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Industry Observations – December 31, 2019

Telecommunication Services Industry

Select Telecommunication Services Public Company Industry Data As of December 31, 2019

(USD in millions, except per share data)

Company Name	Ticker	Market Data					LTM Operating Data			Forward Estimates	
		Price at 12/31/19	% of 52 Week High	Equity Value	Enterprise Value	Debt / Total Capital	Total Assets	LTM Revenue	LTM EBITDA	CY 2019 Revenue Estimate	CY 2019 EBITDA Estimate
Telecommunication Services											
ORBCOMM Inc.	ORBC	\$4.21	45.0%	\$329.59	\$548.92	52.4%	\$587.71	\$268.67	\$47.30	\$292.66	\$71.30
Cogent Communications Holdings, Inc.	CCOI	\$65.81	98.7%	\$2,991.24	\$3,976.29	122.4%	\$932.34	\$524.12	\$174.83	\$576.74	\$213.53
Boingo Wireless, Inc.	WIFI	\$10.95	42.0%	\$483.56	\$671.75	66.2%	\$606.43	\$267.54	\$75.70	\$283.60	\$91.26
Zayo Group Holdings, Inc.	ZAYO	\$34.65	99.9%	\$8,206.15	\$14,499.06	82.6%	\$9,881.80	\$2,575.50	\$1,165.90	\$2,599.75	\$1,305.55
Iridium Communications Inc.	IRDM	\$24.64	87.3%	\$3,230.17	\$5,311.98	54.6%	\$3,827.01	\$553.74	\$299.71	\$590.08	\$359.91
ATN International, Inc. Shenandoah Telecommunications	ATNI	\$55.39	69.7%	\$875.03	\$1,008.93	16.2%	\$1,162.80	\$434.44	\$104.93	\$500.28	\$121.02
Cincinnati Bell Inc.	CBB	\$10.47	95.2%	\$527.90	\$2,682.59	106.8%	\$2,619.00	\$1,545.30	\$392.20	\$1,531.01	\$409.54
T-Mobile US, Inc.	TMUS	\$78.42	92.0%	\$67,094.18	\$112,382.01	61.5%	\$86,109.00	\$44,565.00	\$12,702.00	\$47,358.63	\$13,836.61
United States Cellular Corporation	USM	\$36.23	60.6%	\$3,121.09	\$5,170.46	38.1%	\$8,291.00	\$4,021.00	\$821.00	\$4,059.12	\$835.45
Verizon Communications Inc.	VZ	\$61.40	98.7%	\$253,937.15	\$377,023.24	68.6%	\$284,875.00	\$131,374.00	\$48,698.00	\$133,635.76	\$48,874.59
AT&T Inc.	T	\$39.08	98.4%	\$285,479.40	\$479,890.15	50.4%	\$548,796.00	\$182,365.00	\$54,028.00	\$181,979.51	\$59,745.46
CenturyLink, Inc. Consolidated	CTL	\$13.21	78.9%	\$14,401.93	\$50,274.51	73.0%	\$64,728.00	\$22,609.00	\$9,183.00	\$21,726.11	\$8,977.51
Communications Holdings, Frontier Communications Corporation	CNSL	\$3.88	32.1%	\$279.65	\$2,673.17	86.8%	\$3,443.30	\$1,350.26	\$461.69	\$1,293.73	\$506.80
Frontier Communications Corporation	FTR	\$0.89	25.4%	\$93.74	\$17,053.17	130.3%	\$17,561.00	\$8,289.00	\$3,330.00	\$7,639.18	\$3,131.30
Sprint Corporation Telephone and Data Systems, Inc.	S	\$5.21	64.6%	\$21,396.72	\$60,822.73	63.4%	\$87,928.00	\$32,979.00	\$11,833.00	\$31,841.39	\$11,013.56
Systems, Inc.	TDS	\$25.43	68.2%	\$2,916.82	\$6,296.11	39.1%	\$10,881.00	\$5,172.00	\$1,112.00	\$5,221.00	\$1,223.09

Notes: LTM (latest twelve months); Enterprise Value (market capitalization less total cash and short-term investments plus short-term borrowings and total long-term debt);

EBITDA (earnings before interest, taxes, depreciation and amortization)

Source: Capital IQ

The material contained in this publication is meant to provide general information regarding valuation topics. This publication does not constitute investment advice with respect to the securities of any company discussed herein, is not intended to provide information upon which to base an investment decision, and should not be construed as such. Professional advice should be obtained before taking any action based on the information contained herein.

Publicly available information utilized in this publication has been obtained from sources deemed to be reliable. Houlihan does not guarantee the accuracy or completeness of the information provided within this publication. The material presented reflects information known to the authors at the time this publication was written and this information is subject to change.

Select Telecommunication Services Public Company Valuation Metrics As of December 31, 2019

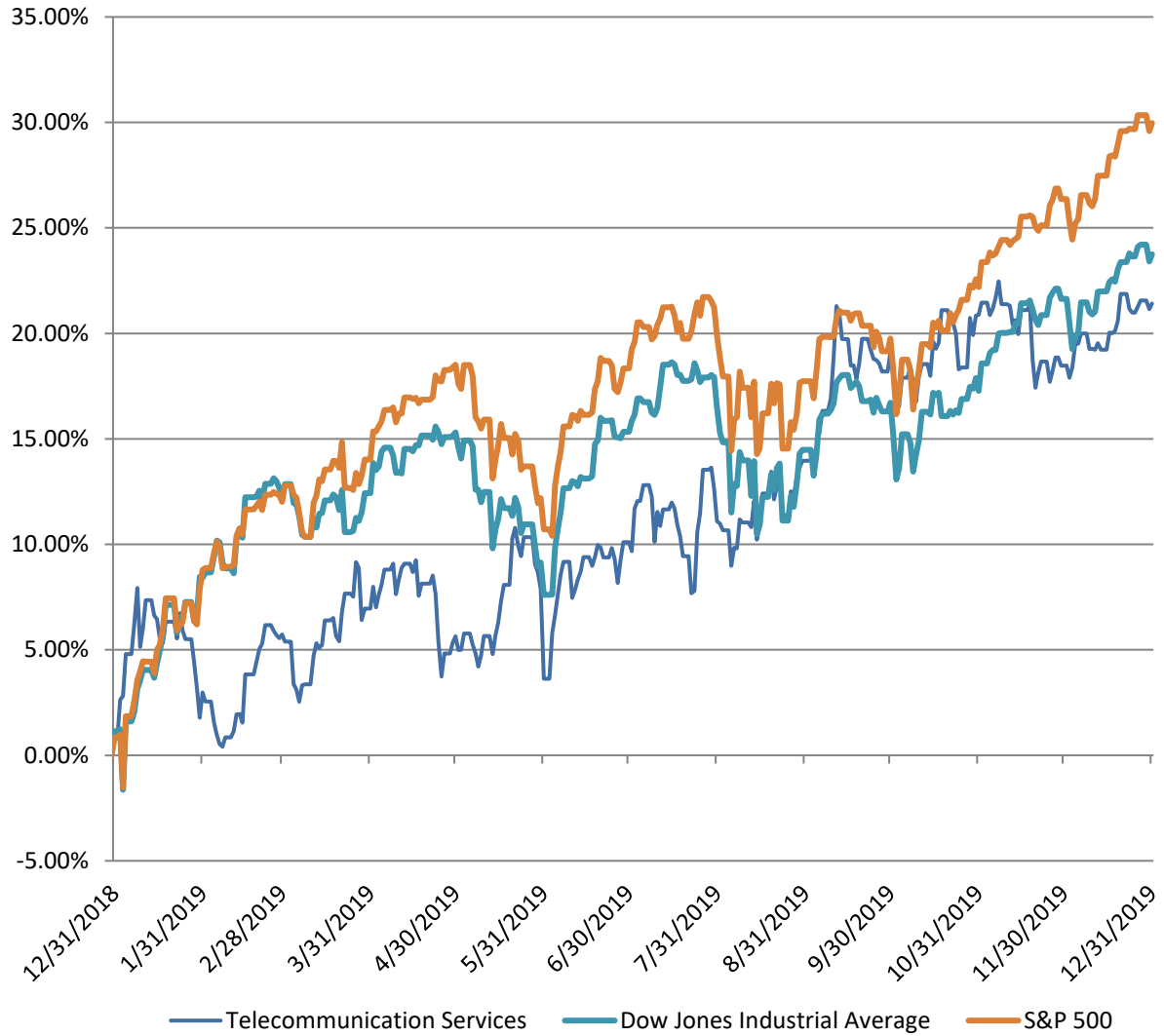
(USD in millions, except per share data)

Company Name	Ticker	LTM Operating Statistics						Trading Multiples			
		Return On Assets	Return On Equity	Return On Capital	Revenue Growth	EBITDA Growth	EBITDA Margin	TEV/ LTM Revenue	TEV/ CY 2019 Revenue	TEV/ LTM EBITDA	TEV/ CY 2019 EBITDA
Telecommunication Services											
ORBCOMM Inc.	ORBC	-0.1%	-8.5%	-0.1%	-6.0%	49.2%	17.6%	2.0x	1.9x	11.5x	7.7x
Cogent Communications Holdings, Inc.	CCOI	6.9%	N/A	7.7%	4.6%	7.1%	33.4%	6.9x	6.9x	20.8x	18.6x
Boingo Wireless, Inc.	WIFI	-0.4%	-4.5%	-1.1%	11.3%	-2.4%	28.3%	2.2x	2.4x	7.7x	7.4x
Zayo Group Holdings, Inc.	ZAYO	3.5%	10.0%	4.4%	-1.0%	-2.2%	45.3%	5.6x	5.6x	12.4x	11.1x
Iridium Communications Inc.	IRDM	0.2%	-3.9%	0.2%	9.4%	22.6%	54.1%	8.9x	9.0x	16.5x	14.8x
ATN International, Inc. Shenandoah Telecommunications	ATNI	1.0%	1.6%	1.2%	-3.7%	-20.6%	24.2%	2.3x	2.0x	9.5x	8.3x
Cincinnati Bell Inc.	CBB	2.1%	N/A	2.9%	20.7%	22.4%	25.4%	1.7x	1.8x	6.8x	6.6x
T-Mobile US, Inc. United States Cellular Corporation	TMUS	5.0%	12.9%	6.2%	4.7%	11.2%	28.5%	2.5x	2.4x	8.6x	8.1x
Verizon Communications Inc.	USM	1.1%	3.3%	1.4%	2.0%	6.3%	20.4%	1.3x	1.3x	6.3x	6.2x
Verizon Communications Inc.	VZ	7.2%	28.6%	10.9%	0.6%	2.5%	37.1%	2.9x	2.8x	7.9x	7.7x
AT&T Inc.	T	3.2%	9.2%	4.6%	10.9%	4.9%	29.6%	2.7x	2.6x	9.0x	8.0x
CenturyLink, Inc. Consolidated	CTL	3.9%	-43.3%	4.9%	-1.6%	10.0%	40.6%	2.2x	2.3x	5.4x	5.6x
Communications Holdings, Frontier Communications Corporation	CNSL	1.2%	-6.6%	1.5%	-4.3%	0.6%	34.2%	2.0x	2.1x	5.7x	5.3x
Frontier Communications Corporation	FTR	4.4%	N/A	5.6%	-4.8%	-4.2%	40.2%	2.1x	2.2x	5.1x	5.4x
Sprint Corporation Telephone and Data Systems, Inc.	S	1.9%	-10.0%	2.4%	0.3%	-1.6%	35.9%	1.9x	1.9x	5.2x	5.5x
Telephone and Data Systems, Inc.	TDS	1.2%	2.9%	1.5%	1.7%	3.9%	21.5%	1.2x	1.2x	5.7x	5.1x
	Mean	2.7%	0.3%	3.5%	2.8%	6.5%	32.8%	3.1x	3.1x	9.2x	8.4x
	Median	2.1%	2.2%	2.9%	1.7%	3.9%	33.4%	2.2x	2.3x	7.9x	7.7x

Notes: LTM (latest twelve months); NTM (next twelve months); EBITDA (earnings before interest, taxes, depreciation and amortization); TEV (total enterprise value)

Source: Capital IQ

Telecommunication Services Public Company LTM Equity Performance As of December 31, 2019



Note: The indices are derived from the equity performance of the previously listed companies. Source: Capital IQ

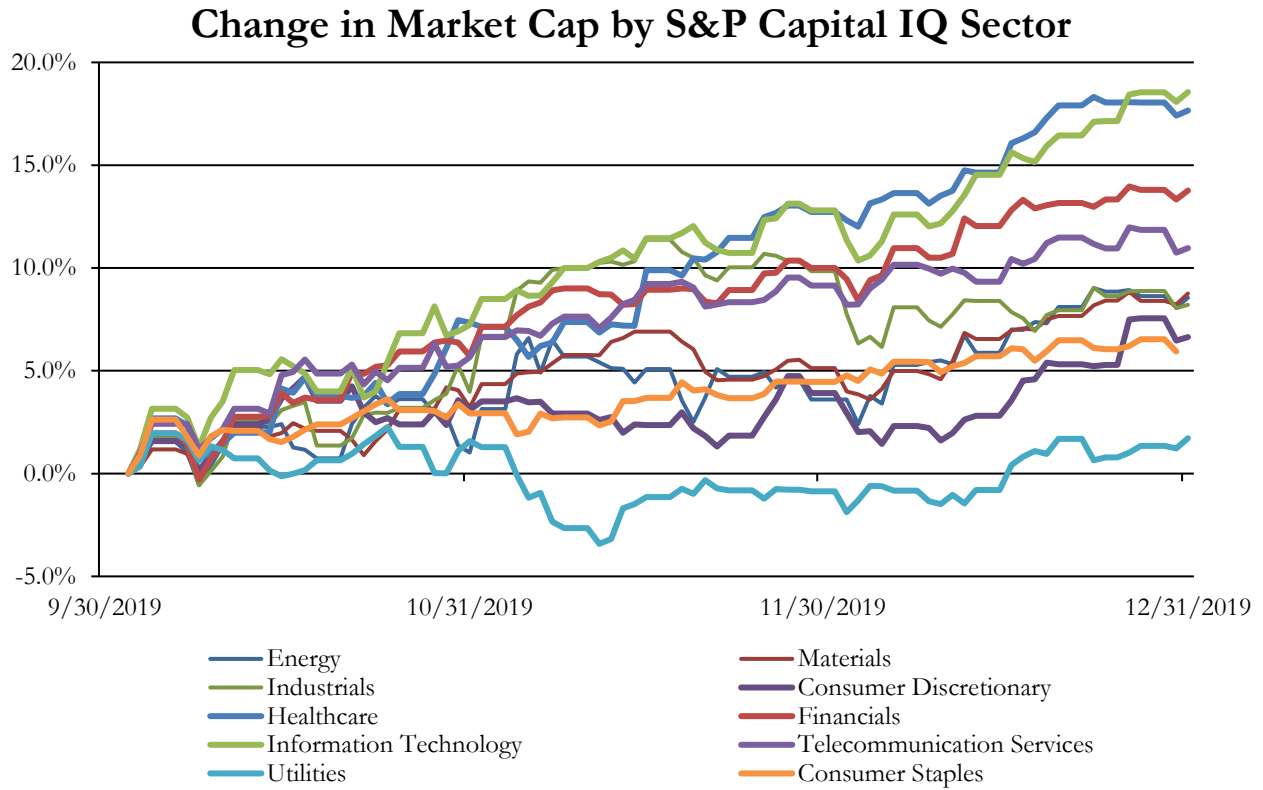
Recent M&A Activity in the Telecommunication Services Industry December 31, 2018 to December 31, 2019

(USD in millions)

Close Date	Target	Acquirer	Target Company Primary Industry	Implied Enterprise Value
3/20/2019	Twenty-First Century Fox, Inc. (nka:TFCF Corporation)	The Walt Disney Company	Movies and Entertainment	\$83,203.21
12/4/2019	Viacom Inc.	CBS Corporation (nka:ViacomCBS Inc.)	Movies and Entertainment	\$20,225.00
8/23/2019	Fox Sports Net LLC	Sinclair Broadcast Group, Inc.	Cable and Satellite	\$10,600.00
9/19/2019	Tribune Media Company	Nexstar Media Group, Inc.	Broadcasting	\$6,239.08
7/1/2019	Epsilon Data Management, LLC	Publicis Groupe Holdings B.V.; MMS USA	Advertising	\$4,400.00
1/2/2019	Raycom Media Inc.	Gray Television, Inc.	Broadcasting	\$3,547.00
8/29/2019	Yankees Entertainment & Sports Network, LLC	Amazon.com, Inc.; Yankee Global Enterprises	Broadcasting	\$3,470.00
2/1/2019	Pandora Media, LLC	Sirius XM Holdings Inc.; Sirius XM Radio Inc.	Movies and Entertainment	\$3,453.84
11/19/2019	Gannett Co., Inc.	New Media Investment Group Inc. (nka:Gannett	Publishing	\$2,227.20
4/30/2019	Turnitin, LLC	Advance Publications, Inc.	Interactive Media and Services	\$1,750.00
7/30/2019	MG LLC	Willis Towers Watson Public Limited Company	Advertising	\$1,334.50
9/10/2019	Broadcast Satellite Service Business of EchoStar Corporation	DISH Network Corporation	Alternative Carriers	\$810.37
9/19/2019	11 Local Television Stations In Eight Markets	TEGNA Inc.	Broadcasting	\$740.00
9/19/2019	Eight Television Stations of Nexstar Media Group Inc.	Scripps Broadcasting Holdings LLC	Broadcasting	\$580.00
10/1/2019	Data, Video and Voice Business and Related Assets of Fidelity	Cable One, Inc.	Integrated Telecommunication Services	\$525.86
5/1/2019	15 Television Stations of Cordillera Communications	Scripps Media, Inc.	Broadcasting	\$521.00
12/17/2019	Radio Portfolio, CoxReps and Gamut Businesses of Cox Media	Apollo Global Management, LLC (nka:Apollo	Broadcasting	\$500.00
9/3/2019	U.S. Tower Portfolio of Grain Management, LLC	American Tower Corporation (REIT)	Wireless Telecommunication Services	\$500.00
9/19/2019	Elemica, Inc.	Eurazeo SE; Eurazeo Capital IV	Interactive Media and Services	\$390.00
1/8/2019	Delta Communications, LLC	Cable One, Inc.	Integrated Telecommunication Services	\$357.00
3/4/2019	Pluto, Inc.	Viacom Inc.	Movies and Entertainment	\$340.00
9/3/2019	Fiber Network of Bluebird Network, LLC	Uniti Group Inc.	Alternative Carriers	\$319.00
1/17/2019	BiteSquad.com, LLC	Wair Holdings Inc.	Interactive Media and Services	\$317.97
1/23/2019	BuildingConnected, Inc.	Autodesk, Inc.	Interactive Media and Services	\$275.00
7/1/2019	Zoosk, Inc.	Spark Networks SE	Interactive Media and Services	\$257.90
3/29/2019	US K12 Courseware Business of Pearson PLC	Nexus Capital Management LP	Publishing	\$250.00
8/8/2019	WBNS TV, Inc.	TEGNA Inc.	Broadcasting	\$245.00
1/3/2019	SiriusDecisions, Inc.	Forrester Research, Inc.	Advertising	\$238.90
1/9/2019	One Sixty Over Ninety, Inc.	Endeavor, LLC	Advertising	\$200.00
11/26/2019	eLocal USA LLC	HomeServe USA Corp.	Advertising	\$177.22
7/3/2019	Bayou City Broadcasting Evansville, Inc. and Bayou City	Allen Media Broadcasting LLC	Broadcasting	\$165.00
4/1/2019	RhythmOne plc	Taptica International Ltd. (nka:Tremor	Interactive Media and Services	\$162.30
10/14/2019	MJR Theatres, Inc.	Kinepolis Group NV	Movies and Entertainment	\$152.25
12/18/2019	Shoptalk Commerce LLC/Groceryshop LLC	Hyve Group Plc	Advertising	\$145.00
1/3/2019	Periscope, Inc.	Quad/Graphics, Inc.	Advertising	\$121.10
3/1/2019	MoNa Mobile Nations, LLC	Future plc	Publishing	\$120.58
6/24/2019	KIXEYE, Inc.	Stillfront Group AB (publ)	Interactive Home Entertainment	\$120.00
1/15/2019	ValuePenguin Inc.	LendingTree, LLC	Interactive Media and Services	\$105.00
1/2/2019	WTOL in Toledo and KWES in Odessa-Midland of Gray	TEGNA Inc.	Broadcasting	\$105.00
6/12/2019	Infinite Esports & Entertainment	Immortals, LLC	Movies and Entertainment	\$100.00
7/1/2019	Appcast, Inc.	StepStone Deutschland GmbH	Advertising	\$93.18
6/18/2019	Justice Network, LLC/Quest Network LLC	TEGNA Inc.	Broadcasting	\$90.59
1/23/2019	Six FM Stations and Two Translator of Alpha Media LLC	Hubbard Radio, LLC	Broadcasting	\$88.00
2/14/2019	The Deal, LLC	Euromoney Institutional Investor PLC	Publishing	\$87.30
6/30/2019	82 Communication Sites	SBA Communications Corporation	Wireless Telecommunication Services	\$83.00
1/22/2019	Portfolio of Wireless Communication Towers of Frontier	Everest Infrastructure Partners, Inc.	Wireless Telecommunication Services	\$80.00
11/22/2019	KVOA-TV of Cordillera Communications, LLC	Quincy Media, Inc.	Broadcasting	\$70.00
9/3/2019	GetFeedback, Inc.	SVMK Inc.	Interactive Media and Services	\$68.30
7/29/2019	SmartBrief, Inc.	Future plc	Publishing	\$66.10
4/29/2019	Cutler Media LLC	Spotify Technology S.A.	Broadcasting	\$56.44
5/1/2019	WWNY and WNYF in New York and KEYC in Minnesota of	Gray Television, Inc.	Broadcasting	\$45.00
10/31/2019	Cadence13 Inc. (nka:Cadence13, a division of RADIO.COM)	Entercom Communications Corp.	Advertising	\$44.18
7/17/2019	KLOS-FM	Meruelo Media Inc.	Broadcasting	\$43.00
2/21/2019	Portfolium, Inc.	Instructure, Inc.	Interactive Media and Services	\$42.86
4/5/2019	MasteryConnect Inc.	Instructure, Inc.	Interactive Media and Services	\$42.54
10/18/2019	VolPStreet, Inc.	Sangoma Technologies Corporation	Integrated Telecommunication Services	\$42.07
2/28/2019	Digiphoto Entertainment Imaging, LLC	Thomas Cook (India) Limited	Movies and Entertainment	\$40.60
5/3/2019	Substantially all of the assets of Relativity Media, LLC	UltraV Holdings LLC	Movies and Entertainment	\$40.00
8/30/2019	Midwest Operations of Uniti Fiber LLC	Bluebird Network, LLC	Alternative Carriers	\$37.00
8/8/2019	RadiOhio, Inc.	TEGNA Inc.	Broadcasting	\$35.00
5/28/2019	RotoGrinders.com	Better Collective USA, Inc.	Movies and Entertainment	\$35.00
5/13/2019	The Golf Digest Companies	Discovery, Inc.	Publishing	\$35.00
4/18/2019	PostUp, Inc.	Upland Software, Inc.	Advertising	\$35.00
9/30/2019	KDLT-TV	Gray Television, Inc.	Broadcasting	\$32.50
3/13/2019	Burlington Telecom Inc.	ZRF Partners; Champlain Broadband, LLC	Alternative Carriers	\$30.80

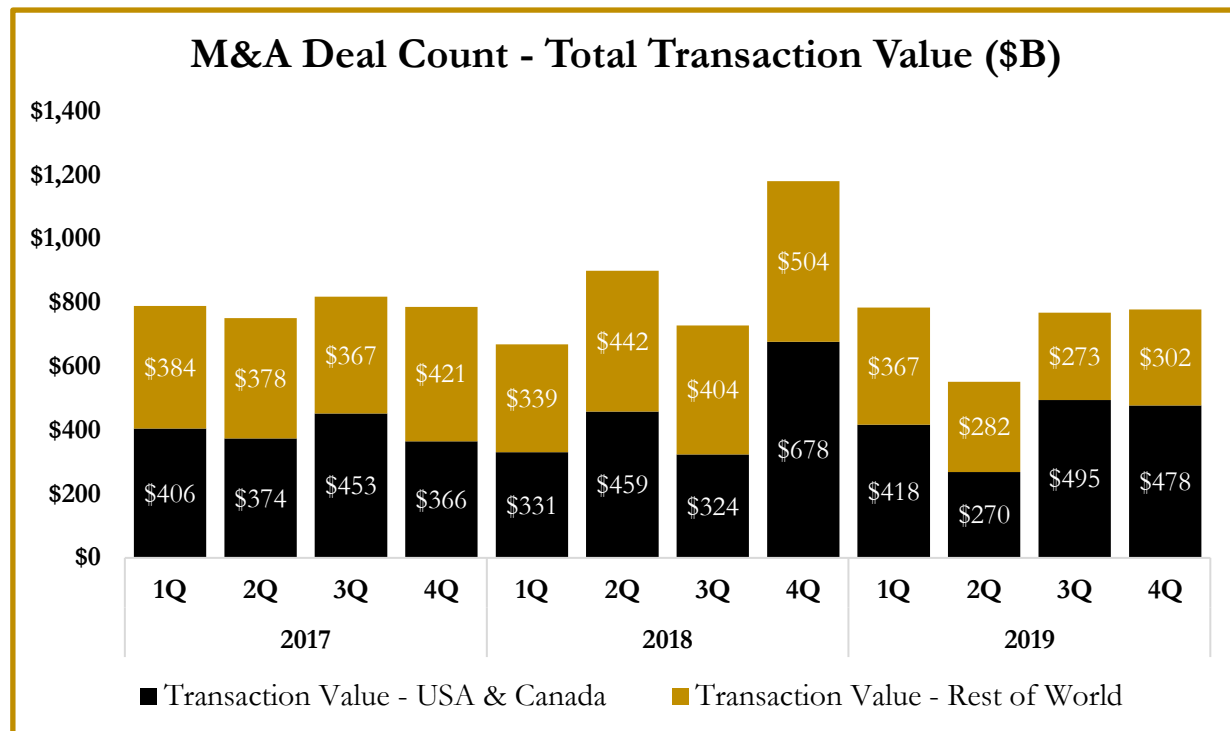
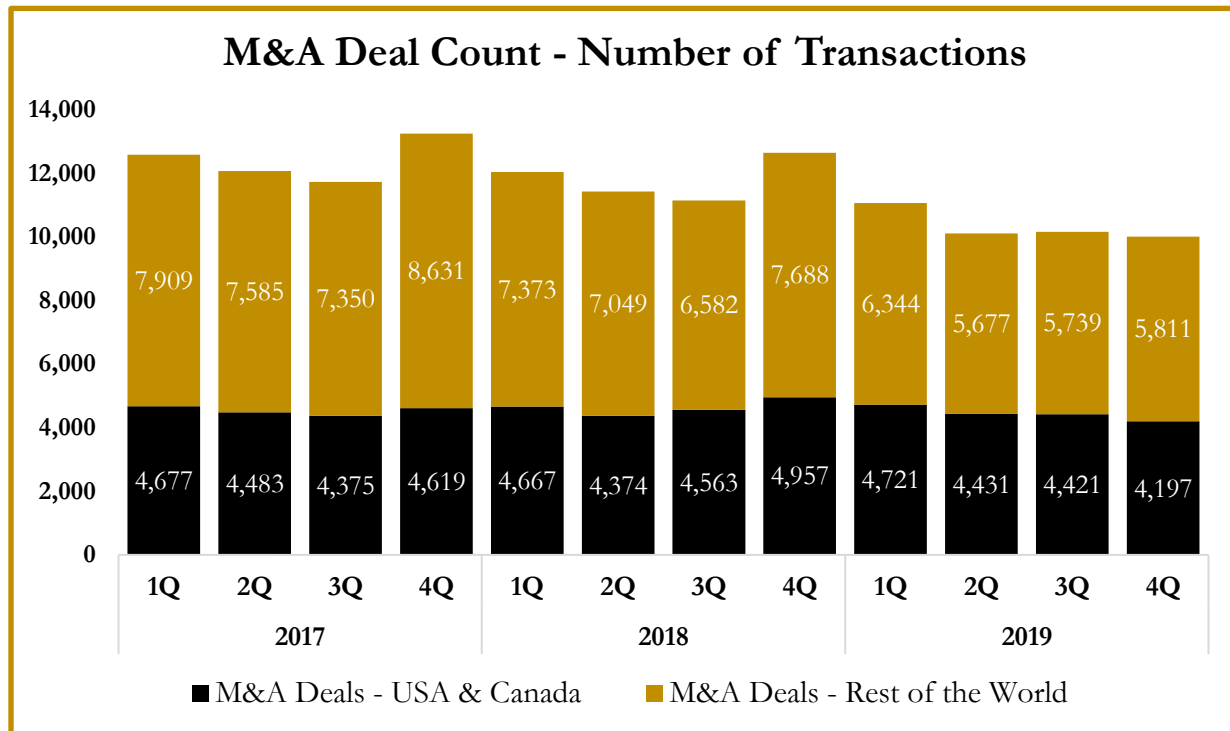
Source: Capital IQ

S&P Capital IQ - Sector Last 3 Month Equity Performance
As of December 31, 2019

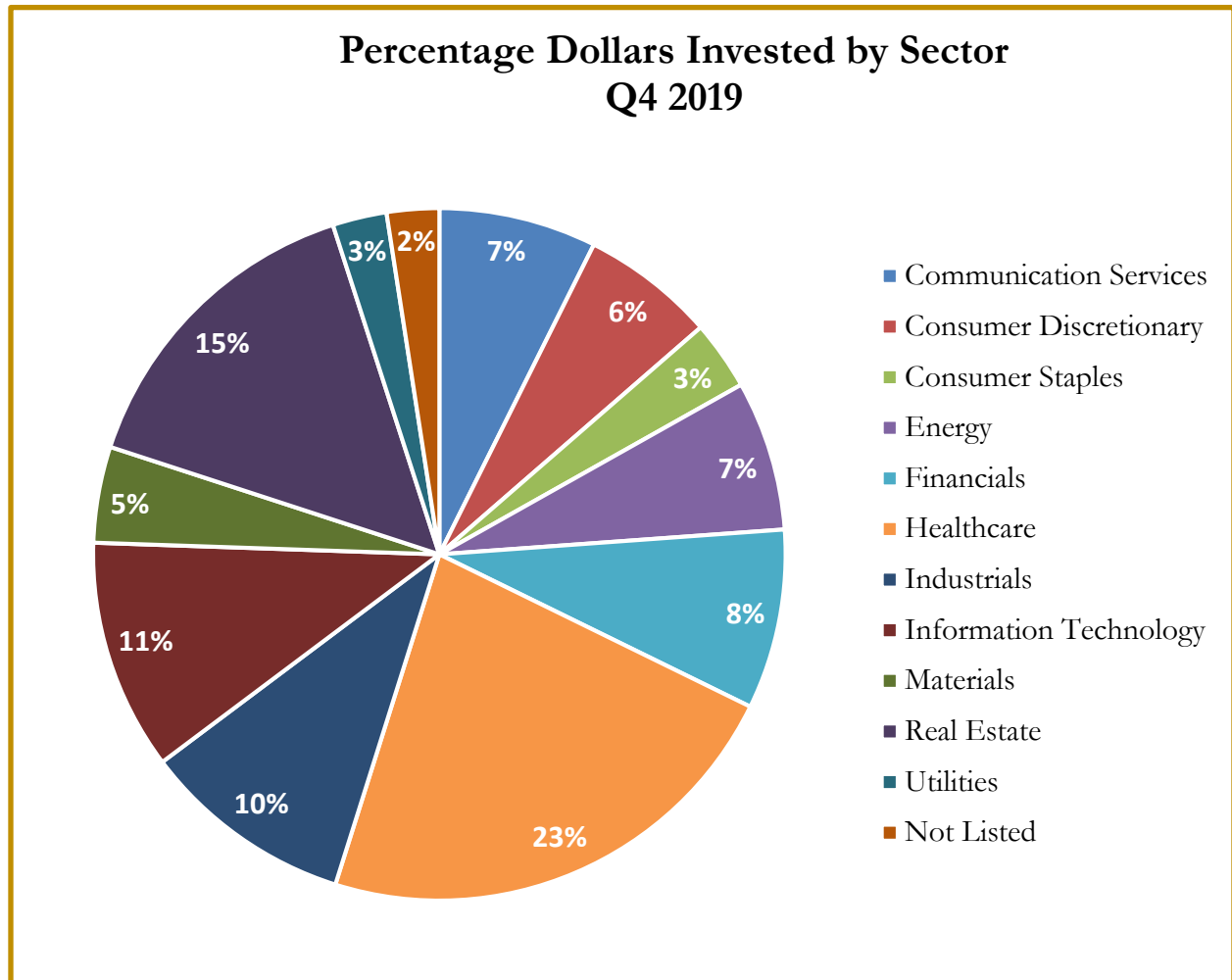


Note: The indices are derived from the equity performance of the S&P Capital IQ Sectors

M&A Deal Flow Statistics by S&P Capital IQ Sector
As of December 31, 2019



M&A Deal Flow Statistics by S&P Capital IQ Sector
As of December 31, 2019





About Us

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Houlihan Capital is SOC-compliant, a FINRA and SIPC member and committed to the highest levels of professional ethics and standards.

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We provide an array of services that include enterprise valuations, portfolio valuation, valuation of carried interest, transaction opinions, tax and financial reporting compliance, purchase price allocations, and a wide variety of consulting services through our Financial Advisory Group.

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For additional information about our industry expertise and services, visit:

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