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COST is a catalyst for success

In the second part of her abridged interview with *International Innovation*, Dr Ángeles Rodríguez-Peña cites interdisciplinarity and networking as valuable assets in the bid to advance European innovation, and explains how COST can help to facilitate these benefits

Given recent advances in technology, the many specialised fields of science appear to be ever more multidisciplinary in nature. How has COST assisted in mediating between different scientific disciplines?

It is COST's priority to foster an open approach that links all disciplines. COST is largely problem-orientated, it is a natural arena for interdisciplinarity and indeed we see a high degree of inter- and multidisciplinarity in many of our Actions across all domains in general.

COST offers researchers the opportunity to apply for funding for networking of research, across disciplines that are not usually interlinked. We had observed that scientists still suffer from many barriers and 'domain dogmatism' which we challenged and hoped to help overcome by establishing a specific trans-disciplinary domain. These proposals receive an unbiased evaluation by experts from our scientific domains, and the panel is enlarged with experts from other disciplines as required.

A vision for the future Innovation Union, however, could be to go a step further and potentially abandon the concept of scientific domains altogether. Proposals would then always be assessed by a transdisciplinary panel based on the individual evaluation of external experts from the required scientific and technological areas.

I believe that this vision would help Europe strive for excellence by removing barriers between disciplines, economic sectors, etc. Experience shows that many of the best solutions to difficult problems arise from the most unexpected source.

Are you expecting a major progression in any particular aspects of your strategy and its outcome in the next couple of years?

Networking was, is and will continue to be a cornerstone of the European Research Area (ERA). In the next two years, we will make the output of our Actions visible and increase management efficiency.

COST is a catalyst for success. Networking advances science and we currently network more than 30,000 researchers in over 250 COST Actions around the world. In new areas of science, where comparatively few teams operate, sharing ideas is vital to create a sense of community and join efforts to avoid lost time. COST Actions also work for society: helping the environment; setting standards; developing new technologies; and supporting industry.

We often refer to some of COST's well-known past successes, such as its role in the pre-normalisation work for the GSM standard and the creation of the European Centre for Medium-Range Weather Forecasting. What

these examples show clearly is that major impacts often become visible over a significant period of time which may extend beyond the four-year period of a COST Action.

It is worth highlighting some of the recent or potential successes of our COST Actions to give an idea of how we provide a platform for very different needs expressed by the scientific community.

- Action METEAU worked to develop and spread good practice in terms of control of the presence of metals in drinking water. The Action had a policy impact in the context of the revision of the European Union Drinking Water Directive (Council Directive 98/83/EC) as well as on the implementation of a Protocol prepared by the World Health Organization (Protocol on Water and Health). The Action also published a series of Best Practice Guides and its results are being disseminated via the International Water Association
- An ongoing Action looks at social and policy factors, migrants' state of health, and improvements in service delivery. The research team presented a paper, 'Improving Harmony, Management and Social Support in Mediterranean Migration for Better Development and a Better Life', to the Parliamentary Assembly of the Mediterranean in Fez in June 2008. Furthermore, Action participants act as advisors to international organisations such as the Council of Europe or the World Health Organization as well as at national level. These are typical ways of transferring research results from the humanities and social sciences
- In November 2010, the European Parliament adopted a resolution in which it asked the European Commission to increase support to the beekeeping industry when the Common Agricultural Policy is next revamped in 2013. The world's largest network to look at the 'Prevention of Bee Colony loss' is COST Action COLOSS. This Action is currently developing novel, standardised honeybee monitoring, sampling and early diagnosis. The immediate effect will be that we will better understand honeybee mortality and possibly be able to avoid the negative impact this has on our economy. In the longer term, this Action's standardisation work could feed into international standards as well
- Finally, the Action called TIMELY is a very good example of how COST is conducive to the creation of new interdisciplinary communities around important breakthrough topics even when applications are not yet in sight. This Action is one of the world's first attempts to form an interdisciplinary research community to study time perception. Previous studies on time perception were mono-disciplinary, therefore the first challenge faced by the Action was to develop a common language to encourage neuroscientists, philosophers, psychologists, musicologists and other scientists to communicate

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These examples are just some of the ways in which we measure the success of the COST support for networking activities. Another aspect of how COST Actions occupy a unique place in the innovation cycle is, for example, the fact that some Actions harmonise methodologies and/or tools allowing for S&T studies that would otherwise not be possible at a national level.

How do you see COST evolving in the next decade? Are there any particular aspects, such as the development of early stage researchers (ESRs), that you wish to focus on, or will you be looking to include more nations and industrial partners?

COST will develop as the most efficient global tool for validating and accelerating the cultural changes needed for innovation which have been prompted by the emergence of new transitions in S&T. It will do so by allowing new scientific communities to interact, by bridging scientific output to policy makers, governments and regulatory bodies and, finally, by providing a breeding ground for exploratory and pre-competitive innovation that also involves SMEs.

ESR development is at the heart of COST's mission because our objective is to anticipate and encourage the emergence of new professions (for instance, interfaces between researchers and engineers or among engineers and producers); new tools to educate future generations of ESRs; and new techniques for knowledge dissemination.

In fact, COST is based on the understanding of a very simple concept: that knowledge creation, knowledge accumulation, knowledge diffusion and knowledge application are all *social* – not solitary – endeavours. COST is about creating communities of passionate people around S&T topics, and in nurturing these communities, knowledge is born.

COST will profit from the activities of its Actions that gather the most brilliant new ideas from scientists at a global level, and will be able to scan for early weak signals of possible new trends in S&T. We will favour high-risk innovative ideas and encourage the development of scientific communities with an open scientific culture.

The innovative industry will be welcoming with the same openness we currently apply. We intend to pay specific attention to start-ups that emerge from or around academia and that are of immediate benefit to the most innovative frontrunners.

Has the project encountered any political obstacles or difficulties due to the international character of COST or is there a unified acceptance and desire to back the project?

There is clear support for the programme and the added value of networking funds it provides. In fact, the European Commission granted COST €30 million of extra funds until the end of the Seventh Framework Programme, bringing our total budget for the entire period up to 240 million. What better testimony is there to COST's curiosity-driven, bottom-up approach?

Experience has taught us that COST has always taken troublesome times in its stride and that is thanks to the fact that it delivers successful intergovernmental cooperation. It is well accepted that scientific and technological cooperation can significantly improve international relations. And with that in mind, we can say that COST has been a stepping stone for many nations in Europe, as it is for others around the world.


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