

"The world is looking at India"

04 February 2013 | Interviews | By Narayan Kulkarni

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Scottish Development International (SDI), the international arm of the Scottish Government responsible for developing and strengthening trade and investment between Scotland and the rest of the world, has associated with Bangalore INDIA BIO 2013 as Innovation Partner and bringing in delegation to India. The delegation led by Ms Anne MacColl, CEO, Scottish Development International, Scotland will be signing Memorandum of Understanding with Karnataka Biotechnology and Information Services (KBITS) during the event and paving way for better Knowledge exchange and trade relations with the two nations.

In this regard BioSpectrum spoke to **Mr Mark Dolan, Country Manager, Scottish Development International (SDI), India** about his views about the opportunities and strengths of Scotland in life sciences space. Excerpts of the interview,

What is the current status of trade between India and Scotland in general and life sciences space in particular?

Ever since India opened up its economy, there has been a tremendous increase in trade and investment between India and other countries. India's relationship with Scotland is no different in that respect and we have seen a healthy increase in both trade and investment between both the countries. In the last three years, we have seen an increase of 30 percent in the number of Scottish companies, who we have supported to set up and develop their business in India (across sectors).

In fact, we have a strong delegation of life sciences companies who are here at Bangalore India Bio to explore opportunities. Prof Charles Ffrenchconstant, a well known figure in the life sciences community will be speaking at the event and so is Dr Pradeep Ramyya from Axsys Technologies, who have set up a successful life sciences business in Glasgow. So, the business relationship between the two countries is definitely becoming stronger.

For the life sciences sector particularly, we have companies like Omega Diagnostic, a Scottish company that manufactures, develops and distributes medical diagnostic products and in-vitro diagnostic test kits for infectious diseases, allergy, food intolerance and autoimmune diseases that established its India office in 2012.

Touch Bionics a leading developer of advanced upper-limb prosthetics and known for developing the i-LIMB hand - the world's first fully articulating and commercially available bionic hand is actively looking to tap into the Indian market.

There's a similar trend, when we look at investment from Indian companies into Scotland across sectors. There are 15 Indian companies that have set up base in Scotland adding around 5000 high value jobs to the Scottish economy.

There are companies like Piramal Healthcare as well Axsys Technologies doing some good work in Scotland. Not only are we seeing collaboration between companies, we are also seeing a trend where well known Indian hospitals and medical institutions are partnering with Scottish Universities to develop joint curriculum for post graduate and short term programmes in biology and bio medical science. For example, Glasgow Caledonian University (GCU) has partnered with renowned private hospitals and institutions such as Sitaram Bhartia Institute of Science and Research, Lilavati Hospital, Max Healthcare, MV Hospital of Diabetes and the Kerala Institute of Medical Sciences for the delivery of its innovative diabetic footcare courses.

What are Scotland's strengths in life sciences space?

Scotland hosts one of the largest life science clusters in Europe with significant international presence in research, development and manufacturing. With a long and remarkable history of medical and scientific discovery stretching back 200 years, Scotland has always been at the forefront of medical innovation. It is no surprise then that we were asked to be the innovation partners at the Bangalore India Bio this year.

Scotland is home to some of the best known life sciences companies across the globe including:

- Quintiles, PPD, Charles River Laboratories, Kendle and Aptuit - in the top 10 major global Contract Research Organisations (CROs) and are all at the forefront of improving drug development processes through scientific excellence
- Pfizer - at the cutting-edge of research and development of human and animal medicines
- Life Technologies - a global provider of premier biotechnology systems, consumables and services
- Merck Sharp & Dohme (MSD) - a global player in discovery, development, manufacture and marketing of a wide range of innovative pharmaceutical products to improve human health.

While Scotland has existing strengths, in key business areas such as medical technologies and pharmaceutical services, where there is already a substantial local company base, ranging from innovative start-ups to global multinationals. We also have research excellence, particularly in areas such as stem cells and regenerative medicine and clinical/ translational medicine, where there are significant current and emerging commercial opportunities.

Over the years, Scottish Universities and research institutes have contributed significantly to the life sciences sector globally through world leading research in areas such as:

- The development of MRI and CAT scanners
- The discovery of p53 cancer suppressor gene
- World-recognised research in diabetes and cancer
- ReNeuron's groundbreaking stem cell trial for stroke patients

A number of exciting new opportunities have also now been identified (resulting from global economic and health trends), which could deliver significant economic impact in the future. These include areas such as assisted living, stratified medicine, wellness and sustainability.

What opportunities can Scotland offer in the life science space?

Globally, the life sciences sector (including pharmaceuticals and biotechnology) is expected to be worth £801 billion, representing an increase of more than 45 percent since 2007. A number of significant global trends are identified as shaping the future of the life sciences and biotech in Scotland, including:

- The emergence of personalized medicine
- The growing trend by big pharmaceuticals towards corporate investment, partnerships and outsourcing
- An increasing move towards translational medicine and the use of biomarkers and associated diagnostics to improve

- the efficiency of the drug discovery process
- Increasing convergence with further integration between drugs and technology
- Increasing use of information technology to accelerate discovery and drive down costs
- Increasing emphasis on the search for alternative therapies for existing approved drugs.

World's most well known and respected MNC's have set up base in Scotland because, of the five most significant aspects of any business that Scotland offers. These are - knowledge , people, innovation, infrastructure and collaboration.

When one talks of the opportunities that we offer in this space, we need to look at the areas where we excel and areas where we can share the success with international companies. These are:

- Medical technology - Diagnostics and medical devices
- Pharma services including contract research and pre-clinical and clinical trials support
- Stem cells and regenerative medicine research
- Drug discovery and development
- Translational medicine
- Therapeutic areas
- Bioinformatics.

We have invested in high-tech infrastructure for supporting the life sciences sector in Scotland and have developed some high-class facilities like Aberdeen's Science and Technology Park, Glasgow's West of Scotland Science Park, Dundee's Ninewells Site, the BioCity Campus and the Edinburgh BioQuarter. Government support and the capabilities of Scotland's company base, makes it ideally placed to capture a larger share of the global market and become an internationally significant location for life sciences and biotech.

Given this context, when we talk about the life sciences sector in India, we see huge opportunity for collaboration on various key areas, such as:

Drug research and development: The sheer number and scale of the market makes India a very attractive destination for foreign companies. However, the Indian clinical research sector is still at an embryonic stage. Indian organisations are being actively approached by foreign companies and they have the capability to develop a global footprint for themselves. However, there are some gaps that have been reported. By collaborating with the Scottish life sciences industry, Indian companies can aim to fill those gaps through exchange of know how and sharing of best practices.

Stem cell research and translational medicine: India is expected to be in the forefront of stem cell research with a market growth potential and a compound annual growth rate (CAGR) of 25 percent or more by 2015. Scotland is renowned for its commercially attractive academic and clinical strengths within the field of translational medicine and Scottish scientists continue to address the key medical challenges with ground-breaking stem cell research. Stem cell researchers can join forces to help facilitate a positive outcome for the development of novel therapeutics using stem cells. Recently, doctors in Edinburgh and Glasgow performed a surgery to treat corneal blindness using stem cells. This trial is currently being carried out on twenty people suffering from corneal blindness. It involves the National Blood Transfusion Services and is being funded jointly by the UK Stem Cell Foundation and Scottish Enterprise in partnership with the Chief Scientist's Office.

Contract Research Organisations (CRO): The local \$485 million clinical research market is growing at a 11-13 percent as the country gains increasing favour as a base for global clinical trials (phase I-IV), it said. However, increasing competition, quality concerns and lack of quality infrastructure in smaller tier II sites are some factors that impacted the growth rate of the CRO market. There is a wealth of experience in Scotland for the CRO market. The strong links between academia and industry and the government support to develop infrastructure to support some of the world's best life sciences companies, makes it a natural partner to help Indian CRO sector to improve and develop to its full potential.

Medical Technologies: The world is looking at India and India has come up very strongly as a top destination for medical tourism. Many of the latest medical technologies are being developed in Scotland - for example the Bionic hand which is the closest to actual hand movements as a prosthetic could be. With such innovative technologies coming from Scotland, India can certainly benefit by collaborating and can position itself higher on the value chain.