

An American flag is shown waving on a beach, with the ocean and a pier visible in the background. The flag is positioned on the right side of the frame, with its stripes extending towards the left.

# Mufson Howe Hunter

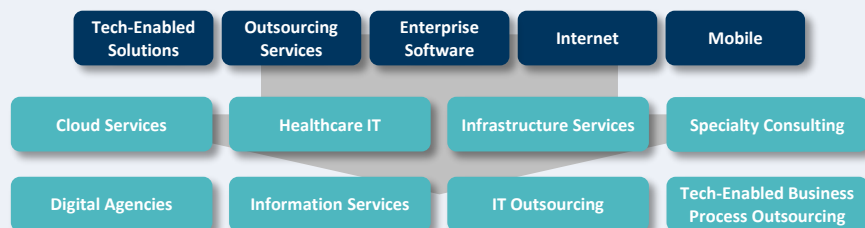
INVESTMENT BANKERS FOR GROWTH

*TECHNOLOGY SERVICES MONTHLY*  
*Virtual Reality/Augmented Reality*

*August 2018*

## Welcome to the MHH Technology Services Newsletter!

Welcome to the August edition of the Mufson Howe Hunter Technology Services Monthly. This month, we highlight key themes and growth drivers in the Virtual Reality/Augmented Reality space. Each month, our team aims to provide you with a newsletter that contains thought-provoking content and analysis, as well as updates on macroeconomic themes, equity capital market performance, private capital market trends and noteworthy M&A activity—all of which is relevant to our core industry sectors:



We hope you find this information valuable, and we welcome any comments or suggestions.

Sincerely,

Brandon K. Eck  
Managing Director, Head of Technology Services

## What we are reading...



- [Mobile Augmented Reality – One Step Beyond](#)
- [Augmented Reality Is Already Improving Worker Performance](#)
- [Amazon Web Services is in a league of its own for cloud revenue, report says](#)
- [Next-gen cloud computing: How healthcare can prepare for the future](#)

## Select 2018 Franchise Themes



**Digital Transformation & Advisory:** Business processes will continue to migrate from legacy systems to modern technology (cloud, edge computing, analytics, IoT, blockchain, AI, etc.). We expect to see continued growth in the digital transformation consulting (DTC) channel. Trusted advisors with the ability to sell across senior business stakeholders within an organization (CMO, CRO, CCO, COO, CIO) and who provide thought leadership, commercial insights, targeted research and proprietary IP will be leaders in the category. For additional insight see our [November 2017 TSM](#).



**Regulation Technology:** The rapid proliferation of new and increasingly complex regulations will continue to drive demand for RegTech solutions that provide operational efficiencies and cost benefits when applied to compliance and risk management practices. Increased regulation isn't just a temporary challenge for global financial institutions – it's the new reality. Financial services firms' average costs to meet their obligations are \$60 million; some are spending up to \$500 million on compliance with KYC and Customer Due Diligence (Thomson Reuters). For additional insight see our [August 2017 TSM](#).



**Healthcare IT:** The sweeping paradigm shift toward population health management and value-based reimbursement models – will continue to drive robust demand for healthcare IT products and services. Consulting Services, Data Analytics and Patient Engagement Technology will comprise a growing portion of the overall HCIT market, reaching an estimated \$74 billion in annual spending by 2021 (Markets and Markets and MHH calculations). Service providers and solutions that improve interoperability among myriad disparate systems will be in high demand for many years to come. For additional insight see our [May 2017](#) and [September 2017 TSM](#).



**IoT-Optimized Infrastructure Services:** “Connected things” will streamline vendor operational models while reducing customer costs. IoT will introduce tons of useful data to the cloud that needs to be captured and effectively managed. IaaS and PaaS companies will be a direct beneficiary of this trend. Cisco expects database, analytics and IoT workloads to account for 22% of total workloads by 2020 (Cisco, 2016). For additional insight, see our [June 2017 TSM](#).



**Blockchain in Financial Services & Beyond:** Although most widely associated with cryptocurrencies, some of the largest financial services firms are exploring using blockchain technology to improve high-risk and/or time-consuming operations, including cross-border payments, AML & KYC compliance, IAM security protocols and smart contracts. We also expect to see further adoption across a variety of other industries, including healthcare, automotive, manufacturing and retail, among others. For additional insight see our [December 2017 TSM](#).

# TECHNOLOGY SERVICES PRACTICE OVERVIEW

The Mufson Howe Hunter Technology Services Group serves growth-oriented, rapidly scalable businesses that leverage proprietary and enabling technologies to address the evolving needs of modern enterprise customers. We apply deep industry expertise and broad transaction experience to provide thoughtful, tailored advice and solutions for our clients. **Our clients turn to us for outstanding M&A advisory and capital-raising execution.**

## Senior Banking Team



**Brandon Eck**  
Managing Director,  
Head of Technology Services

215.399.5411 | beck@mhhco.com

### Prior Experience:

- Managing Director, Head of Technology & Services, Janney Montgomery Scott
- Principal, Catalyst Securities
- Principal, RCW Mirus

### Education:

- Gettysburg College (BA)

18+ Years of  
Experience

60+ Transactions  
Completed



**Andrew Wilson**  
Vice President,  
Technology Services

215.399.5406 | awilson@mhhco.com

### Prior Experience:

- Senior Associate, Technology & Services, Janney Montgomery Scott
- Associate, TMT, J.P. Morgan
- Attorney, M&A, Wilson Sonsini Goodrich & Rosati

### Education:

- Duke University (JD, MBA)
- U. North Carolina, Chapel Hill (BA)

8+ Years of  
Experience

20+ Transactions  
Completed

## Sector Coverage

# Mufson Howe Hunter

- Sell-side Advisory
- Private Placements
- Financial Advisory
- Buy-side Assignments
- Recapitalizations
- Fairness Opinions



## Business Model Coverage

Tech-Enabled Solutions

Outsourcing Services

Enterprise Software

Internet

Mobile

# VIRTUAL REALITY/AUGMENTED REALITY

## What is Virtual Reality/Augmented Reality?

- Virtual Reality** involves immersion in an artificial world, typically achieved by channeling the user's experience through a headset and headphones, effectively tuning out the real world.<sup>(1)</sup>
- Augmented Reality** incorporates 3D visuals into the user's environment, thus *augmenting* the user's real-world surroundings rather than blocking them out.<sup>(1)</sup>
- Early VR/AR companies have received impressive levels of investment from marquee investors, with **more than \$2.3 billion in announced funding in 2017**.<sup>(2)</sup> Goldman Sachs expects virtual and augmented reality to become an **\$80 billion market by 2025**.<sup>(3)</sup>
- One early leader, **Magic Leap**, has raised **\$2.4 billion in equity financing** to date, with the latest round at a **\$6.4 billion post-money valuation**.<sup>(1)</sup>
- AR market growth is expected to outpace VR, with the **AR market expected to grow to \$60.6 billion by 2023 from \$11.1 billion in 2018 – a CAGR of 40.3%**.<sup>(4)</sup>

*"I regard [AR] as a big idea like the smartphone...it's huge. I view AR like I view the silicon here in my iPhone, it's not a product per se, it's a core technology. But there are things to discover before that technology is good enough for the mainstream."*

Tim Cook, Apple Corp CEO

## VR/AR Use Cases

### Gaming



Widespread early adoption of VR technology leveraging consumer-focused VR headsets

### Education



Virtual field trips / Language immersion / Architecture design

### Entertainment



Virtual museum / Virtual live sports / Theatre

### Healthcare



Enhanced telemedicine / Physical rehabilitation / Remote specialist consultation

### Enterprise



Virtual conferencing / Employee training and onboarding / Manufacturing and prototyping

### Military



Simulation training / Remote guidance / Live video feed

## Representative Augmented Reality Industry Landscape<sup>(4)</sup>



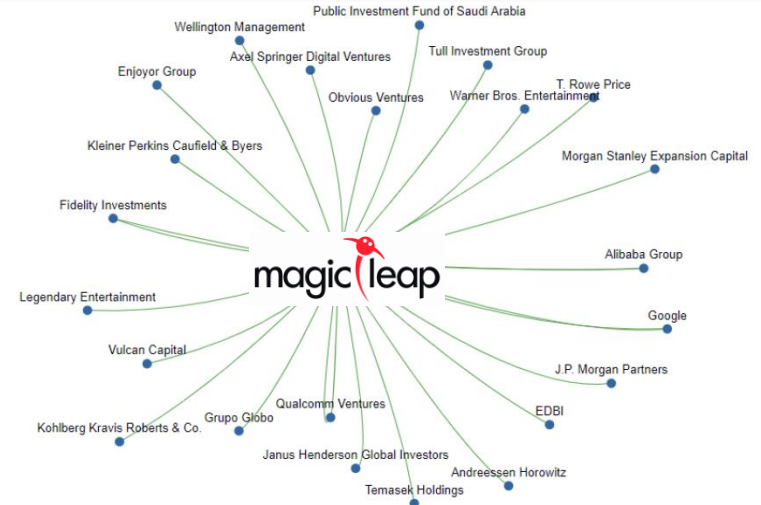
(1) Pitchbook; (2) CB Insights; (3) Goldman Sachs Investment Research; (4) Markets and Markets

# INDUSTRY GROWTH AND KEY PLAYERS











## Noteworthy “FAMGA” Acquisitions<sup>(1)</sup>

<b>facebook</b>				
				
		Licenses IP from: 		
				
				
				

## Magic Leap Investors<sup>(1)</sup>



## Illustrative Middle-Market Transactions<sup>(2)</sup>

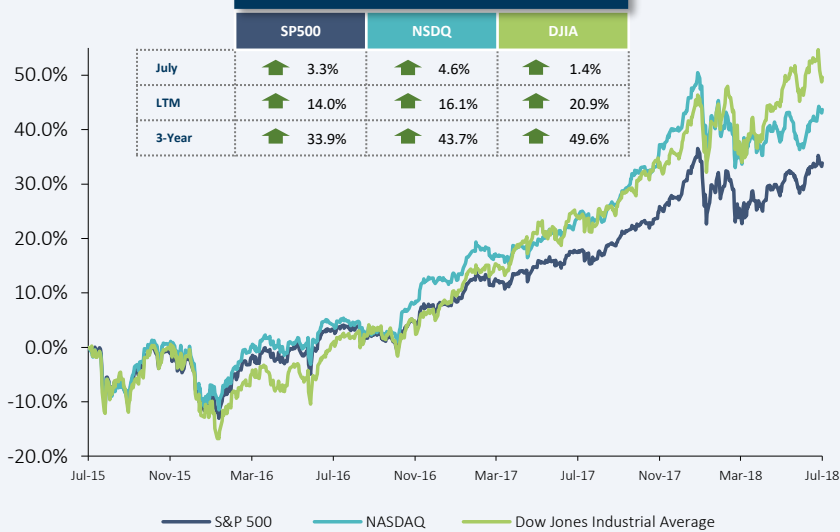
	July 2018	December 2017	August 2017	July 2017	February 2017
<b>Company</b>					
<b>Investor</b>					
<b>Invested (\$mm) / Post-Money Valuation</b>	\$35.2mm/\$185.2mm	\$29.6mm/\$159.6mm	\$21.5mm/\$57.3mm	\$40mm/\$150mm	\$26.7mm/\$81.7mm
<b>Company Description</b>	Provider of a social virtual reality platform intended to bring VR to a mass audience.	Developer of virtual reality technology designed to create an entirely new form of mainstream location-based entertainment.	Developer of 3D virtual simulation technology designed to create engaging shopper experiences.	Developer of a virtual reality (VR) content and technology platform designed to explore and expand the potential of immersive storytelling.	Developer of a software platform designed to create and share 3D videos for virtual reality augmented reality and the web.

(1) CB Insights; (2) Pitchbook



# U.S. ECONOMIC INDICATORS

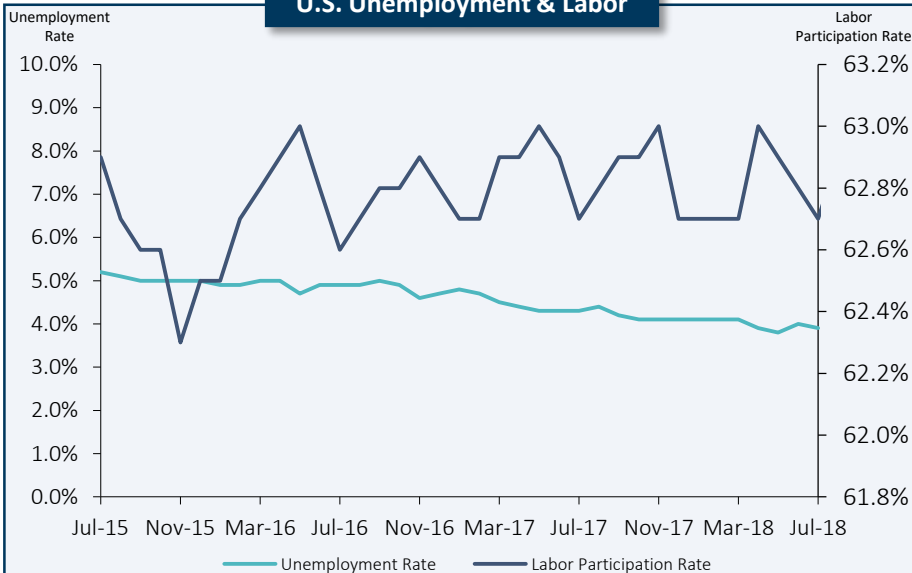
## U.S. Market Indices



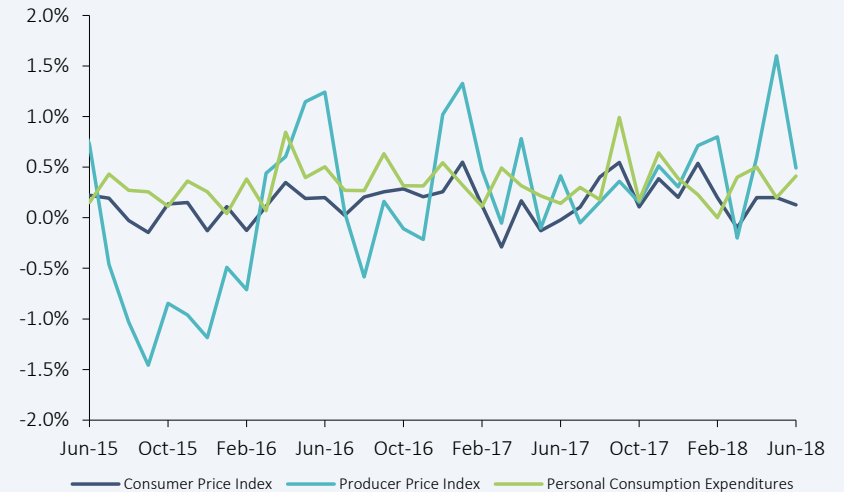
## 10-Year Treasury Rate



## U.S. Unemployment & Labor















## U.S. PPI, CPI and PCE



Sources: CapitalIQ, Federal Reserve Bank of St. Louis

# U.S. TECH SERVICES MIDDLE-MARKET PRIVATE EQUITY: BUY-OUT ACTIVITY

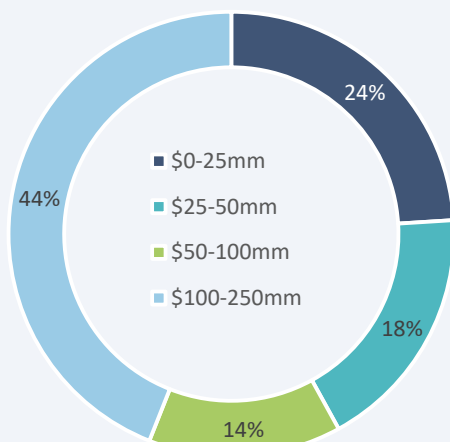
## Select July 2018 Buy-Outs\*\*

Company	Investor	Date	Sector
 Astadia <small>Your Journey to the Cloud Starts Here</small>	 SPRING LAKE EQUITY PARTNERS	July 30	IT Outsourcing
 illumination RESEARCH	 NEWSPRING CAPITAL	July 16	Information Services
 InfoHedge TECHNOLOGIES	 MC PARTNERS	July 11	Infrastructure Services
 CHANGE HEALTHCARE Home Care & Hospice Solutions	 GI PARTNERS	July 2	Healthcare IT
 K&R network SOLUTIONS	 Riverside	July 2	IT Outsourcing
 onramp	 ANSCHUTZ INVESTMENT COMPANY	July 2	Infrastructure Services

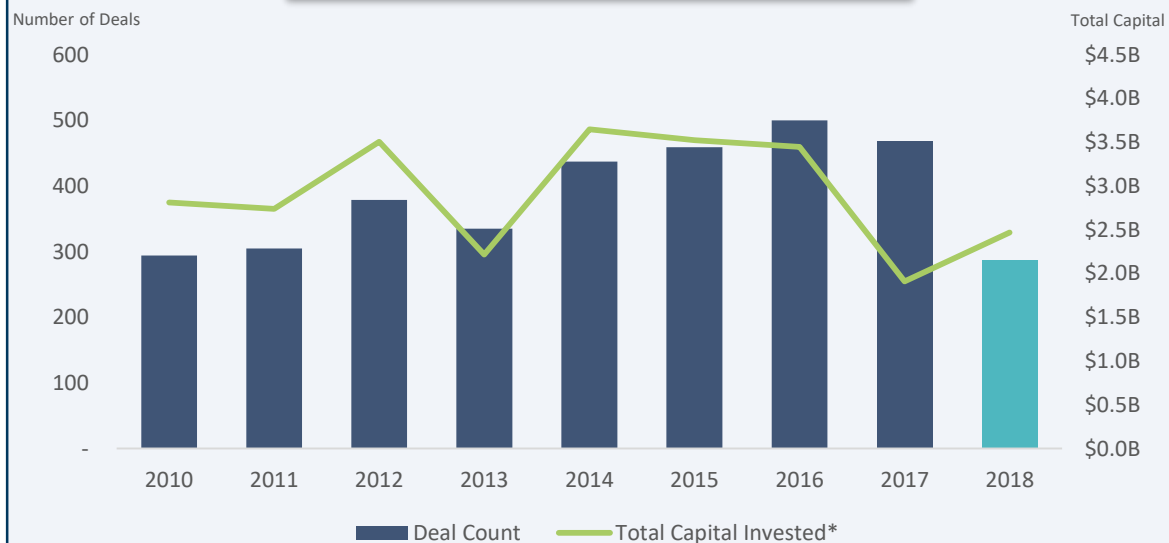
## PE Buy-Outs, Trailing 8 Quarters, as of July 31



## PE Buy-Outs, by Deal Size



## PE Buy-Outs, Historical Annual, as of July 31









Source: Pitchbook

\*For deals with announced transaction value

\*\*Please contact the MHH Technology Services Group directly for any information regarding valuation and deal size

# U.S. TECH SERVICES MIDDLE-MARKET PRIVATE EQUITY: MINORITY ACTIVITY

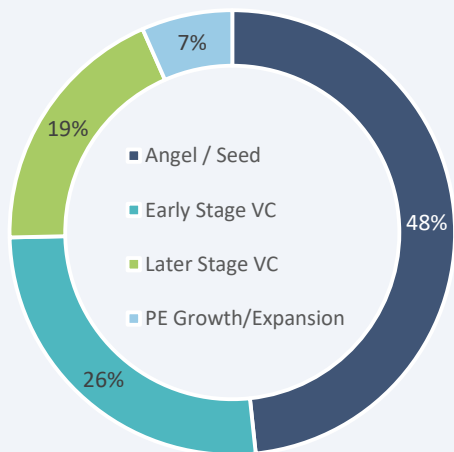
## Select July 2018 Minority Deals\*\*

Company	Stage	Date	Sector
 Olive	Later Stage VC	July 30	Business Process Outsourcing
 Phosphorus	Early Stage VC	July 27	Healthcare IT
 PATIENTCO	Later Stage VC	July 25	Healthcare IT
 k	Early Stage VC	July 17	Healthcare IT
 Sentry Health	Later Stage VC	July 10	Healthcare IT
 HealthCatalyst	Later Stage VC	July 2	Healthcare IT

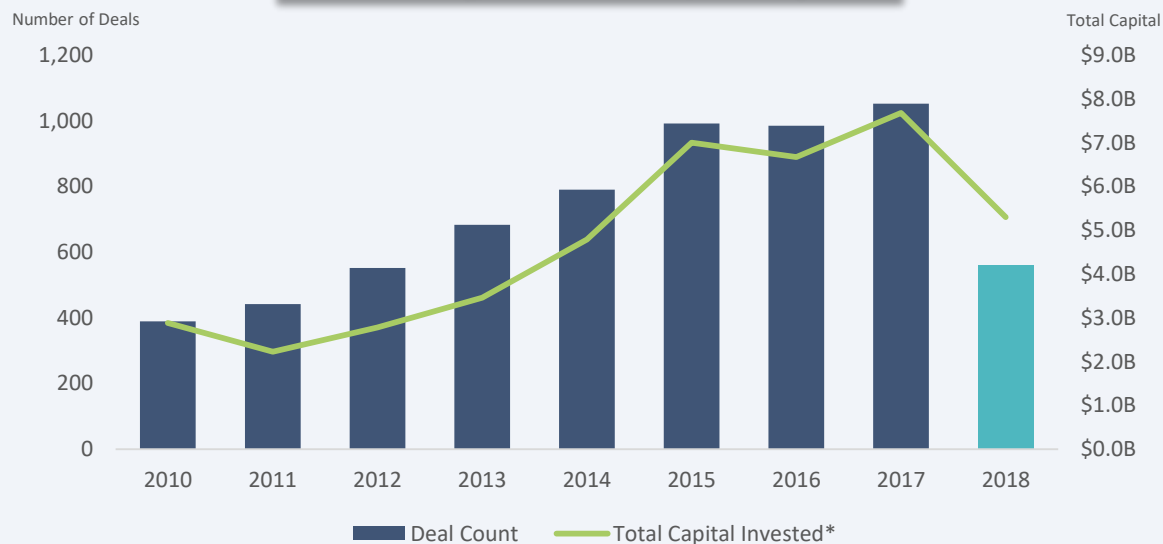
## PE Minority, Trailing 8 Quarters, as of July 31



## PE Minority, by Stage



## PE Minority, Historical Annual, as of July 31



Source: Pitchbook

\*For deals with announced transaction value

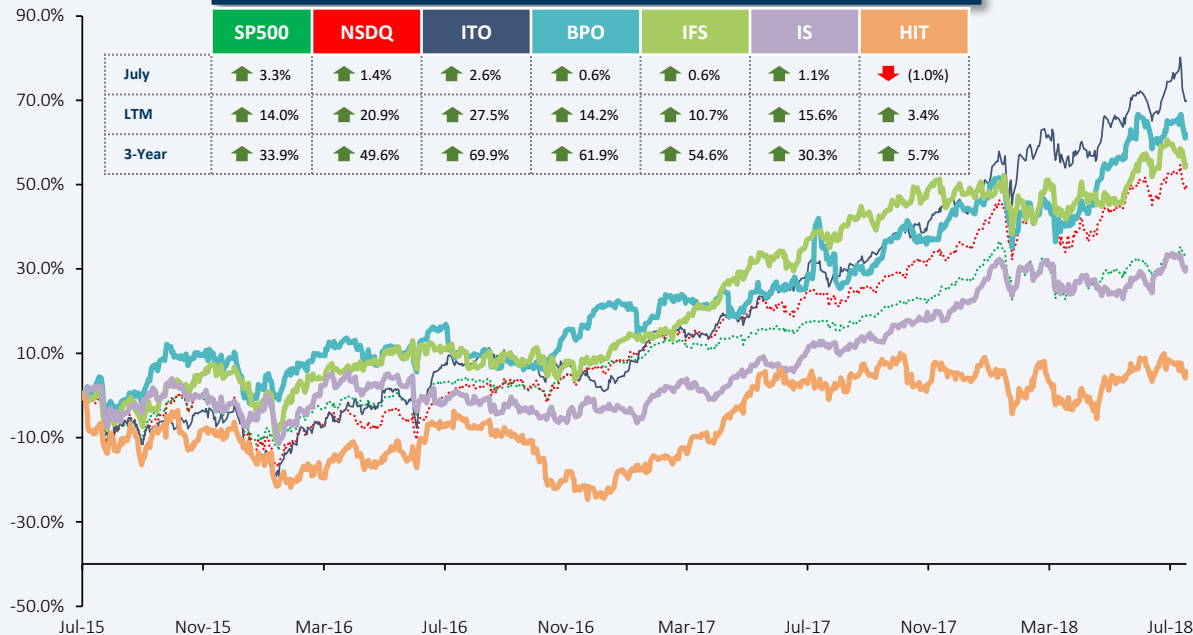
\*\*Please contact the MHH Technology Services Group directly for any information regarding valuation, deal size, and investors



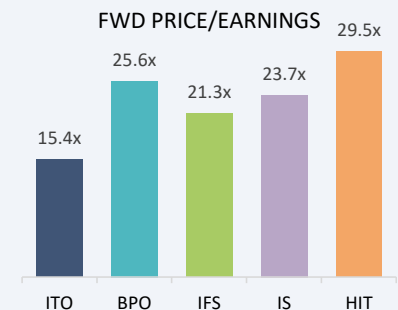
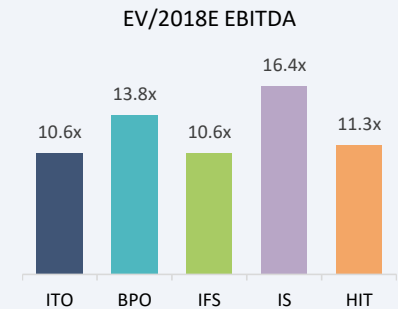
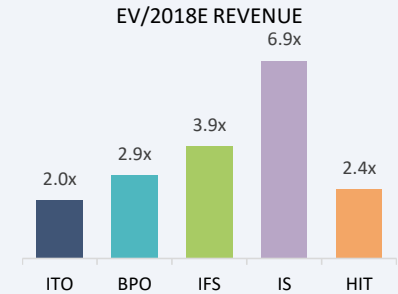
# VALUATION & PERFORMANCE METRICS

ITO	<b>IT Outsourcing:</b> technology services and consulting solutions, including engineering, application development, knowledge management and business process management
BPO	<b>Business Process Outsourcing:</b> services for administering and managing select technology-enabled business processes, including outsourced product development, finance and accounting, human resources, research and analytics, and other industry-specific processes
IFS	<b>Infrastructure Services:</b> providers of managed, hosting and consulting services around planning, designing, implementing and managing mission-critical IT infrastructure
IS	<b>Information Services:</b> providers of independent rating, benchmarking, research and data analytic services
HIT	<b>Healthcare IT:</b> software and technology-related services focused on the design, development, creation, use and maintenance of information systems for the healthcare industry

## Sector Indices Performance, as of July 31, 2018

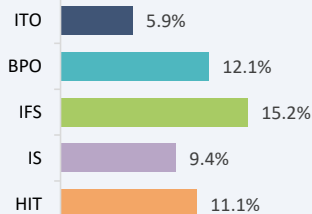


## Median Valuation Metrics

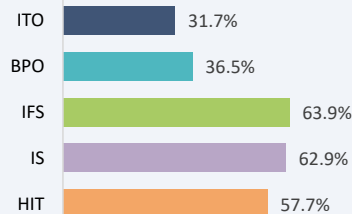


## Median Operational KPIs

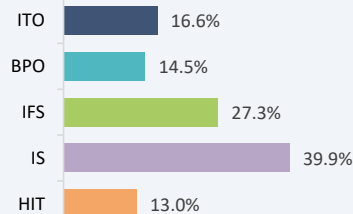
### 2018E REVENUE GROWTH



### LTM GROSS MARGIN



### LTM EBITDA MARGIN



# IT OUTSOURCING

## Valuation Metrics

(\$ in millions)

(\$ in millions)	Operating Metrics							Valuation Multiples					
Company	Market Cap <sup>(1)</sup>	Revenue		LTM Gross Margin	EBITDA <sup>(2)</sup>		LTM EBITDA Margin	EV / Revenue			EV / EBITDA		
		2018E	2019E		2018E	2019E		LTM	2018E	2019E	LTM	2018E	2019E
Accenture plc (ACN)	\$99,290	\$38,945	\$41,604	31.7%	\$6,731	\$7,281	16.3%	2.7x	2.5x	2.3x	14.4 x	14.3 x	13.2 x
Cognizant Technology Solutions Corporation (CTSH)	\$48,232	\$16,226	\$17,662	38.2%	\$3,459	\$3,947	20.5%	3.0x	2.7x	2.5x	13.5 x	12.7 x	11.2 x
Infosys Limited (INFY)	\$39,071	\$11,334	\$12,183	35.0%	\$2,991	\$3,251	26.9%	3.3x	3.1x	2.9x	12.3 x	11.9 x	10.9 x
DXC Technology Company (DXC)	\$29,294	\$24,201	\$23,951	25.4%	\$5,057	\$5,168	15.7%	1.8x	1.5x	1.5x	10.8 x	7.0 x	6.8 x
HCL Technologies Limited (HCLTECH)	\$20,070	\$8,272	\$9,073	33.9%	\$1,866	\$2,032	22.6%	2.5x	2.3x	2.1x	11.2 x	10.4 x	9.5 x
CGI Group Inc. (GIB.A)	\$16,608	\$8,864	\$9,146	29.8%	\$1,623	\$1,699	16.6%	2.0x	2.0x	2.0x	11.5 x	11.0 x	10.5 x
Wipro Limited (BSE:507685)	\$20,198	\$8,737	\$9,276	29.0%	\$1,792	\$1,834	19.7%	2.1x	2.0x	1.9x	10.4 x	9.9 x	9.7 x
Atos SE (ATO)	\$13,925	\$15,645	\$16,035	14.5%	\$2,195	\$2,289	12.6%	0.9x	0.9x	0.9x	7.0 x	6.5 x	6.2 x
Syntel, Inc. (SYNT)	\$2,228	\$932	\$952	38.0%	\$233	\$242	26.9%	2.7x	2.6x	2.6x	9.6 x	10.6 x	10.2 x
Virtusa Corporation (VRTU)	\$1,404	\$1,154	\$1,255	28.7%	\$95	\$118	6.9%	1.5x	1.3x	1.2x	15.7 x	15.2 x	12.2 x
Perficient, Inc. (PRFT)	\$680	\$482	\$504	34.2%	\$77	\$83	11.3%	1.6x	1.5x	1.5x	10.9 x	9.7 x	8.9 x
Mean	\$26,455	\$12,254	\$12,876	30.7%	\$2,375	\$2,540	17.8%	2.2x	2.0x	1.9x	11.6x	10.8x	9.9x
Median	\$20,070	\$8,864	\$9,276	31.7%	\$1,866	\$2,032	16.6%	2.1x	2.0x	2.0x	11.2x	10.6x	10.2x

NA = Not Available; NM = Not Meaningful; LTM = Latest Twelve Months

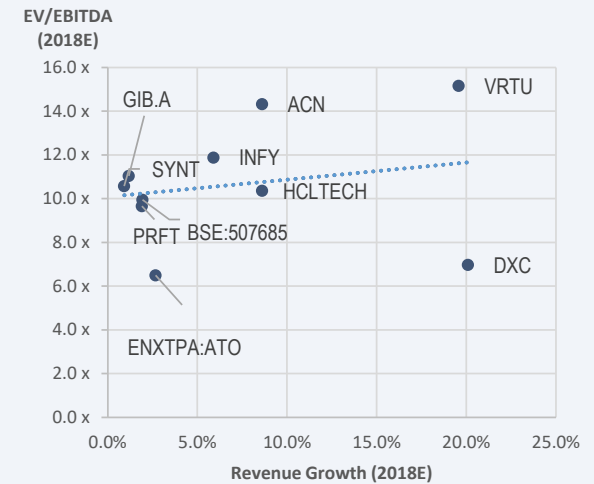
‡ = excluded from Mean and Median calculations

Source: Public Filings, Press Releases and Published Research Reports

(1) As of close July 31, 2018.

(2) Excludes non-recurring, discontinued operations and stock-based compensation

## Relative Valuation

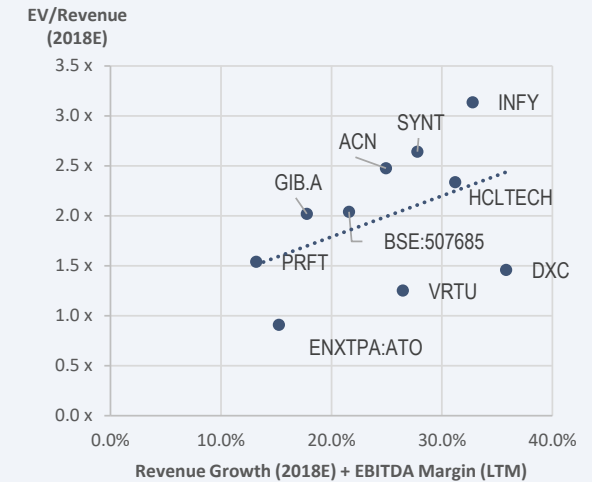


## Select July 2018 Precedent Transactions\*

Announced	Acquirer	Target	Description
July 31			Provides cyber security, intelligence services and other mission assurance services.
July 16			Provides technology consulting, system implementation and graphic designing services.
July 12			Provides outsourced IT services.
July 11			Provides outsourced IT services.
July 10			Provides Microsoft-centric technology services.

Source: CapitalIQ

\*Please contact the MHH Technology Services Group directly for any information regarding valuation and deal size



# BUSINESS PROCESS OUTSOURCING

## Valuation Metrics

(\$ in millions)

Company	Market Cap <sup>(1)</sup>	Operating Metrics						Valuation Multiples					
		Revenue		LTM	EBITDA <sup>(2)</sup>		LTM	EV / Revenue			EV / EBITDA		
		2018E	2019E	Gross Margin	2018E	2019E	Margin	LTM	2018E	2019E	LTM	2018E	2019E
Automatic Data Processing, Inc. (ADP)	\$52,341	\$13,723	\$14,555	42.8%	\$2,956	\$3,218	21.3%	4.0x	3.8x	3.6x	17.9 x	17.8 x	16.3 x
Genpact Limited (G)	\$6,126	\$2,975	\$3,210	37.8%	\$494	\$542	14.9%	2.4x	2.3x	2.1x	15.0 x	13.8 x	12.6 x
EPAM Systems, Inc. (EPAM)	\$6,100	\$1,847	\$2,243	36.0%	\$326	\$405	14.5%	3.6x	3.0x	2.5x	20.0 x	17.0 x	13.7 x
WNS (Holdings) Limited (WNS)	\$2,468	\$801	\$885	33.6%	\$172	\$204	14.5%	3.1x	2.9x	2.6x	16.7 x	13.6 x	11.5 x
ExlService Holdings, Inc. (EXLS)	\$1,997	\$847	\$919	34.5%	\$150	\$167	14.4%	2.3x	2.1x	2.0x	13.3 x	11.9 x	10.7 x
Globant S.A. (GLOB)	\$1,636	\$508	\$608	36.5%	\$86	\$104	13.6%	3.6x	3.1x	2.6x	20.5 x	18.4 x	15.2 x
Luxoft Holding, Inc. (LXFT)	\$1,364	\$995	\$1,139	37.5%	\$152	\$191	10.6%	1.5x	1.3x	1.1x	10.5 x	8.5 x	6.8 x
Mean	\$10,290	\$3,099	\$3,365	37.0%	\$620	\$690	14.8%	2.9x	2.7x	2.4x	16.3x	14.4x	12.4x
Median	\$2,468	\$995	\$1,139	36.5%	\$172	\$204	14.5%	3.1x	2.9x	2.5x	16.7x	13.8x	12.6x

NA = Not Available; NM = Not Meaningful; LTM = Latest Twelve Months

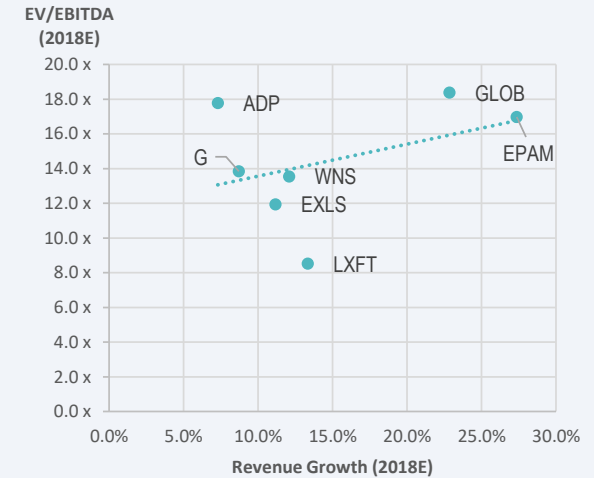
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Source: Public Filings, Press Releases and Published Research Reports

(1) As of close July 31, 2018.

(2) Excludes non-recurring, discontinued operations and stock-based compensation

## Relative Valuation

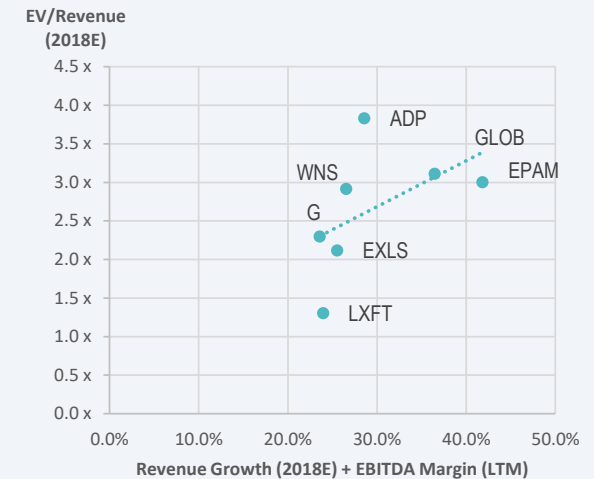


## Select July 2018 Precedent Transactions\*

Announced	Acquirer	Target	Description
July 26	Synoptek	INDUSA Powering Business Through Technology	<ul style="list-style-type: none"> <li>Offers onsite and offsite end-to-end enterprise software solutions and services.</li> </ul>
July 24	HITACHI Inspire the Next	REAN CLOUD	<ul style="list-style-type: none"> <li>Provides managed and professional services for hyperscale integrated IaaS and PaaS providers.</li> </ul>
July 24	softvision	ARROW DIGITAL	<ul style="list-style-type: none"> <li>Provides digital consulting and robotic process automation solutions.</li> </ul>
July 18	GENPACT	BARKAWI Management Consultants	<ul style="list-style-type: none"> <li>Offers supply chain management services.</li> </ul>
July 5	KATALYSATOR	INFOCARE Technology Services	<ul style="list-style-type: none"> <li>Provides help desk support services.</li> </ul>

Source: CapitalIQ

\*Please contact the MHH Technology Services Group directly for any information regarding valuation and deal size



# INFRASTRUCTURE SERVICES

## Valuation Metrics

(\$ in millions)

Company	Market Cap <sup>(1)</sup>	Operating Metrics						Valuation Multiples					
		Revenue		LTM Gross Margin	EBITDA <sup>(2)</sup>		LTM EBITDA Margin	EV / Revenue			EV / EBITDA		
		2018E	2019E		2018E	2019E		LTM	2018E	2019E	LTM	2018E	2019E
Equinix, Inc. (REIT) (EQIX)	\$31,065	\$5,043	\$5,556	49.8%	\$2,399	\$2,694	43.4%	9.1x	7.9x	7.2x	19.2 x	16.6 x	14.7 x
United Internet AG (UTDI)	\$13,611	\$6,223	\$6,630	35.3%	\$1,510	\$1,687	22.0%	3.3x	2.6x	2.4x	14.8 x	10.6 x	9.5 x
Zayo Group Holdings, Inc. (ZAYO)	\$8,893	\$2,660	\$2,758	63.9%	\$1,349	\$1,434	45.8%	5.7x	5.4x	5.2x	11.5 x	10.6 x	9.9 x
VeriSign, Inc. (VRSN)	\$11,268	\$1,208	\$1,252	83.4%	\$858	\$898	65.0%	9.7x	9.3x	9.0x	13.9 x	13.1 x	12.5 x
GoDaddy Inc. (GDDY)	\$8,011	\$2,599	\$2,887	65.3%	\$714	\$825	13.1%	4.5x	3.9x	3.5x	27.5 x	14.2 x	12.3 x
Wix.com Ltd. (WIX)	\$3,412	\$594	\$743	83.7%	\$106	\$166	-10.4%	7.5x	5.4x	4.3x	NM	30.0 x	19.1 x
Endurance International Group Holdings, Inc. (EIGI)	\$1,034	\$1,154	\$1,169	50.6%	\$332	\$346	24.0%	2.4x	2.5x	2.5x	8.4 x	8.7 x	8.3 x
Web.com Group, Inc. (WEB)	\$770	\$762	\$791	68.4%	\$192	\$208	20.0%	1.9x	1.8x	1.8x	8.1 x	7.3 x	6.7 x
Interap Corporation (INAP)	\$257	\$324	\$342	53.0%	\$111	\$119	30.6%	2.7x	2.3x	2.2x	8.5 x	6.8 x	6.3 x
Mean	\$8,702	\$2,285	\$2,459	61.5%	\$841	\$931	29.2%	5.2x	4.6x	4.2x	14.0x	13.1x	11.1x
Median	\$8,011	\$1,208	\$1,252	63.9%	\$714	\$825	27.3%	4.5x	3.9x	3.5x	12.7x	10.6x	9.9x

NA = Not Available; NM = Not Meaningful; LTM = Latest Twelve Months

‡ = excluded from Mean and Median calculations

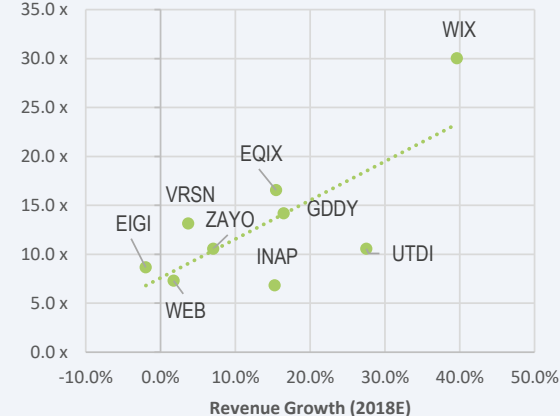
Source: Public Filings, Press Releases and Published Research Reports

(1) As of close July 31, 2018.











(2) Excludes non-recurring, discontinued operations and stock-based compensation

## Relative Valuation

EV/EBITDA  
(2018E)



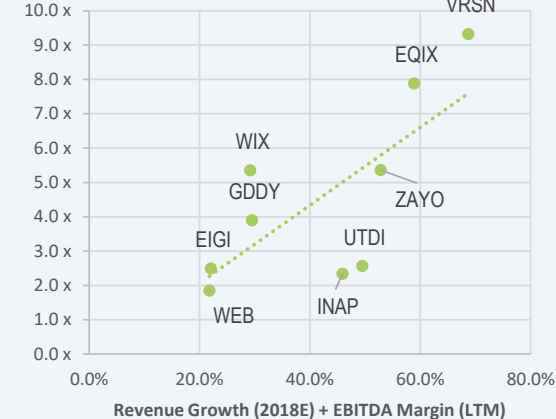
## Select July 2018 Precedent Transactions\*

Announced	Acquirer	Target	Description
July 31			▪ Develops and delivers cloud-based document management software.
July 20			▪ Provides solutions to automate front and middle office investment management functions.
July 16			▪ Manages mission critical business applications for companies and organizations.
July 16			▪ Offers domain registration, monetization and aftermarket services.
July 9			▪ Develops data management software solutions to extract BIM data and collaborate in real-time.

Source: CapitalIQ

\*Please contact the MHH Technology Services Group directly for any information regarding valuation and deal size

EV/Revenue  
(2018E)



## Valuation Metrics

(\$ in millions)

Company	Market Cap <sup>(1)</sup>	Operating Metrics						Valuation Multiples								
		Revenue		LTM	EBITDA <sup>(2)</sup>		LTM	EV / Revenue			EV / EBITDA					
		2018E	2019E	Gross Margin	2018E	2019E	Margin	LTM	2018E	2019E	LTM	2018E	2019E	LTM	2018E	2019E
S&P Global Inc. (SPGI)	\$48,698	\$6,433	\$6,825	71.7%	\$3,181	\$3,405	48.3%	8.4x	7.9x	7.5x	16.8 x	16.0 x	14.9 x			
Moody's Corporation (MCO)	\$31,891	\$4,703	\$4,989	70.9%	\$2,286	\$2,456	47.3%	8.7x	7.8x	7.3x	17.3 x	16.0 x	14.8 x			
IQVIA Holdings Inc. (Q)	\$20,477	\$10,029	\$10,565	42.7%	\$2,199	\$2,378	21.1%	3.7x	3.0x	2.8x	16.6 x	13.6 x	12.6 x			
IHS Markit Ltd. (INFO)	\$18,796	\$3,846	\$4,066	62.3%	\$1,520	\$1,651	31.1%	6.4x	5.9x	5.6x	16.6 x	15.0 x	13.9 x			
Verisk Analytics, Inc. (VRSK)	\$16,863	\$2,361	\$2,525	63.5%	\$1,147	\$1,240	46.0%	9.2x	8.4x	7.8x	20.0 x	17.2 x	15.9 x			
MSCI Inc. (MSCI)	\$12,729	\$1,442	\$1,580	78.5%	\$790	\$881	51.7%	10.9x	9.7x	8.8x	20.0 x	17.6 x	15.8 x			
Garner, Inc. (IT)	\$10,301	\$4,147	\$4,598	60.1%	\$776	\$873	11.5%	3.9x	3.1x	2.8x	28.3 x	16.8 x	14.9 x			
FactSet Research Systems Inc. (FDS)	\$7,929	\$1,373	\$1,464	53.2%	\$469	\$499	33.9%	6.5x	6.0x	5.6x	17.8 x	17.6 x	16.5 x			
Mean	\$20,961	\$4,292	\$4,576	62.9%	\$1,546	\$1,673	36.4%	7.2x	6.5x	6.0x	19.2x	16.2x	14.9x			
Median	\$17,830	\$3,996	\$4,332	62.9%	\$1,334	\$1,446	39.9%	7.5x	6.9x	6.5x	17.5x	16.4x	14.9x			

NA = Not Available; NM = Not Meaningful; LTM = Latest Twelve Months

‡ = excluded from Mean and Median calculations

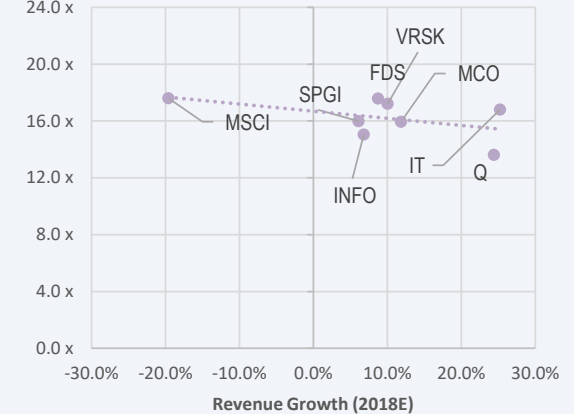
Source: Public Filings, Press Releases and Published Research Reports

(1) As of close July 31, 2018.

(2) Excludes non-recurring, discontinued operations and stock-based compensation

## Relative Valuation

EV/EBITDA  
(2018E)



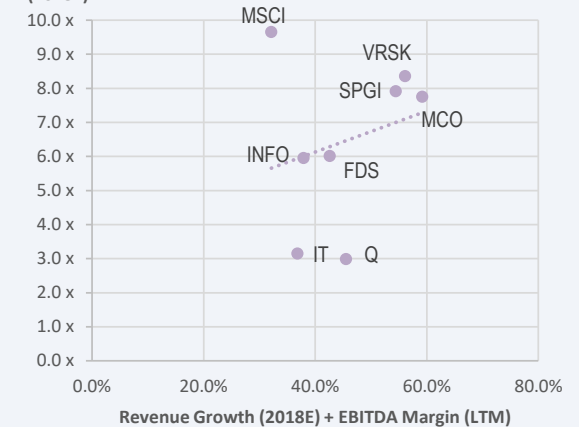
## Select Jun. 2018 Precedent Transactions\*

Announced	Acquirer	Target	Description
July 27	eurofins	ecosur laboratories	• Provides analytical and diagnostic services.
July 16	EQUIFAX®	dataX Ltd.	• Provides real-time credit and debit reporting, and data verification services.
July 11	FnGuide	WISEfn	• Provides data and related solutions to financial institutions.
July 9	Nutrien	Waypoint ANALYTICAL	• Operates as an agricultural laboratory firm.
July 3	AltusGroup	taliance	• Develops software solutions for alternative investment management firms.

Source: CapitalIQ

\*Please contact the MHH Technology Services Group directly for any information regarding valuation and deal size

EV/Revenue  
(2018E)



## Valuation Metrics

(\$ in millions)

Company	Market Cap <sup>(1)</sup>	Operating Metrics						Valuation Multiples					
		Revenue		LTM Gross Margin	EBITDA <sup>(2)</sup>		LTM EBITDA Margin	EV / Revenue			EV / EBITDA		
		2018E	2019E		2018E	2019E		LTM	2018E	2019E	LTM	2018E	2019E
Cerner Corporation (CERN)	\$19,324	\$5,369	\$5,830	84.5%	\$1,626	\$1,783	26.2%	3.8x	3.5x	3.3x	13.4 x	11.7 x	10.7 x
Veeva Systems Inc. (VEEV)	\$9,986	\$819	\$964	69.2%	\$266	\$317	24.1%	13.5x	11.3x	9.6x	42.1 x	34.6 x	29.1 x
athenahealth, Inc. (ATHN)	\$4,949	\$1,356	\$1,490	54.1%	\$374	\$428	16.8%	4.0x	3.7x	3.4x	18.9 x	13.6 x	11.9 x
Allscripts Healthcare Solutions, Inc. (MDRX)	\$2,068	\$2,178	\$2,289	49.6%	\$433	\$469	7.6%	2.1x	1.8x	1.7x	20.9 x	9.1 x	8.5 x
Inovalon Holdings, Inc. (INOV)	\$1,450	\$566	\$639	66.3%	\$161	\$192	12.8%	2.8x	2.2x	1.9x	16.7 x	7.6 x	6.4 x
Quality Systems, Inc. (QSII)	\$856	\$538	\$556	55.4%	\$81	\$85	9.7%	1.7x	1.6x	1.6x	14.1 x	10.8 x	10.2 x
National Research Corporation (NRC)	\$686	NA	NA	58.2%	NA	NA	32.1%	5.5x	NM	NM	16.4 x	NM	NM
HealthStream, Inc. (HSTM)	\$749	\$229	\$239	57.3%	\$39	\$43	11.0%	2.2x	2.4x	2.3x	18.8 x	14.1 x	12.9 x
Computer Programs and Systems, Inc. (CPSI)	\$411	\$291	\$300	55.6%	\$52	\$52	13.1%	1.9x	1.9x	1.8x	12.3 x	10.5 x	10.7 x
Castlight Health, Inc. (CSLT)	\$509	\$154	\$181	61.4%	(\$14)	\$7	-38.1%	3.0x	2.7x	2.3x	NM	NM	NM
Mean	\$4,099	\$1,278	\$1,388	61.2%	\$335	\$375	11.5%	4.0x	3.5x	3.1x	19.3x	14.0x	12.5x
Median	\$1,153	\$566	\$639	57.7%	\$161	\$192	13.0%	2.9x	2.4x	2.3x	16.7x	11.3x	10.7x

NA = Not Available; NM = Not Meaningful; LTM = Latest Twelve Months

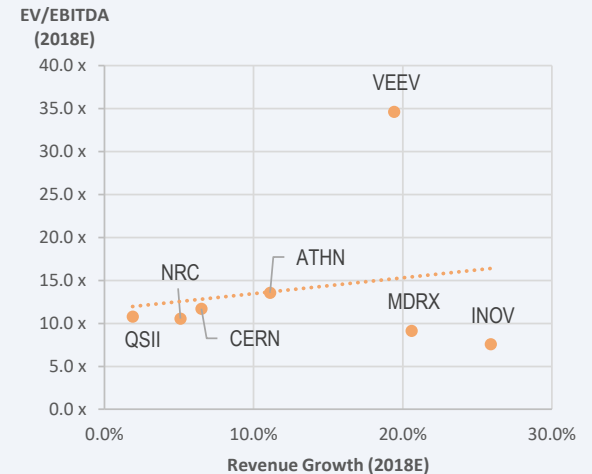
‡ = excluded from Mean and Median calculations

Source: Public Filings, Press Releases and Published Research Reports

(1) As of close July 31, 2018.

(2) Excludes non-recurring, discontinued operations and stock-based compensation

## Relative Valuation\*\*



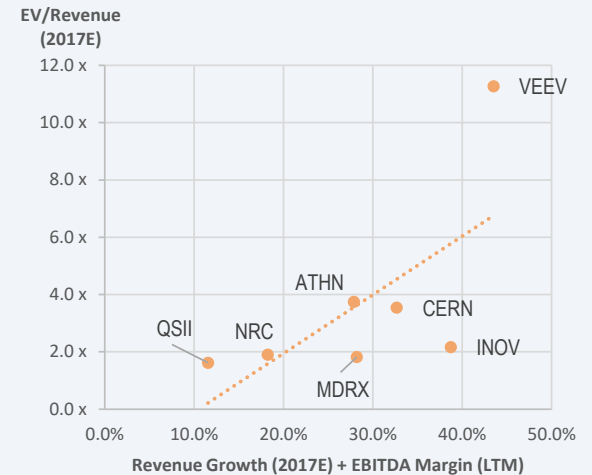
## Select Jun. 2018 Precedent Transactions\*

Announced	Acquirer	Target	Description
July 27			• Develops radiology software for medical equipment.
July 18			• Develops a consumer focused health and wellness platform.
July 17			• Develops electronic clinical outcome assessment solutions for phase I-IV clinical trials.
July 11			• Develops healthcare software for healthcare networks, hospitals and long-term care facilities.
July 9			• Provides Internet-based practice management solutions.

Source: CapitalIQ

\*Please contact the MHH Technology Services Group directly for any information regarding valuation and deal size

\*\*Excluded: CSLT





# TECHNOLOGY SERVICES MONTHLY

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# Mufson Howe Hunter

## INVESTMENT BANKERS FOR GROWTH

### The Mufson Howe Hunter Technology Services Indices

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