	40.7x
Cornerstone OnDemand	NasdaqGS:CSOD	\$2,774	\$2,855	5.6x	5.4x	NM	26.6x
Dice Holdings	NYSE:DHX	\$140	\$119	0.7x	0.8x	4.6x	4.1x
Paycom	NYSE:PAYC	\$6,197	\$6,229	13.2x	10.7x	67.9x	26.1x
Paylocity	NasdaqGS:PCTY	\$3,016	\$3,146	8.5x	6.9x	97.1x	31.1x
TriNet Group	NYSE:TNET	\$3,854	\$3,771	1.2x	4.4x	14.9x	12.0x
Ultimate Software	NasdaqGS:ULTI	\$7,887	\$8,025	8.0x	6.8x	84.3x	27.6x
Verint Systems	NasdaqGS:VRNT	\$3,144	\$2,701	2.8x	2.6x	28.2x	10.2x
Workday	NasdaqGS:WDAY	\$26,396	\$28,173	12.4x	9.8x	NM	52.7x
Median				6.7x	6.1x	52.3x	27.6x
Industrial & Automation Software							
3M	NYSE:MMM	\$128,741	\$117,094	4.0x	3.8x	15.9x	13.3x
ABB	SWX:ABBN	\$51,491	\$48,181	1.5x	1.3x	11.7x	9.1x
American Software	NasdaqGS:AMSW.A	\$322	\$400	3.0x	2.7x	19.6x	15.7x
Aspen Technology	NasdaqGS:AZPN	\$6,760	\$6,661	13.6x	13.1x	31.3x	26.6x
Dassault	ENXTPA:DSY	\$33,570	\$35,719	8.9x	8.3x	32.0x	24.7x
Emerson	NYSE:EMR	\$47,427	\$44,636	2.9x	2.7x	13.6x	12.0x
Fanuc Corporation	TSE:6954	\$34,655	\$41,471	5.2x	5.2x	13.5x	14.2x
General Electric	NYSE:GE	\$256,234	\$122,290	2.1x	2.1x	46.4x	14.9x
HollySys Automation Tech	NasdaqGS:HOLI	\$1,085	\$1,440	2.1x	1.8x	8.4x	7.4x
Honeywell	NYSE:HON	\$118,669	\$110,478	2.9x	2.7x	13.9x	12.4x
Johnson Controls	NYSE:JCI	\$44,034	\$30,963	1.5x	1.4x	8.9x	8.5x
KUKA	DB:KU2	\$4,202	\$3,974	1.1x	1.0x	24.4x	11.9x
Materialise NV	NasdaqGS:MTLS	\$633	\$572	3.4x	2.9x	33.9x	20.7x
Metso	HLSE:METSO	\$5,208	\$5,180	1.6x	1.4x	15.3x	11.1x
OMRON Corp	TSE:6645	\$10,024	\$11,047	1.3x	1.2x	9.3x	8.7x
Parametric Technology	NasdaqGS:PTC	\$10,271	\$9,951	8.5x	7.9x	78.2x	29.5x
Rockwell Automation	NYSE:ROK	\$21,519	\$22,028	3.4x	3.1x	16.5x	13.6x
Schneider Electric	ENXTPA:SU	\$53,164	\$48,023	1.8x	1.8x	11.3x	10.2x
Siemens	DB:SIE	\$135,035	\$108,690	1.4x	1.4x	12.1x	10.2x
YASKAWA Electric Corp	TSE:6506	\$10,634	\$10,708	2.4x	2.3x	15.1x	14.4x
Yokogawa Electric Corp.	TSE:6841	\$4,510	\$4,887	1.2x	1.2x	9.5x	9.0x
Median				2.4x	2.3x	15.1x	12.4x



Public market valuations



Application Software (continued)

(\$ in millions)		TEV	Market Cap	TEV/Revenue		TEV/EBITDA	
				LTM	NTM	LTM	NTM
Education Technology							
Blackbaud	NasdaqGS:BLKB	\$5,050	\$4,607	6.3x	5.6x	36.1x	23.5x
Cambium Learning Group	NasdaqCM:ABCD	\$521	\$472	3.3x	3.2x	17.1x	10.6x
Instructure	NYSE:INST	\$1,339	\$1,476	7.7x	6.1x	NM	NM
K12	NYSE:LRN	\$435	\$635	0.5x	0.5x	10.9x	3.7x
Rosetta Stone	NYSE:RST	\$330	\$367	1.9x	1.9x	NM	NM
Sunlands Online Education Group	NYSE:STG	\$1,282	\$1,646	6.5x	2.8x	NM	NM
Median				4.8x	3.0x	17.1x	10.6x
Business Intelligence & Data							
Alteryx	NYSE:AYX	\$1,883	\$2,062	12.7x	9.4x	NM	NM
AppFolio	NasdaqGM:APPF	\$1,977	\$2,023	12.6x	10.3x	NM	42.6x
Apptio	NasdaqGM:APTI	\$1,304	\$1,443	6.4x	5.5x	NM	NM
Cardylitics	NasdaqGM:CDLX	\$383	\$414	2.9x	2.3x	NM	NM
Cloudera	NYSE:CLDR	\$2,032	\$2,403	5.5x	4.6x	NM	NM
Corelogic	NYSE:CLGX	\$5,866	\$4,280	3.2x	3.1x	14.7x	11.8x
CoStar Group	NasdaqGS:CSGP	\$12,942	\$13,873	12.8x	10.5x	48.7x	31.0x
Gridsum Holding	NasdaqGS:GSUM	\$207	\$206	2.5x	1.5x	NM	15.6x
Hortonworks	NasdaqGS:HDP	\$1,316	\$1,405	4.5x	3.8x	NM	NM
Inovalon Holdings	NASDAQ:INOV	\$1,375	\$1,584	3.1x	2.3x	24.7x	7.3x
MicroStrategy	NasdaqGS:MSTR	\$788	\$1,483	1.6x	1.5x	13.2x	16.1x
MongoDB	NasdaqGM:MDB	\$2,107	\$2,386	13.4x	9.8x	NM	NM
NantHealth	NasdaqGS:NH	\$522	\$371	5.7x	4.9x	NM	NM
New Relic	NYSE:NEWR	\$5,439	\$5,687	15.0x	11.9x	NM	NM
Open Text	NasdaqGS:OTEX	\$11,390	\$9,327	4.2x	4.0x	14.9x	10.8x
PROS Holdings	NYSE:PRO	\$1,220	\$1,152	7.0x	6.2x	NM	NM
Sabre	NasdaqGS:SABR	\$9,846	\$6,754	2.7x	2.6x	13.7x	8.9x
Splunk	NasdaqGS:SPLK	\$15,116	\$16,066	11.2x	8.8x	NM	55.5x
Tableau	NYSE:DATA	\$7,197	\$8,062	7.8x	7.1x	NM	NM
TrueCar	NasdaqGS:TRUE	\$824	\$990	2.5x	2.2x	NM	20.1x
Varonis Systems	NasdaqGS:VRNS	\$2,079	\$2,233	8.9x	7.5x	NM	NM
Workiva	NYSE:WK	\$1,049	\$1,111	4.9x	4.3x	NM	NM
Yext	NYSE:YEXT	\$1,362	\$1,480	7.9x	6.0x	NM	NM
Median				5.7x	4.9x	14.8x	15.8x



Public market valuations

Application Software (continued)

(\$ in millions)		TEV	Market Cap	TEV/Revenue		TEV/EBITDA	
				LTM	NTM	LTM	NTM
Design & Engineering Software							
Ansys	NasdaqGS:ANSS	\$12,788	\$13,678	11.4x	10.1x	27.9x	22.6x
Altair Engineering	NasdaqGS:ALTR	\$2,190	\$2,252	6.3x	5.8x	NM	62.1x
Autodesk	NasdaqGS:ADSK	\$28,581	\$28,287	13.4x	10.8x	NM	59.1x
Aveva Group	LSE:AVV	\$5,058	\$5,086	8.8x	8.1x	64.0x	33.3x
Cadence Design Systems	NasdaqGS:CDNS	\$11,904	\$11,967	6.0x	5.7x	26.1x	17.7x
Hexagon	OM:HEXA B	\$22,503	\$20,262	5.5x	5.2x	18.4x	15.7x
Pivotal Software	NYSE:PVTL	\$5,799	\$4,603	11.6x	9.3x	NM	NM
Progress Software	NasdaqGS:PRGS	\$1,675	\$1,722	4.2x	4.1x	11.6x	8.6x
RIB Software AG	DB:RIB	\$812	\$1,130	5.8x	5.7x	22.3x	17.1x
Synopsys	NasdaqGS:SNPS	\$13,081	\$13,123	4.4x	4.2x	24.6x	17.1x
Twilio	NYSE:TWLO	\$4,861	\$5,169	11.0x	8.5x	NM	NM
Median				6.3x	5.8x	24.6x	17.7x



Public market valuations



EMS / Infrastructure Software

(\$ in millions)		TEV	Market Cap	TEV/Revenue		TEV/EBITDA	
				LTM	NTM	LTM	NTM
Security Software							
Carbon Black	NasdaqGS:CBLK	\$1,847	\$1,548	11.6x	9.1x	NM	NM
Check Point Software	NasdaqGS:CHKP	\$13,973	\$15,484	7.4x	7.3x	14.8x	13.9x
Cheetah Mobile	NYSE:CMCM	\$1,447	\$1,841	2.0x	1.8x	12.5x	15.0x
Cyber-Ark Software	NasdaqGS:CYBR	\$1,869	\$2,194	6.8x	5.7x	68.2x	26.8x
Everbridge	NasdaqGM:EVBG	\$1,263	\$1,325	11.3x	8.5x	NM	NM
FireEye	NasdaqGS:FEYE	\$3,050	\$3,147	4.0x	3.6x	NM	25.3x
ForeScout	NasdaqGM:FSCT	\$1,007	\$1,209	4.2x	3.5x	NM	NM
Fortinet	NasdaqGS:FTNT	\$8,980	\$10,284	5.8x	5.0x	46.4x	20.9x
Gemalto	ENXTAM:GTO	\$6,068	\$5,266	1.8x	1.7x	14.7x	10.5x
Imperva	NasdaqGS:IMPV	\$1,304	\$1,683	4.0x	3.4x	NM	17.6x
Link Motion	NYSE:LKM	\$12	\$121	0.1x	NA	NM	NA
Mimecast	NasdaqGS:MIME	\$2,565	\$2,629	9.8x	7.7x	NM	51.3x
MobileIron	NasdaqGS:MOBL	\$333	\$433	1.9x	1.7x	NM	NM
Okta	NasdaqGS:OKTA	\$5,756	\$5,986	21.8x	16.6x	NM	NM
Palo Alto Networks	NYSE:PANW	\$18,014	\$19,113	9.1x	7.4x	NM	28.5x
Proofpoint	NasdaqGM:PFPT	\$6,028	\$5,944	10.9x	8.1x	NM	63.0x
Qualys	NasdaqGS:QLYS	\$2,671	\$2,999	11.2x	9.2x	43.9x	25.0x
Rapid7	NasdaqGM:RPD	\$1,335	\$1,464	6.3x	5.5x	NM	NM
SecureWorks	NasdaqGS:SCWX	\$747	\$849	1.6x	1.5x	NM	NM
Symantec	NasdaqGS:SYMC	\$15,780	\$12,916	3.3x	3.3x	13.2x	7.5x
Trend Micro	TSE:4704	\$6,502	\$7,821	4.7x	4.3x	13.4x	13.3x
VASCO	NasdaqCM:VDSI	\$698	\$864	3.6x	3.2x	55.0x	39.8x
Zix	NasdaqGS:ZIXI	\$264	\$293	4.1x	3.7x	19.0x	12.4x
Zscaler	NasdaqGS:ZS	\$3,216	\$3,081	20.3x	15.8x	NM	NM
Median				5.2x	5.0x	16.9x	20.9x
System and Network Management Software							
A10 Networks	NYSE:ATEN	\$331	\$455	1.4x	1.4x	NM	31.5x
CA	NasdaqGS:CA	\$14,405	\$14,890	3.4x	3.4x	10.9x	8.8x
CommVault Systems	NasdaqGS:CVLT	\$2,646	\$3,109	3.8x	3.5x	NM	24.1x
Micro Focus	LSE:MCRO	\$11,888	\$7,729	6.1x	NA	16.5x	NA
Netscout Systems	NasdaqGS:NTCT	\$2,320	\$2,167	2.4x	2.3x	15.1x	11.0x
Nutanix	NasdaqGS:NTNX	\$8,281	\$8,782	8.2x	6.5x	NM	NM
One Stop Systems	NasdaqCM:OSS	\$50	\$59	1.8x	1.2x	NM	NM
Presidio	NasdaqGS:PSDO	\$2,100	\$1,240	0.7x	0.7x	9.7x	9.4x
SailPoint	NYSE:SAIL	\$2,213	\$2,275	10.6x	9.4x	NM	NM
ServiceNow	NYSE:NOW	\$30,648	\$31,379	14.7x	11.1x	NM	42.3x
Software	XTRA:SOW	\$3,384	\$3,526	3.4x	3.3x	11.3x	10.6x
Vmware	NYSE:VMW	\$48,300	\$55,719	6.1x	5.5x	22.0x	15.3x
Median				3.6x	3.4x	13.2x	13.2x



Public market valuations

EMS / Infrastructure Software (continued)



(\$ in millions)

Platform / OS	TEV	Market Cap	TEV/Revenue		TEV/EBITDA	
			LTM	NTM	LTM	NTM
Citrix Systems	\$14,987	\$14,314	5.3x	5.1x	17.5x	15.2x
Hewlett-Packard	\$38,023	\$36,159	0.7x	0.7x	8.2x	8.0x
IBM	\$163,465	\$129,718	2.1x	2.0x	9.8x	8.5x
Microsoft Corp.	\$715,755	\$759,407	7.2x	6.1x	20.4x	14.5x
Red Hat	\$27,587	\$28,858	9.6x	8.0x	48.3x	29.8x
Median			5.3x	5.1x	17.5x	14.5x



Public market valuations



Financial Solutions

(\$ in millions)		TEV	Market Cap	TEV/Revenue		TEV/EBITDA	
				LTM	NTM	LTM	NTM
Banking Solutions							
Black Knight	NYSE:BKI	\$9,053	\$7,560	8.5x	7.9x	23.8x	16.4x
Bottomline Technologies	NasdaqGS:EPAY	\$1,989	\$1,942	5.3x	4.8x	43.7x	20.4x
Fidelity National	NYSE:FIS	\$42,303	\$33,836	4.7x	4.9x	16.6x	13.3x
Fiserv	NasdaqGS:FISV	\$33,947	\$29,725	5.9x	5.8x	18.5x	15.6x
Jack Henry & Associates	NasdaqGS:JKHY	\$9,714	\$9,666	6.4x	6.1x	20.7x	17.7x
Q2 Holdings	NYSE:QTWO	\$2,308	\$2,427	11.4x	9.2x	NM	92.3x
Temenos Group	SWX:TEMN	\$10,487	\$10,240	14.1x	12.0x	51.0x	33.1x
Median				6.4x	6.1x	22.2x	17.7x
Capital Market & Investment Solutions							
Envestnet	NYSE:ENV	\$2,771	\$2,392	3.9x	3.3x	33.1x	17.4x
FactSet Research Systems	NYSE:FDS	\$8,124	\$7,814	6.3x	5.8x	19.0x	17.0x
Fidessa Group	LSE:FDSA	\$1,850	\$1,972	3.9x	4.0x	21.0x	18.3x
IRESS	ASX:IRE	\$1,464	\$1,340	4.5x	4.2x	19.8x	15.2x
Moody's	NYSE:MCO	\$37,082	\$32,732	8.6x	7.8x	18.0x	16.1x
Morningstar	NasdaqGS:MORN	\$4,897	\$5,103	5.2x	NA	19.4x	NA
MSCI	NYSE:MSCI	\$15,702	\$14,473	11.8x	10.7x	22.6x	19.3x
SimCorp	CPSE:SIM	\$3,185	\$3,182	7.6x	7.0x	26.0x	24.6x
SS&C Technologies Holdings	NasdaqGS:SSNC	\$14,034	\$12,121	8.2x	3.5x	22.3x	11.3x
Thomson Reuters	TSX:TRI	\$34,878	\$27,586	3.1x	6.2x	13.9x	27.8x
Median				5.7x	5.8x	20.4x	17.4x
Consumer Data & Analytics							
Equifax	NYSE:EFX	\$16,149	\$13,708	4.8x	4.6x	15.4x	13.4x
Experian	LSE:EXPN	\$25,408	\$22,177	5.8x	5.1x	16.6x	14.6x
Fair Isaac	NYSE:FICO	\$6,088	\$5,492	6.2x	5.7x	27.3x	22.4x
Median				5.8x	5.1x	16.6x	14.6x



Public market valuations



Financial Solutions (continued)

(\$ in millions)		TEV	Market Cap	TEV/Revenue		TEV/EBITDA	
				LTM	NTM	LTM	NTM
Payment Processing							
ACI Worldwide	NasdaqGS:ACIW	\$3,420	\$2,812	3.4x	3.3x	21.7x	12.6x
Cielo	BOVESPA:CIEL3	\$14,067	\$12,279	4.6x	4.4x	10.5x	9.7x
Euronet Worldwide	NasdaqGS:EEFT	\$4,049	\$4,298	1.7x	1.6x	10.0x	8.3x
EVO Payments	NasdaqGM:EVOP	\$1,166	\$325	2.2x	NA	9.5x	NA
First Data Corporation	NYSE:FDC	\$39,002	\$17,651	4.7x	4.4x	12.4x	11.5x
Global Payments	NYSE:GPN	\$21,647	\$17,735	5.6x	5.4x	18.6x	15.1x
Net 1 Ueps Technologies	NasdaqGS:UEPS	\$551	\$555	0.9x	NA	3.9x	NA
PagSeguro Digital	NYSE:PAGS	\$9,718	\$10,481	15.0x	8.9x	NM	21.9x
Square	NYSE:SQ	\$22,765	\$23,340	9.3x	14.8x	NM	77.8x
Total System Services	NYSE:TSS	\$19,306	\$15,531	4.1x	5.0x	18.3x	14.0x
Median				4.3x	4.7x	11.4x	13.3x
Insurance Solutions							
CorVel	NasdaqGS:CRVL	\$898	\$953	1.8x	NA	13.0x	NA
Ebix	NasdaqGS:EBIX	\$2,693	\$2,347	6.9x	5.9x	20.4x	15.5x
Guidewire Software	NYSE:GWRE	\$6,914	\$7,419	12.0x	10.0x	NM	55.2x
Sapiens International	NasdaqCM:SPNS	\$480	\$462	1.7x	1.7x	16.2x	11.4x
Verisk	NasdaqGS:VRSK	\$20,186	\$17,557	9.1x	8.3x	20.0x	17.4x
Median				6.9x	7.1x	18.1x	16.5x



Public market valuations



Online & Digital

(\$ in millions)		TEV	Market Cap	TEV/Revenue		TEV/EBITDA	
				LTM	NTM	LTM	NTM
Digital Advertising & Marketing							
Baidu	NasdaqGS: BIDU	\$77,301	\$84,588	5.4x	4.6x	16.1x	17.2x
Criteo	NasdaqGS: CRTO	\$1,141	\$1,602	0.5x	1.1x	4.6x	3.7x
comScore	OTCPK: SCOR	\$1,406	\$1,341	3.5x	3.4x	NM	NM
Google	NasdaqGS: GOOGL	\$661,183	\$758,766	5.5x	4.6x	18.0x	12.5x
Hubspot	NYSE: HUBS	\$4,429	\$4,655	10.8x	8.5x	NM	89.1x
iClick Interactive	NasdaqGM: ICLK	\$358	\$385	2.6x	1.9x	NM	36.7x
Marin Software	NYSE: MRIN	\$14	\$34	0.2x	NA	NM	NA
Perion Network	NasdaqGS: PERI	\$103	\$95	0.4x	NA	4.9x	NA
QuinStreet	NasdaqGS: QNST	\$599	\$646	1.6x	1.3x	35.9x	15.8x
SendGrid	NYSE: SEND	\$1,023	\$1,175	8.7x	6.9x	NM	60.3x
SINA Corp	NasdaqGS: SINA	\$5,008	\$6,491	2.8x	2.0x	11.6x	6.6x
Sogou	NYSE: SOGO	\$2,610	\$3,687	2.6x	1.9x	17.5x	12.6x
Telaria	NYSE: TLRA	\$141	\$213	2.9x	2.3x	NM	19.0x
The Rubicon Project	NYSE: RUBI	-\$2	\$117	NM	0.0x	NM	0.1x
Yandex	NasdaqGS: YNDX	\$10,170	\$10,946	5.8x	4.8x	25.2x	16.4x
Median				2.9x	2.3x	16.8x	16.1x
Digital Media & Video							
Adobe Systems	NasdaqGS: ADBE	\$118,498	\$122,763	15.3x	12.9x	43.5x	27.8x
Bilibili	NasdaqGS: BILI	\$4,966	\$4,520	11.0x	6.4x	NM	39.7x
Blucora	NasdaqGS: BCOR	\$2,023	\$1,783	3.8x	3.5x	21.1x	17.4x
Brightcove	NasdaqGS: BCOV	\$336	\$362	2.1x	2.0x	NM	84.2x
Digimarc	NasdaqGS: DMRC	\$267	\$330	10.8x	10.5x	NM	NM
IAC/Interactive	NasdaqGS: IAC	\$13,950	\$12,983	3.9x	3.3x	34.5x	13.6x
iQIYI	NasdaqGS: IQ	\$21,654	\$18,038	7.3x	5.3x	22.4x	14.9x
Leaf Group	NYSE: LFGR	\$184	\$230	1.4x	1.2x	NM	NM
Netflix	NasdaqGS: NFLX	\$156,787	\$152,838	12.4x	9.2x	NM	68.4x
Pandora Media	NYSE: P	\$2,086	\$1,853	1.4x	1.3x	NM	NM
Pluralsight	NasdaqGS: PS	\$1,890	\$1,354	10.7x	NA	NM	NA
RhythmOne	AIM: RTHM	\$180	\$219	0.9x	0.5x	NM	5.2x
Roku	NasdaqGS: ROKU	\$3,645	\$3,805	6.8x	4.9x	NM	NM
Sonic Foundry	NasdaqCM: SOFO	\$16	\$11	0.4x	NA	NM	NA
TiVo	NasdaqGS: TIVO	\$2,471	\$1,770	3.0x	3.2x	11.9x	11.0x
VeriSign	NasdaqGS: VRSN	\$16,113	\$16,055	13.7x	13.2x	21.0x	18.4x
Xunlei	NasdaqGS: XNET	\$469	\$827	1.9x	NA	NM	NA
Median				3.9x	4.2x	21.7x	17.9x



Public market valuations



Online & Digital (continued)

(\$ in millions)		TEV	Market Cap	TEV/Revenue		TEV/EBITDA	
				LTM	NTM	LTM	NTM
Digital Advertising Agencies & Service Providers							
Dentsu	TSE:4324	\$16,064	\$13,479	1.9x	1.7x	9.9x	9.7x
IPG	NYSE:IPG	\$10,484	\$8,713	1.3x	1.2x	9.2x	8.2x
M&C Saatchi	AIM:SAA	\$428	\$430	1.3x	1.2x	17.0x	9.7x
MDC Partners	NasdaqGS:MDCA	\$1,358	\$248	0.9x	0.9x	8.5x	6.2x
Omnicom	NYSE:OMC	\$19,536	\$16,383	1.3x	1.2x	8.3x	7.7x
Publicis	ENXTPA:PUB	\$16,582	\$15,704	1.5x	1.5x	8.1x	8.3x
WPP	LSE:WPP	\$27,270	\$20,689	1.3x	1.3x	8.3x	8.2x
Median				1.3x	1.2x	8.5x	8.2x
Online Retail & Marketplaces							
1-800-Flowers.com	NasdaqGS:FLWS	\$745	\$814	0.6x	0.6x	10.1x	8.4x
Alibaba	NYSE:BABA	\$506,544	\$508,782	12.7x	8.2x	48.9x	23.3x
Amazon	NasdaqGS:AMZN	\$810,259	\$790,735	4.2x	3.3x	47.0x	25.0x
ASOS	AIM:ASC	\$7,280	\$7,330	2.5x	2.0x	55.2x	29.1x
Blue Apron	NYSE:APRN	\$579	\$589	0.7x	0.7x	NM	NM
boohoo.com	AIM:BOO	\$2,950	\$3,115	3.8x	2.7x	43.4x	29.8x
Booking Holdings	NasdaqGS:BKNG	\$103,719	\$101,597	7.8x	6.9x	20.3x	18.0x
CarGurus	NasdaqGS:CARG	\$3,437	\$3,579	10.0x	7.9x	NM	96.2x
Carvana	NYSE:CVNA	\$1,423	\$918	1.3x	0.7x	NM	NM
Ebay	NasdaqGS:EBAY	\$41,943	\$37,493	4.3x	3.7x	14.0x	11.2x
Expedia	NasdaqGS:EXPE	\$19,624	\$18,172	1.8x	1.7x	18.2x	10.3x
Groupon	NasdaqGS:GRPN	\$2,222	\$2,716	0.8x	0.8x	18.5x	7.5x
Grubhub	NYSE:GRUB	\$9,533	\$9,673	12.6x	9.3x	61.2x	34.7x
Ocado Group	LSE:OCDO	\$8,290	\$7,987	4.3x	3.9x	86.2x	69.3x
Overstock	NasdaqGM:OSTK	\$823	\$966	0.5x	0.4x	NM	NM
Quotient Technology	NYSE:QUOT	\$1,031	\$1,264	3.1x	2.6x	67.1x	13.6x
Rakuten	TSE:4755	\$13,098	\$9,065	1.5x	1.3x	9.9x	7.8x
RumbleON	NasdaqCM:RMBL	\$57	\$60	3.7x	0.6x	NM	NM
Shutterstock	NYSE:SSTK	\$1,367	\$1,652	2.3x	2.1x	30.6x	12.9x
Stamps.com	NasdaqGS:STMP	\$4,383	\$4,495	8.9x	7.7x	22.0x	16.4x
The Trade Desk	NasdaqGM:TTD	\$3,464	\$3,603	10.0x	7.5x	41.8x	24.9x
TripAdvisor	NasdaqGS:TRIP	\$6,521	\$7,164	4.1x	3.9x	39.0x	18.1x
Wayfair	NYSE:W	\$8,063	\$8,225	1.6x	1.2x	NM	NM
Wowo	NASDAQ:JMU	\$51	\$44	0.5x	NA	NM	NA
Median				3.4x	2.6x	39.0x	18.1x



Public market valuations



Online & Digital (continued)

(\$ in millions)		TEV	Market Cap	TEV/Revenue		TEV/EBITDA	
				LTM	NTM	LTM	NTM
Digital Gaming							
Activision	NasdaqGS:ATVI	\$53,077	\$53,977	7.3x	7.0x	23.5x	17.4x
Capcom	TSE:9697	\$2,245	\$2,576	2.6x	2.6x	11.8x	9.8x
Changyou.com	NasdaqGS:CYOU	-\$88	\$962	NM	-0.2x	NM	NM
Electronic Arts	NasdaqGS:EA	\$35,828	\$40,167	7.0x	6.4x	22.8x	17.7x
Gree	TSE:3632	\$547	\$1,336	0.8x	0.7x	4.6x	4.9x
Konami	TSE:9766	\$5,306	\$6,354	2.4x	2.2x	9.4x	8.6x
NetDragon WebSoft	SEHK:777	\$1,201	\$1,396	2.0x	1.6x	44.1x	21.3x
Net Entertainment	OM:NET B	\$1,291	\$1,355	6.9x	6.1x	17.0x	13.1x
Nintendo	TSE:7974	\$40,662	\$49,705	4.2x	3.2x	22.5x	14.1x
Playtech	LSE:PTEC	\$3,160	\$3,270	3.3x	3.2x	10.4x	8.0x
Square Enix	TSE:9684	\$4,749	\$5,923	2.1x	1.9x	11.7x	10.2x
Take-Two Interactive	NasdaqGS:TTWO	\$11,403	\$12,820	6.3x	4.2x	51.1x	16.1x
Ubisoft	ENXTPA:UBI	\$11,653	\$11,014	5.8x	4.8x	12.4x	11.0x
Zynga	NasdaqGS:ZNGA	\$3,139	\$3,774	3.5x	3.2x	37.5x	15.9x
Median				3.5x	3.2x	17.0x	13.1x
Social Media							
Facebook	NasdaqGS:FB	\$511,176	\$555,132	11.2x	8.5x	19.9x	13.9x
LINE	TSE:3938	\$7,744	\$8,644	4.8x	4.0x	73.6x	30.3x
Mail.ru Group	LSE:MAIL	\$5,841	\$6,065	6.0x	4.8x	38.4x	14.9x
Match Group	NasdaqGS: MTCH	\$12,394	\$11,422	8.7x	7.1x	28.0x	18.6x
MeetMe	NasdaqCM:MEET	\$289	\$265	1.9x	1.9x	12.8x	12.3x
Mixi	TSE:2121	\$1,017	\$2,453	0.6x	0.6x	1.4x	1.6x
Momo	NasdaqGS:MOMO	\$8,455	\$9,355	5.3x	4.1x	19.3x	21.6x
Renren	NYSE:RENN	\$680	\$606	3.3x	1.3x	NM	NM
Snap	NYSE:SNAP	\$12,525	\$14,331	13.2x	9.9x	NM	NM
Twitter	NYSE:TWTR	\$23,302	\$26,022	9.0x	7.8x	50.2x	20.2x
XING	XTRA:O1BC	\$1,716	\$1,763	7.5x	6.2x	29.6x	18.9x
Yelp	NYSE:YELP	\$2,770	\$3,585	3.2x	2.8x	70.5x	14.0x
Median				5.7x	4.4x	28.8x	16.7x



Public market valuations



Online & Digital (continued)

(\$ in millions)		TEV	Market Cap	TEV/Revenue		TEV/EBITDA	
				LTM	NTM	LTM	NTM
Digital Commerce Solutions							
Gk Software AG	DB:GKS	\$244	\$241	2.3x	2.0x	35.4x	12.7x
Intershop	XTRA:ISH2	\$64	\$70	1.6x	1.5x	NM	21.6x
NCR	NYSE:NCR	\$7,126	\$3,561	1.1x	1.1x	7.8x	6.3x
PFS Web	NasdaqCM:PFSW	\$231	\$205	0.8x	0.7x	12.4x	8.7x
Shopify	NYSE:SHOP	\$14,073	\$15,653	18.2x	12.9x	NM	NM
Wincor Nixdorf	XTRA:WIN	\$2,224	\$2,058	0.8x	0.8x	7.6x	9.5x
Worldline S.A	ENXTPA:WLN	\$7,502	\$7,659	4.0x	3.7x	21.4x	16.2x
Median				1.6x	1.5x	12.4x	11.1x
Other Digital Companies							
Akamai	NasdaqGS:AKAM	\$12,719	\$12,862	5.0x	4.6x	19.7x	11.8x
Box	NYSE:BOX	\$3,468	\$3,595	7.4x	5.4x	NM	NM
Endurance International	NasdaqGS:EIGI	\$3,072	\$1,277	2.6x	2.7x	10.4x	9.7x
GoDaddy	NYSE:GDDY	\$13,214	\$11,227	5.6x	4.9x	39.0x	17.4x
Just Eat	LSE:JE	\$7,277	\$7,618	10.0x	7.7x	35.5x	29.8x
Limelight Networks	NasdaqGS:LLNW	\$499	\$542	2.7x	2.4x	22.7x	13.7x
Moneysupermarket.com	LSE:MONY	\$2,211	\$2,258	5.0x	4.8x	14.5x	13.1x
NetEase	NasdaqGS:NTES	\$24,751	\$29,985	2.8x	2.2x	16.2x	13.1x
Otello Corporation	OB:OTELLO	\$279	\$365	0.6x	0.8x	NM	9.6x
Phoenix New Media	NYSE:FENG	\$308	\$399	1.2x	1.2x	54.1x	23.6x
Redfin Corporation	NasdaqGS:RDFN	\$1,643	\$1,833	4.3x	3.3x	NM	NM
Sea	NYSE:SE	\$4,533	\$4,954	9.4x	5.0x	NM	NM
Tencent Holdings	SEHK:700	\$486,139	\$480,048	11.6x	8.5x	28.5x	22.7x
United Internet	DB:UTDI	\$15,056	\$12,819	2.8x	2.5x	13.0x	10.4x
Web.com	NasdaqGS:WEB	\$1,487	\$847	2.0x	2.0x	10.2x	7.8x
Wix	NasdaqGS:WIX	\$3,813	\$4,077	7.9x	6.0x	NM	29.4x
Zillow	NasdaqGS:ZG	\$10,839	\$11,272	9.5x	6.5x	NM	36.8x
Zoopla Property Group	LSE:ZPG	\$3,248	\$2,827	8.6x	7.6x	24.8x	19.2x
Median				5.0x	4.7x	21.2x	13.7x



Public market valuations



Tech Enabled Business Services

(\$ in millions)		TEV	Market Cap	TEV/Revenue		TEV/EBITDA	
				LTM	NTM	LTM	NTM
IT Services, Integration & Consulting							
Accenture	NYSE:ACN	\$97,340	\$100,154	2.6x	2.4x	16.1x	14.1x
Atos Origin	ENXTPA:ATO	\$14,540	\$14,241	1.0x	1.0x	7.8x	6.9x
Bechtle	XTRA:BC8	\$3,653	\$3,690	0.8x	0.8x	16.1x	13.5x
CACI International	NYSE:CACI	\$5,143	\$4,116	1.2x	1.1x	12.5x	13.2x
Cancom	XTRA:COK	\$1,883	\$1,986	1.3x	1.2x	19.4x	15.1x
Cap Gemini	ENXTPA:CAP	\$23,634	\$22,008	1.6x	1.5x	12.5x	10.9x
CGI Group	TSX:GIB.A	\$18,476	\$17,270	2.1x	2.0x	12.9x	11.1x
CLPS Incorporation	NasdaqCM:CLPS	\$65	\$68	NM	NA	NA	NA
Cognizant Technology	NasdaqGS:CTSH	\$40,090	\$44,147	2.7x	2.4x	12.7x	11.3x
ComputaCenter	LSE:CCC	\$1,720	\$1,974	0.3x	0.3x	10.6x	9.6x
DXC Technology	NYSE:DXC	\$32,313	\$26,232	1.3x	1.5x	6.4x	7.0x
ePlus	NasdaqGS:PLUS	\$1,292	\$1,246	0.9x	0.9x	12.7x	11.8x
FDM Group	LSE:FDM	\$1,417	\$1,466	4.6x	4.4x	23.7x	20.6x
Fujitsu	TSE:6702	\$13,141	\$12,530	0.3x	0.4x	3.9x	4.4x
HCL Technologies	NSEI:HCLTECH	\$17,410	\$18,793	2.3x	2.1x	10.2x	9.0x
Infosys	NSEI:INFY	\$35,809	\$39,690	3.4x	3.1x	12.6x	11.9x
Luxoft Holdings	NYSE:LXFT	\$1,121	\$1,224	1.2x	1.2x	11.5x	9.2x
ManTech International	NasdaqGS:MANT	\$2,187	\$2,132	1.2x	1.1x	15.6x	13.4x
MAXIMUS	NYSE:MMS	\$3,724	\$3,973	1.5x	1.5x	10.2x	9.9x
NCC Group	LSE:NCC	\$843	\$784	2.5x	2.5x	20.4x	14.5x
Nomura Research Institute	TSE:4307	\$11,367	\$11,992	2.6x	2.4x	12.7x	12.0x
NSD	TSE:9759	\$720	\$918	1.3x	1.3x	9.2x	8.7x
OBIC	TSE:4684	\$6,698	\$7,705	10.9x	10.2x	19.9x	20.2x
Perficient	NasdaqGS:PRFT	\$966	\$915	2.0x	1.9x	17.3x	13.9x
SCSK Corporation	TSE:9719	\$4,365	\$4,773	1.4x	1.4x	10.5x	9.7x
Sopra Group	ENXTPA:SOP	\$4,716	\$4,084	1.1x	1.0x	11.9x	10.1x
Syntel	NasdaqGS:SYNT	\$2,813	\$2,613	3.0x	3.0x	10.8x	12.0x
Talend	NasdaqGM:TLND	\$1,588	\$1,682	9.8x	7.3x	NM	NM
Tata Consultancy Services	NSEI:TCS	\$92,434	\$98,825	5.1x	4.5x	19.2x	17.0x
The Hackett Group	NasdaqGS:HCKT	\$469	\$473	1.8x	1.6x	11.3x	9.1x
Tieto	HLSE:Tieto	\$2,686	\$2,565	1.5x	1.4x	10.4x	10.4x
Unisys	NYSE:UIS	\$635	\$614	0.2x	0.2x	2.6x	1.9x
Virtusa	NasdaqGS:VRTU	\$1,624	\$1,441	1.6x	1.3x	22.0x	14.6x
Wipro	BSE:507685	\$15,203	\$17,476	1.9x	1.8x	9.4x	9.0x
Xerox	NYSE:XRX	\$11,485	\$6,922	1.1x	1.2x	8.0x	6.2x
Median				1.5x	1.5x	12.5x	11.1x



Public market valuations



Tech Enabled Business Services (continued)

(\$ in millions)		TEV	Market Cap	TEV/Revenue		TEV/EBITDA	
				LTM	NTM	LTM	NTM
Business Process Management (BPM)							
Appian	APPN	\$1,893	\$1,954	9.8x	9.1x	NM	NM
Broadridge Financial Solutions	NYSE:BR	\$14,465	\$13,614	3.3x	3.3x	17.7x	17.3x
Cardtronics	NasdaqGS:CATM	\$2,044	\$1,178	1.4x	1.6x	6.2x	7.8x
Cass Information Systems	NasdaqGS:CASS	\$564	\$764	4.1x	NA	11.1x	NA
Computershare	ASX:CPU	\$8,215	\$7,120	3.8x	3.5x	15.4x	12.5x
CSG Systems International	NasdaqGS:CSGS	\$1,533	\$1,392	1.9x	1.8x	11.0x	7.8x
DocuSign	NasdaqGS:DOCU	\$8,029	\$7,739	15.5x	12.8x	NM	NM
EVERTEC	NYSE:EVTC	\$2,129	\$1,579	5.2x	4.8x	14.9x	11.0x
Exlservice Holdings	NasdaqGS:EXLS	\$1,779	\$1,950	2.3x	2.1x	15.7x	11.4x
Genpact	NYSE:G	\$6,601	\$5,717	2.4x	2.2x	15.8x	12.1x
Smartsheet	NYSE:SMAR	\$2,570	\$2,508	21.2x	16.6x	NM	NM
SS&C Technologies	NasdaqGS:SSNC	\$14,034	\$12,121	8.2x	3.5x	22.3x	11.3x
Tabula Rasa Healthcare	NasdaqGM:TRHC	\$1,089	\$1,091	7.2x	5.4x	NM	33.0x
Trans Cosmos	TSE:9715	\$862	\$986	0.4x	0.3x	17.9x	8.6x
WEX	NYSE:WEX	\$9,644	\$7,574	7.4x	6.4x	21.0x	15.3x
Wirecard	XTRA:WDI	\$17,870	\$19,038	9.1x	7.2x	36.1x	25.1x
WNS	NYSE:WNS	\$2,448	\$2,579	3.2x	3.0x	22.3x	15.1x
Worldpay	NYSE:WP	\$32,056	\$23,636	8.1x	8.0x	32.0x	16.7x
Zuora	NYSE:ZUO	\$2,300	\$2,332	13.5x	10.2x	NM	NM
Median				5.2x	4.2x	16.8x	12.3x
Data Center Hosting & Services							
Dropbox	NasdaqGS:DBX	\$11,332	\$12,008	9.8x	8.0x	NM	37.3x
Equinix	NasdaqGS:EQIX	\$40,613	\$31,533	8.8x	7.7x	19.8x	16.3x
Interxion Holding	NYSE:INXN	\$5,617	\$4,562	9.0x	8.3x	21.0x	18.0x
Pure Storage	NYSE:PSTG	\$4,259	\$4,927	3.9x	3.0x	NM	32.8x
Switch	NYSE:SWCH	\$1,635	\$618	4.2x	3.6x	9.7x	7.2x
Tintri	NasdaqGM:TNTR	\$51	\$15	0.4x	0.5x	NM	NM
Median				6.5x	5.7x	19.8x	18.0x
Call Center							
Convergys	NYSE:CVG	\$2,244	\$2,163	0.8x	0.9x	6.6x	6.8x
Sykes Enterprises	NasdaqGS:SYKE	\$1,109	\$1,181	0.7x	0.7x	6.8x	6.1x
TeleTech Holdings	NasdaqGS:TTEC	\$1,852	\$1,624	1.3x	1.2x	9.8x	8.5x
Median				0.8x	0.9x	6.8x	6.8x





 M&A
transactions



M&A transactions



Application Software

Date Announced	Period	Target	Buyer	Enterprise Value	Revenue Multiple
May-18	Q2'2018	A2iA	Mitek Systems (NasdaqCM:MTK)	\$49.7	3.3x
May-18	Q2'2018	Ulukom Bilgisayar Yazilim Donanim Danismanlik ve Ticaret	Wisetech Global (ASX:WTC)	\$5.6	4.0x
May-18	Q2'2018	True North Consulting	GSE Systems (NasdaqCM:GVP)	\$9.8	0.9x
May-18	Q2'2018	Unicommerce eSolutions	Infibeam (BSE:539807)	\$17.9	5.9x
Apr-18	Q2'2018	Metrologic Group	Sandvik Machining Solutions	\$435.8	8.3x
Apr-18	Q2'2018	Beijing Unibeacon Testing Technology	Beijing Watertek Information Technology (SZSE:300324)	\$8.7	6.6x
Apr-18	Q2'2018	PeopleFluent	Learning Technologies Group (AIM:LTG)	\$150.0	1.4x
Apr-18	Q2'2018	Desarrollo de Productos Informáticos	CAD IT (BIT:CAD)	\$5.9	1.4x
Apr-18	Q2'2018	PB & Asoc. and Softcargo and EasyLog	Wisetech Global (ASX:WTC)	\$19.0	3.7x
Apr-18	Q2'2018	Viewpoint	Trimble (NasdaqGS:TRMB)	\$1,200.0	0.5x
Apr-18	Q2'2018	Fidessa Group (LSE:FDSA)	Ion Investment Group	\$2,021.8	4.1x
Apr-18	Q2'2018	Socrata	Tyler Technologies (NYSE:TYL)	\$150.0	6.0x
Apr-18	Q2'2018	Actian	HCL Technologies (NSEI:HCLTECH); Sumeru Equity Partners	\$330.0	3.1x
Apr-18	Q2'2018	Priori Data	appScatter Group (AIM:APPS)	\$19.9	15.4x
Mar-18	Q1'2018	FreeAgent Holdings (AIM:FREE)	National Westminster Bank	\$66.1	5.2x
Mar-18	Q1'2018	Shanghai Chengqi Information Technology	Shanghai Yaoji Playing Card (SZSE:002605)	\$198.1	9.2x
Mar-18	Q1'2018	Itecgyn Informática	Linx Sistemas E Consultoria	\$7.8	2.4x
Mar-18	Q1'2018	MuleSoft	Salesforce.com (NYSE:CRM)	\$6,607.4	22.3x
Mar-18	Q1'2018	LSP Solutions	Wisetech Global (ASX:WTC)	\$6.2	2.5x
Mar-18	Q1'2018	Booker Software	MINDBODY (NasdaqGM:MB)	\$150.0	6.0x
Mar-18	Q1'2018	Tecnotree (HLSE:TEM1V)	-	\$41.8	0.6x
Mar-18	Q1'2018	United Luck Group Holdings	Zhejiang Jinke Culture Industry (SZSE:300459)	\$156.5	2.0x
Feb-18	Q1'2018	Pivot Software	Elmo Software (ASX:ELO)	\$8.8	2.5x
Feb-18	Q1'2018	Openwave Mobility	Enea (publ) (OM:ENEA)	\$90.0	3.3x
Feb-18	Q1'2018	RealDolmen (ENXTBR:REA)	GFI Informatique (ENXTPA:GFI)	\$203.1	0.7x
Feb-18	Q1'2018	CAD IT (BIT:CAD)	Quarantacinqe	\$41.6	0.5x
Feb-18	Q1'2018	WebDAM	Bynder	\$49.1	3.0x
Feb-18	Q1'2018	Xively	Google	\$50.0	16.7x
Feb-18	Q1'2018	Unified Messaging Systems	Everbridge Holdings	\$33.3	2.5x



M&A transactions



Application Software (continued)

Date Announced	Period	Target	Buyer	Enterprise Value	Revenue Multiple
Feb-18	Q1'2018	Fraedom Holdings	Visa (NYSE:V)	\$195.7	4.3x
Feb-18	Q1'2018	Tryumph21	As One (TSE:7476)	\$26.4	0.2x
Feb-18	Q1'2018	Escher Group Holdings	Hanover Investors Management	\$49.1	2.7x
Feb-18	Q1'2018	LiquidHub	Capgemini (ENXTPA:CAP)	\$500.0	2.0x
Feb-18	Q1'2018	e-Builder	Trimble (NasdaqGS:TRMB)	\$500.0	9.4x
Feb-18	Q1'2018	Financial Performance Solutions and Banking Businesses of BasWare	Verdane Capital	\$43.5	2.3x
Feb-18	Q1'2018	Travel Compensation Services and Delay Repay Sniper	Tracsis (AIM:TRCS)	\$9.8	9.8x
Jan-18	Q1'2018	Angoss Software	Datawatch (NasdaqCM:DWCH)	\$28.9	2.8x
Jan-18	Q1'2018	Shenzhen Yilian Technology	Shenzhen MUP Industrial	\$22.6	4.0x
Jan-18	Q1'2018	Lombard Risk Management	Vermeg	\$70.5	1.6x
Jan-18	Q1'2018	Northgate Public Services	NEC (TSE:6701)	\$642.0	2.9x
Dec-17	Q4'2017	Clavis Technology	Ascentia	\$219.0	16.9x
Dec-17	Q4'2017	Aconex (ASX:ACX)	Vantive Australia	\$1,234.8	10.0x
Dec-17	Q4'2017	Gemalto (ENXTAM:GTO)	Thales	\$6,521.4	1.8x
Dec-17	Q4'2017	Microlistics	Wisetech Global	\$30.4	5.9x
Dec-17	Q4'2017	Gemalto (ENXTAM:GTO)	Atos	\$5,994.9	1.7x
Dec-17	Q4'2017	Healthcare Communications	IMmobile	\$20.1	4.2x
Nov-17	Q4'2017	Bazaarvoice (NasdaqGS:BV)	Marlin Equity Partners	\$456.0	2.2x
Nov-17	Q4'2017	Anisa Group	Sanderson Group	\$15.9	1.2x
Nov-17	Q4'2017	Reckon, Reckon Accountants Practice Management Business	MYOB Group	\$136.6	5.6x
Nov-17	Q4'2017	IGE+XAO Group (ENXTPA:IGE)	Schneider Electric Industries	\$172.2	5.1x
Nov-17	Q4'2017	Klavis	Money Forward	\$7.0	8.0x
Oct-17	Q4'2017	Trayport	TMX Group (TSX:X)	\$721.3	9.5x
Oct-17	Q4'2017	Netmessage	Link Mobility Group (OB:LINK)	\$11.6	1.0x
Oct-17	Q4'2017	BroadSoft (NasdaqGS:BSFT)	Cisco Systems (NasdaqGS:CSCO)	\$1,917.0	5.3x
Oct-17	Q4'2017	Silverlake Digitale	Silverlake Axis (SGX:5CP)	\$11.0	2.4x
Oct-17	Q4'2017	Sback Tecnologia Da Informacao	Linx Sistemas E Consultoria	\$17.8	3.8x
Oct-17	Q4'2017	Resource Connect	SmartTrans Holdings (ASX:SMA)	\$13.1	2.2x
Oct-17	Q4'2017	Onvia	Project Diamond Intermediate Holdings	\$65.6	2.7x
Oct-17	Q4'2017	Vendman Systems	Vianet Group (AIM:VNET)	\$5.6	2.4x



M&A transactions



Application Software (continued)

Date Announced	Period	Target	Buyer	Enterprise Value	Revenue Multiple
Sep-17	Q3'2017	Intermarketing	Loomis (OM:LLOMB)	\$22.4	2.0x
Sep-17	Q3'2017	Exa (NasdaqGM:EXA)	Dassault Systèmes Simulia	\$385.9	5.3x
Sep-17	Q3'2017	Chengdu E-store Technology	Besttone Holding (SHSE:600640)	\$37.5	2.1x
Sep-17	Q3'2017	Silver Spring Networks (NYSE:SSNI)	Itron (NasdaqGS:ITRI)	\$840.4	1.9x
Sep-17	Q3'2017	Planet Traders	Wisetech Global (ASX:WTC)	\$9.2	2.9x
Sep-17	Q3'2017	Cargoguide International	Wisetech Global (ASX:WTC)	\$5.5	3.5x
Sep-17	Q3'2017	Integrity Group Consulting / Asset Controls	Updater (ASX:UPD)	\$27.0	3.8x
Sep-17	Q3'2017	EG Solutions (AIM:EGS)	Verint Ws Holdings	\$30.3	2.2x
Sep-17	Q3'2017	NemusTech	Naver (KOSE:A035420)	\$8.0	1.6x
Aug-17	Q3'2017	RevStream	Aptitude Software	\$15.7	4.5x
Aug-17	Q3'2017	Rakumo (51.01% Stake)	Mobile Internet Capital; HDE; i Mercury Capital; OptVentures; Spiral Ventures	\$6.0	1.9x
Aug-17	Q3'2017	Affecto (HLSE:AFE1V)	CGI Nordic Investments	\$118.6	0.8x
Aug-17	Q3'2017	Halarose	IDOX (AIM:IDOX)	\$6.5	1.5x
Aug-17	Q3'2017	MacroPoint	The Descartes Systems Group (TSX:DSG)	\$107.0	8.6x
Aug-17	Q3'2017	AdGeek Marketing Consulting (66.7% Stake)	FreakOut Holdings (TSE:6094)	\$12.4	8.9x
Aug-17	Q3'2017	CMS Transport Systems	Wisetech Global (ASX:WTC)	\$7.1	2.3x
Aug-17	Q3'2017	MatsSoft	Netcall (AIM:NET)	\$28.8	4.0x
Aug-17	Q3'2017	ScanScout, Buyer Platform	Taptica	\$27.5	0.2x
Aug-17	Q3'2017	Numerex (NasdaqGS:NMRX)	Sierra Wireless (TSX:SW)	\$130.3	2.0x
Aug-17	Q3'2017	Impero Solutions	Investcorp Bank (BAX:INVCORP)	\$36.3	3.6x
Jul-17	Q3'2017	Linkury	Algomizer (TASE:ALMO)	\$11.0	0.6x
Jul-17	Q3'2017	Explicitly Grand Investments	Digital Zone Global	\$8.1	45.2x
Jul-17	Q3'2017	SM Mobile Communications	iRiver (KOSDAQ:A060570)	\$20.0	39.0x
Jul-17	Q3'2017	iBabs (60% Stake)	Euronext (ENXTPA:ENX)	\$57.1	8.6x
Jul-17	Q3'2017	TechJini Solutions (71.1% Stake)	Datamatics Global Services (BSE:532528)	\$8.5	1.6x
Jun-17	Q2'2017	Synchronoss (NasdaqGS:SNCR) (87.07% Stake)	Siris Capital Group	\$986.2	2.1x
Jun-17	Q2'2017	Atex Group	Axélero (BIT:AXEL)	\$5.3	0.2x
Jun-17	Q2'2017	EnerNOC (NasdaqGS:ENOC)	Enel Green Power North America	\$293.6	0.7x
Jun-17	Q2'2017	ARI Network Services (NasdaqCM:ARIS)	True Wind Capital	\$138.2	2.7x



M&A transactions

Application Software (continued)



Date Announced	Period	Target	Buyer	Enterprise Value	Revenue Multiple
Jun-17	Q2'2017	Monitise (AIM:MONI)	Fiserv (Europe)	\$52.3	0.7x
Jun-17	Q2'2017	Kalibrate Technologies (AIM:KLBT)	Hanover Investors Management	\$35.2	1.1x
Jun-17	Q2'2017	PTV Planung Transport (97% Stake)	Porsche Zweite Beteiligung	\$348.1	3.1x
Jun-17	Q2'2017	Covisint (NasdaqGS:COVS)	Open Text (NasdaqGS:OTEX)	\$69.2	1.0x
Jun-17	Q2'2017	SK Planet, Benepia Business	M&Service	\$6.7	0.9x



M&A transactions

EMS / Infrastructure Software



Date Announced	Period	Target	Buyer	Enterprise Value	Revenue Multiple
Apr-18	Q2'2018	Advantio	Cognosec (OM:COGS)	\$14.8	4.3x
Mar-18	Q1'2018	Secure Thingz	IAR Systems Group (OM:IAR B)	\$31.0	62.1x
Feb-18	Q1'2018	CSRA	General Dynamics (NYSE:GD)	\$9,871.1	2.0x
Nov-17	Q4'2017	Barracuda Networks	Thoma Bravo	\$1,405.6	3.8x
Nov-17	Q4'2017	CYREN (54.31% Stake)	Warburg Pincus	\$72.9	2.3x
Oct-17	Q4'2017	Gigamon (93% Stake)	Elliott Management	\$1,329.1	4.4x
Oct-17	Q4'2017	IntraLinks Holdings	Siris Capital Group	\$1,020.8	3.5x
Oct-17	Q4'2017	Quantum Storage (Hong Kong)	Kronologi Asia Berhad	\$10.6	1.1x
Sep-17	Q3'2017	Deltagon (77.35% Stake)	UTIB INVL Technology	\$7.5	2.4x
Jul-17	Q3'2017	Guidance Software	Open Text	\$223.9	2.1x



M&A transactions



Tech Enabled Services

Date Announced	Period	Target	Buyer	Enterprise Value	Revenue Multiple
May-18	Q2'2018	IESA	Electrocomponents (LSE:ECM)	\$117.7	0.4x
May-18	Q2'2018	Card Processing Businesses in Seven Countries of First Data	SIA	\$439.7	3.8x
May-18	Q2'2018	Coasin Chile	Logicalis Latin America	\$20.2	0.2x
Apr-18	Q2'2018	Digitas	Madison Future Games	\$117.6	76.2x
Apr-18	Q2'2018	Mattersight (NasdaqGM:MATR)	NICE Systems	\$112.9	2.3x
Apr-18	Q2'2018	Seisma Pty	PS&C (ASX:PSZ)	\$9.7	0.6x
Apr-18	Q2'2018	RMG Networks Holding (NasdaqCM:RMGN)	SCG Digital	\$15.4	0.4x
Apr-18	Q2'2018	Jiangsu Lanchuang Intelligent Technology	Ningbo BaoSi Energy Equipment (SZSE:300441)	\$74.8	6.1x
Apr-18	Q2'2018	Southport Services Group	Perficient (NasdaqGS:PRFT)	\$21.4	1.3x
Mar-18	Q1'2018	Element Solutions	Hinduja Global Solutions	\$8.8	1.0x
Mar-18	Q1'2018	TNT Business Solutions Division of TNT	Restore (AIM:RST)	\$125.3	3.8x
Mar-18	Q1'2018	Xiangjiang Technology	Shanghai Chengdi Construction (SHSE:603887)	\$369.7	2.6x
Mar-18	Q1'2018	Cartesian (OTCPK:CRTN)	Blackstreet Capital Management	\$10.6	0.2x
Mar-18	Q1'2018	Vipera (AIM:VIP)	Sella Open Fintech Platform	\$33.2	2.7x
Mar-18	Q1'2018	Cynosure	Zensar Technologies	\$33.0	1.7x
Mar-18	Q1'2018	Helius Technologies	TechnoPro Holdings (TSE:6028)	\$47.6	1.0x
Mar-18	Q1'2018	FIS System	DB (KOSE:A012030)	\$88.8	2.0x
Mar-18	Q1'2018	Wipro Data Centre and Cloud Services	Ensono	\$405.0	1.7x
Feb-18	Q1'2018	Financière Soft	Computer Task Group IT Solutions	\$16.9	0.5x
Feb-18	Q1'2018	Asian Link	LAC (JASDAQ:3857)	\$6.9	0.6x
Jan-18	Q1'2018	SingleHop	Internap (NasdaqGS:INAP)	\$132.0	2.8x
Jan-18	Q1'2018	Bulletproof Group (ASX:BPF)	Australian Centre For Advanced Computing And Communication	\$21.7	0.6x
Jan-18	Q1'2018	Blaynmail	Rakus (TSE:3923)	\$14.0	2.4x
Jan-18	Q1'2018	Blackhawk Network Holdings (NasdaqGS:HAWK)	Silver Lake; P2 Capital Partners	\$3,019.2	1.4x
Jan-18	Q1'2018	Probizmo	TechnoPro	\$15.8	1.4x
Jan-18	Q1'2018	DST Systems	SS&C Technologies (NasdaqGS:SSNC)	\$5,671.1	2.6x
Jan-18	Q1'2018	Eagle International Institute	NIIT (USA)	\$8.1	0.8x



M&A transactions



Tech Enabled Services (continued)

Date Announced	Period	Target	Buyer	Enterprise Value	Revenue Multiple
Jan-18	Q1'2018	Lotte Data Communication	LOTTE (KOSE:A004990)	\$683.4	0.9x
Dec-17	Q4'2017	Metronode	Equinix (NasdaqGS:EQIX)	\$791.4	17.3x
Dec-17	Q4'2017	SQS Software Quality Systems (AIM:SQS)	Assystem Technologies	\$418.0	1.1x
Dec-17	Q4'2017	IO Data Centers	Iron Mountain (NYSE:IRM)	\$1,375.0	9.6x
Nov-17	Q4'2017	Aricent	Altran	\$2,000.0	2.9x
Nov-17	Q4'2017	iStone (51% Stake)	Columbus (CPSE:COLUM)	\$27.6	0.3x
Nov-17	Q4'2017	Fess	Information Development (TSE:4709)	\$17.9	0.6x
Nov-17	Q4'2017	Leapforce	Appen (ASX:APX)	\$80.0	1.7x
Nov-17	Q4'2017	Shenzhen Topevery Technology (51% Stake)	Shenzhen Ta'aiwei Information Technology	\$12.3	1.9x
Nov-17	Q4'2017	Bulletproof Group (ASX:BPF) (83.8% Stake)	Macquarie Cloud Services	\$15.7	0.4x
Nov-17	Q4'2017	Nsecure	Unica Groep	\$29.4	1.0x
Nov-17	Q4'2017	Rockford IT	SysGroup (AIM:SYS)	\$5.2	0.9x
Oct-17	Q4'2017	Shanghai Yungoal Info Tech (70% Stake)	Digital China Group (SZSE:000034)	\$54.2	8.9x
Oct-17	Q4'2017	Vedang Cellular Services (70% Stake)	Quess Corp (BSE:539978)	\$8.8	0.7x
Oct-17	Q4'2017	Dada (BIT:DA) (69.43 % Stake)	HgCapital Mercury 2 Nominees	\$107.3	1.4x
Oct-17	Q4'2017	Avega Group (OM:AVEG B)	Tieto Sweden	\$57.0	1.0x
Oct-17	Q4'2017	Evolve Technologies and Services	TeamLease Staffing Services	\$5.7	0.3x
Oct-17	Q4'2017	Equinix IS2	Equinix (NasdaqGS:EQIX)	\$93.0	37.2x
Oct-17	Q4'2017	QSight IT Holding	Koninklijke KPN (ENXTAM:KPN)	\$100.2	1.7x
Sep-17	Q3'2017	RecoBell	Futurestream Networks (KOSDAQ:A214270)	\$12.8	8.9x
Sep-17	Q3'2017	Shenzhen Juqent Information Technology (80% Stake)	Guangdong Zhengye Technology (SZSE:300410)	\$18.0	9.3x
Sep-17	Q3'2017	Beyondwinet Information Technology	Beijing Holystone Technology	\$17.5	0.3x
Sep-17	Q3'2017	Crimson	Harvey Nash Group (AIM:HVN)	\$19.9	0.6x
Sep-17	Q3'2017	ETL Factory	HCL Technologies (NSEI:HCLTECH)	\$9.1	1.1x
Aug-17	Q3'2017	Kabuku (90% Stake)	Futaba (TSE:6986)	\$13.8	13.9x
Aug-17	Q3'2017	NCXX Solutions (51% Stake)	CAICA (JASDAQ:2315)	\$5.1	0.2x



M&A transactions



Tech Enabled Services (continued)

Date Announced	Period	Target	Buyer	Enterprise Value	Revenue Multiple
Aug-17	Q3'2017	Beyondsoft Japan	Beijing Beifang Xinyu Information Technology	\$13.2	0.4x
Aug-17	Q3'2017	Beyondsoft Information Technology (Shanghai)	Beijing Beifang Xinyu Information Technology	\$8.4	2.9x
Jul-17	Q3'2017	Somoto (TASE:SMTO)	-	\$74.6	1.3x
Jul-17	Q3'2017	PARX Werk	Persistent Systems	\$9.0	1.1x
Jul-17	Q3'2017	PlusServer	BC Partners	\$459.5	4.0x
Jul-17	Q3'2017	OnX Enterprise Solutions	Cincinnati Bell (NYSE:CBB)	\$199.0	0.3x
Jul-17	Q3'2017	Yg Zhihe Zhuoyuan (Beijing) Technology	Yg Gongchuang Intelligent Technology	\$6.5	0.4x
Jul-17	Q3'2017	Getronics International	Bottega	\$250.9	0.5x
Jul-17	Q3'2017	MDCL-Frontline Solutions	Tianjin Lanmo Innovative Cloud Network Technology	\$10.3	0.7x
Jul-17	Q3'2017	NCI (NasdaqGS:NCIT)	H.I.G. Capital	\$289.4	0.9x
Jun-17	Q2'2017	Clarity Consulting	Perficient (NasdaqGS:PRFT)	\$9.4	0.4x
Jun-17	Q2'2017	PT Packet Systems Indonesia (68.18% Stake)	P.T. Metrodata Electronics (JKSE:MTDL); Logicalis Group	\$10.5	0.1x
Jun-17	Q2'2017	Rightside Group (NasdaqGS:NAME)	Donuts	\$134.6	2.3x
Jun-17	Q2'2017	Beijing Hangxing Yongzhi Technology	Zhongxin Information Development (SZSE:300469)	\$43.5	2.8x



M&A transactions



Online & Digital

Date Announced	Period	Target	Buyer	Enterprise Value	Revenue Multiple
May-18	Q2'2018	Webpro	ZetaDisplay (OM:ZETA)	\$6.1	2.1x
May-18	Q2'2018	Cybird	Aeria (NASDAQ:3758)	\$64.0	0.7x
May-18	Q2'2018	Magento	Adobe Systems (NASDAQGS:ADBE)	\$1,680.0	11.2x
May-18	Q2'2018	iZettle	PayPal (NASDAQGS:PYPL)	\$2,200.0	19.8x
May-18	Q2'2018	Linkable	AJ Rent A Car (KOSE:A068400)	\$16.2	20.1x
May-18	Q2'2018	Cyanide	BigBen Interactive (ENXTPA:BIG)	\$25.3	3.5x
May-18	Q2'2018	ZPG (LSE:ZPG)	Silver Lake	\$3,377.4	8.8x
May-18	Q2'2018	Mitula Group (ASX:MUA)	Lifull (TSE:2120)	\$128.3	5.1x
May-18	Q2'2018	Shenzhen Whale Banner World Network Technology	Keda Group (SHSE:600986)	\$142.8	5.4x
May-18	Q2'2018	ICM Registry	Minds + Machines Group (AIM:MMX)	\$40.7	5.6x
May-18	Q2'2018	Findify	Namaste Technologies (TSXV:N)	\$10.8	21.4x
Apr-18	Q2'2018	Beijing Icoou Technology	Shenzhen Hifuture Electric (SZSE:002168)	\$301.1	15.0x
Apr-18	Q2'2018	FIO SYSTEMS	Hypoport (DB:HYQ)	\$84.7	9.9x
Apr-18	Q2'2018	Tata Interactive Systems	MPS (BSE:532440)	\$12.0	0.6x
Apr-18	Q2'2018	Sanzhi Xiaoxiong Technology	Madison Future Games	\$140.1	8.1x
Apr-18	Q2'2018	Edmodo	Best Assistant Education Online	\$137.5	136.3x
Apr-18	Q2'2018	CM2.Com	Zix (NASDAQGS:ZIXI)	\$16.1	5.4x
Apr-18	Q2'2018	Shenzhen Maiyou Interactive Technology	China Media Group (SZSE:000793)	\$58.0	11.1x
Mar-18	Q1,2018	eTouch Systems	Virtusa (NASDAQGS:VRTU)	\$115.4	1.3x
Mar-18	Q1,2018	NameSilo	Brisio Innovations (OTCPK:NTCE.F)	\$9.5	0.9x
Mar-18	Q1,2018	CommerceHub	GTCR; Sycamore Partners	\$1,055.9	9.5x
Feb-18	Q1,2018	Pipeworks	St. Cloud Capital; DGB Investments; Northern Pacific Group	\$18.2	1.4x
Feb-18	Q1,2018	Dealer Inspire and Launch Digital Marketing	Cars.com (NYSE:CARS)	\$205.0	5.0x
Jan-18	Q1,2018	Callidus Software	SAP America	\$2,425.9	9.6x
Jan-18	Q1,2018	auFeminin.com (ENXTPA:FEM)	Télévision Française 1 SA (ENXTPA:TFI)	\$378.9	2.7x
Jan-18	Q1,2018	Paymark	Ingenico Group - GCS (ENXTPA:ING)	\$120.4	2.2x
Jan-18	Q1,2018	Gambling related informational websites of Good Game	XLMedia (AIM:XML)	\$18.4	9.0x
Jan-18	Q1,2018	HubPages	theMaven (OTCPK:MVEN)	\$10.0	2.0x



M&A transactions

Online & Digital (continued)



Date Announced	Period	Target	Buyer	Enterprise Value	Revenue Multiple
Jan-18	Q1,2018	Real Estate 114	Hyundai Development - Engineering & Construction (KOSE:A012630)	\$64.1	4.5x
Sep-17	Q3'2017	YuMe	RhythmOne (AIM:RTHM)	\$111.0	0.7x
Aug-17	Q3'2017	MaxPoint Interactive (NasdaqGM:MXPT)	Harland Clarke	\$108.2	0.7x
Aug-17	Q3'2017	CannaRegs	MassRoots (OTCPK:MSRT)	\$11.7	26.0x
Jul-17	Q3'2017	St. Hero' Network Technology	Kingnet Network (SZSE:002517)	\$466.4	26.0x
Jul-17	Q3'2017	WebMD Health (NasdaqGS:WBMD)	Internet Brands	\$3,740.4	5.3x
Jul-17	Q3'2017	Bankrate (NYSE:RATE)	Red Ventures	\$1,438.5	3.1x
Jul-17	Q3'2017	Accelyst Solutions and Freecharge Payment Technologies	Axis Bank (BSE:532215)	\$60.0	93.9x
Jul-17	Q3'2017	Rocket Fuel (NasdaqGS:FUEL)	Sizmek	\$149.9	0.3x
Jul-17	Q3'2017	Hainan Qiyao Interactive Entertainment	Shenzhen Taole Network Technology	\$31.3	16.6x
Jun-17	Q2'2017	Kongregate	Modern Times Group (OM:MTG B)	\$55.0	1.6x



IV Selected transactions



Selected transactions



Idean Enterprises OY Acquired By Capgemini

Transaction Summary

- Pharus served as the exclusive financial advisor to Idean Enterprises Oy in its sale to Capgemini. Transaction terms were not disclosed.
- This transaction will reinforce Capgemini's user-centered and digital-first experience design and strategy services, particularly in North America, and extend its network of Digital studios. This transaction is geared to meet growing customer demand for the Group's end to end digital services.
- The shareholders of Idean retained Pharus due to our knowledge of the design and strategy services sector, as well as our M&A advisory experience with digital, innovation and cloud services businesses. We executed a comprehensive M&A process that involved identifying and approaching a broad set of strategic buyers, spearheading marketing activities, leading due-diligence, and negotiating transaction terms.

Key Profiles

- Idean Enterprises, a fast-growing digital strategy and experience design consultancy focuses, primarily on digital user experience (UX), customer experience (CX), and digital strategy. Their client list extends from disruptive Bay Area start-ups, global tech leaders to prominent brands in automotive and consumer electronics, looking to reinvent themselves for the digital era. Clients include LG, Mercedes-Benz, Sony, Volkswagen, 23andMe, Airbus, Cole Haan, Ericsson, IBM, Intel, and Kesko.
- Capgemini provides consulting, technology, and outsourcing services. Its consulting services include strategy and transformation, finance and technology transformation, human resources consulting, supply chain management, solutions environment, and innovation. It serves manufacturing, retail, consumer products, distribution and transportation, aerospace and defense, and financial services industries across the world.



The undersigned acted as the exclusive financial advisor to Idean Enterprises Oy in connection with the transaction

PHARUS
2017

Risto Lähdesmäki, Chief Executive Officer of Idean, said about Pharus:

"These guys just rock! I could not be happier with having chosen Pharus as our investment banking advisor. Since I knew this would be once-in-a-lifetime deal for me and whole team, I wanted to set multiple records and Pharus accepted the challenge - and boy we set many. At every step Pharus added immense value and astutely guided us to the most optimal outcome for the shareholders and for everyone in Idean.

I'm very pleased with their experience, dedication, and diligence - working hard 24/7 as one team, we were able to get a complicated deal closed in a compressed time frame. Pharus was with us right from beginning to end to ensure a successful process. The way they guided me and the team with a human touch was just amazing - I truly felt they had our back all the time. **We could not have achieved these results without Pharus - a deal that worked like a dream for all the stakeholders."**

Selected transactions

Capgemini US Acquires Fahrenheit 212, a Leading Innovation and Design Consultancy

Transaction Summary

- Pharus served as the exclusive financial advisor to Fahrenheit 212 LLC in its sale to Capgemini. Transaction terms were not disclosed.
- This transaction will augment the capabilities of Capgemini’s global strategy and transformation consulting organization, Capgemini Consulting, to provide new innovation, business transformation and digital customer experiences solutions. This bolt on acquisition fits into Capgemini’s digital innovation growth strategy.
- The shareholders of Fahrenheit 212 retained Pharus due to our knowledge of the innovation services sector, as well as our M&A advisory experience with digital and cloud services businesses. We executed a comprehensive M&A process that involved identifying and approaching a broad set of strategic and private equity buyers, spearheading marketing activities, leading due-diligence, and negotiating transaction terms.

Key Profiles

- Fahrenheit 212, an innovation and design consultancy, focuses on defining innovation strategies and develops new products, services, and experiences that create sustainable, profitable growth for global clients such as The Coca-Cola Company, Marriott, and Citi.
- Capgemini provides consulting, technology, and outsourcing services. Its consulting services include strategy and transformation, finance and technology transformation, human resources consulting, supply chain management, solutions environment, and innovation. It serves manufacturing, retail, consumer products, distribution and transportation, aerospace and defense, and financial services industries across the world.

Fahrenheit**212**

has been acquired by



The undersigned acted as the exclusive financial advisor to Fahrenheit 212 LLC in connection with the transaction

P H A R U S
F E B R U A R Y 2 0 1 6



Selected transactions

SPS Commerce (NasdaqGS:SPSC) Acquires Toolbox Solutions, a Leading Provider of Retail Solutions in North America

Transaction Summary

- Pharus served as the exclusive financial advisor to Toolbox Solutions, Inc. in their sale to SPS Commerce, Inc. (NasdaqGS:SPSC)
- The acquisition serves to strengthen SPS Commerce’s retail analytics portfolio, and further broadens their network of more than 60,000 organizations in 60 countries to include leading retailers and CPG suppliers in the North American convenience, grocery, and drug store segments.
- Pharus was mandated by Toolbox Solutions’ shareholders to execute a comprehensive process, that involved identifying and approaching a targeted set of strategic and financial buyers, spearheading marketing and due-diligence, and negotiating the terms of the transaction.
- SPS Commerce acquired all of the shares of ToolBox Solutions for approximately \$18.4 million in cash and \$4.5 million in stock which represents approximately 65,000 shares.

Key Profiles

- ToolBox Solutions is a leading provider of point-of-sale analytics, retail and loyalty software solutions, and category management services to retailers and consumer packaged goods suppliers across the US and Canada. The company has established relationships with many leading retailers and CPG suppliers in the convenience, grocery and drug store segments. The employees will continue to be based in Toronto.
- SPS Commerce provides cloud-based supply chain management solutions worldwide through their platform which improves the way suppliers, retailers, distributors, and other customers manage and fulfill orders. The company is headquartered in Minneapolis.



has been acquired by



The undersigned acted as the exclusive financial advisor to Toolbox Solutions, Inc. in connection with the transaction

PHARUS



Selected transactions



Ziff Davis Acquires Offers.com, a Leader in the Digital Coupon and Deal Space

Transaction Summary

- Pharus served as the exclusive financial advisor to Offers.com, LLC in their sale to Ziff Davis, LLC, a subsidiary of J2 Global (NasdaqGS:JCOM).
- The acquisition further expands Ziff Davis' portfolio of market leading digital properties, and strengthens their position in the growing online deals and offers segment.
- Pharus was mandated by Offers.com's shareholders to execute a comprehensive process, that involved identifying and approaching a targeted set of strategic and financial buyers, spearheading marketing and due-diligence, and negotiating the terms of the transaction.
- Transaction terms were not disclosed.
- Pharus had also served as the exclusive financial advisor to Offers.com in 2010, when it received \$7M in a round of funding from Susquehanna Growth Equity.

Key Profiles

- Offers.com operates a leading online marketplace that connects millions of consumers with coupons, promo codes, deals, and discounts from thousands of leading merchants. Offers.com is headquartered in Austin, TX.
- Ziff Davis is a digital media company that engages in the digital publishing of content in gaming, technology, and men's lifestyle categories. It operates PCMag.com, IGN.com, and AskMen.com. Ziff Davis is headquartered in New York, NY.
- Ziff Davis is owned by J2 Global. J2 Global operates through two segments:
 - Business Cloud Services – Offers cloud services to sole proprietors, small to medium-sized businesses and enterprises, and government organizations; provides eFax, KeepItSafe, LiveDrive, eVoice and Onebox.
 - Digital Media – Operates a portfolio of Web properties, including PCMag.com, IGN.com, Speedtest.net, AskMen.com, and TechBargains.com.

Offers.com[™]

has been acquired by



The undersigned acted as the exclusive financial advisor to Offers.com, LLC in connection with the transaction

P H A R U S
D E C E M B E R 2 0 1 5

Selected transactions



has been acquired by

The undersigned acted as the exclusive financial advisor to Fahrenheit 212 LLC in connection with the transaction.

PHARUS
February 2016

Innovation Services

has been acquired by

The undersigned acted as the financial advisor to Toolbox Solutions, Inc. in connection with the transaction.

PHARUS

Retail Solutions

has been acquired by

The undersigned acted as the exclusive financial advisor to Offers.com, LLC in connection with the transaction.

PHARUS
December 2015

Online Marketing

CG CONTROL GROUP
has merged with

to form

The undersigned acted as the exclusive financial advisor to Control Group, Inc. and its affiliates, in connection with the transactions.

Pharus Securities, LLC

Digital Agency

has been acquired by

The undersigned acted as the exclusive financial advisor to RoyaltyShare, Inc. in its sale to The Orchard Enterprises, Inc.

Pharus Securities
November 2014

Digital Revenue Management

Received Series A financing of \$8 million from

The undersigned acted as the exclusive financial advisor to P97 Networks, Inc. in connection with the transaction.

Pharus Securities

Fuel Payment & Coupon

Completed a growth financing with

The undersigned acted as the exclusive financial advisor to Teachers Strategy Inc. in connection with the transaction.

Pharus Securities
May 2014

Education Technology

has been acquired by

The undersigned acted as the exclusive financial advisor to AmberFin Ltd. in its sale to Dalet S.A. (ENWTPA.DLT)

Pharus Securities
April 2014

Broadcast Technology

Remote DBA Business

has been acquired by

The undersigned acted as financial advisor to Bluewolf Inc. in the sale of its Remote DBA Business to General Corporation, Inc.

Pharus Advisors, LLC
December 2012

IT Services

has been acquired by

Principals of the undersigned acted as financial advisors to SocialGuide, Inc. in its sale to Nielsen Holdings N.V. and M&M Inc. LLC a joint venture between Nielsen and McKinsey & Company, Inc.

Pharus Advisors, LLC
November 2012

Social TV Software

has been acquired by

The undersigned acted as financial advisor to ExpertTune Inc. in its sale to Metso Corporation

Pharus Advisors, LLC
November 2012

Industrial Software

has acquired

The undersigned acted as financial advisor to NetKey, Inc. in connection with this acquisition.

Pharus Advisors, LLC
AUGUST 2007

Retail Software



Pharus overview



Pharus overview

Introduction to Pharus

We are committed to providing clients a high level of attention, independent and objective advice, and creative solutions in challenging environments



**Founded
in 2001**

Global Reach / Cross-border Expertise

New York headquarters,
with offices and affiliates
in major technology
hubs across the globe

Extensive Advisory & Capital Market Capabilities

Mergers & Acquisitions
Valuation &
Fairness Opinions
Corporate Advisory
Private Placements
Principal Investments
Recapitalizations

Industry Specialization & Experience

Digital Media &
Advertising
Broadcast & Media
Technology
Education Technology
Tech-Enabled
Business Services
Industrial Technology
Financial Technology

Strong Network of Key Relationships

90+
Successful
Transactions
Completed

900+
Strategic Buyer
Relationships

1,100+
Venture Capital
& Private Equity
Relationships

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