UK INDIA BUSINESS COUNCIL

partnership in action

SECTOR:
LIFE SCIENCES & HEALTHCARE

SECTOR OVERVIEW: DECEMBER 2011

Welcome to the UKIBC quarterly report on Lifesciences & Healthcare. The goal of our quarterly report is to provide a roundup of the happenings in this sector which considers the biotechnology, pharmaceutical, medical devices and healthcare industries. The report will provide insights on happenings in the market place, collaborations between the UK and India, and details on companies that have succeeded. For those who are following our fortnightly sector views, we are cycling through a variety of sub sector areas and providing you with articles that we hope are informative and which touch on the types of opportunities we are seeing.

This year, India completed its 15th Census. With 2.7 Million enumerators, in a mammoth logistics exercise, the population of India was stated to be around 1.2 Billion. From a healthcare standpoint, Census 2011 provided some interesting new information which we discuss in brief in this report and which was the topic of one of our recent sector views. With the demand for healthcare on the rise in India, it is unsurprising to see that quite a number of entrepreneurs are coming up with innovative medical devices.

CONTACTS: Life Sciences & Healthcare

Priya Kurien

Email: Priya.Kurien@ukibc.com
Tel: +44 (0)20 7592 3040

Biotechnology, healthcare and pharmaceutical industries in the UK have an outstanding track record in drug discovery, a strong academic base and increasing Government support for R&D through investment and tax credits. The UK has recently launched a stem cell centre and has also launched a research institute to aid public private partnerships in early stage drug discovery.

The UKIBC is working with the Wellcome Trust to document the collaborative activity between India and the UK in the areas of pharmaceuticals, lifesciences and healthcare.

UKIBC partnered with the RSC,UKTI, Dr Reddy's, One Nucleus, BIA & OBN to conduct an exclusive event on Opportunities for UK/India Lifesciences Collaborations.

UK INDIA BUSINESS COUNCIL

partnership in action

This quarter, UKIBC hosted a session at UKTI's TechWorld on November 16th on "Making technologies work for the Indian customer" where we had a case study from Philips on the Virtual ICU innovative technology that has been launched in India and UK for mobile health care.

MARKET UPDATE

Indian Healthcare implications from Indian Census 2011

The Indian census for the first time has recorded details about people with multiple disabilities. This information is available state by state which means that healthcare professionals can look at addressing these disabilities in a more targeted fashion. There were also questions on mental health, an area that has not been well understood from a census standpoint to date. A tragic result of higher income and education has been the worrying change in sex ratio, with the number of girls per thousand boys reducing considerably since the last decade. With 50% of the population under the age of 35, India has a young population, one of the main reasons for confidence in its growth in future years.

Click **here** to read more

Medical Device Innovation in India

Scientists based in India are drawing on global technologies, and creating simple, robust and cost-effective diagnostic products that will not only make profits in India but can ultimately also find markets — and help to contain health care costs — from Africa to Europe, from China to the United States. One example of this is a small company, ReaMetrix based in Bangalore, which is rolling out a "lab in a box" that promises to bring diagnostic testing for anything from HIV to malaria, diabetes to arthritis, cheaply and quickly, right to the patient.

Another example of innovation is Perfint based in Chennai, which is using a robotic arm to help perform quick, cost-effective biopsies, to diagnose and then treat lung, liver and other soft tissue cancers.

Another innovation in the medical devices space involved collaboration between three organisations in different sectors. Maestros Mediline, a publicly-listed firm based in Mumbai that designs diagnostic and patient monitoring devices, partnered with Research in Motion (RIM), the makers of BlackBerry phones, and mobile service provider Vodafone to launch a healthcare application for Indian markets. Together, they built a mobile electrocardiogram (ECG) application called eUNO-R10 for BlackBerry smartphones in India. A portable monitor with wearable wrist electrodes records the user's ECG and instantly sends the data to doctors via telephone, Internet or GSM mobile networks. This application reduced the time lag for access to emergency healthcare in the event of cardiac attacks and was piloted by the prestigious Nanavati hospital in Mumbai.

Such innovations are not simply about reducing costs, but it is also what this represents - creating innovation in the

medical devices space to serve patients who can't afford it, who aren't as mobile and who are not supported by sufficient traditional infrastructure for healthcare in India.

UK launches stem cell centre

King's College London is set to launch the Centre for Stem Cells and Regenerative Medicine. The centre, which will be based at Guy's Hospital in London, will bring together the cutting-edge stem cell research currently taking place across the College and its partner NHS trusts, as part of King's Health Partners. The purpose is to drive collaboration between scientists and clinicians through the centre and to translate the potential of stem cells into clinical reality for patients.

UK India collaboration in lifesciences

Computational chemistry service organizations tend to operate in isolation, leaving their customers to handle compound acquisition or synthesis. Similarly, medicinal chemistry providers often use standard, off-the-shelf molecular modeling systems and databases, with only a small team of specialist users. They therefore lack access to advanced, proprietary systems and breadth of expertise.

InhibOx Ltd (spin-out of the University of Oxford, UK) and COSMIC Discoveries (the independent service arm of the Institute of Life Sciences, Hyderabad, India) have formed a close strategic partnership to deliver a full-service drug discovery offering, incorporating expert computational, medicinal and synthetic chemistry design capabilities. Both commercial organizations, linked to world-leading academic institutes, have built their services on advanced proprietary science and technology. Together, they offer unique capabilities that are able to address the most demanding drug discovery challenges on behalf of biotech and pharmaceutical companies worldwide.

InhibOx, a computational drug discovery specialist, is pioneering the use of cloud computing to offer rigorous, full-spectrum computer-aided drug discovery capabilities to customers around the world. COSMIC Discoveries' diverse medicinal and synthetic chemistry expertise spans major therapeutic areas and numerous disease-relevant targets and mechanisms. Their medicinal and computational chemists have developed multiple pre-clinical drug candidates from early leads and hits in a wide variety of therapeutic areas.

The two organizations, in addition to offering integrated drug discovery services, will collaborate on the design of new candidate molecules in support of an internal research projects at Cosmic Discoveries

INVESTMENT UPDATE

Below are some recent developments in the UK and India:

- The UK government has established a new research institute to aid public and private groups working on the early stages of drug discovery. The Translational (early stage) Research Partnerships will allow NHS, university clinical researchers and life science companies to work together to discover and develop new medicines. The Partnerships will

primarily focus on finding new treatments for inflammatory respiratory diseases, like asthma, and joint-related inflammatory diseases like arthritis.

- Deepbridge Innovation Fund is a new venture fund designed to fund fledgling British biotechnology businesses spun out of academia. Sir Richard Sykes, the veteran pharmaceutical executive, is to chair this fund.
- For the last six months, there was a debate on whether India's 100% Foreign Direct Investment (FDI) policy for the pharmaceutical industry needed to change. This was primarily in the light of several "brownfield" (traditional mergers and acquisitions) projects that have been raising concerns that prices of medicines in India are going to get pushed up. This is a concern in a country where most of the population can't afford even the current prices. The government has now made some minor changes where 100% FDI, through the automatic route, will only be for "greenfield" (introduction of new technologies) pharmaceutical projects, with brownfield projects needing to go through additional approval.
- GlaxoSmithKline is eyeing acquisitions worth as much as $2 billion in India in an effort to cement its position in one of the world's fastest-growing drug markets.

In the mergers and acquisitions space

- French drugmaker Sanofi-Aventis SA acquired Universal Medicare's nutraceutical formulations marketing and distribution business
- New Jersey based Par Pharmaceutical Companies has agreed to acquire privately held Edict Pharmaceuticals, an India-based developer and manufacturer of generic pharmaceuticals.

CASE STUDIES

Polytherics is a UK company that has applied the precision chemistry of "PEGylation" to create site-specific conjugation of proteins and peptides that can help produce better drugs such as PEG-Interferon for Hepatitis C. Polytherics was founded in 2002 as a spinoff from the Imperial College, London and the London School of Pharmacy. It has to date raised funding of £7.5million, has around 30 employees based in Central London, and has patents granted in US, Europe, India and China.

Polytherics is no stranger to India and has been working with Indian partners since 2005, when it created a partnership with Shantha Biotechnics (now a part of Sanofi) to create an affordable PEG-Interferon for Hepatitis C.

One of its current collaborations is with the Drugs for Neglected Diseases Initiative (DNDi). This is a collaborative, patients' needs-driven, non-profit drug research and development organization. Polytherics is working with the DNDi to come up with an alternate and cheaper formulation for Amphotericin B to treat a neglected disease particularly prevalent in India and Bangladesh known as Kala-Azar (visceral leishmaniasis). A liposomal replacement formulation has been developed by PolyTherics and DNDi to treat Kala-Azar.

The Polytherics business model is to license their "PEGylation" technology to pharmaceutical companies that can then create their own drugs.

SECTOR:
LIFE SCIENCES & HEALTHCARE

Polytherics sees India as important to its future. The CEO, John Burt stated that he sees a lot of opportunities in India and that they are actively pursuing new partnerships. Polytherics is looking at three ways of working in India – as a market by developing affordable therapeutic drugs with an Indian partner, R&D collaboration and manufacturing the protein. The next few years will be about expanding all three ways of working in India says John. Polytherics is also looking at using Indian service providers – Contract Research Organisations (CROs)in the future.