

editorial



Ken Snowden

Scottish life sciences outlook for 2006

In 2005 –in what is believed to be a worldwide first – all those involved with the Scottish life sciences community joined forces to devise a formal and integrated Life Sciences Strategy. The strategy includes the formation of a life sciences alliance comprising industry, academia, the National Health Service (NHS) in Scotland, financial institutions, the Scottish government and the Scottish Enterprise Network.

The Scottish life sciences community warmly embraces the reality that international collaboration is the key to success and welcomes opportunities to share information and expertise. At the same time, our culture, legislative system, enterprise and political environment provide considerable advantages which allow us to remain ahead of the game as an attractive destination in our own right.

Improving investment conditions

Because the most important factor limiting drug discovery and growth in the life sciences sector over the past few years has been the chilly investment climate, it is significant that 20% of all European life sciences initial public offerings (IPOs) during 2005 were Scottish organisations. This statistic is the most visible evidence yet that the current investment climate allows favourable exit routes for investors in Scottish innovation; this not only demonstrates the business-readiness of many life sciences organisations within the rapidly maturing Scottish life sciences community, but should also help draw the attention of future investors.

Scottish based Ardana, ProStrakan, Stem Cell Sciences and IDMoS all successfully completed their IPO in the past twelve months. Austrian-owned Intercell, which has a facility in Livingston, in central Scotland, producing novel vaccines for the treatment of infectious diseases, also completed its IPO in February 2005.

In December 2005, cancer specialists Cyclacel announced a reverse-merger with XCYT to form Cyclacel Pharmaceuticals. Existing Cyclacel shareholders retain ownership of ~80% of the combined company, which will trade on NASDAQ.

Domestically, the environment for early-stage companies remains supportive, with funding available from several sources, including the Scottish Co-Investment Fund. The Intermediary Technology Institute (ITI) Life Sciences has also made significant investments, including in Stirling Medical Innovations, whose success in theranostic applications has seen the company grow from zero to 75 employees in less than a year.

A £40 million equity fund to support innovative businesses, including life sciences, was announced by the Scottish Executive during 2005, and the Scottish Enterprise Network has pledged £1.85 million for a further ten years to support the commercialisation of research through the Scottish Stem Cell Network.

Stem cell research is not, generally speaking, as thorny a subject in public opinion in the UK as in the USA. This factor, and the stable pan-European regulatory environment in which Scotland operates, lend the Scottish stem cell community significant advantages.

While investment conditions worldwide are improving slowly, Scotland's commitment to supporting its life sciences community has never been stronger or more focused.

Highlights

There are many, many reasons for the Scottish life sciences community to be cheerful as we enter the second half of the current decade. Recent highlights include accolades for the Scottish companies Stem Cell Sciences and Optos; both were selected as 'Technology Pioneers' by the World Economic Forum in 2005. In addition, Stem Cell Sciences was named a business leader by Scientific American magazine in its prestigious annual round-up for 2005.

Galashiels-based pharma company ProStrakan not only took first position in accountancy giant Deloitte's 'fast 50' survey, but also recorded sales growth of more than 4000% between 2000 and 2004. The company now employs 280 people in Scotland.

Nevertheless, although conditions domestically and the global positions of home-grown talent are providing much cause for optimism, we recognize that there is no room whatsoever for complacency.

Successful collaboration

Despite having a very enviable record of scientific innovation in drug development and delivery, the pace of research through the current decade is such that innovation alone is not enough, and the Scottish community places great emphasis on international collaboration.

Recent key collaborative projects included the investment of up to £18 million in Scotland by the Korea Health Industry Development Institute (KHIDI), which has a presence in the West of Scotland Science Park in Glasgow. Kyeong-Ho Lee, President of KHIDI, echoes the view of the Scottish community by saying 'we know that the nature of life sciences is so complex that, without international cooperation, Korea can hardly reach the targets specified in its life science and technology development plan, such as new drug development'.

Scottish-based companies, including Quintiles, Bioreliance (now part of Invitrogen), ProStrakan and PharmaLinks have all gained a significant foothold in the Korean market through The Korean International Collaborative Research Programme. The University of Aberdeen and one of its spinout companies, Haptogen, have also secured multimillion pound partnerships with South Korea to fund further research into drugs to combat Alzheimer's disease and major infectious diseases, such as methicillin-resistant *Staphylococcus aureus* (MRSA), and *Pseudomonas aeruginosa*.

As further evidence of outward focus, Scotland's economic development agency, Scottish Enterprise, and its international arm, Scottish Development International (SDI), announced in January 2006 that several Scottish life sciences institutions, including the University of Dundee, have been identified as favoured suppliers of their innovation and expertise by the Singapore government.

Massachusetts-based Inverness Medical Innovations (IMI), a leading manufacturer of medical diagnostic products and developer of advanced medical devices, recently established a subsidiary in Scotland, Stirling Medical Innovations. The company plans to invest more than US\$6 million in R&D programmes and another US\$55 million in manufacturing and commercialisation of new products. This will create up to 500 jobs at a new biomarker R&D

centre, currently under construction at Stirling University's Innovation Park.

This inward investment success story is largely attributed to the business support and financial backing provided by SDI and ITI Life Sciences.

To date, more than 1300 companies have chosen to invest in Scotland. As has been the case throughout its long history, Scottish influence on global markets belies its size and island status.

Infrastructure

To accommodate this growth, state-of-the-art facilities have been developed across Scotland, providing a hub for life sciences exploration and production, and acting as a lure for scientists and manufacturers from across the world.

Perhaps chief among these is the US\$1 billion Centre for Biomedical Research currently under construction on the outskirts of Edinburgh. This will support Scotland's expertise in stem-cell research and will position Edinburgh as one of the world's foremost centres for biomedical investment. Part of a triangle of science and technology centres in Edinburgh and the Lothians, the Centre for Biomedical Research is supported by the University of Edinburgh, Scottish Enterprise Edinburgh and Lothian, and Lothian University Hospitals NHS Trust.

In the West of the country, the West of Scotland Science Park is the favoured working environment for pure science startups and high-growth technology companies – it is already home to ~ 30 companies. A new multimillion pound British Heart Foundation Cardiovascular Research Centre also opened in Glasgow in 2005.

In Dundee, the Medipark is a prestigious new development located on the campus of Ninewells Hospital and Medical School – one of the largest and most modern teaching hospitals in Europe. This offers opportunities for innovative companies to collaborate with medical researchers from Ninewells.

And in Aberdeen, the Aberdeen Science and Technology Park provides accommodation for high-growth companies working in environmental sciences and medical and biotechnologies.

Reasons to be cheerful abound...

- Scotland has more than 550 organisations and >26,500 employees dedicated to life sciences R&D.
- Scotland houses >20% of the UK's life sciences companies and is already one of the most successful life sciences bases in Europe.
- The biotechnology industry in Scotland has grown at an average of 20% over the past four years, compared with 15% in Europe as a whole.
- Scotland produces 30% of the UK's microbiology PhDs and 31% of the UK's genetics postgraduates. It has 30 University departments and research institutes dedicated to drug-discovery-related research.
- Two Scottish universities, the University of Dundee and the University of Glasgow, have been named by academics as being in the top-five best places to work in Europe, as surveyed by The Scientist magazine, with Dundee taking the top slot for the second year running.

Some might argue that gaining maturity within the nascent, international life sciences industry is not much of an accolade

but maturity, in terms of the Scottish community, represents achieving critical mass, an open-minded attitude and the confidence to collaborate with the very best in the world. That is where I believe we are at the start of the second half of this decade.

Scotland is buzzing with innovation and anticipation, and the commitment behind the 'Life Sciences Scotland' alliance means we move forward with the interests of the government, financial institutions, academia and industry aligned.

The life sciences sector remains volatile, fast-moving and undoubtedly tricky to negotiate for scientists and business minds

alike. But the potential rewards for investors, the economy and mankind in general are truly awe-inspiring – and who wouldn't be excited by that? Not even a canny Scot.

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