



Mufson Howe Hunter

INVESTMENT BANKERS FOR GROWTH

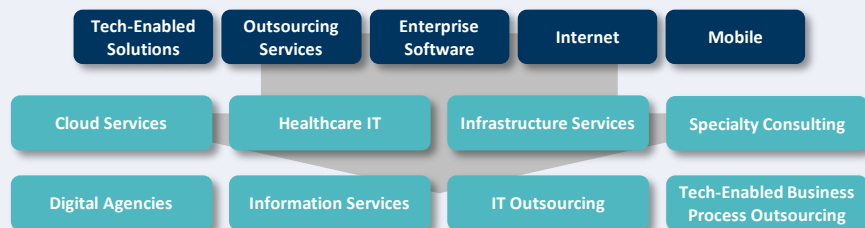
TECHNOLOGY SERVICES MONTHLY

Follow-up from HIMSS '19

April 2019

Welcome to the MHH Technology Services Newsletter!

Welcome to the April 2019 edition of the Mufson Howe Hunter Technology Services Monthly. In this edition, we discuss our take on key topics covered at the 2019 Health Information Management Systems Society (HIMSS) conference. 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...



- [HIMSS 2019 news, trends and analysis](#)
- [10 CLOUD COMPUTING PREDICTIONS THAT WILL TRANSFORM 2019](#)
- [The cloud in 2020: Enterprise compatibility with edge computing, containers and serverless](#)
- [Microsoft, Philips partner on augmented reality for surgery](#)

Select 2019 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 ("RegTech"): 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

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Prior Experience:

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

Education:

- Gettysburg College (BA)

20+ Years of
Experience

60+ Transactions
Completed



Andrew Wilson
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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)

10+ 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

FOLLOW-UP FROM THE 2019 HIMSS CONFERENCE

This February, the MHH Technology & Services team joined 45,000 other attendees at the annual Health Information and Management Systems Society (HIMSS) Conference in Orlando, Florida. ***The staggering scale of the exhibition hall itself, the huge number of attendees and the palpable buzz throughout the week were a clear reflection of a large, dynamic and rapidly growing healthcare IT industry.*** Below are some of the key themes and takeaways that our team noted in reflecting back on HIMSS 2019.

1 ***Interoperability remains front and center***

- Although not a novel concern, interoperability remains a primary hurdle to realizing the promised benefits associated with the digitalization of healthcare.
- This year's dedicated 34,000-square-foot *"Interoperability Showcase"* exhibit highlighted the key challenges and opportunities in achieving interoperability across a vast array of disparate healthcare information systems.
- Most experts believe that a primary stepping stone to effective interoperability will be to encourage / mandate that technology vendors create solutions that readily connect with other—potentially competitive—offerings.
- As such, ***the opening keynote panel revolved largely around CMS's proposed interoperability role***, with CMS Administrator Seema Verma stating that, ***"the industry was not doing what was important, what is needed for patients and for the healthcare system. Instead, the government had to step in."***
- Aneesh Chopra, former U.S. CTO under President Obama, further elaborated, stating that ***"we didn't minimally require it, so the industry didn't self-organize to say, 'Let's voluntarily add this additional bit of data as standardized content,'"*** which is why he believes the proposed interoperability role is vitally important.

2 ***Consumerization & Patient Engagement***

- A common theme spanning numerous exhibits and panel discussions was an ***increased focus on "patient centricity,"***—particularly, healthcare professionals' awareness of patient concerns and the active engagement of individuals in managing their health.
- ***In an age where most industries are increasingly digitalized, today's healthcare consumer expects similar advancements with respect to patient experience.***
- Among other things, consumers want the ability to access their health records and the flexibility to receive care from anywhere, at any time, (e.g., telemedicine).

"Google learns from every search, Amazon learns from every purchase, and Uber learns with every mile...Yet, in healthcare, we're still trapped in sequestering data between the doctor and patient." – Dr. Harlan Krumholz, Yale School of Medicine

3 ***Progressing from "Big Data" to "Actionable Data"***

- HIMSS CEO, Hal Wolf said he believes that the year's most important trend is the push to more effectively leverage big data into actionable insights.
- In his presentation, *"Integrated Meets Value-Based Care,"* Dr. Jason Cheah set forth what he deems to be the ***three key capabilities to unlock the value of big data: (1) Data Analytics, (2) Stakeholder Engagement and (3) Behavioral Insights.***

"How do we actually grab hold of all this incredible information, the data that gets turned into information...to make better decisions in care?" – Hal Wolf, HIMSS CEO

FOLLOW-UP FROM THE 2019 HIMSS CONFERENCE

4 Blockchain visions coming to fruition

- As highlighted in numerous keynotes and panel discussions, **blockchain has tremendous potential to reduce healthcare costs, increase patient engagement and improve clinical outcomes** through more efficient and secure data sharing.
- In prior years, “blockchain” was a ubiquitous buzz word at HIMSS, but actual use cases for the technology were only vaguely understood. **This year, attendees identified concrete use cases**, with many blockchain pilots slated for full implementations in 2019.
- Frequently discussed blockchain use cases include RCM, clinical trials and research, patient treatment adherence and data monetization.**
- Microsoft’s David Houlding advised health organizations to identify discrete blockchain use cases and implement them one at a time, as opposed to sweeping—and likely haphazard—roll outs.

5 Race to scale driving robust M&A Activity in EHR & Clinical Communications markets

- The Top 10 EHR vendors account for 65% of the physician practice EHR market, with **600+ vendors vying for the remaining 35% of the market¹**—hence, there were well over 100 EHR vendors at HIMSS.
- This **market fragmentation—juxtaposed against nationwide interoperability initiatives and the continued trend of practitioner consolidation into hospital-owned practices and clinically integrated networks—has set the stage for widespread consolidation of the EHR market as companies turn to M&A in the race to achieve scale.**
- Having recognized the clear “roll-up” opportunity, **private equity firms have been particularly active in the EHR market**, acquiring and combining small to mid-size vendors.
- As reflected in several transactions below, **the clinical communication / collaboration market has also seen robust M&A activity**, as major vendors and private equity firms strive to aggregate best-of-breed solutions into comprehensive platforms at scale.

Recent Healthcare IT Investments²

Investor	Target	Description
Hill-Rom	voalte Mar-2019	<ul style="list-style-type: none"> Acquisition Hospital point-of-care communication platform, including VoIP communications, text messaging and user directory
McKesson Ventures	xhealth Mar-2019	<ul style="list-style-type: none"> Early Stage VC Patient engagement platform that can prescribe and monitor digital health content and services from within an EHR charting interface
PHARMAGEST Inter@ctive	Embleema Feb - 2019	<ul style="list-style-type: none"> Accelerator / Incubator Healthcare blockchain application designed for secure sharing of medical records
eMDs	aprima Jan-2019	<ul style="list-style-type: none"> Buyout/Acquisition EHR/PM/RCM application developer
HARBOURVEST	INFLUENCE HEALTH Jan-2019	<ul style="list-style-type: none"> Acquisition Patient Engagement software and healthcare marketing analytic services
perfectserve	TELMEDIQ Jan-2019	<ul style="list-style-type: none"> Acquisition Clinical communication and secure text platform, that integrates with existing hospital systems and EMRs
Harbert Management Corporation HMC	envera Apr-2018	<ul style="list-style-type: none"> Early Stage VC Patient engagement software developer

¹ Office of the National Coordinator | ² Pitchbook and MHH Research

U.S. ECONOMIC INDICATORS

U.S. Market Indices

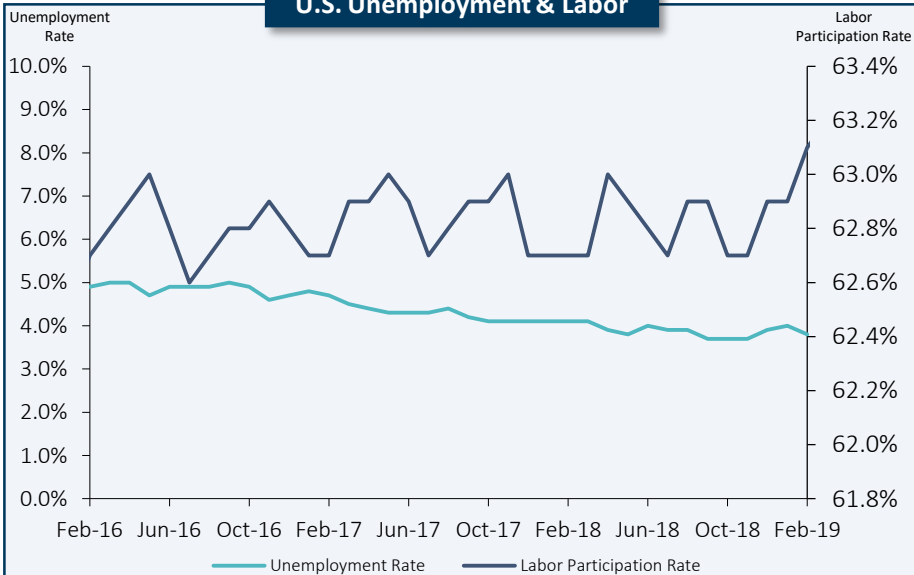
	SP500	NSDQ	DJIA
March	▲ 1.1%	▲ -0.4%	▲ 1.8%
LTM	▼ -4.2%	▼ -1.8%	▼ -4.4%
3-Year	▲ 38.2%	▲ 55.5%	▲ 52.1%



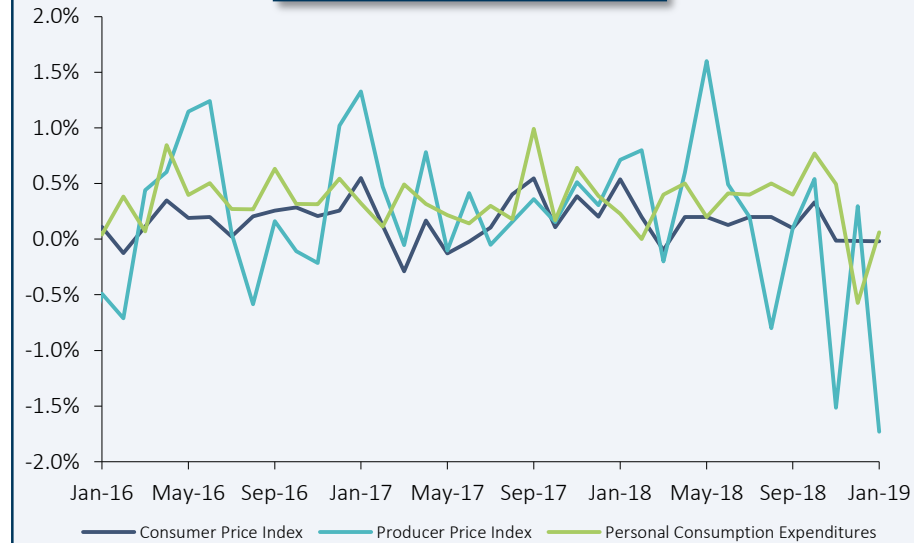
10-Year Treasury Rate



U.S. Unemployment & Labor















U.S. PPI, CPI and PCE



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

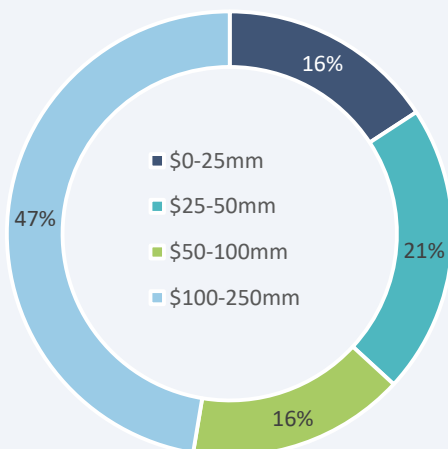
Select Mar. 2019 YTD Buy-Outs**

Company	Investor	Date	Sector
 ividata GROUP	 KEENSIGHT CAPITAL	Mar 11	IT Outsourcing
 DIGITAL PHARMACIST	 K1	Mar 11	Healthcare IT
 capsule	 FP FRANCISCO PARTNERS	Feb 11	Healthcare IT
 strivelogistics	 CI CAPITAL PARTNERS	Feb 11	IT Outsourcing
 INFLUENCE HEALTH	 HARBOURVEST	Jan 8	Healthcare IT
 CNI <small>we make IT happen™</small> <small>Canadian Networks Inc.</small>	 SpireCapital	Jan 7	IT Outsourcing

PE Buy-Outs, Trailing 8 Quarters, as of Mar. 31



PE Buy-Outs, by Deal Size



PE Buy-Outs, Historical Annual, as of Mar. 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

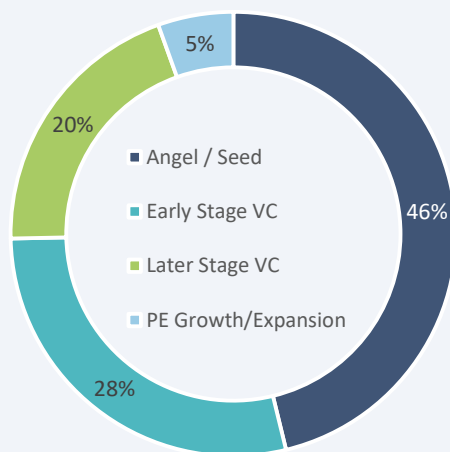
Select Mar. 2019 YTD Minority Deals**

Company	Stage	Date	Sector
 movius	Late Stage VC	Mar 20	Business Process Outsourcing
 Igneous	Late Stage VC	Mar 13	Infrastructure Services
 CorneaGen	Early Stage VC	Feb 26	Healthcare IT
 HealthCatalyst	Late Stage VC	Feb 7	Healthcare IT
 PICBIO	Early Stage VC	Jan 7	Healthcare IT
 PEAR THERAPEUTICS	Late Stage VC	Jan 4	Healthcare IT

PE Minority, Trailing 8 Quarters, as of Mar. 31



PE Minority, by Stage



PE Minority, Historical Annual, as of Mar. 31



Source: Pitchbook

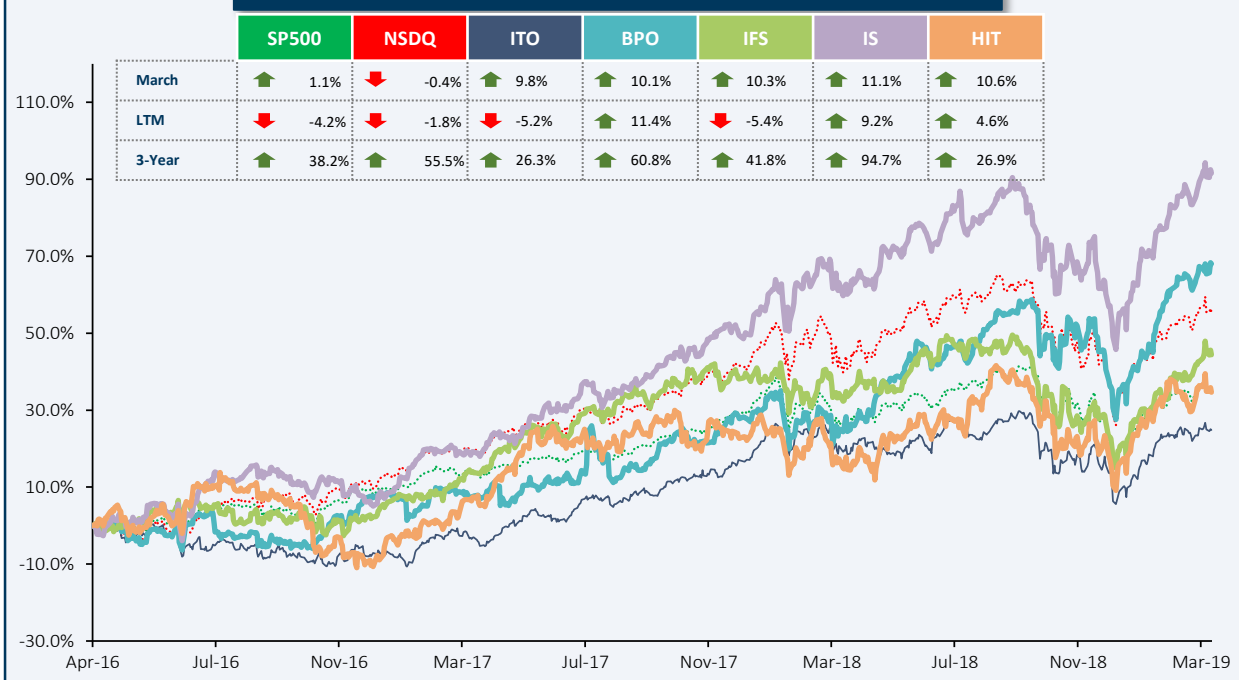
*For deals with announced transaction value

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

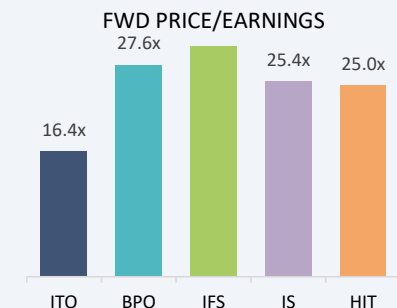
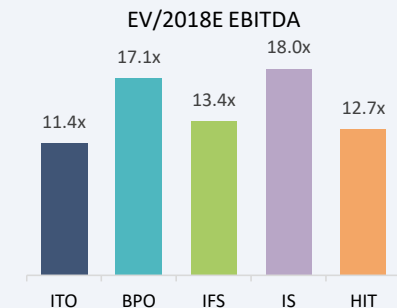
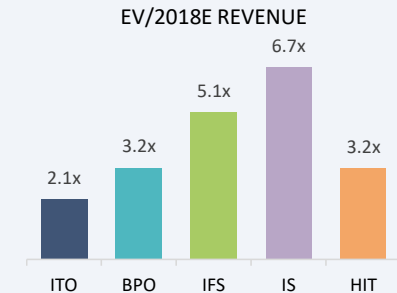
VALUATION & PERFORMANCE METRICS

ITO	IT Outsourcing: technology services and consulting solutions, including engineering, application development, knowledge management and business process management
BPO	Business Process Outsourcing: 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	Infrastructure Services: providers of managed, hosting and consulting services around planning, designing, implementing and managing mission-critical IT infrastructure
IS	Information Services: providers of independent rating, benchmarking, research and data analytic services
HIT	Healthcare IT: software and technology-related services focused on the design, development, creation, use and maintenance of information systems for the healthcare industry

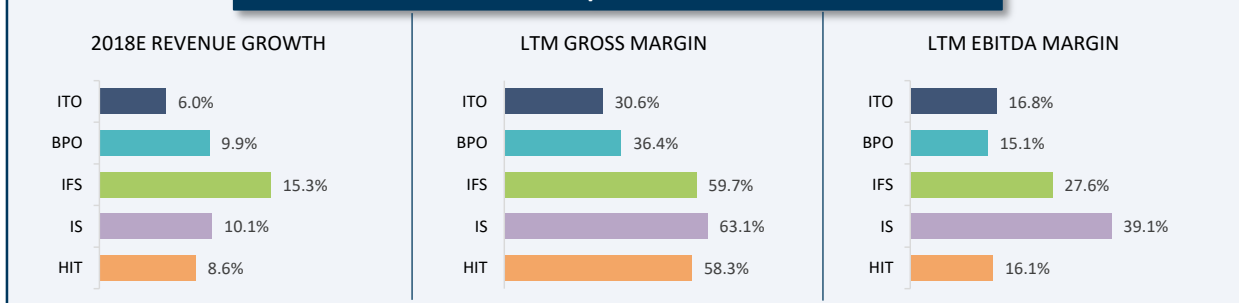
Sector Indices Performance, as of March 31, 2019



Median Valuation Metrics



Median Operational KPIs



Source: CapitalIQ

IT OUTSOURCING

Valuation Metrics

(\$ in millions)

Company	Market Cap ⁽¹⁾	Operating Metrics					Valuation Multiples					
		Revenue		LTM Gross Margin	EBITDA ⁽²⁾		EV / Revenue			EV / EBITDA		
		2018E	2019E		2018E	2019E	LTM	2018E	2019E	LTM	2018E	2019E
Accenture plc (ACN)	\$100,615	\$40,590	\$43,470	31.5%	\$6,892	\$7,337	16.3%	2.4x	2.4x	2.2x	12.7 x	13.1 x
Infosys Limited (INFY)	\$40,323	\$11,341	\$12,433	34.3%	\$2,848	\$3,165	26.0%	3.2x	3.3x	3.0x	12.3 x	11.7 x
Cognizant Technology Solutions Corporation (CTSH)	\$39,970	\$16,111	\$17,396	39.0%	\$3,326	\$3,811	20.9%	2.3x	2.2x	2.1x	10.1 x	9.4 x
DXC Technology Company (DXC)	\$20,477	\$21,744	\$20,847	29.0%	\$4,914	\$4,874	22.6%	1.0x	1.2x	1.2x	4.6 x	5.1 x
HCL Technologies Limited (HCLTECH)	\$19,863	\$8,329	\$9,190	34.8%	\$1,846	\$2,117	23.2%	2.4x	2.3x	2.1x	10.3 x	10.6 x
CGI Group Inc. (GIB.A)	\$17,235	\$8,529	\$9,053	30.6%	\$1,621	\$1,699	16.8%	2.1x	2.2x	2.0x	11.5 x	11.4 x
Wipro Limited (BSE:507685)	\$20,166	\$8,247	\$8,689	29.3%	\$1,475	\$1,701	17.4%	2.2x	2.1x	2.0x	12.7 x	11.7 x
Atos SE (ATO)	\$9,016	\$14,107	\$15,550	14.5%	\$1,901	\$2,297	12.6%	0.6x	0.7x	0.6x	4.8 x	4.9 x
Synthomer plc (SYNT)	\$1,925	\$2,014	\$2,121	18.7%	\$243	\$264	11.3%	1.1x	1.1x	1.0x	9.4 x	9.1 x
Virtusa Corporation (VRTU)	\$1,475	\$1,200	\$1,363	29.3%	\$98	\$134	7.5%	1.5x	1.4x	1.2x	14.0 x	17.2 x
Perficient, Inc. (PRFT)	\$871	\$495	\$525	35.3%	\$75	\$84	11.7%	1.9x	1.9x	1.7x	12.6 x	10.9 x
Mean	\$24,721	\$12,064	\$12,785	29.6%	\$2,294	\$2,499	16.9%	1.9x	1.9x	1.7x	10.4x	10.9x
Median	\$19,863	\$8,529	\$9,190	30.6%	\$1,846	\$2,117	16.8%	2.1x	2.1x	2.0x	11.5x	11.4x

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 March 29, 2019.

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

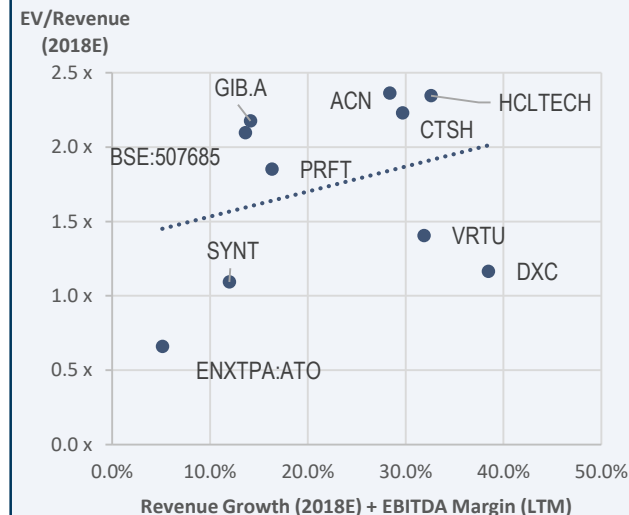
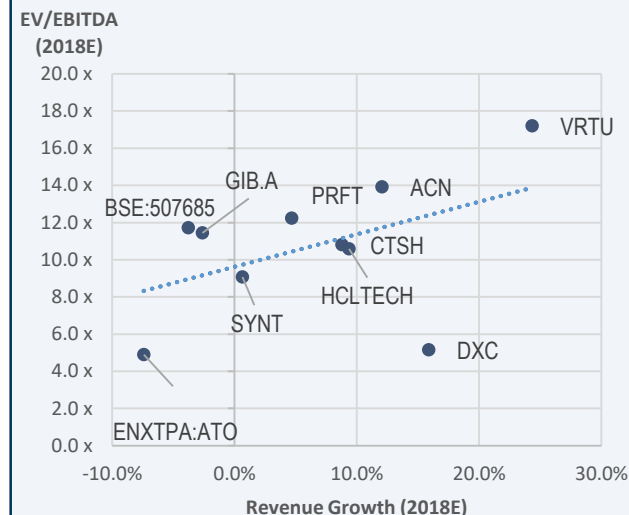
Select March 2019 YTD Precedent Transactions*

Announced	Acquirer	Target	Description
March 13			Provides IT outsourcing services
March 11			Provides IT outsourcing services internationally
February 14			Provides IT outsourcing services for implementation, customization, and others
January 9			Provides IT outsourcing services
January 7			Provides software development and IT solutions

Source: CapitalIQ

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

Relative Valuation



BUSINESS PROCESS OUTSOURCING

Valuation Metrics

(\$ in millions)

Company	Market Cap ⁽¹⁾	Operating Metrics						Valuation Multiples								
		Revenue		LTM Gross Margin	EBITDA ⁽²⁾		LTM EBITDA Margin	EV / Revenue			EV / EBITDA			LTM	2018E	2019E
		2018E	2019E		2018E	2019E		LTM	2018E	2019E	LTM	2018E	2019E			
Automatic Data Processing, Inc. (ADP)	\$63,107	\$13,764	\$14,577	43.7%	\$3,059	\$3,595	22.5%	4.7x	4.7x	4.4x	19.8 x	20.9 x	17.8 x			
Genpact Limited (G)	\$5,207	\$2,977	\$3,282	36.4%	\$500	\$546	14.1%	2.1x	2.1x	1.9x	13.5 x	12.2 x	11.2 x			
EPAM Systems, Inc. (EPAM)	\$6,425	\$1,837	\$2,242	35.4%	\$337	\$412	15.1%	3.4x	3.2x	2.6x	18.3 x	17.4 x	14.2 x			
WNS (Holdings) Limited (WNS)	\$2,533	\$785	\$846	34.9%	\$148	\$155	16.1%	3.2x	3.2x	3.0x	16.1 x	17.1 x	16.3 x			
ExlService Holdings, Inc. (EXLS)	\$2,205	\$882	\$999	33.9%	\$150	\$177	13.9%	2.4x	2.3x	2.0x	14.5 x	13.6 x	11.5 x			
Globant S.A. (GLOB)	\$1,841	\$521	\$630	38.2%	\$95	\$112	16.3%	3.6x	3.4x	2.8x	19.1 x	18.8 x	16.0 x			
Luxoft Holding, Inc. (LXFT)	\$1,383	\$909	\$982	37.3%	\$123	\$154	10.8%	1.4x	1.4x	1.3x	10.3 x	10.6 x	8.5 x			
Mean	\$11,814	\$3,097	\$3,365	37.1%	\$630	\$736	15.5%	3.0x	2.9x	2.6x	15.9x	15.8x	13.6x			
Median	\$2,533	\$909	\$999	36.4%	\$150	\$177	15.1%	3.2x	3.2x	2.6x	16.1x	17.1x	14.2x			

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

‡ = excluded from Mean and Median calculations

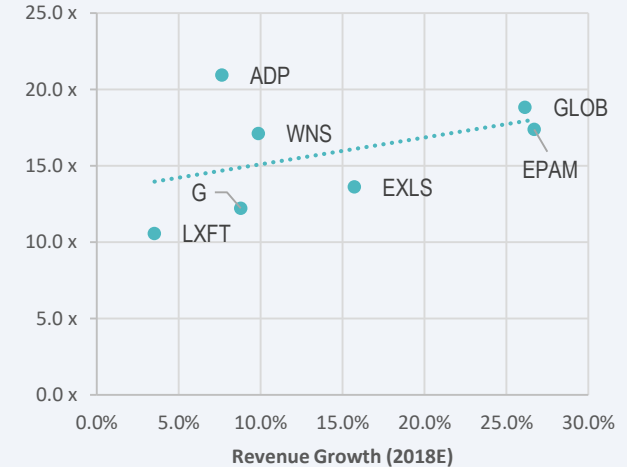
Source: Public Filings, Press Releases and Published Research Reports

(1) As of close March 29, 2019.

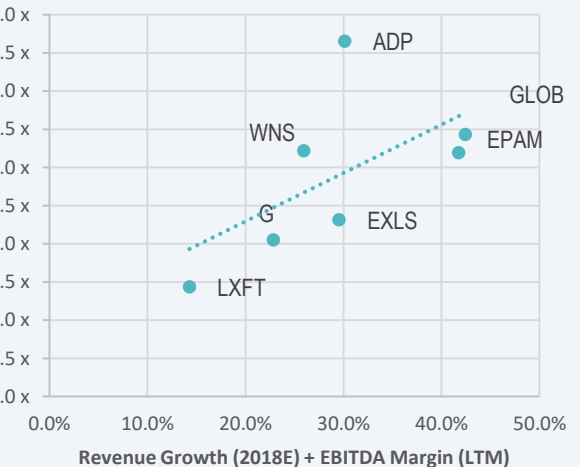
(2) Excludes non-recurring, discontinued operations and stock-based compensation

Relative Valuation










EV/EBITDA
(2018E)



EV/Revenue
(2018E)



Select March 2019 YTD Precedent Transactions*

Announced	Acquirer	Target	Description
March 19	 PROTEL COMMUNICATIONS, INC.	 xtelesis experience excellence	Provides VOIP and help desk solutions
March 7	 PROSEGUR CASH	 V/N	Provides customer services, telemarketing, technical supports and back office services
February 6	 certus technology group	 SysGroup	Provides hosting services and service desk
January 8	 RUBY receptionists	TMS Online Services	Provides managed online chat services
January 7	 dogado	 checkdomain	Provides digital solutions for websites, emails and online marketing

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 ⁽¹⁾	Operating Metrics						Valuation Multiples					
		Revenue		LTM Gross Margin	EBITDA ⁽²⁾		LTM EBITDA Margin	EV / Revenue			EV / EBITDA		
		2018E	2019E		2018E	2019E		LTM	2018E	2019E	LTM	2018E	2019E
Equinix, Inc. (REIT) (EQIX)	\$30,113	\$5,070	\$5,568	49.1%	\$2,411	\$2,702	44.9%	8.1x	8.0x	7.3x	16.6x	16.8x	15.0x
VeriSign, Inc. (VRSN)	\$17,231	\$1,215	\$1,270	84.1%	\$871	\$909	66.4%	14.8x	14.7x	14.0x	20.9x	20.5x	19.6x
GoDaddy Inc. (GDDY)	\$12,136	\$2,658	\$2,983	66.3%	\$733	\$813	15.0%	5.4x	5.2x	4.7x	28.1x	19.0x	17.1x
Zayo Group Holdings, Inc. (ZAYO)	\$7,365	\$2,590	\$2,598	64.1%	\$1,292	\$1,360	45.9%	5.0x	5.0x	5.0x	10.0x	10.0x	9.5x
United Internet AG (UTDI)	\$8,372	\$5,921	\$6,276	34.5%	\$1,364	\$1,499	16.5%	1.8x	1.8x	1.7x	11.0x	7.8x	7.1x
Wix.com Ltd. (WIX)	\$4,707	\$602	\$763	80.3%	\$111	\$178	-4.6%	7.8x	7.2x	5.7x	NM	39.4x	24.5x
Endurance International Group Holdings, Inc. (EIGI)	\$1,414	\$1,146	\$1,142	53.6%	\$326	\$321	27.6%	2.7x	2.8x	2.8x	8.9x	9.7x	9.8x
Interap Corporation (INAP)	\$209	\$322	\$328	55.4%	\$113	\$123	30.0%	2.8x	2.7x	2.6x	8.8x	7.6x	7.0x
Mean	\$10,193	\$2,440	\$2,616	60.9%	\$903	\$988	30.2%	6.1x	5.9x	5.5x	14.9x	16.4x	13.7x
Median	\$7,868	\$1,902	\$1,934	59.7%	\$802	\$861	27.6%	5.2x	5.1x	4.8x	11.0x	13.4x	12.4x

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

‡ = excluded from Mean and Median calculations

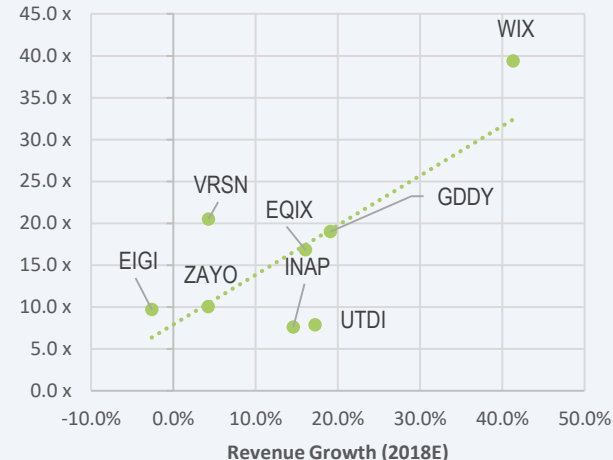
Source: Public Filings, Press Releases and Published Research Reports

(1) As of close March 29, 2019.

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

Relative Valuation

EV/EBITDA
(2018E)



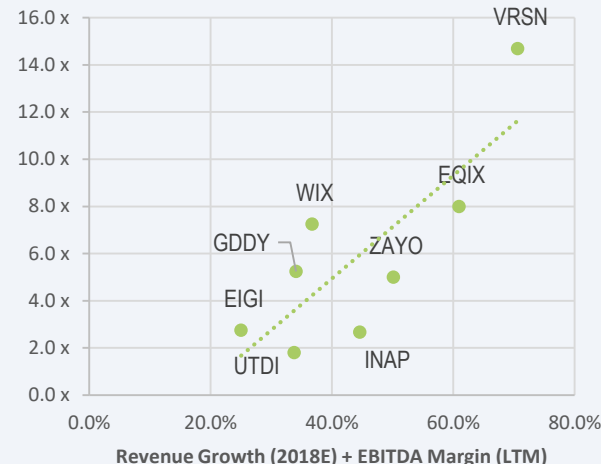
Select March 2019 YTD Precedent Transactions*

Announced	Acquirer	Target	Description
March 20			Provides storage and management solutions for achieved information
February 28			Operates data center in Fort Lauderdale
February 1			Provides offsite storage and document archiving services
January 15			Provides data center solutions
January 10			Provides cloud hosting and infrastructure services

Source: CapitalIQ

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

EV/Revenue
(2018E)



INFORMATION SERVICES

Valuation Metrics

(\$ in millions)

Company	Market Cap ⁽¹⁾	Operating Metrics						Valuation Multiples					
		Revenue		LTM Gross Margin	EBITDA ⁽²⁾		LTM EBITDA Margin	EV / Revenue			EV / EBITDA		
		2018E	2019E		2018E	2019E		LTM	2018E	2019E	LTM	2018E	2019E
S&P Global Inc. (SPGI)	\$45,744	\$6,334	\$6,646	72.4%	\$3,148	\$3,347	49.9%	7.7x	7.7x	7.3x	15.0x	15.5x	14.6x
IQVIA Holdings Inc. (Q)	\$24,870	\$10,365	\$10,906	42.7%	\$2,203	\$2,414	21.1%	4.1x	3.4x	3.2x	18.2x	15.8x	14.4x
Moody's Corporation (MCO)	\$26,449	\$4,515	\$4,712	71.7%	\$2,176	\$2,310	47.3%	6.7x	6.8x	6.5x	13.3x	14.0x	13.2x
IHS Markit Ltd. (INFO)	\$20,705	\$4,016	\$4,477	63.3%	\$1,540	\$1,759	32.9%	6.8x	6.6x	5.9x	17.6x	17.3x	15.1x
Verisk Analytics, Inc. (VRSK)	\$19,728	\$2,394	\$2,556	63.0%	\$1,132	\$1,225	44.9%	9.4x	9.3x	8.7x	20.9x	19.6x	18.1x
Garner, Inc. (IT)	\$13,397	\$3,960	\$4,323	62.6%	\$712	\$796	14.6%	4.0x	4.0x	3.6x	24.6x	22.0x	19.7x
MSCI Inc. (MSCI)	\$13,359	\$1,434	\$1,537	79.9%	\$781	\$852	53.4%	10.4x	10.2x	9.5x	18.5x	18.6x	17.1x
FactSet Research Systems Inc. (FDS)	\$8,511	\$1,371	\$1,459	52.2%	\$464	\$505	33.3%	6.4x	6.5x	6.1x	18.1x	19.1x	17.5x
Mean	\$21,596	\$4,299	\$4,577	63.5%	\$1,520	\$1,651	37.2%	6.9x	6.8x	6.3x	18.3x	17.7x	16.2x
Median	\$20,217	\$3,988	\$4,400	63.1%	\$1,336	\$1,492	39.1%	6.8x	6.7x	6.3x	18.1x	18.0x	16.1x

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

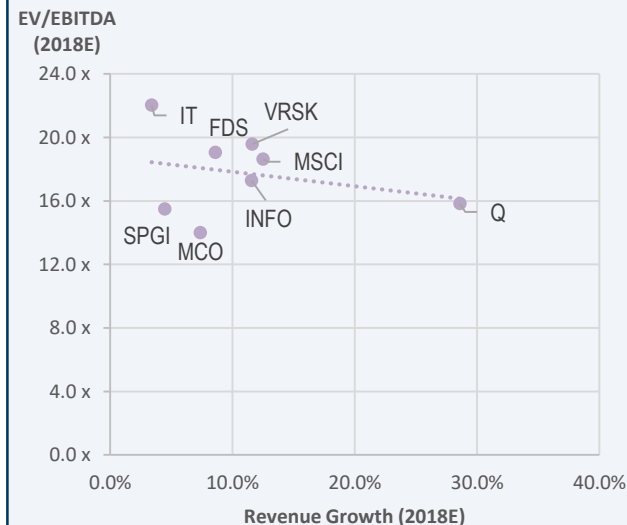
† = excluded from Mean and Median calculations

Source: Public Filings, Press Releases and Published Research Reports

(1) As of close March 29, 2019.

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

Relative Valuation

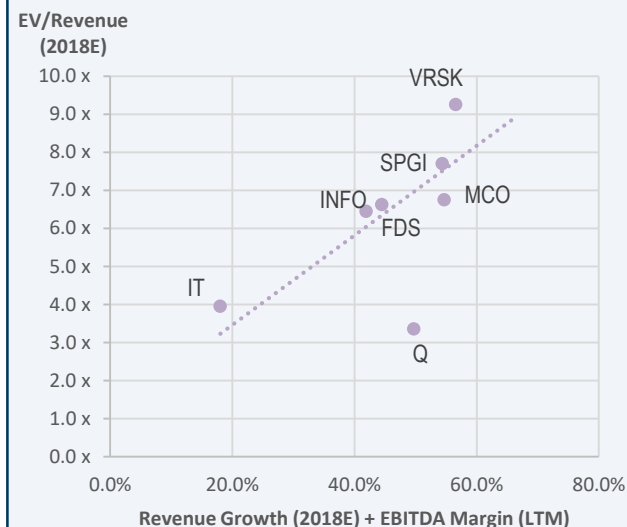


Select March 2019 YTD Precedent Transactions*

Announced	Acquirer	Target	Description
March 20	SimplyBiz Group	defaqto	<ul style="list-style-type: none"> Provide financial information to financial institutions, financial advisers and consumers
March 18	CURTISS WRIGHT	TCG Tactical Communications Group LLC	<ul style="list-style-type: none"> Provides tactical datalink solutions to military clients
February 6	OTC Markets	Qaravan	<ul style="list-style-type: none"> Provides risk performance analytics tools for community banks
January 8	APPRISS [®] Knowledge for good.™	CFI CrimeFinders INCORPORATED	<ul style="list-style-type: none"> Offers criminal records research services
January 8	CENTRAL SQUARE TECHNOLOGIES	lucity™	<ul style="list-style-type: none"> Provides asset and maintenance management software solutions and support services

Source: CapitalIQ

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



Valuation Metrics

(\$ in millions)

Company	Market Cap ⁽¹⁾	Operating Metrics						Valuation Multiples					
		Revenue		LTM Gross Margin	EBITDA ⁽²⁾		LTM EBITDA Margin	EV / Revenue			EV / EBITDA		
		2018E	2019E		2018E	2019E		LTM	2018E	2019E	LTM	2018E	2019E
Cerner Corporation (CERN)	\$18,873	\$5,393	\$5,802	84.1%	\$1,572	\$1,712	24.1%	3.5x	3.4x	3.2x	13.6x	11.8x	10.8x
Veeva Systems Inc. (VEEV)	\$13,201	\$857	\$1,019	70.4%	\$297	\$355	25.3%	15.0x	14.2x	12.0x	44.0x	41.1x	34.3x
athenahealth, Inc. (ATHN)	\$5,166	\$1,346	\$1,473	54.3%	\$374	\$422	20.2%	4.0x	3.9x	3.5x	16.4x	13.9x	12.4x
Allscripts Healthcare Solutions, Inc. (MDRX)	\$2,080	\$2,151	\$2,189	48.1%	\$414	\$457	4.4%	2.0x	1.9x	1.9x	30.1x	9.8x	8.9x
Inovalon Holdings, Inc. (INOV)	\$1,437	\$536	\$632	71.1%	\$169	\$202	20.1%	4.6x	4.3x	3.7x	19.7x	13.7x	11.5x
National Research Corporation (NRC)	\$941	\$121	\$127	59.6%	NA	NA	33.4%	8.2x	8.1x	7.7x	23.4x	NM	NM
NextGen Healthcare, Inc. (QSII)	\$955	\$530	\$550	54.3%	\$86	\$86	7.1%	1.8x	1.8x	1.8x	18.6x	11.2x	11.2x
HealthStream, Inc. (HSTM)	\$850	\$231	\$239	57.0%	\$41	\$43	11.9%	2.6x	2.9x	2.8x	20.6x	16.5x	15.8x
Computer Programs and Systems, Inc. (CPSI)	\$340	\$282	\$291	55.3%	\$45	\$51	12.1%	1.7x	1.7x	1.6x	10.9x	10.7x	9.3x
Castlight Health, Inc. (CSLT)	\$340	\$155	\$159	60.7%	(\$13)	\$11	-22.5%	1.8x	1.8x	1.7x	NM	NM	25.5x
Mean	\$4,418	\$1,160	\$1,248	61.5%	\$332	\$371	13.6%	4.5x	4.4x	4.0x	21.9x	16.1x	15.5x
Median	\$1,196	\$533	\$591	58.3%	\$169	\$202	16.1%	3.1x	3.2x	3.0x	19.7x	12.7x	11.5x

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

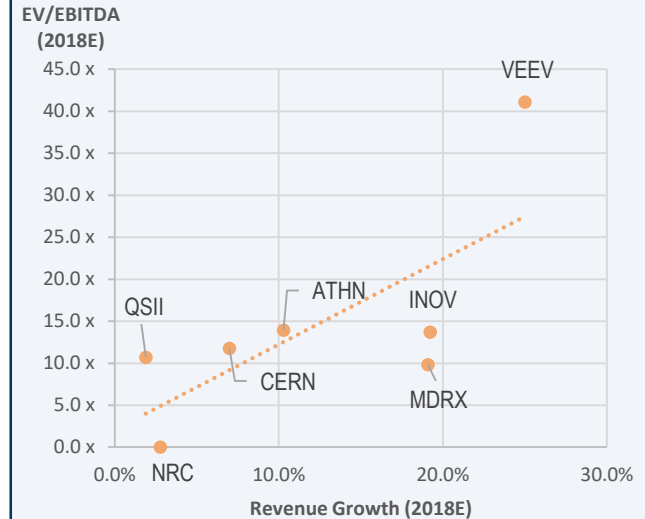
‡ = excluded from Mean and Median calculations

Source: Public Filings, Press Releases and Published Research Reports

(1) As of close March 29, 2019.

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

Relative Valuation**



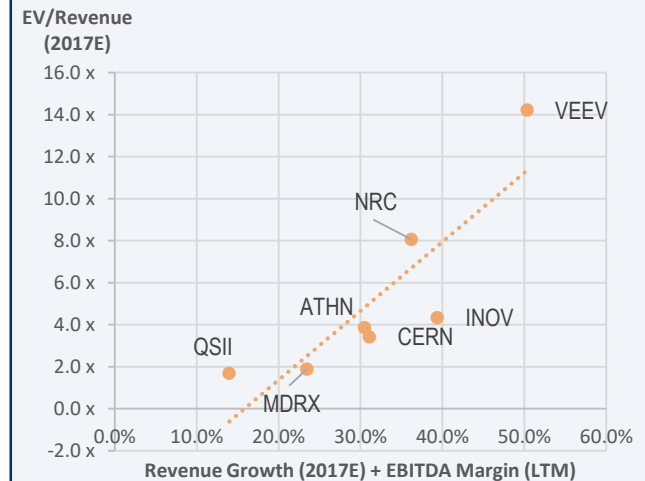
Select March 2019 YTD Precedent Transactions*

Announced	Acquirer	Target	Description
March 18	HENRY SCHEIN ONE	Lighthouse	Develops dental appointment reminder and retention marketing for dental practices
March 5	TABULARASA HEALTHCARE	PrescribeWellness	Develops healthcare communication platform for healthcare personnel
February 5	perfectserve	Lightning Bolt	Provides AI-optimized physician shift scheduling technology
January 16	perfectserve	TELMEDIQ	Provides clinical communication platform that connects hospital systems
January 2	doctors ADMINISTRATIVE SOLUTIONS	ALTEX BUSINESS SOLUTIONS	Provides EMR software, practice management software and Cisco networking 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

IT Outsourcing is currently comprised of: ACN, CTSI, INFY, NESI:HCLTECH, GIB.A, WIT, ENXTPA:ATO, SYNT, VRTU, PRFT; Business Process Outsourcing Index is currently comprised of: ADP, G, EPAM, LXFT, EXLS, WNS, GLOB; Infrastructure Services Index is currently comprised of: EQIX, ZAYO, UTDI, VRSN, DFT, GDDY, EIGI, WIX, WEB, INAP; Information Services Index is currently comprised of: SPGI, Q, MCO, INFO, VRSK, IT, MSCI, FDS; and, Healthcare IT is currently comprised of: CERN, VEEV, ATHN, MDRX, WBMD, INOV, QSII, HSTM, NRCLB, CPSI, CSLT.

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