



Heads of Terms

How can the Natural Resources sectors help the Biotech sector?

The natural resources sectors, which include mining, oil and gas, rise and fall according to their own economic cycles. In markets such as Australia where natural resources are a major part of the economy, a country's stock exchange can plummet dramatically when demand, and therefore prices, drop! Over the past 15 years or so, Australian biotech companies have tended to fair better when the resources sector is down, and *vice versa*; largely because as smaller mining companies listed on the Australian Stock Exchange (ASX) struggle during such a decline, an opportunity arises for private biotech companies to list on the ASX by reverse take-over (RTO). Consequently, investment money is more directed into biotech.

PharmaVentures has recently assisted a company involved in a similar RTO. We provided an independent commercial and technical expert report for 3Legs Resources plc, a former UK AIM listed resources firm which was originally founded in 2011 as a gas exploration company. The recent economic climate in oil, gas and mining had not helped it achieve its goals, and the company ceased operations and became a shell company. An opportunity arose to reverse into another biotech company called SalvaRx which had already acquired a majority holding in a biotech called iOX, into 3Legs Resources. On the 22nd of March the company listed on the London Stock Exchange's AIM as SalvaRX. Our expert report, which was part of the Admission Document, can be found on the SalvaRx website: <http://www.salvarx.io>

Dr Fintan Walton

Chief Executive, PharmaVentures Ltd.

industry insight

CRO Consolidation Continues With Smaller Transactions



Issac Jacob

Senior Director, PharmaVentures Limited

The CRO universe has been very active for the past few years with a flurry of activity by both private equity and strategic players. The segment has attracted strong interest due to the expansion of the biopharma market, driven by new drugs candidates and the growing relevance of emerging markets in terms of biopharma sales. Recently, TFS and WuXi PharmaTech were acquired by financial investors that view these firms as attractive platforms for further consolidation.

Average Sector EBITDA Margins for Top Infection Control and Other Medtech Players

Date	Target	Acquiror	100% Value (\$m)	Enterprise Value to	
				Revenue	EBITDA
Nov 15	Ecron Acunova (India)	Take Solutions (USA)	17	<1.0x	NA
Sep 15	Kinesis Pharma (Netherlands)	Venn Life Sciences (Ireland))	7	1.1x	10.8x
Sep 15	TFS (Sweden)	Ratos AB (Sweden)	51	1.0x	NA
Jun 15	DreamCIS (South Korea)	Tigermed (China)	29	1.7x	NA
Apr 15	WuXi PharmaTech (China)	Ally Bridge Group (USA)	3,431	4.4x	21.6x
Nov 14	JCL Bioassay (Japan)	CMIC (Japan)	25	1.1x	6.4x
Nov 14	Covance (US)	Labcorp (US)	5,600	2.2 x	13.3 x
May 14	Frontage Laboratories (US)	Tigermed (China)	72	1.8 x	N/A
Apr 14	Medpace (US)	Cinven (PE firm) (UK)	915	N/A	~10-12 x
Mar 14	Aptiv Solutions (US)	ICON (Eire)	144	1.3 x	15.9 x
Mar 14	CRO services of Galapagos NV	Charles River (US)	134	2.1 x	12.0 x
Dec 13	PRA Health (US)	CRI Lifetree (US)	77	2.1 x	14.1 x
Sep 13	Novella (US)	Quintiles (US)	168	~1.3 x	~10 x
Jul 13	ReSearch Pharmaceutical Services (US)	PRA International (US)	289	0.7 x	10.4 x
Jun 13	PRA International (US)	KKR (PE firm) (US)	1,400	2.3 x	14.2 x
Apr 13	HERON Group (UK)	PAREXEL (US)	24	1.9 x	NM
Mar 13	BioClinica Inc. (US)	JLL Partners (US)	108	1.4 x	10.5 x
Feb 13	ClinStar (US)	PRA International (US)	51	1.7 x	6.5 x
Feb 13	Clinical trial services of Cross Country Healthcare (US)	ICON (Eire)	56	0.8 x	12.3 x

Table 1

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deal update

PharmaVentures Advises 3Legs Resources on its Acquisition of SalvaRx

PharmaVentures is pleased to announce that it acted as an independent technical and commercial expert adviser to 3Legs on its Reverse Takeover of SalvaRx. 3Legs Resources is an investment company that focuses on life sciences and related technologies.

SalvaRx is an immuno-oncology company developing novel therapeutics that stimulate the immune system to fight cancer. SalvaRx also owns over 60% of iOx Therapeutics, which is developing anti-cancer treatments based on invariant natural killer T-cells and is poised to undertake the first Phase I/II human trials.

Adrian Dawkes, Vice President, PharmaVentures said; "In the pivotal area of immuno-oncology we were pleased to be able to provide an expert assessment of the iOx technology to support 3Legs in its acquisition."

Fintan Walton, Chief Executive of PharmaVentures said: "This is the twelfth independent expert report we have provided for companies raising finance, and the third during the recent upturn in IPO activities in the UK. Expert commercial and technical insight is a key component in company acquisitions especially where public markets are involved. PharmaVentures is able to provide valuable advisory services for our clients via our deep knowledge of the pharmaceutical and biotechnology sectors."



Infection Control

Secular Growth Drivers Power Investment and M&A



Ping Shek

Vice President, PharmaVentures Limited

Patients undergoing surgery need to be protected from infection during and after procedures. Surgical instruments are required to be cleaned and sterilised and the hospital environment needs to be kept at good levels of hygiene to prevent hospital acquired infections ('HAIs'). The infection control market includes low temperature sterilisers through disinfectant solutions to surgical drapes and gowns.

The infection control market is estimated to be worth \$12.1 billion (2015) with a forecast CAGR of 6.7%. The sterilisation equipment segment is estimated to be worth \$4.3 billion with a forecast CAGR of 7.6% with the fastest growth sub-segment being low temperature sterilisation which is forecast to increase by 9-10% per year.

The global aging demographic is a key driver of growth with approximately half of all surgical procedures for patients over 60 and

the number of over 60s is forecast to increase from 901 million in 2015 to 2.1 billion in 2050. An important potential moderator of this growth in surgical procedures is the ability and willingness of governments to fund the inherent increase in demand.

A greater proportion of operations in the future will involve minimally invasive surgery ('MIS'). The inherent advantages of MIS, together with development of sophisticated surgical instruments and robotic assisted

Average Sector EBITDA Margins for Top Infection Control and Other Medtech Players

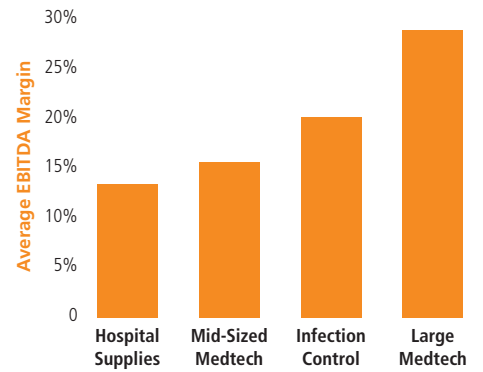


Figure 1

Source: Capital IQ, investment research, PharmaVentures analysis

procedures will continue to push growth. MIS requires sophisticated which need to be processed for re-use and are often unsuitable for steam autoclave processing. Many instruments require sterilisation rather than just disinfection and the FDA is considering expanding the scope of sterilisation requirements.

The increasing awareness of HAIs has meant a growing use of infection control products and services; the CDC (Centre for Disease Control) estimated that there are 1.7 million hospital associated infections in the US which cause or contribute to approximately 99,000 deaths annually. Many of the microbes are resistant to treatment so minimising potential infection through adequate sterilisation and disinfection is paramount.

Emerging Markets ('EMs') remain a key driver of growth despite a recent slowdown in these economies. EM growth in surgical procedures is two to five times higher than in Developed Markets ('DMs'). Also in many EMs, incidences of infection can be high.

Overall, there are several crucial factors impacting the infection control market. First, there is continued pricing pressure from the healthcare service providers. Second, hospital groups are centralising procurement to reduce unit purchasing costs and reducing the number of suppliers. Third, hospital group mergers have exacerbated the trend towards 'one-stop' procurement.

The infection control industry (by value) is led by a relatively small number of players who focus on high value machines, equipment and technologies. Infection control consumables are made by a wider range of players, many of whom are in more general hospital supplies. Table 1 shows selected players with STERIS, Getinge and 3M the three principal groups.

The industry is evolving with larger players from developed markets making selective acquisitions that add to their international footprint with complementary products, new

Selected Players in Infection Control

Player	Steam Sterilisers	Washers/Disinfection	Low Temp. Sterilisers	Low Temp. High Level Disinfection	GI Endoscopy	Sterility Assurance Products	Instrument Cleaning Chemistries	Low Temp. Chemistries	Applied Infection Control	Surface Decontamination	Contract Services	Surgical Textiles
STERIS	●	●	●	●	●	●	●	●	●	●	●	
Getinge	●	●	●	●			●	●	●	●	●	
3M			●	●		●	●					●
J&J			●	●		●	●					
Belimed	●	●										
Cantel Medical				●	●			●				
Matachana	●	●	●									
MMM	●	●								●		
Anios					●					●		
Olympus				●	●							
Sterigenics											●	
Hartmann										●		●

Table 1

Source: STERIS investor presentation, investment research, company websites, PharmaVentures analysis

Selected Recent Infection Control M&A Transactions

Date	Target	Bidder	Enterprise Value (EV)	EV/LTM Revenue	EV/LTM EBITDA
Dec 15	Stericool (TR)	Getinge (SE)	n.a.	n.a.	n.a.
Sep 15	Medical Innovations Group (UK)	Cantel Medical (US)	\$80m	2.8 x	10.5 x
Jul 15	Endoclear (BR)	Anios (FR)	n.a.	n.a.	n.a.
Jun 15	General Econopak	STERIS (US)	\$180m	n.a.	n.a.
Nov 14	IMS (IT)	Cantel (US)	€19.6m	1.8 x	7.3 x
Apr 14	Soluscope (FR)	Anios (FR)	n.a.	n.a.	n.a.
Apr 14	Integrated Medical Systems Inc. (US)	STERIS (US)	\$165m	1.2 x	19.4 x
Mar 14	Nordion (US)	Sterigenics (US)	\$561m	2.5 x	8.0 x
Feb 14	Synergy Health (UK)	STERIS (US)	£1.3bn	3.4 x	13.0x

Table 2

Source: Capital IQ, investment research, press articles, PharmaVentures analysis

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CRO Consolidation

Unlike previous years, there was only one transaction with a disclosed value above \$100 million in 2015 (buyout of WuXi PharmaTech by an investor consortium) while the remainder of the transactions were relatively much smaller in nature, as highlighted in Table 1 and 2. Transaction activity in the sector has been driven by the following factors:

- ▶ Emergence of Japan as an area of interest for global CROs
- ▶ Geographic expansion into emerging markets
- ▶ Acquisition of technological platforms for eCRO

Looking forward into 2016, it is expected that CROs will continue to seek opportunities to build capability in Japan, emerging markets, late phase services, regulatory affairs and eCRO platforms. Also, there may be more transactions involving medium sized CROs who may be seeking partners in order to gain greater heft and compete more effectively with larger competitors. The recent Chiltern/Theorem deal is a good example resulting in a combined entity with complementary strengths and more than 3,700 people in 45 countries globally.

2015 and 2016 YTD CRO M&A Transactions (undisclosed financial metrics)

Date	Acquiror	Target	Target Country	EV (\$m)
07-Mar-16	Synexus	Research Across America	USA	—
01-Feb-16	HG Capital	Kinapse	UK	—
19-Jan-16	Biodinica	Clinverse	USA	—
21-Jan-16	Parexel	Health Advances	USA	—
07-Dec-15	ICON	PMG Research	USA	—
02-Dec-15	Accelovance	Clinquest	Netherlands	—
06-Aug-15	Chiltern	Theorem	USA	—
29-Jul-15	PRA Health	Value Health Solutions	USA	18.5
15-Jul-15	Tigermid	Frontage Labs	USA	—
06-Jul-15	Biodinica	Medici Group	USA	—
27-May-15	Ergomed	Sound Opinion	UK	—
05-May-15	JSS Medical	Max Neeman	India	1.5
02-May-15	PPD	CRA Intermediate Hldgs.	USA	—
20-May-15	Quintiles	Clio Science	Japan	—
10-Apr-15	Clinipace	Accovion	Germany	—
06-Apr-15	Quest Life Sciences	Fortis Clinical Research	India	—
26-Mar-15	Parexel	Quantum Solutions	India	94.0
05-Feb-15	Accelovance	Altair Clinical	UK	—

Table 2

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Infection Control

technologies or geographic expansion (particularly in EMs). A list of selected recent M&A transactions is shown in Table 2.

EM acquisitions can provide access to new EM customers and also a lower cost manufacturing hub that can be used to supply their EM regions. Further, there are potential cross-selling synergies. EM hubs can also become R&D centres developing new lower cost products.

We expect continued M&A activity from corporates in this sector as they reconfigure their business. Infection control with its healthy market growth rate is likely to be part of this restructuring. In addition, we would expect to see some hospital supplies providers to expand or move into a the infection control area.

In summary, whilst there are challenges facing the infection control industry structural growth drivers are favourable and EMs will also underpin medium term demand growth.

Latest White Paper

Trends in the CMO Landscape



Jansen Jacob

Director, PharmaVentures Limited

In Q3 of 2015 in our quarterly publication of *Termsheet*, we predicted a significant increase in pharmaceutical M&A deal values for 2015. This optimism was reflected in a recent record high for M&A values in the sector; 63% higher than that seen in 2014 and over 100% greater than aggregate deal values in 2012 and 2013. 2015 was cornerstoned by four mega deals each valued at over \$10 billion. This was twice as many transactions of that scale seen in 2014.

The CMO market is expected to grow steadily over the near-term, outpacing the underlying pharmaceutical market. One of the key underlying drivers for the increased rate of growth of the CMO market over the global pharmaceutical market is Pharma companies' need to increase operational efficiency to counter the negative effects of patent expiries of their key products. Outsourcing many of the non-core activities such as manufacturing to dedicated organisations enables pharma companies to achieve the efficiencies and flexibility they are looking for. Consequently, CMOs now account for approximately 33% of the bio/pharma industry's cost of goods for drug product. Outsourcing in itself drives the availability of manufacturing assets, as Pharma can then dispose of under-utilised manufacturing sites and non-core assets.

In our latest white paper '*Trends in the CMO Landscape*' we demonstrate the impact this increase in deal values has had on the Pharmaceutical industry and specifically in relation to CMOs and their future. We highlight the challenges facing the leading players and what strategies they are employing to address these in an increasingly competitive and fragmented sector.

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Goddard Cartoon © PharmaVentures; all rights reserved

PharmaVentures Advises Transgene on the Sale of Their Biopharmaceutical Manufacturing Plant

In early February PharmaVentures was pleased to announce that it acted as an advisor to Transgene on the sale of its biopharmaceutical manufacturing unit in Strasbourg, France, to the US company Advanced Bioscience Laboratories (ABL), Inc.

Transgene (Euronext: TNG), a member of Institut Mérieux, is a publicly traded French biopharmaceutical company focused on discovering and developing targeted immunotherapies for the treatment of cancer and infectious diseases.

ABL, also a member of Institut Mérieux, is a leading US contract research and manufacturing organisation. The Strasbourg acquisition will enable the company to

establish ABL Europe and to increase its capabilities as a contract manufacturer with a stronger foothold within European Union.

Nigel Borshell, Vice President of PharmaVentures said: "We are delighted to have helped Transgene find a buyer for their biopharmaceutical manufacturing facility and to see its continued operation by ABL as a strategic and high value asset"

Fintan Walton, Chief Executive of PharmaVentures said: "Yet again the successful sale of this manufacturing facility in France shows that PharmaVentures is a leader in finding buyers for pharmaceutical companies wishing to divest assets."



BIO Returns to San Francisco in 2016

June 6-9, 2016
Moscone Center, San Francisco, CA

The BIO International Convention (BIO) returns to the birthplace of biotech, San Francisco, California for 2016! The Bay Area region continues to grow and advance biomedical innovation while continuing to offer programs and services to support new medical advances.

BIO attracts over 15,000 biotechnology and pharma leaders who come together for one week of intensive networking to discover new opportunities and promising partnerships. This event covers a wide spectrum of life science and application areas including drug discovery, biomanufacturing, genomics, biofuels, nanotechnology and cell therapy.

If you would like to arrange a meeting with one of the PharmaVentures Team at BIO, please contact Maria Seal: maria@pharmaventures.com

Forthcoming Conferences

Bio-Europe Spring 2016
4-6 April, Stockholm

BioTrinity 2016
25-27 April, London

Anglonordic Life Science Conference XIII
19 May, London

BIO 2016 International Convention
6-9 June, San Francisco

Nordic Life Science Days
14-15 September, Stockholm

16th Annual Biotech Investor Forum for Global Partnering and Investment
27-28 September, Zurich

CPhI Worldwide
4-6 October, Barcelona

AusBiotech (International Biofest) 2016
24-26 October, Melbourne

Bio-Europe
7-9 November, Cologne

Medica
14-17 November, Dusseldorf

Genesis 2016
1 December, London

To meet with PharmaVenture's experts at any of these conferences, please contact Maria Seal: maria@pharmaventures.com

Or

To arrange an interview with PharmaTelevision, please contact Graham Combe: graham@pharmaventures.com

meet the team



Alex Evans
PA to the CEO

Alex joined PharmaVentures in 2015 to support its founder and CEO Dr Fintan Walton. Before joining the team Alex had spent a number of years working within the Council Secretariat Office for The Science and Technology Facilities Council (STFC), based at Rutherford Appleton Laboratories in Harwell, Oxfordshire. She possesses a broad range of skills as a board secretary, academic researcher and events coordinator.

Alex holds a Masters Degree, with Distinction, from the University of Bristol.

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