



FROM IDEA TO MARKET: A REVIEW OF THE SPANISH TECHNOLOGY PLATFORMS

The European Commission and Member States have launched different measures within the European Research Area in order to improve the well-being of the citizens and the competitiveness of Europe. The Spanish Technology Platforms have proven to be a successful instrument of public-private cooperation and play a role in key areas of innovation for economic development. Following the steps of the European Technology Platform, Spain supported the creation of an important network of National Technology Platforms. The Spanish Technology Platforms have adapted efficiently to the changes of the R&D&I system and nowadays they are a key instrument to build an economic model based on knowledge.

There is a general consensus about the direct effect that a country's investment in research has on its economic development, and it is also admitted that the future of a country depends on its ability to innovate. There is also no doubt about the need to transfer the generated knowledge to the market and society, in order to develop an alternative knowledge-based growth model that gives citizens a better quality of life. The capability to develop and deploy new technologies and give a quick answer to the market is a sign of economic health and progress.

Therefore, for more than a decade the leaders of the EU have been continuously conveying a message in favor of growth and employment. It is widespread that in a future full of challenges, investment in R&D&I is key to maintain and boost growth, productivity and the well-being of our society. Building a knowledge society and using know-how and innovation are two principles that should drive the future actions of the European Union.

This message is embodied in the so-called "knowledge triangle" that is based on three pillars – education, research and innovation – and is the support for the consolidation of the European Research Area (ERA). Its purpose is to create favorable conditions for increasing the impact of R&D&I activities in Europe, improving the well-being of its citizens and business competitiveness and lending consistency to the different European and National policies.

As part of the measures taken to achieve the ERA objective, a series of deficiencies were detected while designing the 7th European Framework Program for Research and Technological Development: the need to address strategic actions in those cases where reaching the growth, competitiveness and sustainability of Europe depends on decisive technological advances, the need to achieve a Science-Technology-Business system with a structure according to specific sectoral objectives and to have suitable stakeholders to identify and to tackle the above mentioned strategic



Mª LUISA CASTAÑO MARÍN

General Director of Research,
Development and Innovation Policy,
Ministry of Economy and
Competitiveness



Figure 1. Thematic interactions between the different platforms that are part of the GICI (Inter-platform Group for Smart Cities). Source: Smart Cities – Outlook Paper 2030 (June 2015).

problems. All the agents of the Science-Technology-Innovation system are mobilized around the ultimate objective of significantly improving people's daily lives.

Aware of the need to involve the productive sector in the development of Europe's common research policy, and seeking to implement and bring to market the developed knowledge, the European Commission created the European Technology Platforms (ETP), which are identified as instruments that draw together a mix of different interested actors. Led by industry, their purpose is to define the medium and long-term research and technology development priorities, as well as to establish a series of guidelines to achieve these priorities through action plans in those technological areas where the growth, competitiveness and sustainability required

for the European Union depend on technological and research advances in the medium and long term.

The creation and consolidation of the European Technology Platforms began in 2005. There are at present nearly 40 and they are currently grouped together in six major thematic blocks: Energy, Environment, ICT, Bio-based economy, Production and Processes. (<http://ec.europa.eu/research/innovation-union>).

In parallel to the creation of European Technology Platforms and also promoted by the European Commission the National Platforms through "mirror groups" were created in different Member States. Thus, following the steps of the European Technology Platforms, either as an element to support them or as a mechanism for structuring and strategically cooperation in a certain sector at the national level,

some Member States set up the National Technology Platforms with similar characteristics and equivalent areas to the European ones. However, the development of this process was very uneven in the different Member States and heterogeneous within the different Technology Platforms.

Spain is a singular exception since it is the only Member State where the Technology Platforms were organized and deployed in key technology sectors and areas. Over the years, the largest network of Europe's National Platforms took shape. This is the reason why the Spanish Technology Platforms are an interesting and successful instrument to strengthen and complement the European Platforms. They encourage permanent public-private partnerships, the coordination of activities between business and public research centers and promote a more committed, planned and structured scenario of innovation.

The keys to this success have undoubtedly been the involvement, commitment and perseverance of the stakeholders of the Spanish Technology Platforms. But it is also important to highlight some certain strategic financial decisions taken by the Spanish authorities. Of particular relevance was the design of a public policy, managed by the national government, to continuously support the creation, development and consolidation of the Spanish Technology Platforms. On the other hand and from an operational perspective, Spain chose to concentrate the management and coordination of the Spanish network of Platforms in a single General Directorate, in addition to establishing a direct and professional liaison for each platform. This has guaranteed the creation of a common, homogeneous and integrated strategy for all the platforms and has also encouraged an analogous development of all of them. Other initiatives have been taken by the General Directorate to foster networking opportunities, to encourage information exchange and to share best practices between them. A clear example is the TRANSIERE Forum, the European Forum for Science, Technology and Innovation in which the system stakeholders meet every year and where the Technol-



ogy Platforms have their own space to exchange information and best practices.

Finally, from the thematic point of view, the Spanish Technology Platforms have rightly been established in those areas and/or sectors where Spain wants to and can play a relevant role. Those were not necessarily the areas that Europe had originally designed. One example is the creation of the Spanish Technology Platform for Automotive Components (M2F), which recognizes the chain of automotive component suppliers as leaders of technology development, as opposed to the European Platform primarily formed by vehicle manufacturers (ERTRAC). Another example is the Integral Logistics Technology Platform (LOGISTOP), supported by the excellent geostrategic position of Spain and its networks to other markets, was created several years before the set-up of the European one (ALICE (European Logistics Platform)), which was promoted and designed by the Spanish platform LOGISTOP.

Over the years, the Spanish Technology Platforms, as a network of agents from the Science, Technology and Innovation System, industry-led and specialized in a particular technological area, have worked together in a coordinated, solid and sustainable structure. The stakeholders of the Technology Platforms identify priorities and define research and innovation agendas in strategic technological areas including roadmaps and implementation plans. These research and innovation agendas help focus research activities of the public system to a more applied research closer to social demand, and it also encourages industrial investment in R&D&I activities, so necessary at this time.

There are currently 36 Technology Platforms in Spain, in technological areas as diverse as Energy, Health, Transport, Agriculture-Food, Environment, Information Technologies and Safety. On the website of the Ministry of Economy and Competitiveness, there is a specific entry dedicated to the Technology Platforms as agents of the R&D&I system. These Technology Platforms cover the complete chain of economic value, thereby ensuring that knowledge generated by re-

search transforms technologies and processes and, in a short period of time, it reaches the market as products and services. Furthermore, since they develop a shared vision of the stakeholders, their contribution is not only to reducing fragmentation in research and development activities, but they mobilize public and private funding and move forward in the internationalization of the Spanish Science Technology and Innovation System. Moreover, they have also become drivers of innovation as they are able to rapidly, actively and effectively adapt to the challenges arisen from the evolution of the R&D&I system.

The definition and implementation of the Spanish Science, Technology and Innovation Strategy (2013-2020) recognizes the key role of the social challenges. This novel view makes the R&D&I and the design and planning of the implementation actions focus on the global challenges of society and they should be based in a technology prospective that gives rise on one hand to the strategic planning of the former in the short medium and long term and on the other hand to the design and implementation of measures that aim at increasing the returns and the impact of the investments made. Therefore, the Technology Platforms that act as channels of communication between the various public and private agents play an essential role in the identification of emerging technologies, converging technologies, public-private collaboration and the detection of new demands on a global scale. This new concept has meant that the platforms have had to adapt to this new work scheme.

Thus, under this umbrella and since 2013, the Technology Platforms have been establishing inter-platform groups to provide multidisciplinary solutions to specific problems in the framework of the challenges of society, identified by the Spanish Science, Technology and Innovation Strategy. The inter-platform groups that have been set up include: Circular Economy, Smart Transport, Energy Storage, Advanced Manufacturing, Active Aging and Health, and Smart Cities.

It is worth mentioning the Smart Cities group for its special rele-

vance in the 'Europe 2020' Strategy. The Smart Cities act as a model for its growth based on three factors: smart, sustainable and inclusive. Smart growth is reached through knowledge, development and innovation. Sustainable growth is based on a greener economy more effective in the management of resources and more competitive. And the third key driver, inclusive growth, is aimed at boosting employment and social and territorial cohesion.

The multisector nature of the Smart City concept implies the application of solutions and technologies from different sectors. As consequence, the Inter-platform Group for Smart Cities- GICI -, created in 2013, coordinates actions and, with a common view, provides solutions to the challenges of this particular area from the different sectors represented by the Spanish Technology Platforms. The GICI was promoted by the Ministry of Economy and Competitiveness which, taking into account the creation of several Smart City Technology Platforms, proposed the establishment of a unique group combining the efforts already being made by the existing individual platforms. Aiming that all together could address the issue on an integrated basis, thus avoiding duplication and ensuring a comprehensive view. Currently GICI draws together 20 Spanish Technology Platforms and a group of reference organizations that ensure that the work done by GICI is connected to other existing smart city initiatives. Figure 1 displays how the platforms share interests in different thematic areas.

The European Commission currently believes that "the European Technology Platforms are rapidly evolving into champions for growth, as they have the capacity to address a wide range of innovation challenges, from the laboratory to the market, in a consistent way." Likewise, in Spain, the Technology Platforms can and should play a relevant role in the development of the key innovation areas for the country's economic growth, bringing together and coordinating public and private interests, moving knowledge towards the market, ensuring the profitability of the investment in R&D and, in the end, building an economic model based on knowledge. ■