Interview: Emilio Lora-Tamayo, President, CSIC, Spain

29.05.2014

Emilio Lora-Tamayo, president of the Spanish National Research Council (CSIC), outlines Spainâ??s current strengths and weaknesses in the areas of research and innovation.

Could you please introduce yourself to our readers?

CSIC consists of 125 research institutes, approximately 22 of which fall into the area of biology and biomedicine. The rest consist of institutes that cover everything from humanities to materials, and from physics to chemistry. I was the Vice President of CSIC from 1996 until 2002, when I was appointed president for almost two years. Between 2004 until 2012, I came back to my research and my chair at Universitat AutÃ²noma de Barcelona, where I am a professor of microelectronics. Since January 2012, I have been President of CSIC again.

Where does Spain fit today on the world stage of innovation, and where can it improve?

Spain is ranked tenth worldwide for production of science, measured in terms of publications and papers. Concerning innovation, we are far behind in seventeenth place. All scientists and policymakers in Spain and across Europe agree that Spain has a problem in transferring its knowledge into commercial or industrial innovation. We have to place much more effort somewhere in the scientific value chain without compensating knowledge and basic research, as clearly innovation and basic research are mutually inclusive.

The goal of the Spanish Research and Development System is to invest two percent of Spanish GDP in research. Currently, the country is at about 1.3 percent, so we still have a while to go. The importance of this figure is that the majority of this investment effort is made by the public sector. The private sector in Spain is far below the European average, and needs to make a much stronger

effort. This is why everyone must support and enhance research here.

What is your assessment of Spainâ??s entrepreneurial capacity in face of this innovation challenge?

Twenty years ago, I would have said that this capacity is underdeveloped. There was a gap between generation of knowledge in terms of research and the people who actually produce devices or services, for example. Although still a lot a work to be done, today, the efforts of researchers and improvements in the public system have closed this gap, and our results from research have a better entrepreneurial use today than in the past. Sometimes, researchers even launch their own initiatives in some form of entrepreneurship, although often times these scientists have a tough time occupying the position of CEO.

In any case, CSIC has created around 100 spinoffs over the last ten years, 90 of which are still running. The majority of these are run with the idea of science and development being completely separate from administration and economics. I believe that the private sector should make more effort to collaborate with the public sector through organizations like CSIC to help continue bridge this gap. Industrial teaching in Spain is not easy to manage with this approach, many big firms manage their own knowledge and research although we despite our collaborations with them. The vast majority of our firms are small and medium enterprises. By small, I really mean micro â?? usually no more than four to five employees. They are not necessarily interested in research, but rather ensuring the company is financed properly. It is a difficult balance, but this is why CSIC has been so successful with spinoffs: many are interested in research results generated in Spain, and thus the market opportunities available today attract the attention of people worldwide.

How does CSIC help scientists or students who may be great at research but lack the necessary skills to be commercially oriented?

For several years, the Spanish National Research Council (CSIC) has performed an intensive work to achieve that the discoveries done by researchers in their laboratories reaches society in the form of products. For this, the work by the Deputy Head of Knowledge Transference (VITRI) has been enhanced as she is responsible for collaborating with researchers in order to protect their work through patents. She helps them to make the licensing of those patents and collaborates to put researchers in contact with companies interested in those projects.

In addition, in recent years, Technology-based Companies and spin-offs arising from CSIC have increased and their researchers are supported by CSIC during the creation process to carry it out.

How strong is intellectual property protection in Spain?

From the perspective of our research, Spain is generally in a good position. We generate patents, which we register in Spain, Europe, Japan and the US, and when we establish contracts with the industry, CSIC always negotiates the terms regarding how the industry will use our IP. The criteria that we use are universal; we separate the background information and the added value we put into our patent, which must be paid. Sometimes, as part of our terms, the industry has to pay for the patent towards the organization, whether it is Spanish or from somewhere else in Europe. If they are still interested afterwards, occasionally we negotiate some sort of down payment, and if they obtain some commercial results, we ask for some kind of percentage, which is quite normal.

There is an immense amount of collaboration that goes on between the council and similar organizations worldwide. Why is CSIC the best partner for other organizations?

CSIC is one of the best partners you can find. We compete with the biggest similar organizations in Europe, and CSIC is the third biggest. Ranking these organizations in terms of output or papers and patents, normalized by the number of scientists, CSIC is number one. The Council also deals with a high number of contracts with the industry. Among them, we have collaborated significantly with the pharmaceutical and biomedical industries. In the last ten years, we have tried to emphasize approaching translational focus of our biology and biomedicine activity, ranging from our very first steps in a biological molecule or chemical sources to the end of the clinical process to treat different diseases. This is particularly important in the fields of neurological, chronic and rare diseases.

CSIC has also been instrumental in the construction of the European Research Area. How has the Council specifically been involved in this creation process?

CSIC always collaborates with Spanish and European institutions in order to achieve that science and research can progress. My team and I have worked with the spokespersons of this organization so that they know in depth the needs, challenges and goals of institutions such as CSIC. Thus, it is achieved that ERA supports and enhances the goals of European scientific organizations.

CSIC has a delegation in Brussels that holds regular meetings with ERA. What CSIC also seeks in this regard is to help researchers from the organization so that they have the best possible results when competing for resources in European programs.

How would you like CSIC to be positioned in the future?

We want to continue being the best, and to maintain our current figures and output. We are quite happy with the results we obtained in 2013. We thought these last few months had actually experienced some decline, but this is not true. In fact, CSIC has been experiencing exponential growth, which we wish to sustain. It is true that due to economic volatility some of the work throughout Europe has been rerouted to Brussels, but CISC is still among the top players and performs very well. We are training our researchers to create competitive proposals. Indeed, 2013 was a tough year, but we hope that the damage caused by shortages is peripheral rather than central. Nevertheless, CSIC finished 2013 with positive results and 2014 is already looking better in terms of budget and personnel. While Spainâ??s situation is still not the same as it was in 2007, it is much better than in the last couple of years. With this kind of outlook, CSIC is very well positioned to be a leader in the goals as outlined by Horizon 2020.

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