

## INDUSTRY INSIGHTS

# HEALTHCARE & LIFE SCIENCES

## 1Q 2017 M&A Market Update



### Inside This Issue...

Despite a tepid start in 2016, fourth quarter M&A activity represented the most active quarter of the year, making up for overall declines from 2015. Globally, 2016 ranked the third-most-active year for M&A in history and October ranked as the busiest month ever. The confluence of historically low costs of capital, CEO confidence and the need to augment low organic growth remain fundamental drivers of the U.S. M&A market, fueling optimism for 2017.

The healthcare sector continues to be a bright spot in the M&A market. In 2016, this sector witnessed 14 megadeals (transactions exceeding \$1 billion) compared to 18 in 2015, while garnering the highest EV/EBITDA multiples of any sector in the middle market with the median EV/EBITDA multiple increasing 21.9 percent over 2015 to 15.0x. Given the uncertainty of how the Trump administration will affect health policy, many analysts are predicting more deal making in 2017, as hospitals, health plans and doctor groups look to join forces to weather unexpected changes that come into effect. The Trump administration has proposed allowing U.S. companies to pay a lower tax rate when repatriating cash currently held overseas - a policy from which many biotech firms would benefit. Biotech M&A could accelerate if changes in the tax code support this trend by facilitating the repatriation of cash trapped overseas for bigger biopharma companies. Furthermore, Trump's vows to boost U.S. GDP to 4 percent or greater, cut taxes and reduce regulation, coupled with a global equities market that has risen 9 percent on average since the election, creates a highly favorable M&A environment in which to transact deals.

BDO Capital Advisors, LLC provides counsel in the areas of:

- Mergers & Acquisitions
- Capital Raising
- Board Advisory

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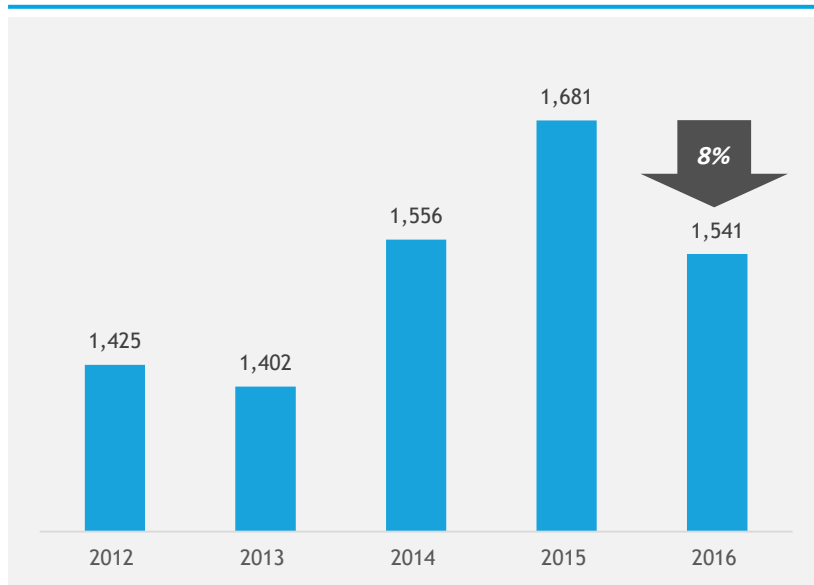
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## SECTOR M&A ACTIVITY

### COMMENTARY

- 2016 was an active year for U.S. healthcare and life sciences (H&LS) M&A
- The number of deals involving U.S. targets decreased 8.3% in 2016, but this was coming off a record level of activity the prior year
- The number of middle market deals (transaction values <\$500M) involving North American targets decreased 13.9% in 2016

### Announced M&A Transactions: U.S. H&LS Industry

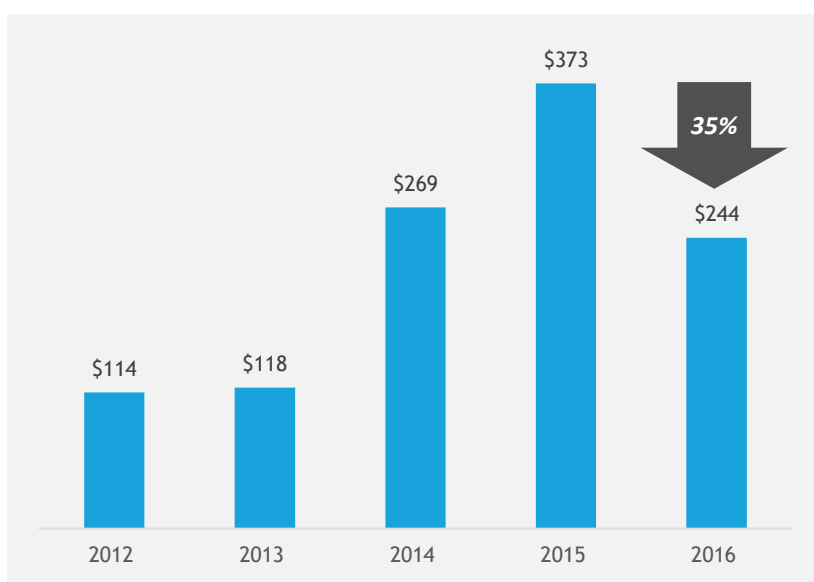


Source: S&P Capital IQ

### COMMENTARY

- Total reported deal value fell a pronounced 34.7% in 2016, but 2015 was bolstered by nearly \$100 billion from the Anthem/Cigna and Aetna/Humana deals, which are unlikely to pass regulatory scrutiny
- 2016 witnessed 14 megadeals (transactions exceeding \$1 billion), compared to 18 in 2015
- Shire plc's (NASDAQ:SHPG) \$35 billion acquisition of Baxalta Inc. (NYSE:BXLT) was the largest H&LS deal of 2016
- The median transaction value in 2016 was \$61M, as most deals occur in the middle market

### Total M&A Transaction Value (\$B): U.S. H&LS Industry



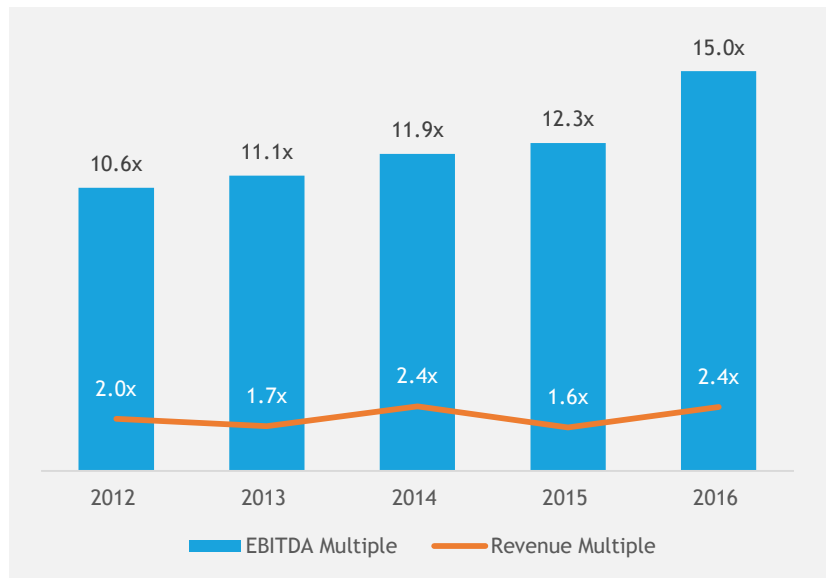
Source: S&P Capital IQ

# SECTOR VALUATION TRENDS

## COMMENTARY

- Valuations continued to climb throughout 2016, consistent with what we have been seeing across much of the M&A market
- The median EV/EBITDA multiple increased 21.9% to 15.0x
- The median EV/Revenue multiple increased 46.6% to 2.4x
- In a deal landscape comprised of both record private equity (PE) dry powder and corporate access to capital, competition has been fierce and continues to drive pricing

## Median U.S. H&LS M&A Transaction Multiples

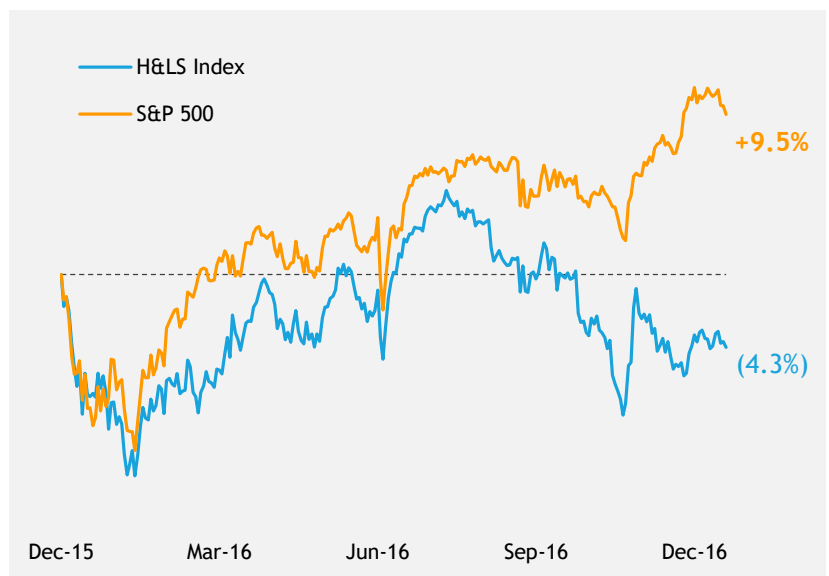


Note: Excludes Revenue multiples > 10x and EBITDA multiples > 30x  
Source: S&P Capital IQ

## COMMENTARY

- A recent McKinsey & Co. report showed that healthcare investments returned the highest global total returns to shareholders (15%) between 2010 and 2015
- Health care stocks in general began suffering in July 2016, when a Republican Congress brought a vote to repeal Obamacare and presidential campaigns heightened attention on drug pricing
- The S&P 500 Health Care index fell 4.3% during 2016 relative to the overall S&P 500, which gained 9.5%
- Pharma giant Endo International plc (NasdaqGS:ENDP) was the worst-performing stock in the S&P 500 last year, falling 73.1%

## H&LS Equity Market Performance v. S&P 500 Index



Note: H&LS Index represented by S&P 500 Health Care Index (^HCX)  
Source: S&P Capital IQ

## SUB-SECTOR TRENDS

### COMMENTARY

- As in 2015, Long-Term Care was the most active sub-sector in 2016, accounting for 22% of overall U.S. H&LS deal volume
- Deal value was, as usual, greatest in the Pharmaceuticals space with numerous megadeals, including Shire plc's (NASDAQ:SHPG) \$35 billion acquisition of Baxalta Inc. (NYSE:BXLT)
- Deal volume increased the most (+23%) in the eHealth sub-sector and fell hardest in Managed Care (-53%)
- The Biotechnology sector remained a bright spot, eclipsing 2015's record-setting year with 173 deals announced in 2016 (+8%)

### COMMENTARY

- Healthcare deals garnered the highest EV/EBITDA multiples of any sector in the middle market last year
- The median EV/EBITDA multiple in the space was 11.2x, a full 2.0x above the average multiple across all other sectors

### 2016 U.S. H&LS M&A Transaction Mix by Sub-Sector

Sub-Sector	% Total Deal Volume	% Total Deal Value
Behavioral Health	3%	1%
Home Health & Hospice	4%	0%
Hospitals	6%	5%
Labs, MRI & Dialysis	3%	5%
Long-Term Care	22%	6%
Managed Care	1%	1%
Physician Medical Groups	8%	5%
Rehabilitation	3%	0%
Other	13%	5%
<b>Services subtotal</b>	<b>63%</b>	<b>28%</b>
Biotechnology	11%	7%
eHealth	10%	8%
Medical Devices	7%	24%
Pharmaceuticals	10%	33%
<b>Technology subtotal</b>	<b>38%</b>	<b>72%</b>

Sources: S&P Capital IQ, HealthCareManda.com

### Healthcare Valuations Lead All Other Sectors in 2016

Sector	Median TEV/EBITDA Multiple
Healthcare	11.2x
Telecommunication Services	10.9x
Consumer Staples	10.8x
Information Technology	10.5x
Consumer Discretionary	9.8x
Financials	8.8x
Energy	8.6x
Industrials	7.9x
Materials	6.3x

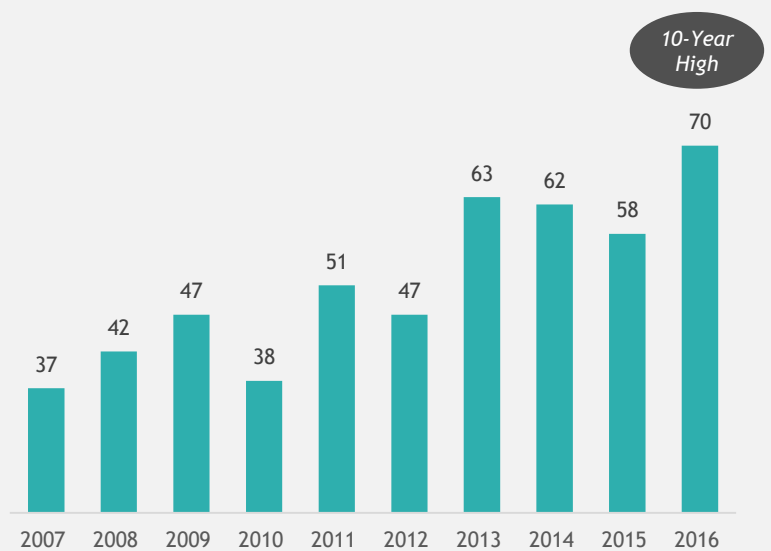
Note: Represents announced majority M&A transactions with Enterprise Values between \$10M and \$250M and EV/EBITDA multiples between 3x and 20x for 2016  
Source: S&P Capital IQ

# Spotlight: Life Sciences Tools & Services

## COMMENTARY

- The U.S. Life Sciences Tools & Services sector enjoyed record level M&A activity in 2016, with 70 announced transactions (+21% y/y)
- Increased levels of outsourcing, heightened focus on drug purity, increasing costs of drug development, growing regulations, globalization of customers and increased R&D spend have bolstered this sub-sector in recent years
- Private equity has shown significant interest in the space and is pursuing buy-and-build strategies given the level of fragmentation

## Announced M&A Transactions: U.S. Life Sciences Tools

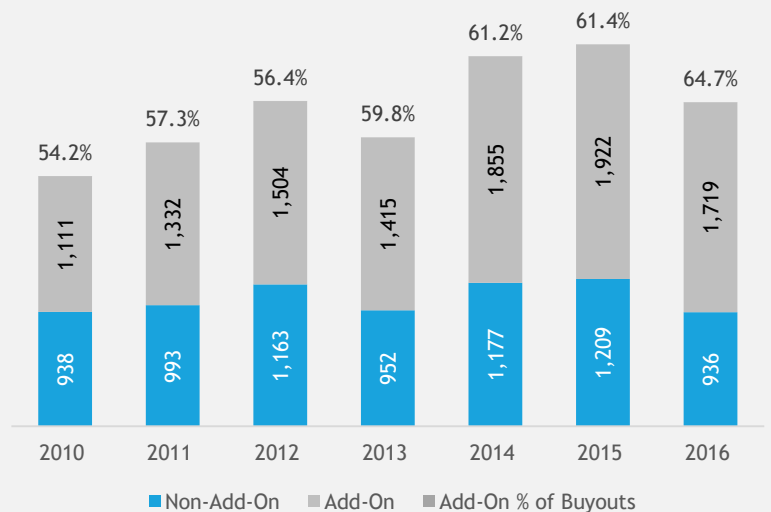


Source: S&P Capital IQ

## COMMENTARY

- Amidst intense competition for high-quality assets, private equity firms are utilizing add-on acquisitions at a record pace
- Add-ons made up 65% of U.S. buyout activity in 2016, up from 61% in 2015 and the highest proportion since PitchBook began tracking the metric
- Most notably, there were 283 add-ons in the healthcare industry last year, more than in any other sector
- BDO Capital's latest deal closing, the sale of Cygnus Technologies to GTCR-backed Maravai LifeSciences, is a prime example of this trend

## Add-On Acquisitions Dominate U.S. PE Activity



Source: PitchBook

## Spotlight: Life Sciences Tools & Services

### Select U.S. Life Sciences Tools M&A Transactions Announced in 2016

Date	Target	Buyer
12/28/16	KineMed, Inc., Dynamic Proteomics Biomarker Assets	GlaxoSmithKline Intellectual Property Development Limited
12/14/16	Helomics Corporation	Gerald Vardzel
11/29/16	Omnia Biologics, Inc., cGMP Manufacturing Assets	Vigene Biosciences, Inc.
11/21/16	TKL Research, Inc., Clinical Trials Division	Novella Clinical, Inc.
11/03/16	Averica Discovery Services Inc.	Neopharm Labs Inc.
10/28/16	KLUS Pharma, Inc.	Sichuan KELUN PHARMACEUTICAL Co., Ltd.
10/26/16	TriLink BioTechnologies, Inc.	Maravai Life Sciences Inc.
10/26/16	Cygnus Technologies, Inc.	Maravai Life Sciences Inc.
10/13/16	iMEDGlobal Corp	K&L Consulting Services, Inc.
10/12/16	Transgenomic, Inc. (NasdaqCM:TBIO)	Precipio Diagnostics, LLC
10/11/16	Irvine Pharmaceutical Services, Inc.	Nitto Avecia Pharma Services
09/28/16	Agilix Laboratories, Inc.	Charles River Laboratories International, Inc. (NYSE:CRL)
09/26/16	PharmaCore, Inc.	Cambrex Corporation (NYSE:CBM)
09/23/16	ExecuPharm Inc.	PAREXEL International Corporation (NasdaqGS:PRXL)
09/20/16	Alliance Biomedical Research, LLC	Great Point Partners, LLC
09/13/16	Pharmatek Laboratories, Inc.	Catalent Pharma Solutions, Inc.
09/06/16	BTC of Lincoln	BTC Network, LLC
08/22/16	BioClinica, Inc.	Cinven Limited
08/16/16	Ash Stevens Inc.	Piramal Pharma Solutions Inc.
08/16/16	Clinical Research Solutions, LLC	Brixey & Meyer Capital
08/04/16	IMS Health Holdings, Inc. (NYSE:IMS)	Quintiles Transnational Holdings Inc. (NYSE:Q)
08/04/16	Validation Specialists, LLC	AM Technical Solutions, Inc.
08/03/16	InClinica, Inc.	Velocity Fund Management
08/01/16	Stemgent Inc. and Biopta Inc.	BioServe Biotechnologies, Ltd
08/01/16	BTC of New Bedford, LLC	BTC Network, LLC
08/01/16	inVentiv Health Inc.	Advent International Corporation
07/27/16	Sequenom Inc.	Laboratory Corporation of America Holdings (NYSE:LH)
07/26/16	Oncology Research Information Exchange Network	The Legacy Companies
07/25/16	Compass Research, LLC	BioClinica, Inc.
07/14/16	ViroCyt, LLC	Sartorius Aktiengesellschaft (DB:SRT)
07/12/16	Columbus Center For Women's Health Research, Inc.	Aventiv Research, Inc.
07/06/16	kSep Systems, LLC	Sartorius Stedim Biotech S.A. (ENXTPA:DIM)
07/06/16	Envision Pharma, Inc.	Ardian; GHO Capital Partners LLP
06/30/16	ClinicalRM, Inc.	ICON Public Limited Company (NasdaqGS:ICLR)
06/28/16	IntelliCyt Corporation	Sartorius Aktiengesellschaft (DB:SRT)

## Spotlight: Life Sciences Tools & Services

### Select U.S. Life Sciences Tools M&A Transactions Announced in 2016 (cont.)

Date	Target	Buyer
06/27/16	Blue Stream Laboratories, Inc.	Charles River Laboratories International, Inc. (NYSE:CRL)
06/23/16	IMUGEN, Inc.	Oxford Immunotec Global PLC (NasdaqGM:OXFD)
06/23/16	Adesis, Inc.	Universal Display Corporation (NasdaqGS:OLED)
06/01/16	PCI Pharma Services	Frazier Healthcare Partners / Partners Group Holding AG
05/25/16	SynteractHCR	Amulet Capital Partners LP
05/24/16	W.R. Grace & Co., SPE Cartridges Business	S*Pure Pte. Ltd.
05/13/16	WaferGen Bio-systems, Inc. (NasdaqCM:WGBS)	Takara Bio USA Holdings, Inc.
05/05/16	Algynomics, Inc.	Proove Biosciences, Inc.
05/04/16	Medivative Technologies LLC	Kimball Electronics, Inc. (NasdaqGS:KE)
04/27/16	Benchmark Biolabs, Inc.	AgriLabs, LLC
04/26/16	MIGSLLC	DNA2.0, Inc.
04/18/16	Cirrus Pharmaceuticals, Inc.	Recipharm AB (publ) (OM:RECI B)
04/04/16	Nimbus Apollo, Inc.	Gilead Sciences Inc. (NasdaqGS:GILD)
04/04/16	Nelson Laboratories, Inc.	Sterigenics International, Inc.
03/31/16	Advantar Laboratories, Inc.	Eurofins Scientific SE (ENXTPA:ERF)
03/25/16	VirtualScopics, Inc.	BioTelemetry, Inc. (NasdaqGS:BEAT)
03/25/16	Creative Laboratory Products, Inc	Lee Biosolutions, Inc.
03/22/16	ACT Oncology LLC	Precision for Medicine, Inc.
03/22/16	Blue Sky Biotech, Inc.	LakePharma, Inc.
03/21/16	Zephyrus Biosciences, Inc.	Bio-Techne Corporation (NasdaqGS:TECH)
03/14/16	Institute for Systems Biology	Western HealthConnect
03/08/16	eResearchTechnology, Inc.	Nordic Capital; Novo A/S
03/07/16	Theranostics Health, Inc.	Avant Diagnostics, Inc. (OTCPK:AVDX)
03/04/16	Florida Clinical Research Center, LLC, Clinic In Bradenton	Meridien Research, Inc.
03/01/16	Research Across America Inc.	Synexus Limited
02/26/16	PreClinOmics, Inc.	Crown Bioscience, Inc.
02/25/16	BioLogics, Inc.	McKesson Specialty Health
02/25/16	Molecular NeuroImaging LLC	inviCRO, LLC
01/21/16	Oregon Analytical Services, LLC	EVIO Inc.
01/18/16	Altermune Technologies LLC, Alphamer Technology	Centauri Therapeutics Limited
01/11/16	MO BIO Laboratories, Inc.	QIAGEN N.V. (NasdaqGS:QGEN)
01/08/16	Affymetrix Inc.	Thermo Fisher Scientific Inc. (NYSE:TMO)
01/07/16	WIL Research Company, Inc.	Charles River Laboratories International, Inc. (NYSE:CRL)
01/05/16	BioreclamationIVT	Arsenal Capital Partners
01/04/16	Hamner Institute For Chemical Safety Sciences	ScitoVation, LLC

## BDO CAPITAL DEAL CLOSING



BDO Capital Advisors, LLC (BDO Capital) is pleased to announce the sale of Cygnus Technologies, Inc. (Cygnus or the Company) to Maravai LifeSciences (Maravai), a portfolio company of GTCR. The sale builds upon BDO Capital’s extensive healthcare credentials and expertise advising entrepreneur-owned businesses. Valentina Midura, Senior Managing Director, and Patrick Bisceglia, Director, led the engagement for BDO Capital with support from Associate Eric Higgins and BDO Transaction Advisory Services professionals Joe Burke, Alison Torres, Art Vutiprichar, Brendan Sullivan and Ryan O’Farrell.

Founded in 1987, Cygnus is a pioneer in the field of bioprocess contaminant and impurity analysis. The Company achieved a first mover advantage at the onset of a global boom in the development of biologics and has entrenched itself in this rapidly expanding marketplace by leveraging proprietary technology to develop unique antibodies and assays with best-in-class performance characteristics that are relied upon by leading biotech and pharmaceutical companies. “The Company’s impeccable reputation and financial profile enabled us to garner significant interest from potential buyers and ultimately resulted in an excellent outcome for the Company and its employees,” says Midura.

Maravai LifeSciences was formed in March 2014 as a partnership between Carl Hull and Eric Tardif, proven life sciences industry veterans, and GTCR, a leading private equity firm focused on investing in growth companies in the Financial Services & Technology, Healthcare, Technology, Media & Telecommunications and Growth Business Services industries. The Chicago-based firm pioneered The Leaders Strategy™—finding and partnering with management leaders in core domains to identify, acquire and build market-leading companies through transformational acquisitions and organic growth. Since 1980, GTCR has invested more than \$12 billion in over 200 companies.

Maravai’s mission is to build a transformative company in the in vitro diagnostics and life sciences tools markets by acquiring outstanding businesses in these spaces and accelerating their growth. “We are thrilled to partner with GTCR and Maravai, which share our vision for the future of Cygnus and offer substantial resources that will enable us to offer further innovation and value to our customers,” commented Ken Hoffman, founder and CEO of Cygnus. “We are very enthusiastic to partner with Cygnus to support its continued growth and leadership position in the industry,” added Maravai founding partner Carl Hull.

*“Cygnus is one of those great entrepreneurial success stories with a visionary founder that grew an initial idea into the dominant player in its industry.”*

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## One of the Most Active Advisory Networks in the World

*5<sup>th</sup> Most Active Middle-Market Advisor*

**840** DEALS IN 2016

**\$36B** TRANSACTION VALUE

**60** COUNTRIES



BDO's global M&A and Transaction Services teams completed 840 deals in 2016, generating a combined value of USD \$35.6B. This represents a growth in value of 15 percent when compared to the results in 2015. BDO also performed strongly in the 2016 financial advisor league tables:

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Global small cap table (deals up to USD \$50M), Thomson Reuters rankings
- ▶ **Top 5 mid-market M&A advisor in the world**  
(Deals up to USD \$500M), Thomson Reuters rankings
- ▶ **Private Equity - 4th most active advisor for PE deals in the world and in Europe**  
PitchBook 2016 Global League Tables
- ▶ **Buyout deals - 5th most active advisor globally for buyout deals**  
PitchBook 2016 Global League Tables



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