

April 2019

The Lighthouse

Software Online & Digital Tech Enabled Business Services

Pharus Observations

Digital Marketing Capabilities are the New Hot Commodity

The appetite for digital and online marketing solutions driven by consumer data and analytics has only increased in the first half of 2019. During April, the digital marketing space saw lively M&A activity, with a number of firms being snapped up by buyers from a range of industries. As much of the interaction between consumers and companies migrates online, companies are scrambling to acquire integrated digital marketing capabilities in order to keep up. Everyone, from consultancies to traditional marketing giants to financial sponsors have recognized the value in the space.

On April 14th, the largest of these acquisitions took place when marketing and public relations conglomerate, **Publicis (ENXTPA:PUB)**, acquired the data-driven digital marketing solutions provider, **Epsilon Data Management** for \$4.4 billion. Epsilon's wealth of first-party data will no doubt serve Publicis well in drawing marketers amid external cost pressure and the shift to digital.

S4 Capital (LSE:SFOR), the marketing venture started by retired WPP founder, Sir Martin Sorrell, acquired programmatic solutions provider **MightyHive** in December 2018 for \$150 million. S4's push into digital started with its July 2018 acquisition of digital content company **MediaMonks** for \$351.8 million and is now continued by this acquisition in digital media planning and programmatic ad-buying.

In November 2018, Wisconsin-based printing company Quad/Graphics (NYSE:QUAD) acquired impact marketing and advertising agency, **Periscope**, for \$132.5 million. Quad/Graphics CEO, Joel Quadracci said in the press release that the acquisition would "turbo-charge [their] existing offering with its world-class capabilities in strategy, including media buying and analytics, creative and account management."

We can expect to see further deal activity in the second half of 2019 as demand for these types of companies remains strong.



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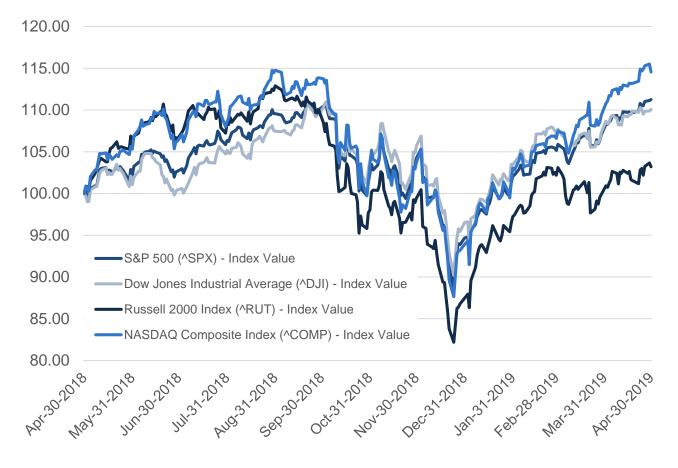
Capital market trends



Capital market trends

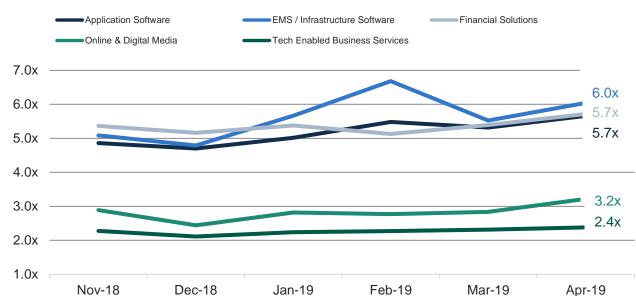
Relative Performance of Major Indices

Through April 30, 2019 (Base = 100, 4/2/2018)



			Change %	
Index	As of 30-Apr-19	1 Year	3 Months	1 Month
Dow Jones	26,592.91	10.06%	6.73%	1.27%
Nasdaq	8,095.39	14.56%	11.17%	3.40%
S&P 500	2,945.83	11.25%	8.94%	2.74%
Russell 2000	1,591.21	3.20%	6.12%	2.26%

Historical Median TEV / Revenue Multiples



	our ro	1.00	10	indi io	7.61	10
	Nov-18	Dec-18	Jan-19	Feb-19	Mar-19	Apr-19
Application Software						
Customer Relationship Management (CRM) & Customer Engagement	5.5x	7.3x	7.3x	8.5x	8.1x	8.5x
Accounting & Enterprise Resource Planning (ERP)	5.2x	5.0x	5.5x	5.9x	6.5x	7.0x
Supply Chain Management (SCM) & Logistics	5.5x	5.0x	5.6x	6.6x	6.5x	7.0x
HR & Workforce Management	6.8x	6.1x	7.3x	7.9x	7.0x	7.0x
Education Technology	3.2x	2.0x	2.4x	1.9x	2.8x	3.2x
Industrial & Automation Softw are	2.1x	1.9x	2.0x	2.2x	2.3x	2.5x
Business Intelligence & Data	6.0x	6.0x	6.4x	7.7x	6.9x	7.4x
Design & Engineering Software	6.3x	5.8x	6.6x	7.6x	7.1x	8.0x
EMS / Infrastructure Software						
Security Software	6.0x	5.9x	7.1x	7.9x	7.7x	8.7x
System and Netw ork Management Softw are	4.1x	3.8x	3.9x	4.5x	4.6x	4.5x
Platform / OS	5.1x	4.8x	4.9x	4.9x	4.6x	4.6x
Financial Solutions						
Banking Solutions	6.5x	6.0x	6.5x	6.5x	6.8x	6.9x
Capital Market & Investment Solutions	6.0x	5.8x	6.3x	6.8x	7.0x	6.1x
Consumer Data & Analytics	5.4x	5.4x	5.4x	5.5x	5.8x	6.1x
Payment Processing	4.1x	4.0x	4.4x	4.6x	4.7x	4.8x
Insurance Solutions	4.3x	4.0x	5.0x	5.1x	4.3x	4.3x
Online & Digital Media						
Digital Advertising & Marketing	1.6x	1.4x	1.9x	1.7x	1.8x	1.9x
Digital Media & Video	3.8x	4.0x	5.3x	7.6x	6.0x	5.5x
Digital Advertising Agencies & Service Providers	1.2x	1.2x	1.3x	1.2x	1.2x	1.4x
Online Retail & Marketplaces	2.8x	2.3x	2.7x	2.5x	2.3x	2.3x
Digital Gaming	2.7x	2.3x	2.4x	2.1x	2.5x	2.7x
Social Media	4.9x	4.6x	4.6x	4.7x	4.7x	4.8x
Digital Commerce Solutions	1.4x	1.2x	1.4x	1.4x	1.4x	1.5x
Other Digital Companies	4.4x	4.0x	4.5x	4.9x	4.4x	4.7x
Tech Enabled Business Services						
IT Services, Integration & Consulting	1.4x	1.2x	1.6x	1.5x	1.6x	1.6x
Business Process Management (BPM)	5.5x	5.5x	5.6x	5.4x	5.4x	5.9x
Data Center Hosting & Services	5.5x	4.8x	6.0x	5.5x	5.1x	5.8x
Call Center	0.8x	0.8x	0.9x	1.0x	1.0x	1.0x

Current & Forward Market Multiples

	Median TEV/Revenue		Median TEV/EB	TDA	
	LTM	NTM	LTM	NTM	
Application Software					
Customer Relationship Management (CRM) & Customer Engagement	8.5x	6.8x	52.5x	46.9x	
Accounting & Enterprise Resource Planning (ERP)	7.0x	5.5x	36.0x	23.5x	
Supply Chain Management (SCM) & Logistics	7.0x	6.6x	34.9x	29.3x	
HR & Workforce Management	7.0x	5.9x	24.8x	35.4x	
Education Technology	3.2x	2.7x	24.9x	24.7x	
Industrial & Automation Software	2.5x	2.4x	15.2x	15.2x	
Business Intelligence & Data	7.4x	6.9x	14.3x	30.1x	
Design & Engineering Software	8.0x	6.1x	30.7x	23.4x	
EMS / Infrastructure Software					
Security Software	8.7x	6.8x	29.3x	23.5x	
System and Network Management Software	4.5x	4.2x	23.7x	16.0x	
Platform / OS	4.6x	4.4x	16.8x	12.2x	
Financial Solutions					
Banking Solutions	6.9x	6.7x	24.0x	16.6x	
Capital Market & Investment Solutions	6.1x	6.4x	24.2x	19.8x	
Consumer Data & Analytics	6.1x	5.7x	23.8x	16.5x	
Payment Processing	4.8x	4.1x	16.0x	12.7x	
Insurance Solutions	4.3x		18.1x	17.3x	
Online & Digital Media					
Digital Advertising & Marketing	1.9x	1.7x	11.9x	13.0x	
Digital Media & Video	5.5x	4.0x	21.0x	26.8x	
Digital Advertising Agencies & Service Providers	1.4x	1.4x	9.4x	8.5x	
Online Retail & Marketplaces	2.3x	2.5x	22.2x	14.2x	
Digital Gaming	2.7x	2.6x	12.9x	8.7x	
Social Media	4.8x	3.4x	24.1x	10.7x	
Digital Commerce Solutions	1.5x	1.3x	10.7x	11.4x	
Other Digital Companies	4.7x	3.5x	22.1x	16.0x	
Tech Enabled Business Services					
IT Services, Integration & Consulting	1.6x	1.4x	13.1x	11.2x	
Business Process Management (BPM)	5.9x	5.3x	17.5x	12.9x	
Data Center Hosting & Services	6.8x	5.5x	21.9x	18.1x	
Call Center	1.0x	0.9x	9.1x	7.8x	

Me	dians			
Application Software	5.7x	5.2x	22.7x	23.0x
EMS / Infrastructure Software	6.0x	5.6x	20.3x	16.7x
Financial Solutions	5.7x	5.4x	21.5x	16.5x
Online & Digital Media	3.2x	2.7x	16.3x	12.9x
Tech Enabled Business Services	2.4x	2.2x	13.7x	11.6x



Application Software



				TEV/Rev	/enue	TEV/EBI	TDA
(\$ in millions)		TEV	Market Cap	LTM	NTM	LTM	NTM
Customer Relationship Manag	gement (CRM) & Customer Enga	gement					
Five9	NasdaqGM:FIVN	\$2,982	\$3,064	10.9x	9.4x	NM	56.6x
LivePerson	NasdaqGS:LPSN	\$1,656	\$1,703	6.4x	5.5x	NM	87.6x
NICE Systems	TASE:NICE	\$8,653	\$8,632	5.8x	5.4x	22.9x	17.5x
Pegasystems	NasdaqGS:PEGA	\$5,548	\$5,692	6.4x	5.9x	NM	92.8x
Salesforce.com	NYSE:CRM	\$116,333	\$117,308	8.8x	6.9x	76.3x	26.1x
SDL	LSE:SDL	\$609	\$627	1.5x	1.3x	14.8x	11.8x
Veeva	NYSE:VEEV	\$21,372	\$22,682	23.4x	19.5x	80.3x	51.7x
Zendesk	NYSE:ZEN	\$9,365	\$9,231	14.4x	10.8x	NM	NM
Median				7.6x	6.4x	49.6x	51.7x
Accounting & Enterprise Reso	urce Planning (FRP)						
Avalara, Inc.	NYSE:AVLR	\$4,584	\$4,731	15.5x	12.5x	NM	NM
BasWare	HLSE:BAS1V	\$352	\$313	2.2x	2.1x	NM	64.2x
Blackline	NasdaqGS:BL	\$2,716	\$2,830	11.3x	9.3x	NM	NM
Coupa Software	NasdagGS:COUP	\$6,551	\$6,698	25.2x	18.0x	NM	NM
Intuit	NasdaqGS:INTU	\$60,578	\$63,476	9.2x	8.3x	31.0x	22.2x
Kingdee International	SEHK:268	\$3,443	\$3,684	8.4x	6.9x	58.2x	27.7x
Model N	NYSE:MODN	\$580	\$585	4.0x	4.0x	NM	51.0x
Oracle	NYSE:ORCL	\$189,792	\$172,933	4.8x	4.8x	11.6x	10.2x
QAD	NasdagGS:QADA	\$692	\$815	2.1x	2.1x	71.6x	35.8x
Sage	LSE:SGE	\$10,774	\$10,242	4.5x	4.2x	16.3x	16.3x
SAP	DB:SAP	\$154,624	\$146,974	5.4x	4.9x	20.9x	14.9x
Upland Software	NasdaqGM:UPLD	\$1,452	\$1,183	8.7x	6.7x	36.1x	17.8x
Median	·			6.9x	5.8x	31.0x	22.2x
Supply Chain Management (S	, ,						
Amber Road	NYSE:AMBR	\$389	\$369	4.5x	4.3x	NM	53.6x
Descartes Systems Group	TSX:DSG	\$3,320	\$3,097	11.7x	9.9x	34.7x	26.8x
Manhattan Associates	NasdaqGS:MANH	\$4,167	\$4,229	7.2x	7.0x	29.2x	32.6x
SPS Commerce	NasdaqGS:SPSC	\$1,662	\$1,826	6.5x	5.9x	38.4x	24.5x
Median				6.9x	6.5x	34.7x	29.7x



				TEV/Rev	/enue	TEV/EBI	TDA
(\$ in millions)		TEV	Market Cap	LTM	NTM	LTM	NTM
HR & Workforce Management							
Atlassian Corporation	NasdaqGS:TEAM	\$25,626	\$26,553	23.0x	17.6x	NM	74.2x
Benefit Focus	NasdaqGM:BNFT	\$1,372	\$1,325	5.3x	4.3x	NM	75.2x
CastLight Health	NYSE:CSLT	\$465	\$537	3.0x	2.9x	NM	47.0x
Ceridian HCM	NYSE:CDAY	\$7,921	\$7,468	10.6x	9.5x	67.9x	41.7x
Cornerstone OnDemand	NASDAQ: CSOD	\$3,204	\$3,257	6.0x	5.5x	NM	24.4x
Dice Holdings	NYSE:DHX	\$178	\$167	1.1x	1.1x	8.1x	4.9x
Paycom	NYSE:PAYC	\$11,370	\$11,427	18.6x	14.8x	55.3x	35.4x
Paylocity	NasdaqGS:PCTY	\$5,005	\$5,109	12.0x	9.3x	NM	31.8x
TriNet Group	NYSE:TNET	\$4,533	\$4,363	1.3x	4.7x	15.5x	11.9x
Upwork	NasdaqGS:UPWK	\$2,028	\$2,134	8.0x	6.4x	NM	NM
Verint Systems	NasdaqGS:VRNT	\$4,342	\$3,945	3.5x	3.2x	24.8x	13.1x
Workday	NasdaqGS:WDAY	\$45,774	\$46,347	16.2x	12.9x	NM	67.6x
Median				7.0x	5.9x	24.8x	35.4x
Industrial & Automation Softw	are						
3M	NYSE:MMM	\$123,104	\$109,239	3.8x	3.8x	13.6x	13.7x
ABB	SWX:ABBN	\$50,348	\$43,832	1.8x	1.7x	15.9x	15.7x
American Software	NasdaqGS:AMSW.A	\$320	\$403	2.9x	2.8x	32.3x	20.4x
Aspen Technology	NasdaqGS:AZPN	\$8,562	\$8,407	15.8x	15.1x	34.4x	30.4x
Dassault	ENXTPA:DSY	\$38,875	\$40,931	9.6x	8.6x	34.7x	24.8x
Endava	NYSE:DAVA	\$1,574	\$1,639	4.8x	3.9x	32.8x	20.9x
Emerson	NYSE:EMR	\$48,385	\$43,632	2.7x	2.5x	13.3x	11.8x
Fanuc Corporation	TSE:6954	\$30,637	\$36,157	5.4x	5.7x	15.7x	19.9x
General Electric	NYSE:GE	\$204,779	\$88,691	1.7x	1.7x	13.3x	16.5x
HollySys Automation Tech	NasdaqGS:HOLI	\$847	\$1,263	1.5x	1.3x	6.3x	5.2x
Honeywell	NYSE:HON	\$132,686	\$126,358	3.3x	3.5x	15.0x	14.8x
Johnson Controls	NYSE:JCI	\$47,148	\$34,227	1.5x	1.9x	9.5x	13.5x
KUKA	DB:KU2	\$2,970	\$2,598	0.8x	0.8x	23.2x	19.2x
Materialise	NasdaqGS:MTLS	\$879	\$881	4.2x	3.8x	38.6x	22.6x
Metso	HLSE:METSO	\$5,858	\$5,584	1.6x	1.4x	11.9x	9.8x
OMRON Corp	TSE:6645	\$10,000	\$10,972	1.3x	1.3x	10.6x	10.9x
Parametric Technology	NasdaqGS:PTC	\$11,120	\$10,732	8.9x	8.1x	76.7x	26.9x
Rockwell Automation	NYSE:ROK	\$22,718	\$21,389	3.4x	3.3x	15.3x	14.1x
Schneider Electric	ENXTPA:SU	\$53,449	\$46,067	1.9x	1.7x	11.2x	10.0x
Siemens	DB:SIE	\$123,494	\$94,548	1.3x	1.2x	12.4x	9.9x
YASKAWA Electric Corp	TSE:6506	\$9,786	\$9,700	2.3x	2.3x	16.4x	17.5x
Yokogawa Electric Corp.	TSE:6841	\$5,135	\$5,556	1.4x	1.3x	10.1x	9.1x
Median				2.5x	2.4x	15.2x	15.2x

Application Software (continued)



				TEV/Rev	/enue	TEV/EBI	TDA
(\$ in millions)		TEV	Market Cap	LTM	NTM	LTM	NTM
Education Technology							
Blackbaud	NasdaqGS:BLKB	\$4,461	\$3,800	5.2x	4.9x	36.8x	24.7x
Instructure	NYSE:INST	\$1,520	\$1,562	6.9x	5.6x	NM	NM
K12	NYSE:LRN	\$967	\$1,170	1.0x	0.9x	13.0x	7.1x
Rosetta Stone	NYSE:RST	\$547	\$583	3.2x	2.7x	NM	50.0x
Sunlands Online Education Group	NYSE:STG	\$214	\$508	0.7x	0.6x	NM	NM
Median				3.2x	2.7x	24.9x	24.7x
Business Intelligence & Data							
Alteryx	NYSE:AYX	\$5,381	\$5,537	21.2x	14.0x	NM	NM
AppFolio	NasdaqGM:APPF	\$3,255	\$3,296	17.1x	12.1x	NM	72.9x
Cardylitics	NasdaqGM:CDLX	\$359	\$352	2.4x	1.7x	NM	NM
Cloudera	NYSE:CLDR	\$2,513	\$2,993	5.2x	3.0x	NM	NM
Corelogic	NYSE:CLGX	\$5,073	\$3,277	2.9x	3.0x	13.2x	10.7x
CoStar Group	NasdaqGS:CSGP	\$17,046	\$18,134	13.7x	11.9x	43.1x	32.8x
Domo, Inc.	NasdaqGM:DOMO	\$957	\$1,037	6.7x	NM	NM	NM
Elastic N.V.	NYSE:ESTC	\$5,975	\$6,281	24.8x	NM	NM	NM
Gridsum Holding	NasdaqGS:GSUM	\$137	\$113	2.2x	NA	NM	NA
Inovalon Holdings	NASDAQ:INOV	\$2,927	\$2,074	5.5x	4.5x	24.9x	14.5x
MicroStrategy	NasdaqGS:MSTR	\$1,098	\$1,533	2.2x	2.2x	NM	30.1x
MMTEC	NasdaqCM:MTC	\$78	\$78	NM	NA	NM	NA
MongoDB	NasdaqGM:MDB	\$7,500	\$7,749	28.1x	20.2x	NM	NM
NantHealth	NasdaqGS:NH	\$258	\$76	2.9x	2.6x	NM	NM
New Relic	NYSE:NEWR	\$5,718	\$6,036	12.8x	9.4x	NM	64.3x
Open Text	NasdaqGS:OTEX	\$12,327	\$10,303	4.3x	4.1x	14.3x	10.7x
PROS Holdings	NYSE:PRO	\$1,922	\$1,941	9.4x	7.6x	NM	NM
Sabre	NasdaqGS:SABR	\$8,662	\$5,720	2.2x	2.1x	13.0x	8.8x
Splunk	NasdaqGS:SPLK	\$19,668	\$20,728	10.9x	8.9x	NM	53.3x
Tableau	NYSE:DATA	\$9,475	\$10,497	8.2x	6.6x	NM	39.5x
TrueCar	NasdaqGS:TRUE	\$504	\$677	1.4x	1.4x	NM	15.8x
Varonis Systems	NasdaqGS:VRNS	\$2,026	\$2,133	7.4x	7.3x	NM	NM
Workiva	NYSE:WK	\$2,319	\$2,399	9.5x	7.8x	NM	NM
Yext	NYSE:YEXT	\$2,287	\$2,430	10.0x	7.6x	NM	NM
Median				7.4x	6.9x	14.3x	30.1x

Application Software (continued)



			_		venue	TEV/EBI	TDA
(\$ in millions)		TEV	Market Cap	LTM	NTM	LTM	NTM
Design & Engineering Softwar	e						
Ansys	NasdaqGS:ANSS	\$15,645	\$16,422	12.1x	10.5x	29.0x	23.4x
Altair Engineering	NasdaqGS:ALTR	\$2,790	\$2,794	7.0x	5.6x	71.0x	43.9x
Aurora Mobile	NasdaqGM:JG	\$866	\$918	8.3x	4.6x	NM	NM
Autodesk	NasdaqGS:ADSK	\$40,257	\$39,123	15.7x	12.2x	NM	45.5x
Aveva Group	LSE:AVV	\$6,904	\$7,010	8.5x	6.8x	46.4x	25.7x
Cadence Design Systems	NasdaqGS:CDNS	\$19,460	\$19,498	8.9x	8.3x	34.1x	24.7x
Hexagon	OM:HEXA B	\$21,894	\$19,780	5.4x	4.7x	19.5x	14.1x
Pivotal Software	NYSE:PVTL	\$5,073	\$5,774	7.7x	6.3x	NM	NM
Progress Software	NasdaqGS:PRGS	\$2,011	\$2,029	5.1x	4.6x	15.2x	9.1x
RIB Software AG	DB:RIB	\$717	\$959	4.2x	3.6x	22.2x	14.2x
Synopsys	NasdaqGS:SNPS	\$18,078	\$18,123	5.7x	5.4x	32.4x	20.1x
Twilio	NYSE:TWLO	\$16,138	\$16,432	21.4x	13.3x	NM	NM
Median				8.0x	6.0x	30.7x	23.4x

EMS / Infrastructure Software



				TEV/Rev	/enue	TEV/EBI	TDA
(\$ in millions)		TEV	Market Cap	LTM	NTM	LTM	NTM
Security Software							
Carbon Black	NasdaqGS:CBLK	\$821	\$982	3.9x	3.3x	NM	NM
Check Point Software	NasdaqGS:CHKP	\$17,005	\$18,764	8.8x	8.4x	18.4x	16.7x
Cheetah Mobile	NYSE:CMCM	\$437	\$860	0.6x	0.6x	5.4x	6.5x
Cyber-Ark Software	NasdaqGS:CYBR	\$4,368	\$4,795	12.7x	10.1x	75.8x	39.0x
Everbridge	NasdaqGM:EVBG	\$2,418	\$2,429	16.4x	11.5x	NM	NM
FireEye	NasdaqGS:FEYE	\$3,046	\$3,201	3.6x	3.4x	NM	20.4x
ForeScout	NasdaqGM:FSCT	\$1,799	\$1,898	6.0x	4.6x	NM	NM
Fortinet	NasdaqGS:FTNT	\$14,291	\$15,941	7.9x	6.6x	49.8x	25.0x
Gemalto	ENXTAM:GTO	\$5,960	\$5,339	1.8x	1.8x	14.9x	9.6x
Mimecast	NasdaqGS:MIME	\$3,144	\$3,112	9.8x	7.5x	NM	44.2x
MobileIron	NasdaqGS:MOBL	\$556	\$644	2.8x	2.6x	NM	91.0x
Okta	NasdaqGS:OKTA	\$11,383	\$11,675	28.5x	21.3x	NM	NM
OneSpan	NasdaqCM:OSPN	\$642	\$741	3.0x	2.7x	66.5x	21.9x
Palo Alto Networks	NYSE:PANW	\$22,483	\$23,757	8.7x	7.2x	NM	26.4x
Proofpoint	NasdaqGM:PFPT	\$6,780	\$6,978	9.0x	7.4x	NM	47.4x
Qualys	NasdaqGS:QLYS	\$3,246	\$3,534	11.6x	9.7x	41.0x	26.0x
Rapid7	NasdaqGM:RPD	\$2,535	\$2,619	10.4x	7.6x	NM	NM
SecureWorks	NasdaqGS:SCWX	\$1,449	\$1,578	2.8x	2.5x	NM	NM
Symantec	NasdaqGS:SYMC	\$17,941	\$15,475	3.8x	3.7x	20.3x	8.4x
Tenable	NasdaqGS:TENB	\$3,166	\$3,454	11.0x	8.6x	NM	NM
Trend Micro	TSE:4704	\$5,345	\$6,940	3.7x	3.4x	11.5x	10.5x
Tufin Software	NYSE:TUFN	\$739	\$727	8.7x	7.0x	NM	NM
Zix	NasdaqGS:ZIXI	\$415	\$442	5.9x	2.2x	29.3x	9.5x
Zscaler	NasdaqGS:ZS	\$8,141	\$8,480	33.5x	24.3x	NM	NM
Median				8.3x	6.8x	24.8x	21.9x

Cystem and Network manag							
A10 Networks	NYSE:ATEN	\$363	\$486	1.6x	1.5x	NM	NA
Anaplan	NYSE:PLAN	\$4,655	\$4,977	19.3x	14.9x	NM	NM
CommVault Systems	NasdaqGS:CVLT	\$1,956	\$2,414	2.8x	2.7x	61.6x	17.3x
Micro Focus	LSE:MCRO	\$14,704	\$10,359	4.5x	4.2x	13.9x	10.1x
Netscout Systems	NasdaqGS:NTCT	\$2,413	\$2,288	2.7x	2.7x	23.7x	NA
Nutanix	NasdaqGS:NTNX	\$7,343	\$7,865	5.9x	5.3x	NM	NM
One Stop Systems	NasdaqCM:OSS	\$33	\$33	0.9x	0.6x	NM	15.9x
Presidio	NasdaqGS:PSDO	\$2,187	\$1,240	0.7x	0.7x	10.2x	9.3x
SailPoint	NYSE:SAIL	\$2,431	\$2,502	9.8x	NA	NM	NM
ServiceNow	NYSE:NOW	\$49,800	\$50,370	17.7x	13.6x	NM	48.9x
Software	XTRA:SOW	\$2,611	\$2,815	2.6x	2.6x	9.1x	8.9x
SolarWinds	NYSE:SWI	\$7,477	\$5,990	8.8x	7.7x	37.2x	16.1x
Vmware	NYSE:VMW	\$85,176	\$83,783	9.5x	8.5x	35.1x	22.0x
Median				4.5x	3.5x	23.7x	16.0x

EMS / Infrastructure Software (continued)

			Market Cap	TEV/Revenue		TEV/EBITDA	
(\$ in millions)		TEV		LTM	NTM	LTM	NTM
Platform / OS							
Citrix Systems	NasdaqGS:CTXS	\$13,660	\$13,337	4.6x	4.4x	16.8x	12.0x
Hewlett-Packard	NYSE:HPQ	\$31,816	\$30,593	0.5x	0.5x	6.6x	6.6x
IBM	NYSE:IBM	\$162,045	\$124,822	2.1x	2.1x	9.5x	8.9x
Microsoft Corp.	NasdaqGS:MSFT	\$955,571	\$1,000,764	7.8x	7.1x	18.4x	16.5x
Red Hat	NYSE:RHT	\$30,571	\$32,446	9.1x	7.9x	46.7x	29.0x
Median				4.6x	4.4x	16.8x	12.0x

Financial Solutions



				TEV/Revenue		TEV/EBITDA	
(\$ in millions)		TEV	Market Cap	LTM	NTM	LTM	NTM
Banking Solutions							
Black Knight	NYSE:BKI	\$9,779	\$8,458	8.8x	8.1x	26.9x	16.2x
Bottomline Technologies	NasdaqGS:EPAY	\$2,073	\$2,060	5.0x	4.7x	48.7x	19.9x
Fidelity National	NYSE:FIS	\$46,609	\$37,518	5.5x	5.5x	19.5x	13.9x
Fiserv	NasdaqGS:FISV	\$39,629	\$34,206	6.7x	6.3x	20.8x	16.6x
GreenSky	NasdaqGS:GSKY	\$1,008	\$985	2.4x	1.7x	6.4x	4.7x
Jack Henry & Associates	NasdaqGS:JKHY	\$11,478	\$11,504	7.2x	7.0x	24.0x	21.6x
Pintec Technology	NasdaqGM:PT	\$298	\$230	1.9x	NA	NM	NA
Q2 Holdings	NYSE:QTWO	\$3,333	\$3,327	13.8x	10.2x	NM	NM
Senmiao Technology Limited	NasdaqCM:AIHS	\$124	\$132	220.0x	NA	NM	NA
Temenos Group	SWX:TEMN	\$12,055	\$11,519	14.2x	11.9x	48.2x	31.5x
Median				6.9x	6.7x	24.0x	16.6x
Capital Market & Investment So							
Envestnet	NYSE:ENV	\$3,631	\$3,461	4.5x	3.8x	42.3x	17.2x
FactSet Research Systems	NYSE:FDS	\$10,879	\$10,549	7.8x	NA	23.1x	NA
IRESS	ASX:IRE	\$1,858	\$1,736	5.7x	5.4x	24.2x	19.5x
Moodys	NYSE:MCO	\$42,127	\$37,279	9.4x	8.8x	20.1x	18.4x
Morningstar	NasdaqGS:MORN	\$5,916	\$6,119	5.7x	NA	21.9x	NA
MSCI	NYSE:MSCI	\$20,753	\$19,082	14.5x	13.1x	27.2x	24.0x
SimCorp	CPSE:SIM	\$3,834	\$3,887	8.9x	8.0x	32.1x	27.8x
SS&C Technologies Holdings	NasdaqGS:SSNC	\$25,406	\$17,096	6.1x	5.3x	18.7x	13.2x
Thomson Reuters	TSX:TRI	\$31,448	\$30,819	5.6x	5.3x	35.8x	20.1x
Median				6.1x	5.4x	24.2x	19.5x
Consumer Data & Analytics							
Equifax	NYSE:EFX	\$17,746	\$15,286	5.2x	5.0x	23.8x	14.5x
Experian	LSE:EXPN	\$29,550	\$26,115	6.1x	5.7x	20.0x	16.4x
Fair Isaac	NYSE:FICO	\$8,878	\$8,133	8.2x	7.5x	35.6x	33.2x
Median				6.1x	5.7x	23.8x	16.4x

Financial Solutions (continued)



				TEV/Rev	venue	TEV/EBITDA	
(\$ in millions)		TEV	Market Cap	LTM	NTM	LTM	NTM
Payment Processing							
ACI Worldwide	NasdaqGS:ACIW	\$4,673	\$4,139	4.6x	3.3x	27.7x	11.7x
Cielo	BOVESPA:CIEL3	\$7,578	\$5,286	2.6x	2.7x	7.3x	10.2x
Euronet Worldwide	NasdaqGS:EEFT	\$7,696	\$7,785	3.0x	2.6x	16.0x	12.2x
EVO Payments	NasdaqGM:EVOP	\$1,530	\$958	2.7x	2.5x	23.3x	9.3x
First Data Corporation	NYSE:FDC	\$44,109	\$24,405	5.1x	4.8x	13.1x	12.7x
Global Payments	NYSE:GPN	\$27,869	\$23,057	8.3x	6.1x	21.2x	16.5x
i3 Verticals, Inc.	NasdaqGS:IIIV	\$349	\$222	1.1x	2.5x	12.5x	8.5x
Net 1 Ueps Technologies	NasdaqGS:UEPS	\$323	\$203	0.6x	1.1x	6.2x	NM
PagSeguro Digital	NYSE:PAGS	\$7,821	\$8,529	11.5x	5.1x	NM	13.9x
Square	NYSE: SQ	\$30,572	\$30,797	9.3x	12.5x	NM	66.2x
StoneCo Ltd.	NasdaqGS:STNE	\$7,926	\$7,986	42.1x	12.3x	NM	20.9x
Total System Services	NYSE:TSS	\$22,080	\$18,137	5.4x	5.4x	18.5x	14.7x
Median				4.8x	4.1x	16.0x	12.7x
Insurance Solutions							
CorVel	NasdaqGS:CRVL	\$1,242	\$1,338	2.1x	NA	15.6x	NA
Ebix	NasdaqGS:EBIX	\$2,165	\$1,542	4.3x	3.3x	13.3x	10.1x
Guidewire Software	NYSE:GWRE	\$7,908	\$8,671	10.7x	10.2x	NM	46.5x
Sapiens International	NasdaqCM:SPNS	\$784	\$768	2.7x	2.4x	20.6x	13.9x
Verisk	NasdaqGS:VRSK	\$25,812	\$23,100	10.6x	9.9x	24.0x	20.7x
Median				4.3x	6.6x	18.1x	17.3x



Online & Digital



			_	TEV/Revenue		TEV/EBITDA	
(\$ in millions)		TEV	Market Cap	LTM	NTM	LTM	NTM
Digital Advertising & Marke	ting						
Alphabet	NasdaqGS:GOOG.L	\$727,505	\$828,721	5.1x	4.4x	17.3x	12.1x
Baidu	NasdaqGS:BIDU	\$49,096	\$58,075	3.3x	2.8x	10.2x	15.2x
Criteo	NasdaqGS:CRTO	\$1,126	\$1,275	0.5x	1.2x	5.0x	3.9x
Hubspot	NYSE:HUBS	\$7,482	\$7,756	14.6x	10.8x	NM	84.7x
iClick Interactive	NasdaqGM:ICLK	\$207	\$219	1.3x	1.0x	NM	27.9x
Marin Software	NasdaqGM:MRIN	\$21	\$29	0.4x	NA	NM	NA
Perion Network	NasdaqGS:PERI	\$73	\$76	0.3x	0.3x	3.3x	2.9x
QuinStreet	NasdaqGS:QNST	\$648	\$711	1.5x	1.3x	24.7x	11.9x
SINA Corp	NasdaqGS:SINA	\$4,040	\$4,378	1.9x	1.7x	7.6x	6.2x
Sogou	NYSE:SOGO	\$1,135	\$2,227	1.0x	0.9x	13.6x	8.0x
Telaria	NYSE:TLRA	\$281	\$329	5.1x	4.0x	NM	68.0x
The Rubicon Project	NYSE:RUBI	\$242	\$330	1.9x	1.6x	NM	23.6x
Yandex	NasdaqGS:YNDX	\$11,756	\$12,189	5.6x	4.2x	22.7x	13.5x
Median				1.9x	1.6x	11.9x	12.8x
Digital Media & Video							
Adobe Systems	NasdaqGS:ADBE	\$142,049	\$141,140	14.9x	12.2x	43.7x	26.8x
Bilibili	NasdaqGS:BILI	\$5,076	\$5,805	8.5x	4.9x	NM	NM
Diverse	N	.	0 4,000	0.4	0.4	10.0	10.0

Median				5.5x	4.2x	21.0x	26.8x
Zoom Video Communications	Nasdaq:ZM	\$18,805	\$18,807	56.9x	35.9x	NM	NM
Xunlei	NasdaqGS:XNET	-\$85	\$236	NM	NA	NM	NA
VeriSign	NasdaqGS:VRSN	\$24,074	\$23,533	19.7x	19.3x	29.0x	26.8x
TiVo	NasdaqGS:TIVO	\$1,844	\$1,170	2.7x	2.8x	11.9x	10.0x
Taptica International	AIM:TAP	\$189	\$244	0.7x	0.4x	5.0x	2.8x
Sonic Foundry	OTCPK:SOFO	\$9	\$5	0.3x	NA	NM	NA
Roku	NasdaqGS:ROKU	\$7,007	\$7,204	9.4x	6.3x	NM	NM
Qutoutiao	NasdaqGS:QTT	\$1,341	\$1,662	3.1x	1.2x	NM	NM
Pluralsight	NasdaqGS:PS	\$2,570	\$2,641	11.1x	7.6x	NM	NM
Netflix	NasdaqGS:NFLX	\$169,851	\$162,007	10.2x	7.9x	99.6x	48.0x
Leaf Group	NYSE:LEAF	\$183	\$214	1.2x	1.1x	NM	71.6x
iQIYI	NasdaqGS:IQ	\$15,819	\$16,032	4.4x	3.3x	16.1x	10.4x
IAC/Interactive	NasdaqGS:IAC	\$19,702	\$18,923	4.6x	4.0x	24.0x	16.9x
HUYA Inc.	NYSE:HUYA	\$4,337	\$5,209	6.4x	4.2x	NM	41.1x
Digimarc	NasdaqGS:DMRC	\$305	\$349	14.4x	12.1x	NM	NM
Brightcove	NasdaqGS:BCOV	\$370	\$380	2.2x	2.0x	NM	44.0x
Blucora	NasdaqGS:BCOR	\$1,890	\$1,689	3.4x	2.4x	18.0x	13.2x
Bilibili	NasdaqGS:BILI	\$5,076	\$5,805	8.5x	4.9x	NM	NM

Online & Digital (continued)



				TEV/Rev	/enue	TEV/EBITDA	
(\$ in millions)		TEV	Market Cap	LTM	NTM	LTM	NTM
Digital Advertising Agencies	& Service Providers						
Dentsu	TSE:4324	\$13,143	\$11,479	1.4x	1.3x	8.4x	7.8x
IPG	NYSE:IPG	\$13,895	\$8,902	1.7x	1.6x	10.6x	9.4x
M&C Saatchi	AIM:SAA	\$449	\$437	0.8x	1.3x	13.2x	9.2x
MDC Partners	NasdaqGS:MDCA	\$1,284	\$154	0.9x	0.9x	9.5x	7.2x
Omnicom	NYSE:OMC	\$22,116	\$17,620	1.5x	1.5x	9.4x	9.1x
Publiclis	ENXTPA:PUB	\$15,690	\$13,701	1.6x	1.5x	8.1x	6.4x
WPP	LSE:WPP	\$21,506	\$15,721	1.1x	1.1x	8.8x	7.4x
Median				1.4x	1.3x	9.4x	7.8x
Online Retail & Marketplace	s						
1-800-Flowers.com	NasdaqGS:FLWS	\$1,255	\$1,366	1.0x	1.0x	16.2x	14.1x
Alibaba	NYSE:BABA	\$486,191	\$481,031	9.7x	NA	37.6x	NA
Amazon	NasdaqGS:AMZN	\$980,472	\$948,487	4.1x	3.4x	33.7x	21.9x
ASOS	AIM:ASC	\$4,331	\$4,282	1.3x	1.1x	32.9x	21.1x
Blue Apron	NYSE:APRN	\$256	\$201	0.4x	0.5x	NM	14.3x
boohoo.com	AIM:BOO	\$3,499	\$3,723	3.1x	2.4x	35.0x	24.7x
Booking Holdingings	NasdaqGS:BKNG	\$83,818	\$81,428	5.8x	5.4x	14.5x	14.0x
Cango	NYSE:CANG	\$831	\$1,060	5.2x	3.6x	17.5x	4.1x
CarGurus	NasdaqGS:CARG	\$4,363	\$4,521	9.6x	7.2x	NM	65.5x
Carvana	NYSE:CVNA	\$3,657	\$2,948	1.9x	1.0x	NM	NM
Ebay	NasdaqGS:EBAY	\$39,306	\$33,772	3.6x	3.6x	12.8x	9.9x
Eventbrite	NYSE:EB	\$1,678	\$2,014	5.8x	5.0x	NM	NM
Expedia	NasdaqGS:EXPE	\$22,138	\$19,315	2.0x	1.8x	17.5x	9.9x
Groupon	NasdaqGS:GRPN	\$1,725	\$2,000	0.7x	0.7x	11.6x	6.3x
Grubhub	NYSE:GRUB	\$6,313	\$6,083	5.7x	4.3x	44.2x	22.3x
EverQuote, Inc.	NasdaqGM:EVER	\$188	\$229	1.1x	0.9x	NM	NM
Ocado Group	LSE:OCDO	\$12,300	\$12,365	5.9x	5.4x	NM	NM
Overstock	NasdaqGM:OSTK	\$366	\$425	0.2x	0.2x	NM	NM
Pinduoduo Inc.	NasdaqGS:PDD	\$22,487	\$25,656	11.8x	5.6x	NM	NM
Quotient Technology	NYSE:QUOT	\$702	\$869	1.8x	1.5x	34.2x	9.4x
Rakuten	TSE:4755	\$13,748	\$14,997	1.4x	1.2x	10.3x	22.9x
RumbleON	NasdaqCM:RMBL	\$161	\$103	1.0x	0.2x	NM	NM
Shutterstock	NYSE:SSTK	\$1,242	\$1,424	2.0x	1.8x	22.2x	10.2x
Stamps.com	NasdaqGS:STMP	\$1,475	\$1,504	2.5x	2.8x	6.7x	12.5x
The Trade Desk	NasdaqGM:TTD	\$9,610	\$9,817	20.1x	14.0x	83.2x	47.7x
TripAdvisor	NasdaqGS:TRIP	\$6,813	\$7,400	4.2x	4.0x	28.7x	14.2x
Wayfair	NYSE:W	\$14,777	\$14,819	2.2x	1.5x	NM	NM
Wowo	NASDAQ:JMU	\$29	\$14	0.3x	NA	NM	NA
Median				2.3x	2.1x	22.2x	14.2x

Online & Digital (continued)



				TEV/Rev	venue	TEV/EBITDA	
(\$ in millions)		TEV	Market Cap	LTM	NTM	LTM	NTM
Digital Gaming							
Activision	NasdaqGS:ATVI	\$35,225	\$36,929	4.7x	5.5x	14.1x	14.2x
Capcom	TSE:9697	\$2,109	\$2,401	2.2x	2.4x	9.0x	8.8x
Changyou.com	NasdaqGS:CYOU	\$518	\$1,009	1.1x	1.1x	3.8x	3.1x
Electronic Arts	NasdaqGS:EA	\$24,190	\$28,357	4.6x	4.7x	14.2x	13.9x
Gree	TSE:3632	\$140	\$915	0.2x	0.2x	2.4x	2.7x
Konami	TSE:9766	\$5,002	\$6,144	2.2x	2.0x	9.2x	8.1x
NetDragon WebSoft	SEHK:777	\$1,363	\$1,545	1.9x	1.6x	11.7x	10.1x
Net Entertainment	OM:NET B	\$727	\$762	3.9x	3.9x	10.1x	8.0x
Nintendo	TSE:7974	\$35,248	\$44,926	3.3x	3.0x	14.7x	11.1x
Playtech	LSE:PTEC	\$1,980	\$1,749	1.4x	1.1x	6.5x	4.4x
Square Enix	TSE:9684	\$3,168	\$4,100	1.5x	1.3x	16.2x	7.8x
Take-Two Interactive	NasdaqGS:TTWO	\$8,641	\$10,241	3.3x	3.2x	29.1x	13.8x
Ubisoft	ENXTPA:UBI	\$10,723	\$10,341	4.7x	4.3x	31.8x	10.2x
Zynga	NasdaqGS:ZNGA	\$4,771	\$5,252	5.3x	3.7x	83.7x	16.4x
Median				2.7x	2.7x	12.9x	9.5x
Social Media							
Facebook	NasdaqGS:FB	\$514,025	\$552,058	8.7x	7.1x	18.7x	13.2x
LINE	TSE:3938	\$7,424	\$7,971	3.9x	3.2x	NM	NM
Mail.ru Group	LSE:MAIL	\$5,035	\$5,002	4.8x	3.4x	NM	10.5x
Match Group	NasdaqGS: MTCH	\$18,306	\$16,977	10.6x	8.7x	31.2x	22.3x
MeetMe	NasdaqCM:MEET	\$427	\$419	2.4x	2.0x	18.8x	10.4x
Mixi	TSE:2121	\$357	\$1,622	0.2x	0.3x	0.8x	1.2x
Momo	NasdaqGS:MOMO	\$6,352	\$7,272	3.3x	2.6x	12.3x	9.8x
Pinterest	NYSE:PINS	\$17,414	\$16,400	23.0x	15.9x	NM	NM
Renren	NYSE:RENN	\$224	\$119	0.5x	0.4x	NM	NM
Snap	NYSE:SNAP	\$14,095	\$14,928	11.1x	8.3x	NM	NM
Twitter	NYSE:TWTR	\$27,627	\$30,600	8.7x	7.6x	34.2x	20.5x
XING	XTRA:O1BC	\$2,037	\$2,088	7.8x	6.2x	29.3x	20.4x

Median

Yelp

Digital Commerce Solution	ons						
Gk Software AG	DB:GKS	\$196	\$170	1.7x	1.5x	31.6x	11.0x
Intershop	XTRA:ISH2	\$53	\$60	1.5x	1.2x	NM	33.9x
NCR	NYSE:NCR	\$7,056	\$3,478	1.1x	1.1x	8.6x	6.7x
PFS Web	NasdaqCM:PFSW	\$116	\$89	0.4x	0.4x	6.5x	4.4x
Shopify	NYSE:SHOP	\$25,281	\$27,174	21.4x	15.6x	NM	NM
Wincor Nixdorf	XTRA:WIN	\$2,289	\$2,008	0.9x	NA	10.7x	NA
Worldline S.A	ENXTPA:WLN	\$11,713	\$11,441	6.1x	4.3x	29.3x	16.8x
Median				1.5x	1.3x	10.7x	11.0x

\$2,510

\$3,266

2.7x

4.8x

2.4x

3.4x

50.5x

24.1x

10.4x

10.5x

NYSE:YELP

Online & Digital (continued)



				TEV/Rev	/enue	TEV/EBITDA	
(\$ in millions)		TEV	Market Cap	LTM	NTM	LTM	NTM
Other Digital Companies							
Akamai	NasdaqGS:AKAM	\$13,279	\$13,119	4.8x	4.6x	17.3x	11.2x
CooTek (Cayman)	NYSE:CTK	\$617	\$702	4.6x	2.4x	55.3x	20.3x
Endurance International	NasdaqGS:EIGI	\$2,628	\$794	2.3x	2.3x	8.6x	8.6x
GoDaddy	NYSE:GDDY	\$15,929	\$14,298	6.0x	5.2x	42.8x	20.5x
Just Eat	LSE:JE.	\$6,088	\$6,182	6.0x	4.5x	29.2x	25.0x
Limelight Networks	NasdaqGS:LLNW	\$306	\$341	1.6x	1.4x	61.2x	8.7x
Moneysupermarket.com	LSE:MONY	\$2,502	\$2,541	5.4x	5.0x	16.4x	13.9x
NetEase	NasdaqGS:NTES	\$32,010	\$36,409	3.3x	2.5x	22.1x	17.9x
Opera	NasdaqGS:OPRA	\$889	\$1,063	5.2x	3.6x	17.5x	13.7x
Otello Corporation	OB:OTELLO	\$211	\$237	0.8x	NA	NM	7.7x
Phoenix New Media	NYSE:FENG	\$243	\$317	1.2x	1.0x	NM	NM
Redfin Corporation	NasdaqGS:RDFN	\$1,567	\$1,881	3.2x	2.3x	NM	NM
Sea	NYSE:SE	\$11,139	\$11,075	13.5x	5.3x	NM	NM
SurveyMonkey	NasdaqGS:SVMK	\$2,484	\$2,328	9.8x	7.9x	NM	59.0x
Tencent Holdings	SEHK:700	\$474,253	\$467,714	10.4x	NA	28.6x	NA
United Internet	DB:UTDI	\$10,424	\$7,983	1.8x	1.7x	10.0x	7.0x
Wix	NasdaqGS:WIX	\$6,325	\$6,690	10.5x	8.3x	NM	42.8x
Zillow	NasdaqGS:ZG	\$6,133	\$6,839	4.6x	2.4x	NM	NM
Median				4.7x	3.0x	22.1x	13.9x



Tech Enabled Business Services



				TEV/Rev	/enue	TEV/EBITDA	
(\$ in millions)		TEV	Market Cap	LTM	NTM	LTM	NTM
IT Services, Integration & Cons	sulting						
Accenture	NYSE:ACN	\$112,461	\$116,513	2.8x	2.5x	16.8x	15.1x
Atos Origin	ENXTPA:ATO	\$16,506	\$11,017	1.2x	1.3x	9.0x	9.0x
Bechtle	XTRA:BC8	\$4,460	\$4,301	0.9x	0.8x	17.7x	13.0x
CACI International	NYSE:CACI	\$5,831	\$4,847	1.3x	1.1x	12.8x	11.0x
Cancom	XTRA:COK	\$1,623	\$1,765	1.0x	1.0x	15.8x	11.6x
Cap Gemini	ENXTPA:CAP	\$21,521	\$20,008	1.5x	1.3x	11.4x	9.1x
CGI Group	TSX:GIB.A	\$20,973	\$19,606	2.4x	2.2x	14.4x	12.1x
CLPS Incorporation	NasdaqGM:CLPS	\$116	\$125	2.0x	NA	NM	NA
Cognizant Technology	NasdaqGS:CTSH	\$37,768	\$41,534	2.3x	2.2x	11.4x	11.3x
ComputaCenter	LSE:CCC	\$1,701	\$1,776	0.3x	0.3x	9.4x	8.1x
DXC Technology	NYSE:DXC	\$23,055	\$17,636	1.0x	1.1x	4.2x	4.8x
ePlus	NasdaqGS:PLUS	\$1,390	\$1,283	1.0x	0.9x	13.3x	12.6x
FDM Group	LSE:FDM	\$1,338	\$1,382	4.2x	3.8x	20.6x	18.5x
Fujitsu	TSE:6702	\$14,994	\$14,805	0.4x	0.4x	5.4x	6.1x
HCL Technologies	NSEI:HCLTECH	\$22,766	\$23,041	2.7x	2.3x	11.7x	10.1x
Infosys	NSEI:INFY	\$43,003	\$46,761	3.7x	3.3x	14.5x	13.6x
Luxoft Holdings	NYSE:LXFT	\$1,878	\$1,980	2.1x	1.9x	19.7x	13.7x
ManTech International	NasdaqGS:MANT	\$2,473	\$2,471	1.3x	1.1x	15.0x	13.4x
MAXIMUS	NYSE:MMS	\$4,772	\$4,699	2.0x	1.6x	13.7x	11.4x
NCC Group	LSE:NCC	\$691	\$632	2.2x	2.0x	14.1x	11.1x
Nomura Research Institute	TSE:4307	\$10,810	\$11,300	2.4x	2.2x	11.8x	10.9x
NSD	TSE:9759	\$827	\$1,025	1.5x	1.4x	10.1x	8.8x
OBIC	TSE:4684	\$9,194	\$10,271	13.8x	12.6x	23.2x	23.6x
Perficient	NasdaqGS:PRFT	\$1,046	\$971	2.1x	1.9x	17.4x	11.7x
SCSK Corporation	TSE:9719	\$4,487	\$4,913	1.4x	1.3x	10.1x	9.3x
Sopra Group	ENXTPA:SOP	\$3,261	\$2,566	0.7x	0.7x	8.6x	7.0x
Talend	NasdaqGM:TLND	\$1,472	\$1,505	7.2x	5.6x	NM	NM
Tata Consultancy Services	NSEI:TCS	\$115,564	\$121,767	5.5x	5.0x	20.4x	18.6x
The Hackett Group	NasdaqGS:HCKT	\$451	\$458	1.7x	1.6x	10.8x	8.9x
Tieto	HLSE:TIETO	\$2,399	\$2,098	1.3x	1.3x	10.5x	7.9x
Unisys	NYSE:UIS	\$672	\$580	0.2x	0.2x	2.5x	1.4x
Virtusa	NasdaqGS:VRTU	\$1,867	\$1,662	1.6x	1.3x	20.3x	13.9x
Wipro	BSE:507685	\$21,759	\$25,731	2.6x	2.5x	13.7x	12.1x
Xerox	NYSE:XRX	\$11,903	\$7,553	1.2x	1.3x	7.8x	7.1x
Median				1.6x	1.4x	13.1x	11.2x

Tech Enabled Business Services (continued)

				TEV/Rev	venue	TEV/EBITDA	
(\$ in millions)		TEV	Market Cap	LTM	NTM	LTM	NTM
Business Process Management	(BPM)						
Appian	APPN	\$2,240	\$2,335	9.9x	8.4x	NM	NM
Broadridge Financial Solutions	NYSE:BR	\$14,609	\$13,665	3.4x	3.2x	18.0x	14.6x
Cardtronics	NasdaqGS:CATM	\$2,430	\$1,656	1.8x	1.8x	8.8x	8.2x
Cass Information Systems	NasdaqGS:CASS	\$486	\$717	3.1x	NA	9.5x	NA
Computershare	ASX:CPU	\$8,261	\$6,813	3.6x	3.4x	13.4x	11.3x
CSG Systems International	NasdaqGS:CSGS	\$1,637	\$1,440	1.9x	1.8x	11.3x	7.7x
DocuSign	NasdaqGS:DOCU	\$9,298	\$9,628	13.3x	10.2x	NM	NM
EVERTEC	NYSE:EVTC	\$2,675	\$2,199	5.9x	5.6x	15.4x	11.9x
ExIservice Holdings	NasdaqGS:EXLS	\$2,158	\$2,040	2.4x	2.2x	17.5x	12.7x
Genpact	NYSE:G	\$7,820	\$6,884	2.6x	2.3x	17.4x	12.5x
PagerDuty	NYSE:PD	\$3,498	\$3,452	NM	22.4x	NA	NM
Smartsheet	NYSE:SMAR	\$4,260	\$4,468	24.0x	16.7x	NM	NM
SS&C Technologies	NasdaqGS:SSNC	\$25,406	\$17,096	6.1x	5.3x	18.7x	13.2x
Tabula Rasa Healthcare	NasdagGM:TRHC	\$1,197	\$1,171	5.9x	3.9x	73.5x	27.5x
Trans Cosmos	TSE:9715	\$733	\$903	0.3x	0.3x	9.8x	7.4x
WEX	NYSE:WEX	\$10,914	\$9,095	7.3x	6.0x	19.9x	14.5x
Wirecard	XTRA:WDI	\$17,000	\$18,511	7.4x	5.4x	26.0x	18.5x
WNS	NYSE:WNS	\$2,769	\$2,860	3.4x	3.1x	19.0x	13.9x
Worldpay	NYSE:WP	\$44,497	\$36,449	11.3x	10.2x	28.8x	20.0x
Zuora	NYSE:ZUO	\$2,262	\$2,424	9.6x	7.8x	NM	NM
Median				5.9x	5.3x	17.5x	12.9x
Data Center Hosting & Services							
Box	NYSE:BOX	\$2,872	\$2,976	4.7x	4.1x	NM	62.7x
Dropbox	NasdaqGS:DBX	\$9,467	\$10,390	6.8x	5.6x	NM	23.3x
Equinix	NasdaqGS:EQIX	\$48,953	\$38,227	9.7x	8.6x	21.9x	18.1x
Interxion Holding	NYSE:INXN	\$6,226	\$4,961	9.7x	8.3x	22.8x	16.4x
Pure Storage	NYSE:PSTG	\$4,851	\$5,599	3.6x	2.7x	NM	26.8x
Switch	NYSE:SWCH	\$1,938	\$848	4.8x	4.3x	11.9x	8.6x
Median				6.8x	5.6x	21.9x	18.1x
Call Center							
Sykes Enterprises	NasdaqGS:SYKE	\$1,152	\$1,179	0.7x	0.7x	7.0x	6.4x
TeleTech Holdings	NasdaqGS:TTEC	\$1,896	\$1,685	1.3x	1.1x	11.2x	9.2x
Median				1.0x	0.9x	9.1x	7.8x



Application Software



Date Announced	Period	Target	Buyer	Enterprise Value	Revenue Multiple
Apr-19	Q2'2019	Breezy HR, Inc.	Learning Technologies Group plc (AIM:LTG)	\$30.0	8.3x
Apr-19	Q2'2019	Axioma, Inc.	Deutsche Börse Aktiengesellschaft (XTRA:DB1)	\$850.0	8.5x
Apr-19	Q2'2019	BSM Technologies Inc. (TSX:GPS)	Geotab Inc.	\$88.2	1.9x
Apr-19	Q2'2019	Celtech Software Group	Universe Group plc (AIM:UNG)	\$6.5	2.7x
Mar-19	Q1'2019	lpswitch, Inc.	Progress Software Corporation (NasdaqGS:PRGS)	\$225.0	-
Mar-19	Q1'2019	Dynamic Yield	McDonald's Corporation (NYSE:MCD)	\$300.0	-
Mar-19	Q1'2019	Espial Group Inc. (TSX:ESP)	Enghouse Systems Limited (TSX:ENGH)	\$42.1	0.8x
Mar-19	Q1'2019	Tactical Communications Group, LLC	Curtiss-Wright Corporation (NYSE:CW)	\$50.0	-
Mar-19	Q1'2019	EASY SOFTWARE AG (XTRA:ESY)	Deutsche Balaton AG (DB:BBHK)	\$26.9	0.7x
Mar-19	Q1'2019	Figure Eight Inc.	Appen Limited (ASX:APX)	\$300.0	-
Feb-19	Q1'2019	Workday and Cornerstone OnDemand Business	Alight Solutions LLC	\$110.0	-
Feb-19	Q1'2019	Containerchain Pty Ltd	Wisetech Global Limited (ASX:WTC)	\$66.1	-
Feb-19	Q1'2019	Attunity Ltd. (NasdaqCM:ATTU)	QlikTech International AB	\$551.6	5.4x
Feb-19	Q1'2019	PBU CAD-Systeme Gmbh	Tech-Value S.p.A.	\$5.4	-
Feb-19	Q1'2019	GreenShoot Labs Limited	The Panoply Holdings plc (AIM:TPX)	\$9.5	-
Feb-19	Q1'2019	Ellie Mae, Inc. (NYSE:ELLI)	Thoma Bravo, LLC	\$3,683.3	6.6x
Feb-19	Q1'2019	Solium Capital Inc. (TSX:SUM)	Morgan Stanley (NYSE:MS)	\$864.3	7.2x
Feb-19	Q1'2019	Tax Systems plc (AIM:TAX)	Bowmark Capital LLP	\$141.8	6.8x
Feb-19	Q1'2019	The Ultimate Software Group, Inc. (NasdaqGS:ULTI)	Hellman & Friedman LLC; JMI Management, Inc.; The Blackstone Group L.P. (NYSE:BX)	\$10,874.8	9.0x
Feb-19	Q1'2019	Top Image Systems Ltd. (NasdaqCM:TISA)	Kofax Limited	\$22.1	0.7x
Feb-19	Q1'2019	PCSYS A/S	TECSYS Inc. (TSX:TCS)	\$10.3	-
Feb-19	Q1'2019	Dynacommerce Holding B.V.	Tech Mahindra Limited (NSEI:TECHM)	\$18.2	-



Date Announced	Period	Target	Buyer	Enterprise Value	Revenue Multiple
Jan-19	Q1'2019	MSR Customs Corporation	The Descartes Systems Group Inc (TSX:DSG)	\$248.8	-
Jan-19	Q1'2019	Trendkite, Inc.	Cision Ltd. (NYSE:CISN)	\$221.1	-
Dec-18	Q1'2019	Pictureworks Holdings Sdn Bhd	PUC Berhad (KLSE:PUC)	\$37.6	-
Dec-18	Q4'2018	Pictureworks Holdings Sdn Bhd	PUC Berhad (KLSE:PUC)	\$37.6	-
Dec-18	Q4'2018	MINDBODY, Inc. (NasdaqGM:MB)	Vista Equity Partners LLC	\$2,154.4	7.4x
Dec-18	Q4'2018	Global Software Business Unit of Atos Convergence Creators GmbH	Enea AB (publ) (OM:ENEA)	\$20.6	-
Dec-18	Q4'2018	Cortex Business Solutions Inc. (TSXV:CBX)	TransZap P2P Canada, Inc.	\$33.3	3.1x
Dec-18	Q4'2018	Socionext Embedded Software Austria GmbH	ArtSpark Holdings Inc. (TSE:3663)	\$17.7	-
Dec-18	Q4'2018	Harvest S.A. (ENXTPA:ALHVS)	Five Arrows Managers SAS	\$75.6	3.9x
Dec-18	Q4'2018	IQMS Inc.	Dassault Systèmes SE (ENXTPA:DSY)	\$425.0	-
Dec-18	Q4'2018	Danal, Inc.	Boku, Inc. (AIM:BOKU)	\$101.4	-
Dec-18	Q4'2018	Lighthouse Computer Services Inc.	Converge Technology Solutions Corp. (TSXV:CTS)	\$23.2	-
Dec-18	Q4'2018	SDH Holding SA/ SDATAWAY SA	Intretech (Hk) Co., Limited	\$36.1	-
Nov-18	Q4'2018	RTLS SmartSpace Business of Ubisense Group Plc	Abyssinian Topco Limited	\$44.8	-
Nov-18	Q4'2018	Assima PLC (ENXTPA:ALSIM)	Partner One Capital	\$10.3	0.7x
Nov-18	Q4'2018	Cylance Inc.	BlackBerry Limited (TSX:BB)	\$1,500.0	-
Nov-18	Q4'2018	iPass Inc. (NasdaqCM:IPAS)	Pareteum Corporation (NasdaqCM:TEUM)	\$29.0	0.5x
Nov-18	Q4'2018	Apptio, Inc. (NasdaqGM:APTI)	Vista Equity Partners LLC	\$2,122.3	7.1x
Nov-18	Q4'2018	Datawatch Corporation	Altair Engineering Inc. (NasdaqGS:ALTR)	\$187.2	3.9x
Nov-18	Q4'2018	DealerMine Inc.	Quorum Information Technologies Inc. (TSXV:QIS)	\$11.0	-
Nov-18	Q4'2018	Inuvo, Inc. (AMEX:INUV)	ConversionPoint Technologies Inc.	\$84.5	0.5x
Oct-18	Q4'2018	Mitek Systems, Inc. (NasdaqCM:MITK)	ASG Technologies Group, Inc.	\$438.3	7.6x



Date Announced	Period	Target	Buyer	Enterprise Value	Revenue Multiple
Oct-18	Q4'2018	eVision Industry Software BV	Wolters Kluwer Law & Business Group	\$180.0	7.2x
Oct-18	Q4'2018	Red Hat, Inc. (NYSE:RHT)	International Business Machines Corporation (NYSE:IBM)	\$35,710.2	10.8x
Oct-18	Q4'2018	SLI Systems Limited (NZSE:SLI)	ESW Holdings, Inc.	\$27.4	1.0x
Oct-18	Q4'2018	Vix Verify Global Pty Ltd	GB Group plc (AIM:GBG)	\$27.1	1.8x
Oct-18	Q4'2018	JetPay Corporation (NasdaqCM:JTPY)	NCR Corporation (NYSE:NCR)	\$184.9	2.2x
Oct-18	Q4'2018	Symbility Solutions Inc. (TSXV:SY)	CoreLogic, Inc. (NYSE:CLGX)	\$84.4	3.0x
Oct-18	Q4'2018	Pimz Co., Ltd.	Cafe24 Corp. (KOSDAQ:A042000)	\$6.2	3.8x
Oct-18	Q4'2018	IFS Global Holdings Pty Ltd	Wisetech Global Limited (ASX:WTC)	\$39.2	7.0x
Oct-18	Q4'2018	Swiped On Limited	Smartspace Software Plc (AIM:SMRT)	\$7.3	11.0x
Oct-18	Q4'2018	LSI-Sigma Software Limited	Wisetech Global Limited (ASX:WTC)	\$6.6	2.8x
Oct-18	Q4'2018	ZheJiang SINON Technology CO.LTD	Hangzhou Prevail Optoelectronic Equipment Co., Ltd. (SZSE:300710)	\$17.2	4.9x
Oct-18	Q4'2018	IT SONIX GmbH/XPURE GmbH	Data Respons ASA (OB:DAT)	\$20.2	1.3x
Oct-18	Q4'2018	MYOB Group Limited (ASX:MYO)	KKR & Co. Inc. (NYSE:KKR)	\$1,529.7	6.0x
Sep-18	Q3'2018	FueTrek Co., Ltd. (TSE:2468)	Glory Ltd. (TSE:6457)	\$67.7	1.6x
Sep-18	Q3'2018	All Right Software Inc.	EPS Holdings, Inc. (TSE:4282)	\$13.8	2.2x
Sep-18	Q3'2018	Prime Analytics, LLC	KRM22 PIc (AIM:KRM)	\$8.0	3.2x
Sep-18	Q3'2018	Top Data Science Oy	Morpho, Inc. (TSE:3653)	\$5.0	9.9x
Sep-18	Q3'2018	IntraLinks Holdings, Inc.	SS&C Technologies Holdings, Inc. (NasdaqGS:SSNC)	\$1,500.0	4.6x
Sep-18	Q3'2018	Brand View Limited	Ascential plc (LSE:ASCL)	\$49.0	2.9x
Aug-18	Q3'2018	Big Fish Athletics (Beijing) Network Technology Co., Ltd.	Zhejiang Wanshengda Playing Card Co.	\$35.6	26.6x
Aug-18	Q3'2018	Digium, Inc.	Sangoma Technologies Corporation (TSXV:STC)	\$27.9	0.9x
Aug-18	Q3'2018	DHI Group, Inc. (NYSE:DHX)	TCS Capital Management, LLC	\$152.6	0.8x



Date Announced	Period	Target	Buyer	Enterprise Value	Revenue Multiple
Aug-18	Q3'2018	Virtual Calibre SDN. BHD. / Virtual Calibre MSC SDN. BHD.	Japan System Techniques Co., Ltd. (TSE:4323)	\$15.5	1.3x
Aug-18	Q3'2018	Smartbox Assistive Technology Ltd	Tobii Dynavox LLC	\$14.0	1.2x
Aug-18	Q3'2018	Trinium Technologies, LLC	Wisetech Global Limited (ASX:WTC)	\$49.9	6.0x
Aug-18	Q3'2018	TravelClick, Inc.	Amadeus Americas, Inc.	\$1,520.0	4.1x
Aug-18	Q3'2018	Taric S.A.	Wisetech Global Limited (ASX:WTC)	\$34.7	5.3x
Aug-18	Q3'2018	Esize Netherlands B.V.	Proactis Holdings Plc (AIM:PHD)	\$17.6	3.0x
Jul-18	Q3'2018	Eze Software Group LLC	SS&C Technologies Holdings, Inc. (NasdaqGS:SSNC)	\$1,450.0	5.2x
Jul-18	Q3'2018	Hangzhou Worth Technology Co., Ltd.	Leon Technology Co., Ltd. (SZSE:300603)	\$175.8	5.0x
Jul-18	Q3'2018	Indus Software Technologies Pvt. Ltd.	Ebix, Inc. (NasdaqGS:EBIX)	\$29.0	1.3x
Jul-18	Q3'2018	Jilin Jincai Technology Co., Ltd.	Fujian Boss Software Corp. (SZSE:300525)	\$6.1	3.0x
Jul-18	Q3'2018	Shenzhen Youluo Technology Co., Ltd.	China High-Speed Railway Technology Co., Ltd. (SZSE:000008)	\$270.0	41.2x
Jul-18	Q3'2018	PerfectCard DAC	EML Payments Limited (ASX:EML)	\$7.1	3.3x
Jul-18	Q3'2018	Shire Systems Ltd.	Elecosoft plc (AIM:ELCO)	\$8.3	3.0x
Jul-18	Q3'2018	B2 Group S.a.R.L	Gresham Technologies plc (LSE:GHT)	\$9.9	4.9x
Jul-18	Q3'2018	Savoye SA	Noblelift Intelligent Equipment Co.,Ltd. (SHSE:603611)	\$37.6	0.4x
Jul-18	Q3'2018	Electronic Data Processing PLC (LSE:EDP)	Kerridge Commercial Systems Group Limited	\$15.4	1.0x
Jul-18	Q3'2018	Taliance Group	Altus Group Limited (TSX:AIF)	\$23.3	4.3x
Jul-18	Q3'2018	SUSE International Holdings GmbH, SUSE GmbH, and SUSE LLC	Eqt Fund Management S.A.R.L	\$2,535.0	7.3x
Jul-18	Q3'2018	Link Mobility Group ASA (OB:LINK)	ABRY Partners, LLC	\$537.1	2.7x
Jun-18	Q2'2018	RO Innovation, Inc.	RO Innovation, Inc.	\$14.3	2.4x
Jun-18	Q2'2018	Convergys Corporation (NYSE:CVG)	Concentrix Corporation	\$2,534.0	0.9x
Jun-18	Q2'2018	Cheleo SRL	TXT e-solutions S.p.A. (BIT:TXT)	\$8.8	2.7x

Application Software (continued)



Date Announced	Period	Target	Buyer	Enterprise Value	Revenue Multiple
Jun-18	Q2'2018	Pierbridge, Inc.	Wisetech Global Limited (ASX:WTC)	\$59.4	6.4x
Jun-18	Q2'2018	Constructionline	Warburg Pincus LLC	\$210.9	11.4x
Jun-18	Q2'2018	Artilium plc (AIM:ARTA)	Pareteum Corporation (AMEX:TEUM)	\$100.6	7.9x
May-18	Q2'2018	A2iA S.A.	Mitek Systems, Inc. (NasdaqCM:MITK)	\$49.7	3.3x
May-18	Q2'2018	Ulukom Bilgisayar Yazilim Donanim Danismanlik ve Ticaret AS	Wisetech Global Limited (ASX:WTC)	\$5.6	4.0x
May-18	Q2'2018	True North Consulting, LLC	GSE Systems, Inc. (NasdaqCM:GVP)	\$9.8	0.9x
May-18	Q2'2018	Unicommerce eSolutions Private Limited	Infibeam Incorporation Limited (BSE:539807)	\$17.9	5.9x

EMS / Infrastructure Software



Date Announced	Period	Target	Buyer	Enterprise Value	Revenue Multiple
Apr-19	Q2'2019	Xware AB	Wisetech Global Limited (ASX:WTC)	\$16.4	6.6x
Apr-19	Q2'2019	GBST Holdings Limited (ASX:GBT)	Bravura Solutions Limited (ASX:BVS)	\$123.6	1.8x
Feb-19	Q1'2019	Substantially All Assets of Determine, Inc.	Corcentric Collective Business System Corp.	\$46.0	-
Feb-19	Q1'2019	IDology, Inc.	GB Group plc (AIM:GBG)	\$301.0	-
Feb-19	Q1'2019	Webroot Inc.	Carbonite, Inc. (NasdaqGM:CARB)	\$618.5	-
Feb-19	Q1'2019	MicroPact Inc.	Tyler Technologies, Inc. (NYSE:TYL)	\$195.0	-
Dec-18	Q4'2018	Shenzhen Renyong Electronic System Co., Ltd.	Shenzhen Infinova Intelligent Technology Co., Ltd.	\$8.1	-
Dec-18	Q4'2018	Verimatrix, Inc.	Inside Secure S.A. (ENXTPA:INSD)	\$158.0	-
Nov-18	Q4'2018	Ultra Electronics Limited	ADB Safegate BVBA	\$28.5	-
Oct-18	Q4'2018	Red Hat, Inc. (NYSE:RHT)	International Business Machines Corporation (NYSE:IBM)	\$35,710.2	10.8x
Oct-18	Q4'2018	SK infosec Co., Ltd.	SK Telecom Co., Ltd. (KOSE:A017670)	\$313.2	1.7x
Oct-18	Q4'2018	Savision B.V.	Martello Technologies Corporation	\$11.0	3.2x
Oct-18	Q4'2018	MJ Freeway LLC	MTech Acquisition Corp. (NasdaqCM:MTEC)	\$70.0	5.7x
Oct-18	Q4'2018	Imperva, Inc. (NasdaqGS:IMPV)	Thoma Bravo, LLC	\$2,126.1	5.0x
Oct-18	Q4'2018	Rocket Software, Inc.	Bain Capital Private Equity, LP	-	4.4x
Oct-18	Q4'2018	FusionStorm, Inc.	Computacenter plc (LSE:CCC)	\$90.0	0.2x
Sep-18	Q3'2018	Allure Global Solutions, Inc.	Creative Realities, Inc. (OTCPK:CREX)	\$13.8	1.5x
Sep-18	Q3'2018	Datatrics B.V.	MailUp S.p.A. (BIT:MAIL)	\$7.9	22.7x
Sep-18	Q3'2018	Beijing Xunzhong Communication Technology Co., Ltd.	Tatwah Smartech Co., Ltd. (SZSE:002512)	\$178.9	2.3x
Sep-18	Q3'2018	Cinnober Financial Technology AB (publ) (OM:CINN)	Nasdaq Technology AB	\$187.4	4.4x
Sep-18	Q3'2018	Wise lausnir ehf	Advania Holding Hf.	\$9.6	0.7x
Aug-18	Q3'2018	Shift F7 Group Limited	AdEPT Telecom plc (AIM:ADT)	\$10.1	1.6x



EMS / Infrastructure Software (continued)

Date Announced	Period	Target	Buyer	Enterprise Value	Revenue Multiple
Aug-18	Q3'2018	Infonet Bilgi Teknolojileri Ticaret Anonim Sirketi	Cyber Security 1 AB (OM:CYB1)	\$9.8	0.4x
Aug-18	Q3'2018	Sunjesoft Inc.	Kelan Software Systems (Hong Kong) Co., Ltd	\$10.7	5.3x
Jul-18	Q3'2018	Basefarm AS	Orange Business Services SAS	\$409.8	3.5x
Jul-18	Q3'2018	iSYS RTS GmbH	Minda Industries Limited (BSE:532539)	\$5.8	1.1x
Jul-18	Q3'2018	Tangelo Games Corp. (TSXV:GEL)	Third Eye Capital Corporation	\$75.1	2.7x
Jul-18	Q3'2018	CA, Inc. (NasdaqGS:CA)	Broadcom Inc. (NasdaqGS:AVGO)	\$21,777.0	4.3x
Jun-18	Q2'2018	MWR InfoSecurity Limited	F-Secure Oyj (HLSE:FSC1V)	\$139.2	4.9x

Tech Enabled Services



Date Announced	Period	Target	Buyer	Enterprise Value	Revenue Multiple
Apr-19	Q2'2019	BlueSoft	Orange Polska (WSE:OPL)	\$52.0	1.6x
Apr-19	Q2'2019	Halfmann Goetsch Partner AG	NNIT (CPSE:NNIT)	\$11.2	1.3x
Apr-19	Q2'2019	Jiangxi Samton Technology	SGSG Science&Technology (SZSE:300561)	\$115.6	1.9x
Apr-19	Q2'2019	Certain Business And Assets of Secarma Limited	Shearwater Group PLC (AIM:SWG)	\$9.7	2.0x
Feb-19	Q1'2019	SpeedPay, Inc.	ACI Worldwide, Inc. (NasdaqGS:ACIW)	\$750.0	-
Feb-19	Q1'2019	Future Focus Infotech Pvt. Ltd.	en-japan inc. (TSE:4849)	\$11.4	-
Feb-19	Q1'2019	SpeedPay, Inc.	ACI Worldwide, Inc. (NasdaqGS:ACIW)	\$750.0	-
Feb-19	Q1'2019	Future Focus Infotech Pvt. Ltd.	en-japan inc. (TSE:4849)	\$11.4	-
Feb-19	Q1'2019	SpeedPay, Inc.	ACI Worldwide, Inc. (NasdaqGS:ACIW)	\$750.0	-
Feb-19	Q1'2019	Future Focus Infotech Pvt. Ltd.	en-japan inc. (TSE:4849)	\$11.4	-
Feb-19	Q1'2019	Nielsen+Partner Unternehmensberater GmbH	Larsen & Toubro Infotech GmbH	\$31.6	-
Feb-19	Q1'2019	Saracen Datastore Limited	Iron Mountain (UK) plc	\$10.0	-
Jan-19	Q1'2019	Paygent Co.,Ltd.	NTT DATA Corporation (TSE:9613)	\$57.9	-
Jan-19	Q1'2019	Earthport plc (AIM:EPO)	Mastercard Incorporated (NYSE:MA)	\$280.1	6.3x
Jan-19	Q1'2019	Software Information Systems, LLC	Converge Technology Solutions Corp. (TSXV:CTS)	\$15.4	-
Jan-19	Q1'2019	Ruletronics	Larsen & Toubro Infotech Limited (NSEI:LTI)	\$7.5	-
Jan-19	Q1'2019	Compass Informatics / Compass Informatics UK	Tracsis plc (AIM:TRCS)	\$6.9	-
Jan-19	Q1'2019	First Data Corporation (NYSE:FDC)	Fiserv, Inc. (NasdaqGS:FISV)	\$41,941.6	5.0x
Jan-19	Q1'2019	DeClout Limited (Catalist:5UZ)	Exeo Global Pte. Ltd.	\$128.7	0.5x
Jan-19	Q1'2019	Luxoft Holding, Inc. (NYSE:LXFT)	DXC Technology Company (NYSE:DXC)	\$2,078.4	2.1x
Dec-18	Q4'2018	Earthport plc (AIM:EPO)	Visa International Service Association	\$244.8	4.5x
Dec-18	Q4'2018	KMD A/S	NEC Corporation (TSE:6701)	\$1,222.6	-

Tech Enabled Services (continued)



Date Announced	Period	Target	Buyer	Enterprise Value	Revenue Multiple
Dec-18	Q4'2018	Sandz Solutions (Singapore) Pte Ltd.	Kronologi Asia Berhad (KLSE:KRONO)	\$18.0	-
Dec-18	Q4'2018	Aerospace Network Security Technology (Shenzhen) Co., Ltd.	Aisino Corporation (SHSE:600271)	\$84.5	-
Dec-18	Q4'2018	Travelport Worldwide Limited (NYSE:TVPT)	Siris Capital Group, LLC; Evergreen Coast Capital Corp.	\$4,350.1	1.6x
Dec-18	Q4'2018	PrimeQ Pty Ltd.	Accenture plc (NYSE:ACN)	\$22.3	-
Dec-18	Q4'2018	GCL System Integration	Liaoning Huajun Asset Management Co., Ltd.	\$39.0	-
Dec-18	Q4'2018	Guangdong united Data Holding Group Co., Ltd.	Lontrue Co., Ltd. (SZSE:300175)	\$30.5	-
Dec-18	Q4'2018	Advantech Technologies (IT) Ltd.	One Software Services (1997) Ltd.	\$13.2	-
Nov-18	Q4'2018	Exaxe Limited	Majesco (AMEX:MJCO)	\$13.1	-
Nov-18	Q4'2018	ConvergeOne Holdings, Inc.	CVC Capital Partners Limited	\$1,651.5	1.2x
Oct-18	Q4'2018	SendGrid, Inc. (NYSE:SEND)	Twilio Inc. (NYSE:TWLO)	\$2,014.3	14.3x
Oct-18	Q4'2018	IAI Spólka Akcyjna (WSE:IAI)	MCI Capital TFI SA	\$37.8	7.3x
Oct-18	Q4'2018	The Communicator Corporation Limited	j2 Global, Inc. (NasdaqGS:JCOM)	\$9.9	1.6x
Oct-18	Q4'2018	Hortonworks, Inc. (NasdaqGS:HDP)	Cloudera, Inc. (NYSE:CLDR)	\$2,106.7	6.6x
Oct-18	Q4'2018	ITANDI, Inc.	GA technologies Co.,Ltd (TSE:3491)	\$16.2	13.4x
Sep-18	Q3'2018	Guangdong Ruilian Technology Co., Ltd.	Fujian Boss Software Corp. (SZSE:300525)	\$16.7	4.1x
Sep-18	Q3'2018	i-secure Co, Ltd.	Vintcom Technology Public Company Limited (SET:VCOM)	\$6.0	1.6x
Aug-18	Q3'2018	G-AsiaPacific Sdn Bhd	K-One Technology Berhad (KLSE:K1)	\$5.0	2.0x
Aug-18	Q3'2018	Hangzhou Yowant Network Co., Ltd	Saturday Co., Ltd. (SZSE:002291)	\$281.9	3.7x
Aug-18	Q3'2018	NSS Holding AS	NRC Group ASA (OB:NRC)	\$12.3	0.4x
Aug-18	Q3'2018	Apogee Corporation Limited	HP Inc. (NYSE:HPQ)	\$498.5	1.8x
Jul-18	Q3'2018	MetaPack Limited	Stamps.com Inc. (NasdaqGS:STMP)	\$224.7	4.8x
Jul-18	Q3'2018	Syntel, Inc. (NasdaqGS:SYNT)	Atos SE (ENXTPA:ATO)	\$3,669.2	3.7x

Tech Enabled Services (continued)



Date Announced	Period	Target	Buyer	Enterprise Value	Revenue Multiple
Jul-18	Q3'2018	Charles River Systems, Inc.	State Street Corporation (NYSE:STT)	\$2,600.0	8.4x
Jul-18	Q3'2018	ASHITA-TEAM Co., Ltd.	Vector Inc. (JASDAQ:2656)	\$28.6	2.3x
Jun-18	Q2'2018	Hönigsberg & Düvel Datentechnik GmbH	HCL Technologies Limited (NSEI:HCLTECH)	\$34.8	0.4x
Jun-18	Q2'2018	Web.com Group, Inc. (NasdaqGS:WEB)	Siris Capital Group, LLC	\$1,864.3	2.5x
Jun-18	Q2'2018	Time Channel Information Technology	Zhong Fu Tong Group (SZSE:300560)	\$57.0	5.0x
Jun-18	Q2'2018	Guangzhou Ruiling Network Technology	Honz Pharmaceutical Co., Ltd. (SZSE:300086)	\$50.0	1.6x
May-18	Q2'2018	IESA Limited	Electrocomponents plc (LSE:ECM)	\$117.7	0.4x
May-18	Q2'2018	Card Processing Businesses in 7 Countries of First Data	SIA S.p.A.	\$439.7	3.8x
May-18	Q2'2018	Coasin Chile S.A.	Logicalis Latin America	\$20.2	0.2x

Online & Digital



Date Announced	Period	Target	Buyer	Enterprise Value	Revenue Multiple
Feb-19	Q1'2019	Xstream A/S	SeaChange International, Inc. (NasdaqGS:SEAC)	\$5.5	-
Oct-18	Q4'2018	Fujian Chenghe Century Industrial Co., Ltd.	Chengzhi Shareholding Co., Ltd. (SZSE:000990)	\$222.6	25.6x
Oct-18	Q4'2018	Beijing Right Service Tech. Co., Ltd.	Brilliance Technology Co., Ltd. (SZSE:300542)	\$23.4	9.9x
Oct-18	Q4'2018	Xintongda Intelligent Technology Co., Ltd.	Hongrun Construction Group Co., Ltd. (SZSE:002062)	\$39.1	0.9x
Oct-18	Q4'2018	Valiance Partners, Inc.	NNIT A/S (CPSE:NNIT); NNIT Inc.	\$35.7	3.6x
Oct-18	Q4'2018	Beijing Lanxum	Beijing Chenguang Rongxin Enterprise Management Center	\$73.6	1.1x
Aug-18	Q3'2018	Oryx Gaming International LLC	AA Acquisition Group Inc.	\$8.7	1.3x
Aug-18	Q3'2018	Wazee Digital, Inc.	Veritone, Inc. (NasdaqGM:VERI)	\$15.0	0.8x
Jul-18	Q3'2018	10bis.Co.II Ltd.	Takeaway.com N.V. (ENXTAM:TKWY)	\$157.3	10.2x
Jul-18	Q3'2018	FFG FINANZCHECK Finanzportale GmbH	Scout24 AG (DB:G24)	\$333.1	8.1x
Jul-18	Q3'2018	KeyDrive S.A.	CentralNic Group Plc (AIM:CNIC)	\$55.0	0.9x
Jul-18	Q3'2018	TapInfluence, Inc.	IZEA, Inc. (NasdaqCM:IZEA)	\$7.1	1.2x
Jul-18	Q3'2018	LifeWorks Corporation Ltd.	Morneau Shepell Ltd	\$326.2	3.9x
Jul-18	Q3'2018	Comas S.r.I./Webber S.r.I.	Innolva S.P.A.	\$10.9	2.5x
Jun-18	Q2'2018	Hainan Hong Kong and Macao Information Industry Co., Ltd.	Shenzhen Quanxinhao Co., Ltd. (SZSE:000007)	\$179.7	2.7x
Jun-18	Q2'2018	GET Holdings Limited (SEHK:8100)	-	\$14.4	0.7x
May-18	Q2'2018	Webpro AS	ZetaDisplay AB (OM:ZETA)	\$6.1	2.1x
May-18	Q2'2018	Cybird Co., Ltd.	Aeria Inc. (JASDAQ:3758)	\$64.0	0.7x
May-18	Q2'2018	Magento, Inc.	Adobe Systems Incorporated (NasdaqGS:ADBE)	\$1,680.0	11.2x
May-18	Q2'2018	iZettle AB	PayPal (NasdaqGS:PYPL)	\$2,200.0	19.8x
May-18	Q2'2018	Linkable Inc.	AJ Rent A Car Co., Ltd. (KOSE:A068400)	\$16.2	20.1x
May-18	Q2'2018	Cyanide SA	BigBen Interactive (ENXTPA:BIG)	\$25.3	3.5x

Online & Digital (continued)



Date Announced	Period	Target	Buyer	Enterprise Value	Revenue Multiple
May-18	Q2'2018	ZPG Plc (LSE:ZPG)	Silver Lake	\$3,377.4	8.8x
May-18	Q2'2018	Mitula Group Limited (ASX:MUA)	Lifull Co., Ltd. (TSE:2120)	\$128.3	5.1x
May-18	Q2'2018	Shenzhen Whale Banner World Network Technology Co., Ltd.	Keda Group Co., Ltd. (SHSE:600986)	\$142.8	5.4x
May-18	Q2'2018	ICM Registry, LLC	Minds + Machines Group Limited (AIM:MMX)	\$40.7	5.6x
May-18	Q2'2018	Findify AB	Namaste Technologies Inc. (TSXV:N)	\$10.8	21.4x





Tata Consultancy Services Acquires W12 Studios, award-winning digital design agency

Transaction Summary

- Pharus is pleased to announce our role as the exclusive financial advisor to W12 Studios Limited (W12) in its sale to Tata Consultancy Services. W12 will become part of TCS Interactive, the digital design division within TCS' Business & Technology Services organization. The transaction, TCS' first in the digital space, will further strengthen TCS Interactive's array of creative and experience service offerings.
- The shareholders of W12 retained Pharus because of our broad expertise in marketing digital transformation services companies, our comprehensive knowledge of the design and strategy services competitive landscape, and our bespoke approach to M&A advisory. We executed a targeted M&A process that involved identifying and approaching a customized universe of strategic buyers, spearheading marketing activities, leading due-diligence, and negotiating transaction terms.

Key Profiles

- Founded in 2012 and based in London, W12 imagines and builds iconic products and experiences for renowned media and technology brands worldwide. With industry-leading expertise in visual, interaction, motion, sonic and creative technology, W12's competencies span the full range of the service journey, from developing innovative brand strategies to building expectationexceeding product ideas and prototypes. W12 has defined, designed, and prototyped digital products for leading media services and technology companies across 14 countries.
- Tata Consultancy Services is an IT services, consulting and business solutions organization that has been partnering with many of the world's largest businesses in their transformation journeys for the last fifty years. TCS offers a consulting-led, cognitive powered, integrated portfolio of IT, Business & Technology Services, and engineering. This is delivered through its unique Location Independent Agile delivery model, recognized as a benchmark of excellence in software development.
- Tata Consultancy Services was founded in 1968 and is based in Mumbai, India. Tata Consultancy Services Limited is a subsidiary of Tata Sons Limited.

Fabian Birgfeld, Co-Founder and Chief Executive Officer of W12, said about Pharus, "We are very grateful to the Pharus team for working tirelessly and supporting us throughout the exploratory process and due diligence stage. Their availability and expertise were absolutely essential in bringing TCS and us together and completing this transaction."

W12 Studios has been acquired by

TATA CONSULTANCY SERVICES

The undersigned acted as the exclusive financial advisor to W12 Studios Limited in connection with the transaction

PHARUS

Infosys Acquires Fluido, Largest Salesforce Consulting Partner in the Nordics



- Pharus served as the exclusive financial advisor to Fluido Oy in their sale to Infosys Limited (NSEI:INFY).
- Executing on its strategy to help clients navigate the next in their digital transformation journey, this acquisition strengthens Infosys' position as a leading Salesforce enterprise cloud services provider, and enhances its ability to provide clients an unparalleled cloud-first transformation.
- Pharus was mandated by Fluido'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.
- Infosys acquired Fluido for all-cash purchase price of up to €65 million (\$76 million), including earnout and bonuses.

fluide

has been acquired by

The undersigned acted as the exclusive

financial advisor to Fluido Oy in

connection with the transaction

HARUS

Key Profiles

- Fluido is the leading Salesforce Consultancy and Partner in the Nordics. Fluido offers consulting, development and integration services tailored for customer needs to make customer data meaningful in the moments that matter the most. Fluido's headquarters are in Espoo, Finland, with additional offices in Denmark, Norway, Slovakia and Sweden.
- Infosys is a global leader in next-generation digital services and consulting. They provides business information technology services, including application development and maintenance, independent validation, infrastructure management, and business process management services, as well as engineering services, such as engineering and life cycle solutions; and consulting and systems integration services comprising consulting, enterprise solutions, systems integration, and advanced technologies.
- Infosys was founded in 1981 and is headquartered in Bengaluru, India.

Kai Mäkelä, Chief Executive Officer of Fluido, said about Pharus, "The Pharus team is amazing. They were by our side through every step of the process, providing keen insights, thorough preparation and a depth of relationships in our market. Most important the Pharus team worked tirelessly for the best interests of our shareholders and employees. We are confident that the transaction with Infosys provides our shareholders with the greatest value combined with the best platform for our continued growth. THANKS TO THE PHARUS TEAM!!"

Domino Media Group Acquired by Multiply Media

Transaction Summary

- Pharus served as the exclusive strategic advisor to Domino Media Group, Inc. in its transaction with Multiply Media. Transaction terms were not disclosed.
- With this transaction, Multiply reinforces its focus on creating and cultivating enduring, digital-first brands in its sizeable lifestyle categories. Domino joins Multiply's family of brands, which includes FashionBeans, HealthyWay, and Urbo. The Domino brand stands to expand its core audience with additional support centered on analytics and technology.
- Pharus was retained by the shareholders of Domino (including Launch Capital and iNovia) due to our extensive knowledge of and M&A experience in the digital media and eCommerce sectors.
- In its role as an advisor, Pharus was mandated to execute a comprehensive M&A process, that involved identifying and approaching a targeted set of strategic buyers, spearheading marketing activities, leading due-diligence, and negotiating transaction terms.

Key Profiles

- Domino is a Millennial-focused women's lifestyle media and eCommerce company with roots in home, design, DIY, and entertaining. Established in 2005, the company quickly solidified its position as an editorial leader in the home décor space through its publications. Domino relaunched in 2013, introducing their expanded content across print, digital and commerce platforms.
- Multiply is a premium digital publisher fluent in technology and analytics platforms built to support and invest in editorial leaders in high value consumercentric content categories. The Company operates a number of notable digital properties including FashionBeans, HealthyWay, and Urbo.

domino has been acquired by multiply

The undersigned acted as the exclusive financial advisor to Domino Media Group, Inc. in connection with the transaction



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 usercentered 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.

idean

has been acquired by

The undersigned acted as the exclusive

financial advisor to Idean Enterprises

Oy in connection with the transaction

HARUS

Capgemini

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 to 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.

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."

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



- 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 out 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 duediligence, 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.



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



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-ofsale 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.



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



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 mediumsized 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.

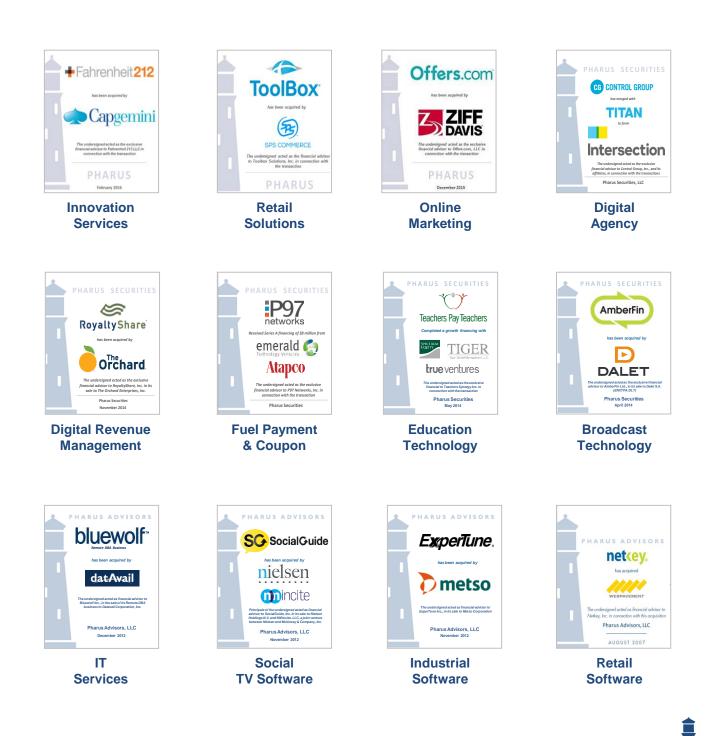




The undersigned acted as the exclusive financial advisor to Offers.com, LLC in connection with the transaction







V 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





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

Software / SaaS

Education Technology

Digital & Creative Services Performance Marketing

Data & Analytics Industrial Technology Consumer Strong Network of Key Relationships

> **110+** Successful Transactions Completed

900+ Strategic Buyer Relationships

1,500+ Venture Capital & Private Equity Relationships

Contact Information

Michael E. Goodman

Co-Founder & Sr. Managing Director 212.904.0102 mgoodman@pharus.com

Kenneth M. Harrell

Co-Founder & Sr. Managing Director 212.904.0101 kharrell@pharus.com

New York Headquarters

551 Fifth Avenue 11th Floor | New York, NY 10176 | 212.904.0100

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