

Delancey Street Partners is pleased to present our Contract Research Organization ("CRO") Sector Review for Q4 2016. CROs provide support to the pharmaceutical, biotechnology and medical device industries through outsourced research and development services that span drug discovery, preclinical research, clinical research, clinical trial management, commercialization, and pharmacovigilance. As the pharmaceutical industry has evolved and matured, pharmaceutical companies are dedicating their resources and efforts to particular areas of the industry's value chain and have developed vendor relationships to perform non-core functions. CROs have benefited from this trend, capturing a growing share of the core functions that large pharmaceutical companies now seek to outsource.



This CRO Sector Review identifies current trends affecting the CRO industry and a view of the ramifications for M&A activity in the sector.

Executive Summary

Today's pharmaceutical development process is characterized by increased complexity, larger trial sizes, and changes in protocol design to better manage data requirements and payor demands. These trends have created pressure on pharmaceutical companies to seek and exploit efficiencies in the drug development and commercialization process. At the same time, pharmaceutical companies are seeking to consolidate and simplify the supply chain, concentrating sourcing among a select number of multi-service providers. In response, large CROs are actively expanding their offerings beyond core clinical research services.

Strong underlying pharmaceutical demand, coupled with increasing complexity and regulatory burden, have created a favorable environment for CROs. Incremental outsourcing of additional processes to qualified CROs brings cost efficiency to the process and improves quality control and speed to market. The most significant near-term opportunities for CROs are in the areas of data-driven development strategies, commercialization expertise, and regulatory consulting. Differentiated expertise in these areas is scarce in the market, and we have seen an increase in M&A among large CROs to acquire these capabilities. As a result, the M&A market is favorable for smaller specialty service providers that offer unique expertise.

Summary Observations

- Spending on drug development is increasing
- Pharmaceutical companies are seeking to simplify the supply chain and reduce their total number of vendors
- Role of CROs expanding to include a variety of ancillary services, creating a "one-stop" option for pharmaceutical companies and leading to strategic partnerships
- Large CROs find it is often easier to "buy" rather than "build" specialized expertise
- The Quintiles IMS merger highlights migration of traditional CRO model outside of core research services
- Active interest among private equity investors in building differentiated CRO platforms
- M&A market is robust for specialty service provider targets with scale
- The CRO sector trades at a current and historical premium to the S&P 500

About Delancey Street Partners

Delancey Street Partners is an independent, industry-focused investment bank. We serve CEOs, Entrepreneurs, Shareholders and Boards of Directors of high growth and middle market private and public companies. Our services include strategic advisory, capital raising and independent board advice. We advise on sell-side and buy-side M&A, growth capital financings and recapitalizations. Our focus sectors include Business Services & Technology, Healthcare, Industrial & Industrial Technology, and Infrastructure.

Learn more at: www.delanceystreetpartners.com

Recent Delancey Street CRO Activity



Delancey Street Partners is pleased to announce that we served as financial advisor to ExecuPharm, Inc. ("ExecuPharm" or "the Company"), a leading global functional service provider, in its sale to PAREXEL International Corporation ("PAREXEL"). ExecuPharm selected Delancey as its advisor for our M&A expertise and long-term partnership model. Over several years we partnered with the Company to assess, evaluate and explore strategic alternatives within the context of the rapidly evolving and dynamic pharmaceutical industry. We managed a highly selective and targeted sell-side M&A process and structured and negotiated the terms of the transaction.

About ExecuPharm, Inc.

Established in 1995, ExecuPharm (www.execupharm.com) provides clients with qualified professionals across functional areas, such as clinical monitoring and study management. The Company also provides core operational activities including onboarding, training, line management, performance management and policy administration. The Company is headquartered in King of Prussia, Pennsylvania, and serves many of the top 20 pharmaceutical corporations, as well as mid-sized and small biopharmaceutical companies.

About PAREXEL International Corporation (NYSE: PRXL)

PAREXEL (<u>www.PAREXEL.com</u>) is a leading global biopharmaceutical services company, providing a broad range of expertise-based clinical research, consulting, medical communications and technology solutions and services to the worldwide

pharmaceutical, biotechnology and medical device industries. Committed to providing solutions that expedite time-to-market and peak-market penetration, PAREXEL has developed significant expertise across the development and commercialization continuum, from drug development and regulatory consulting to clinical pharmacology, clinical trials management and reimbursement. PAREXEL Informatics provides advanced technology solutions, including medical imaging, to facilitate the clinical development process. Headquartered near Boston, Massachusetts, PAREXEL has offices in 84 locations in 51 countries around the world, and has approximately 18,600 employees.

Delancey Street Partners Leadership

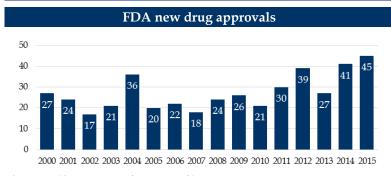
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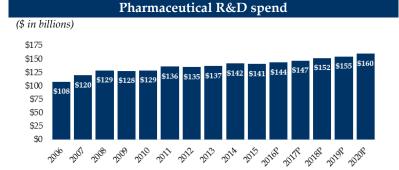
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The CRO Landscape: Positive Outlook with Steady Growth



Source: FDA (CDER NME NDAs/BLAs Approvals).

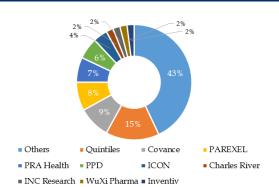


Source:EvaluatePharma.



Source: Zion Research.

CRO Industry Market Share



Source: KPMG - CROs, convergence and commercial opportunities.

- FDA new drug approvals increasing, motivating growth in pharmaceutical product pipelines
- 2015 approvals at the highest level in nearly 20 years
- Record approvals of orphan drugs, the development of which relies heavily on CROs
- Continued steady growth in R&D spend supported by robust market for new drugs
- The cost to develop a drug has increased 145% since 2003 to more than \$2.6 billion
- Only one FDA approval for every 5,000-10,000 compounds evaluated

- CRO industry experiencing strong growth
- Clear benefit from outsourcing
- Specialty and expanded services providing attractive source of incremental revenue

- Market remains highly fragmented with many small, specialty providers
- Large CROs compete for partnerships with pharmaceutical companies to bolster market share
- Active consolidation as leading CROs seek sources of growth



Spotlight Trend: The Evolving CRO Model

We see a pronounced trend of CROs expanding their traditional models to include a variety of ancillary services, a strategy that has changed the dynamic between pharmaceutical company and CRO from purely "client/vendor" to that of "strategic partnership." Outsourcing of additional specialty services enables pharmaceutical companies to focus on their core business of intellectual property development and portfolio management. Increased outsourcing has led to a high volume of consolidation among CROs, as large CROs seek to bolster strategic client partnerships and increase the share of total service revenue across the product lifecycle.

Despite inherent growth in core clinical research spending, public companies serving the pharmaceutical industry find it challenging to meet shareholder growth expectations through organic initiatives alone. For example, PAREXEL (NYSE:PRXL) has communicated a long-term revenue growth expectation of 10-12% annually. While CROs can develop ancillary services inhouse, many turn to M&A to gain access to scale and expertise in these areas more rapidly. This has created an appetite for specialty service providers, particularly in the areas of data analytics, laboratory services, commercialization services, regulatory consulting, and pharmacovigilance. The evolution of Quintiles, culminating in the merger of Quintiles and IMS Health (highlighted on page 5), is an example of a large CRO (Quintiles) seeking to differentiate itself through additional services in a competitive market.

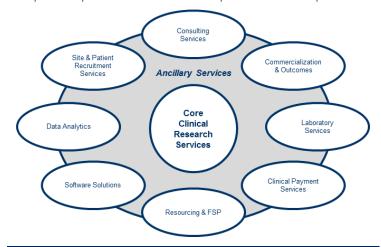
M&A Implications

Large CROs seek targets with sufficient scale that can deliver an immediate material impact on revenue and provide access to new markets. The most attractive targets materially augment the buyer's existing services and provide opportunity to solidify client partnerships. For smaller service providers without this scale, private equity has emerged as a potential alternative, as financial sponsors seek to build high quality CRO platforms by combining smaller, niche providers.

As shown in the chart to the right, we have seen the consolidation trend among CROs lead to historically high sector valuation multiples. Of 26 transactions reviewed since 2009, the median EV/EBITDA multiple was 10.4x and every available transaction over the past 18 months was above the historical median. We see this valuation momentum maintained in today's market.

Expansion of CRO Service Offering

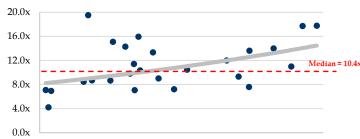
The traditional model has evolved beyond core research to include a variety of ancillary services as large CROs seek to increase their strategic partnerships and "share of wallet" with pharmaceutical companies



Illustrative Recent M&A

Date	Buyer	Target	Target Description				
Nov 2016 Bracket		CLINapps	Clinical supply chain management software				
Oct 2016	PAREXEL	ExecuPharm	Functional Service Provider				
Apr 2016 PRA Health Sciences		Nextrials	Trial management electronic data capture software				
Feb 2016	PAREXEL	Health Advances	Independent life sciences strategy consulting services				
Sep 2015	BioClinica	Synowledge	Drug safety and regulatory affairs consulting services				
Jul 2015	PRA Health Sciences	Value Health Solutions	Clinical software developer				
Apr 2015	PAREXEL	Quantum Solutions India	Specialized pharmacovigilance services				
Feb 2015	015 ICON MediMedia Pharma Solut		s Medical and scientific communication strategy consulting services				

Historical Sector M&A Multiples (EV/LTM EBITDA)



Dec-08 Dec-09 Dec-10 Dec-11 Dec-12 Dec-13 Dec-14 Dec-15 Dec-16

Exponential Trendline • EV / LTM EBITDA Transaction Multiple Source: CapitallQ and Delancey Street Partners.

Quintiles Case Study: Building a Multi-Function CRO Platform Through M&A

Quintiles has historically been acquisitive, and provides a useful case study in examining the strategy of a large CRO using M&A to achieve growth and augment services. As shown in our analysis, the market has largely rewarded this long-term growth, with Quintiles' (NYSE:Q) stock price up more than 80% over the past three years. The following is a summary and rationale for Quintiles' recent acquisition history.

- October 2011: Quintiles acquires Outcome Sciences for \$177 million
 - Market leader in registries, post-approval research and quality-improvement initiatives for biopharma, medical device and government
 - Strengthened Quintiles' late-phase offerings
- August 2012: Quintiles acquires Expression Analytics
 - Provider of genomic sequencing
 - Expands Quintiles' personalized medicine capabilities
- May 2013: Quintiles raises \$947 million as part of Initial Public Offering
- August 2013: Quintiles acquires Novella Clinical
 - Provider of preclinical to post-approval clinical trial management services
 - Additionally, provider of resourcing solutions including FSP and contracting staffing
- May 2014: Quintiles acquires Encore Health Resources
 - Provider of IT consulting services to healthcare market as well as clinical, strategy and physician advisory services
- May 2015: Quintiles acquires Clio Science
 - Full service CRO in Japan
- **November 2016:** Quintiles merges with IMS Health. Rationale for the merger includes:
 - Integration of IMS Health's Real World Evidence (RWE) analytics, consulting, outsourcing and technology services to make Quintiles IMS an end-toend service provider for pharmaceutical clients
 - Creation of the world's largest portfolio of healthcare information, therapeutic & regulatory expertise, and proprietary technologies with presence in 100+ countries
 - Strengthening of client strategic partnerships through deep integration of data services





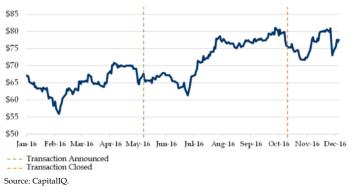


Source: CapitalIQ.

Source: CapitalIQ.

Market Reaction to the Merger

- Value of a "smarter CRO" is still to be demonstrated by Quintiles IMS, but the company has delivered to date on merger expectations, with revenue estimates in line and cost synergies double what was anticipated
- Quintiles' share price is up 17% since announcement of the merger



The Role of Private Equity

Private equity plays an important role in the consolidating CRO sector. While there is a high level of strategic M&A among large CROs, many smaller companies in the sector lack the size and scale to be attractive targets for strategic buyers. A number of middle market private equity firms have made platform investments in the industry and are actively searching for additional opportunities in keeping with this thesis.

Certain attributes make the CRO sector highly attractive for private equity investment, including the following:

- Strong pharmaceutical end market growth
- High profitability
- Minimal cap ex requirements
- Highly fragmented with opportunities for consolidation
- Clear exit alternatives
- Pathway to multiple expansion on exit

Private equity can represent an attractive interim step for smaller CROs, providing capital and strategic direction for growth.

Sample Private Equity Platforms

Private Equity Group

Platform Company











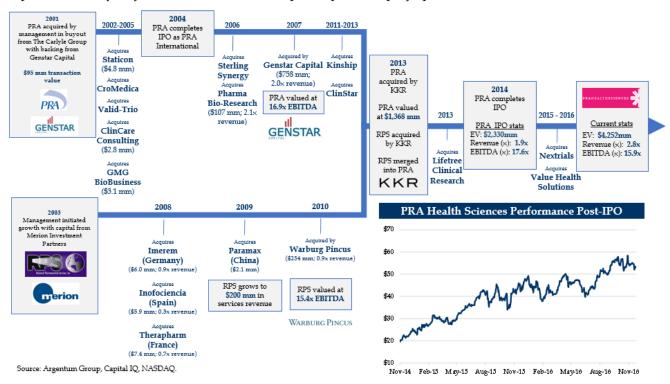




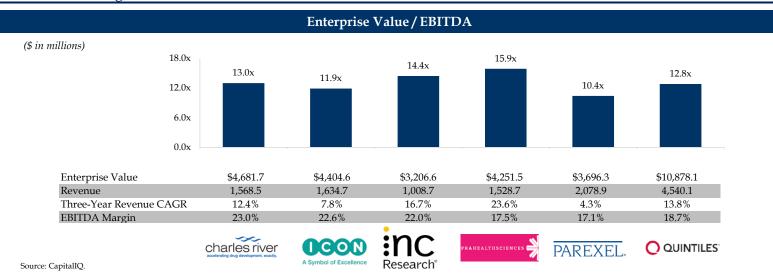


Private Equity Platform Case Study

Private equity has demonstrated an ability to build leading CRO platforms through M&A and create substantial value over a multiyear period. PRA Health Sciences, which went public in 2014, represents the culmination of a successful private equity platform that developed over nearly 15 years and included four separate private equity sponsors.



Current Trading Performance of Select CROs



Year-to-Date Sector Trading Performance vs. S&P 500



- Strong sector performance year-to-date in 2016
- U.S. presidential election provided support for multiple economic sectors, and S&P 500 has outperformed the CRO sector since the election
- General sentiment that the Trump administration will be a positive for the pharmaceutical industry, and the providers serving it

5-Year Enterprise Value / EBITDA Trend





Source: CapitalIQ.



Comparable Company Analysis

COMPANY	STOCK PERFORMANCE AND COMPANY DATA					LTM MARGINS		GROWTH		VALUATION DATA						
		52-W	eek	Market Value	Enterprise Value	Revenue LTM	Gross Profit	EBITDA	5-Year EPS	3-Year Revs	EV Reve	// enue	EBI	,		ice/ nings
Name	12/8/16	Low	High	(\$mm)	(\$mm)	(\$mm)	% Margin	% Margin	CAGR	CAGR	LTM	2016	LTM	2016	2016	2017
Clinical Research Organizations																
Charles River Laboratories International, Inc.	\$73.52	\$65.70	\$89.18	\$3,516.1	\$4,681.7	\$1,568.5	39.1%	23.0%	23.0%	12.4%	3.0x	2.8x	13.0x	11.7x	16.5x	14.6x
ICON Public Limited Company	76.49	62.31	85.74	4,306.9	4,404.6	1,634.7	42.5%	22.6%	47.5%	7.8%	2.7x	2.6x	11.9x	11.6x	16.2x	14.6x
INC Research Holdings, Inc.	49.85	34.19	57.11	2,811.7	3,206.6	1,008.7	39.0%	22.0%	N.M.	16.7%	3.2x	3.1x	14.4x	13.2x	20.0x	17.1x
PRA Health Sciences, Inc.	54.57	35.60	60.96	3,497.7	4,251.5	1,528.7	35.0%	17.5%	62.3%	23.6%	2.8x	2.7x	15.9x	14.6x	22.1x	18.7x
PAREXEL International Corporation	65.27	51.16	71.13	3,501.7	3,696.3	2,078.9	35.3%	17.1%	29.4%	4.3%	1.8x	1.8x	10.4x	10.1x	19.0x	16.0x
Quintiles IMS Holdings, Inc.	77.54	55.01	81.45	9,446.4	10,878.1	4,540.1	37.4%	18.7%	24.2%	13.8%	2.4x	1.9x	12.8x	9.4x	19.8x	17.2x
Mean				\$4,513.4	\$5,186.5	\$2,059.9	38.1%	20.1%	37.3%	13.1%	2.6x	2.5x	13.1x	11.8x	18.9x	16.4x
Median				3,508.9	4,328.0	1,601.6	38.2%	20.4%	29.4%	13.1%	2.7x	2.7x	12.9x	11.6x	19.4x	16.6x
High				9,446.4	10,878.1	4,540.1	42.5%	23.0%	62.3%	23.6%	3.2x	3.1x	15.9x	14.6x	22.1x	18.7x
Low				2,811.7	3,206.6	1,008.7	35.0%	17.1%	23.0%	4.3%	1.8x	1.8x	10.4x	9.4x	16.2x	14.6x

Recent M&A and Strategic Commentary from Select CRO Executives

~
charles river
accelerating drug development, exactly.

"Clients increasingly rely on us because of the breadth of our portfolio and our scientific expertise. We believe it is critically important that we continue to strategically expand our portfolio, both through internal development and targeted acquisitions, so that we can continue to expand our ability to support our client's early-stage drug research efforts." (James Foster, Chairman and CEO, November 2, 2016)



"We will continue to drive future revenue growth by further enhancing our service capabilities and entering new markets. As part of this strategy, we closed the clinical acquisition during the quarter. ClinicalRM brings to ICON deep expertise in how to operate within the market for government and NGO-sponsored research, and they will lead ICON's efforts to further penetrate this market segment. Alongside targeted M&A, we're deploying capital to return value to shareholders through share repurchases. Last quarter, we received approval to buy back shares of up to circa USD 400 million, and since commencing the current program on October 1, we have repurchased shares worth approximately USD 28 million." (Ciaran Murray, Chairman and CEO, October 20, 2016)



"I love INC's position from a balance sheet perspective. Our leverage is close to 1.5x or 1.75x in that range. So our balance sheet gives us the flexibility to do a series of tuck-in acquisitions, which is probably our preference. And also obviously, do larger hundreds of millions of dollars of acquisitions. So we like the flexibility. We are not adverse to a larger acquisition, it's not necessarily our preference. But if the right deal came across, we would certainly be willing to do that. Acquisitions are our first priority in terms of capital deployment." (Gregory Rush, CFO and EVP, November 8, 2016)



"We continue to be encouraged by our strong levels of new business awards, which we believe will help drive a revenue recovery. We are executing on our growth strategy to expand our service offerings, and strategic acquisitions are an important part of that strategy, and the ExecuPharm acquisition is a good example. We also remain committed to maximizing shareholder value through sustained margin improvement efforts." (Josef von Rickenbach, Chairman and CEO, October 30, 2016)



"[raising cash and paying down debt is] does actually allow us to have a lot of dry-powder if something arises. The team and the board are pretty ambitious and are willing to make a bold move if the right opportunity arises and we'll keep looking." (Colin Shannon, President and CEO, November 3, 2016)



"But in essence, we have a pipeline of ongoing small niche kind of things to acquire, again, capabilities or an access to a market. And mostly, what we bought at IMS were technology capabilities. We moved the company from being purely a market research data-focused company to more of a full-service information technology and services company providing a lot of analytical tools and software platforms to manage data." (Ari Bousbib, Chairman and CEO, November 15, 2016)



Recent CRO M&A Activity

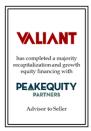
Date	Target	Acquiror	Target Business Description
11/17/16	CLINapps Inc.	Bracket	Software development & consulting services to pharmaceutical and biotechnology industries
11/10/16	inVentiv Health Clinical, Inc.	Advent International Corporation	Contract drug development services for biopharmaceutical and medical device companies
10/20/16	BioClinica, Inc.	Cinven	Integrated clinical research technology solutions for the biopharmaceutical industry
10/03/16	ExecuPharm Inc.	PAREXEL International Corporation	Functional Service Provider services for the biopharmaceutical industry
09/28/16	Agilux Laboratories, Inc.	Charles River Laboratories International, Inc.	Metabolism and pharmacokinetic services for the pharmaceutical industry
09/19/16	ClinicalRM, Inc.	ICON Public Limited Company	Research, regulatory and sponsor services for the biopharmaceutical industry
09/01/16	EVIDERA	Pharmaceutical Product Development, LLC	Health information and research services for life sciences organizations
08/04/16	IMS Health Holdings, Inc. (NYSE:IMS)	Quintiles Transnational Holdings Inc.	Information and technology services to healthcare industry worldwide
08/03/16	InClinica, Inc.	Velocity Fund Management	Clincial research outsourcing services for the pharmaceutical industry
07/25/16	Compass Research, LLC	BioClinica, Inc.	Clinical research and trial services for the biopharmaceutical industry
06/27/16	Blue Stream Laboratories, Inc.	Charles River Laboratories International, Inc.	Contract analytical, formulations and development-support laboratory services
05/31/16	Medelis, Inc.	WCCT Global, LLC	Oncology contract research services for the biopharmaceutical industry
05/25/16	Privacy Analytics Inc.	IMS Health Holdings, Inc.	Data anonymization software solutions for healthcare and related industries
05/03/16	eResearchTechnology, Inc.	Nordic Capital	Technology-driven services for the biopharmaceutical industry and medical devices
04/04/16	WIL Research Company, Inc.	Charles River Laboratories International, Inc.	Global contract research organization for the biopharmaceutical industry
03/18/16	Nextrials, Inc.	PRA Health Sciences, Inc.	Trial management electronic data capture software for the biopharmaceutical industry
03/01/16	Research Across America Inc.	Synexus Limited	Clinical research trial services for the pharmaceutical industry
02/10/16	Health Advances, LLC	PAREXEL International Corporation	Strategy consulting services for the healthcare industry
02/08/16	CRO Analytics, LLC	Ben Franklin Technology Partners	Clinical research performance data collection, reporting and consulting services
01/31/16	AlphaImpactRx, Inc.	IMS Health Holdings, Inc.	Research-based insights, analytics and solutions to biopharmaceutical and other industries
01/19/16	Clinverse, Inc.	BioClinica, Inc.	Cloud-based clinical payments system for the pharmaceutical industry
12/04/15	PMG Research, Inc.	ICON Public Limited Company	Clinical research and trial services for the biopharmaceutical industry
11/18/15	Oncotest GmbH	Charles River Laboratories International, Inc.	Preclinical pharmacological contract research services for the pharmaceutical industry
10/23/15	Neuro-Sys SAS	Undisclosed	Preclinical drug discovery modeling services for the pharmacetical industry
10/15/15	Agenda1 Analytical Services Limited	Concept Life Sciences Limited	Contract analytical support services to pharmaceutical industry
09/30/15	TFS Trial Form Support International AB	Ratos AB	Clinical contract research services for the pharmaceutical industry
09/21/15	Synowledge LLC	BioClinica, Inc.	Drug safety and regulatory affairs consulting services for the pharmaceutical industry
09/02/15	Clinical Professionals Ltd	CPL Resources plc	Pharmaceutical research and development recruitment services
07/31/15	Value Health Solutions	PRA Health Sciences	Clinical trial management software for the pharmaceutical industry
07/24/15	Celsis International Ltd.	Charles River Laboratories International, Inc.	Bacterial detection and microbial screening systems for the pharmaceutical industry
07/22/15	Healthcare Data Solutions, LLC	IMS Health Holdings, Inc.	Database information services for the healthcare industry
07/06/15	MediciGroup, Inc.	BioClinica, Inc.	Patient recruitment services for the pharmaceutical industry
07/02/15	Effektor A/S	IMS Health Holdings, Inc.	Data warehousing and business intelligence services for the healthcare industry
07/01/15	Rehfeld Partners A/S	IMS Health Holdings, Inc.	Information management and business intelligence services for the health industry
06/30/15	TRIALCAMP SLL	Eurofins Agroscience Services Limited	Contract research services for the biopharmaceutical industry
06/26/15	WCCT Global, LLC	Medivate Partners LLC	Early drug development and late phase services to biopharmaceutical industry
05/19/15	Clio Science	Quintiles Transnational Holdings Inc.	Contract research services for the biopharmaceutical industry
05/05/15	Dataline Software Limited	IMS Health Holdings, Inc.	Rapid analysis and visualization services for the healthcare industry
04/13/15	Quantum Solutions India	PAREXEL International Corporation	Specialized pharmacovigilance services
02/27/15	MediMedia Pharma Solutions	ICON Public Limited Company	Medical and scientific communication strategy consulting services
Source: Cap		. ,	

Information on Delancey Street Partners

Recent DSP M&A Transaction Experience





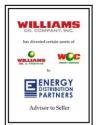












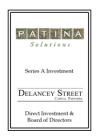




Recent DSP Merchant Banking Experience











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All other transactions effectuated through Delancey Street Partners, LLC

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