Interview with Rhona Allison, Senior Director Life and Chemical Sciences at Scottish Enterprise, Scottish Enterprise

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What does the life sciences sector represent for the Scottish economy in terms of value and employment and how have these figures evolved over the last few years?

The Scottish government has set out an economic strategy in which they identify six key industrial sectors for the growth of the nationâ??s economy. These sectors were identified due to their high opportunity and disproportionate high potential in the impact they have on our economy. Life sciences is one of these six key sectors and Scotland today is home to 640 life science organisations that employ about 32,000 people. We are also home to four of the top seven global contract research organisations (CROs) and 53% of life science companies in Scotland are in the pharmaceutical services sector. Slightly less than 25% of companies are in the medical technology area, which is one the fastest growing sectors in the region. In terms of value, the life sciences contribute Â£3.1 billion to the Scottish economy on an annual basis and we are proud to be the only nation in the world to have an industry-led strategy that has been signed up to in the creation and delivery by the industry, government, academia and the NHS. No other industrial sector has set out to include all of the key stakeholders in the development and delivery of their economic strategy. Furthermore, Scotland developed a 15-year plan for the life sciences sector that was launched in 2005, and we have just had our second revision of that strategy to adjust its focus and implementation. These revisions are conducted every three years to ensure that the strategy remains in line with ongoing changes in the market and also to verify the progress that has been achieved in the preceding years. In doing this we can guarantee that we remain relevant to current issues within the industry and that we leverage our most competitive assets in response to key opportunities. For example, the areas of regenerative medicine & stem cells and translational & clinical medicine are two of our key priorities because Scotland has a real uniqueness in these areas.

Given that Scottish Enterprise has identified the life sciences as a priority sector, how much capital are you investing directly into the sector?

If you only consider the capital amount that SE are investing into the sector, you will only see a limited view of the bigger picture and the greater activities that Scotland has set out to drive this industry further. It is necessary to understand that the Scottish public sector is working as a joint entity on this strategy, and therefore, only taking into account the money that Scottish Enterprise is devoting to it would be misleading. Within this collaborative effort, Scottish Enterprise is the main

agency that is responsible for the economic growth of the sector, but this can only be achieved as long as we are working hand-in-hand with the NHS, universities, medical research entities, as well as others part of the broader UK strategy, such as the Office for Life Sciences (OLS).
One of the main tools that allows us to work as a cohesive unit with all the other entities, is our Life Sciences Advisory Board (LiSAB) that was created in 2009 and is co-chaired by the industry and our Deputy First Minister. Having the most senior ministerial involvement on this board demonstrates the commitment that the Scottish government has to the life sciences. On the industry side the board includes representatives from companies in all divisions of the sector, namely pharma, agribiotech, diagnostics, medical technology, and pharma services (contract research and clinical research organisations). Those representatives come from companies of all sizes, and are either indigenous or external inward investors. The LiSAB highlights our joint approach to promoting the life sciences in Scotland in a forum where industry and government can meet on a quarterly basis to decide the way forward.
Additional to the LiSAB, we have account managers that are assigned to each company located in Scotland that has high growth aspirations. These managers are in place to understand where each company is going and to assist in the development of their business strategy by identifying the areas in which Scottish Enterprise and the public sector can be of most use. This is something that is free of charge and is a very powerful tool to foster the growth of life science companies in Scotland.
Going back to your original question, if you only look at the financial contribution of Scottish Enterprise to the sector, you would not take into account all of these initiatives that exist for life sciences. From a Scottish Enterprise point of view, it is very clear what our role is and we have identified three main goals that we would like to achieve. These are to build and grow companies already located in Scotland; attract new companies to the region and to create new Scottish companies. A number of reports have already identified Scotland as the region with the highest rate of startup and spin-out companies per capita in the UK, so we already know we are very good at creating new companies. Our priorities are then to build companies and embed their activities here in Scotland by understanding their market drivers. One example of such drivers is the high M&A activity that we have witnessed in the global pharmaceutical and healthcare industries in recent years. Given this trend we want to guarantee that companies in Scotland have good reasons to be conducting their business here and understand those advantages.

What would you say are the main advantages that make Scotland a great place to do business, particularly for life sciences?

Scotland has a number of financial incentives to support companies that are conducting research and driving innovation here. There are also a number of investment funds that are based here that are run by the Scottish Investment Bank, a division of Scottish Enterprise, and they look for opportunities to co-invest with the private sector. We also provide a number of growth incentives, such as skills training for individuals and Scotland is one of the best places in Europe to train individuals in the life sciences. We arguably have one of the best educated populations in the life sciences in terms of the number of graduates, PhDs and research associates that come out of here, and this is in fact one of our biggest exports to other countries. Just as an example, one-third of microbiologists in the UK are trained in Scotland, and this highlights the educational wealth that our nation has.
Scotland was also recently identified as having the highest medical research per capita in all of Europe, and this is not surprising because we have four very strong medical schools, namely Aberdeen, Dundee, Edinburgh and Glasgow. All four of these schools punch way above their weight in regards to the medical research that they conduct and the amount of medical research funding that they are able to attract, and this is directly related to the quality of their work. Ultimately the talent pool that is available in Scotland is a great incentive for companies, as is the support that the government is willing to provide to the industry. The great quality of research that occurs in Scotland

is also related to the collaborative nature that is embedded in the culture of the nation. Given our small size we recognise the need to collaborate for greater achievement, both locally and at a global level.
Another reason to come to Scotland, and the greater UK, is that within the global pharmaceutical industry there is an increasing demand for researchers to understand biology and chemistry and the impact that these may have on products along the pipeline. When you have clinicians that work closely with teaching hospitals and universities, they are able to learn the biology of disease to discern how it progresses in the human body. This allows them to understand how and when to intervene at certain points of that disease. Juxtaposing this clinical practice that can then be fed back into the research is exceptionally powerful and the UK is quite unique in this, because when our medical students finish school they are able to be researchers as well as practicing clinicians.
Finally, NHS Scotland is also very active in establishing a relationship with the industry and working together with them to ensure that innovation is rewarded. This is particularly true in the medical technology space for which we launched this year a framework for the uptake of innovation within the NHS. Through this framework, companies are in direct contact with NHS authorities, clinicians and patients, in order for them to receive input on the design, development and cost-effectiveness of their products. Having your end-user providing you with feedback along every step of the development process is an extremely useful tool for companies because it secures the success of their products.
All of these reasons are particularly relevant to healthcare companies that are looking to focus further into translational research and this is an increasing trend in the industry. These companies are looking to build stronger relationships with leading academics and healthcare providers. The worldâ??s first collaboration of this type was signed with Scotland five years ago. The $75 million translational research deal was with Wyeth which was subsequently taken over by Pfizer. Pfizer has very recently renewed that relationship with Scotland. This underlines the quality, strength and collaborative nature that we have with the pharmaceutical industry and we pride ourselves in building such partnerships.

One of the greatest challenges for life science SMEs today is the 20% drop in equity funding over the last couple of years. What have you achieved in your effort to bridge the â??venture capital gapâ?• in Scotland?

We have actually been quite successful in attracting considerable investments from European sources through our investment products. More importantly though is our framework of intervention for companies, that assists in everything from strategy development to marketing, as well as product development and R&D. The aim is also to determine how we can assist financially with any of these processes and can pay up to 20-25% of the total investment in R&D for a company based in Scotland. This is about genuinely stimulating innovative research and commercialising these products in Scotland. Many companies are choosing to come to Scotland, not only because of its innovative environment, but also because of the financial incentives and assistance that has been set out for companies.
We are also in discussions with a venture capital (VC) fund that would manage the Â£2-10 million sector and that is considering basing itself in Scotland. This would provide the region with a very active lead investor based in Scotland. Scottish Enterprise already invests a third of its available investment funds into life science companies, but we recognise that much more can be done and we are moving to stimulate the VC market further. In comparison to the VC market in the US, Europe is still very behind and we really need to continue improving this.

One of Scotlandâ??s flagship initiatives to attract the most innovative life science companies and researchers has been the creation of the Edinburgh BioQuarter in 2007/2008. What distinguishes the Edinburgh BioQuarter from the other science parks around the UK?

The most distinguishing aspect of the Edinburgh BioQuarter is that it is a partnership between the private and public sectors, including the NHS, and academia. Edinburgh University was recently recognized as the 13th top medical school in the world and the BioQuarter is collocated with a world-class teaching hospital. The BioQuarter is managed by one of the best real estate development agencies, Alexandria, that caters specifically to the life sciences sector around the world.
Essentially the BioQuarter represents a concentration of every medical student that is trained by Edinburgh University working in partnership with the teaching hospital and a number of world-class research institutions. Aside from general admissions, the hospital hosts a reproductive and maternity centre and will soon include a paediatric centre and body and brain institute.
Also on site is the Scottish Centre for Regenerative Medicine, which is very significant when you consider that Scotland has the highest concentration of stem cell researchers in all of Europe.
Ultimately the quality of science that exists in Edinburgh speaks for itself and within the UKâ??s assessment criteria for scientific research it is always ranked amongst the highest and best. When you link this to Scotlandâ??s clinical research capabilities, world-class medical imaging capabilities and access to patients, you end up with a clear proposition of how the BioQuarter is very different to all other science parks in the UK. Alexandria has gone as far as saying that they envision the Edinburgh BioQuarter to become one of the top ten global locations for life sciences research.

On a more personal note, what are your personal ambitions as the head of the life sciences division for Scottish Enterprise?

I would like to hit all of our targets set out in our strategy for the life sciences and double the economic contribution of the sector to the Scottish economy by 2020. I also want to continue building the relationship with the industry to make sure that we work hand-in-hand to achieve these goals and that they recognise the advantages that Scotland has to offer. Also, I would like to see more VCs active in Scotland and a filling up of the Edinburgh BioQuarter.

What is your final message to the global industry and those based in the UK?

As stated by David Greenwood, who was the CFO of Geron, one of the leading regenerative medicine companies in the world: â??If you are not working with Scotland, you should be!â?•

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