

# National Pact for Research and Innovation. Collective commitment for progress in Catalonia

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In this article I will not only describe the process to elaborate the National Pact for Research and Innovation (thereinafter NPRI) but also make some remarks on the motivations and conditions of a process leading to a national agreement as is this pact.

## Why a NPRI?

### Why research and innovation?

The capacity of a society to generate, disseminate and apply knowledge for its own benefit determines the current level of progress and welfare and sets its future perspectives.

In order to take on both local and global social, economic and environmental challenges, it is more than ever necessary to develop these capacities to the maximum by means of research and innovation, which depend mostly on available human capital.

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For this reason, talent, science, technology and innovation are the new structural foundations to improve competitiveness and social capital, which in turn generate tangible and intangible benefits for humans: quality of life, employment, sustainable environment, social and territorial cohesion.

Consequently, any resources a society is able to use for research and innovation and the results obtained from it are crucial for its development. Despite having made efforts in the right direction, Catalonia has a degree of research and innovation that does not fit its potential nor the ambition that always characterised it. Although this situation was able to be maintained during a period determined by a set of given social and economic conditions, it seems that this is not going to be possible in the future anymore. If no change in the socioeconomic model is seriously tackled so as to place research and innovation as a priority, Catalonia will not be able to keep the

relatively high welfare its inhabitants have had historically and wish to keep for the future.

Some may ask why we need a pact for both research and innovation or even why not call it innovation pact alone, given that most countries regard research as a part of a wider vision that is innovation. So why research and innovation?

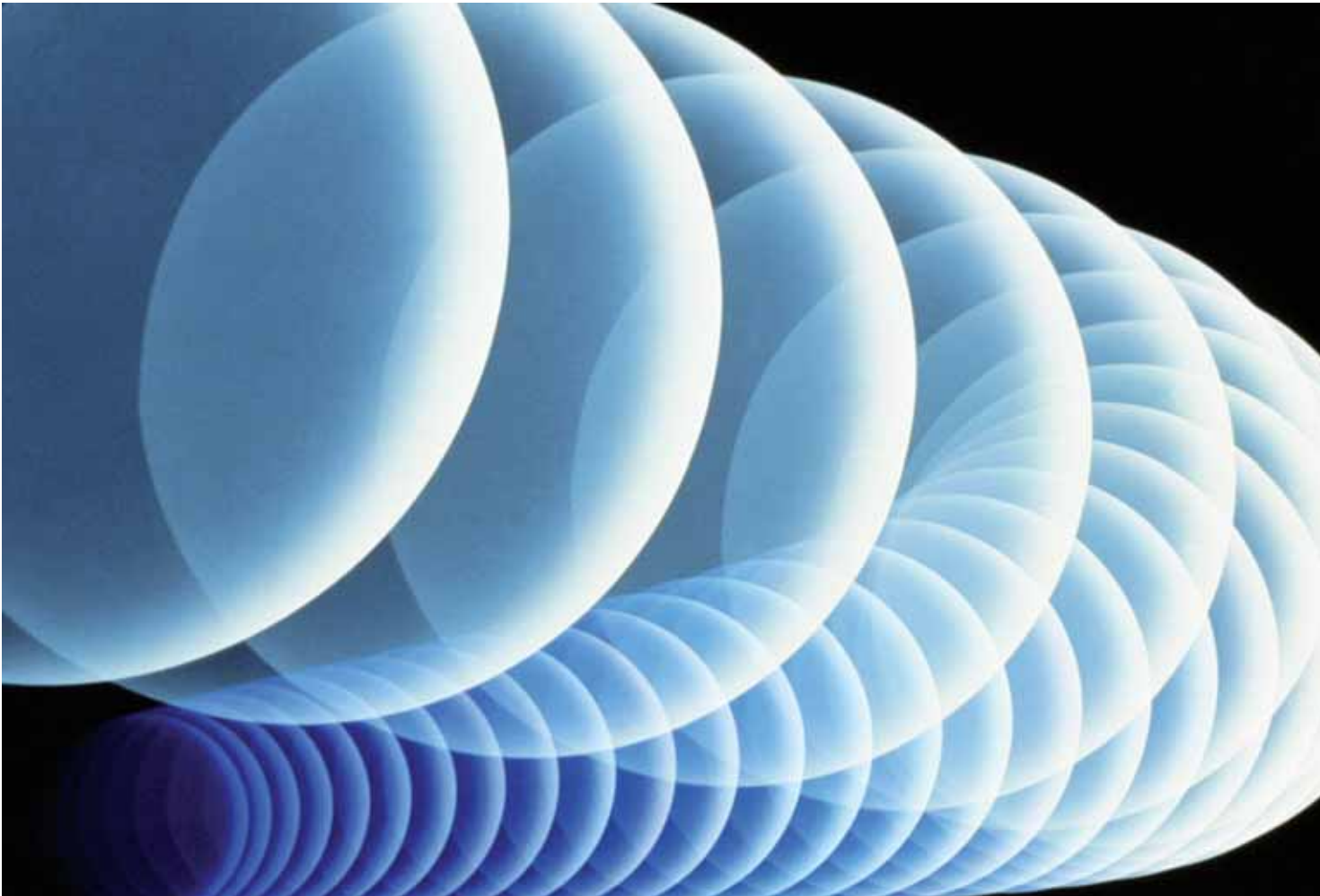
Until some years ago, the generation, dissemination, absorption, application and use of knowledge in the form of goods, services or processes were held to be sequential stages of the value chain, so research and innovation were also kept relatively apart from each other.

It is now accepted that current times require a different view, neither sequential nor lineal, to deal with the complexity and to use the synergies and cross-fertilisation between the different stakeholders and stages in the social and economic value chain of knowledge.

Moreover, explaining research as a separate item from innovation – although the one could conceptually be regarded as a part of the other or both to be a whole – makes clear that knowledge generation through research plays a key role in the development of society. This role stems from its crucial character as a talent source by means of researcher training, as a creator of stimulating learning environments in higher education, as a knowledge reservoir to take on complex issues and as a landmark at country and society level since it allows to stay connected to global talent pools, among other benefits.

### Why a national pact?

Knowledge flows without any restriction in spaces and has a global dimension in research and the results it produces. However, absorption and application of knowledge always occurs, thus generating the according benefits in a territorial dimension. Curiously, globalisation has strengthened this reality by giving increasing importance



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to the territorial dimension of social and economic development and the key factors it depends upon: talent, research and innovation.

This is the reason why the national dimension is an indispensable social and economic level as it sets the framework of a reality of its own in which the research and innovation capacity to act on progress comes in. Considering Catalonia's current situation and potential, this national dimension is comparable to countries like Finland and Flanders.

This national dimension obviously does not mean that the future can be tackled alone, without considering the supranational dimension of research and innovation systems. This supranational dimension is made of the relations and interactions that need to occur with the rest of Spain, Europe and the knowledge and innovation nodes all over for the benefit of Catalonia.

At the same time, it is also important to remind that Catalonia is not a homogeneous socio-economic reality and that the different territorial ar-

also require various approaches to envisage the future upon the basic assumptions we are discussing, with own solid, nationally articulated projects. These future plans for research and innovation could be fostered in different ways. However, the Government of Catalonia believed it was necessary to conclude a national pact. The aim of such a national pact is that research and innovation become an instrumental pillar for the development of Catalan society. This requires a clear consensus and coordinated, cooperative action by social and economic partners going beyond action of a single government or those coming after.

### The aim of a national pact is that research and innovation become an instrumental pillar for development.

Long-term commitment of key players (government, political parties, companies, universities, trade unions) and many others constituting the research and innovation system is indispensable. This commitment shall be based on a shared view that allows to set a future horizon far from short-sightedness and private interests. It shall facilitate stable policies setting the frame for common decision-taking, planning and action.

### What shall the NPRI deal with?

The NPRI is to set the framework and the overall pattern for research and innovation in a ten to fifteen-year timeframe, within which it shall serve as a reference for governmental pluriannual research and innovation plans, related budgetary decisions and general policies. It shall also guide the action of involved social, economic and knowledge players as well as society in general.

The NPRI shall tackle at least the following key issues:

- ▶ What role shall research and innovation play in Catalan society?

- ▶ With what view and ambition wishes Catalonia to position itself in research and innovation in the years to come?

- ▶ What are the objectives for approaching the future?

- ▶ What strategies and policies need to be followed in the next years?

- ▶ What do the research and innovation efforts need to focus on and which areas can we become leaders in and thus need to push?

- ▶ Which governance model for the research and innovation system is necessary to be more efficient and effective, to take better decisions and foster synergies between stakeholders?

- ▶ What public and private resources will need to be mobilised and what for?

It is also important that the NPRI clearly states where to start working to leave behind an incremental evolution of research and innovation – as we have had in the last years – and have a transformation allowing a quantum leap instead. This leap is to consolidate what is already existing and working along the desired lines but also to improve efficiency and effectiveness of what is not working optimally but we need. At the same time, new ways to give the necessary momentum to the Catalan research and innovation system will have to be opened. Catalonia in a whole is a diversified socioeconomic reality, which is probably one of its strengths, but at the same time this requires a research and innovation system serving multiple needs and challenges.

## Other pacts for research and innovation

Some countries and regions have set medium and long-term research and innovation strategies in the last years, basically in the wake of the Lis-

bon agreement. In some cases, this has been made by means of a pact:

- ▶ Flanders. Pact for Innovation (includes research), 2003
- ▶ Germany. Pact for Research and Innovation, 2005
- ▶ France. Pact for Research, 2006.

The key objective of the three pacts is to reach R&D investment equivalent to 3% of GDP by 2010, with 66% coming from private initiative, according to the Lisbon strategy. However, start-off conditions were quite different (e.g. Germany was close to 2.5% when the agreement was signed).

## The NPRI has to state clearly where to start working to leave behind an incremental evolution of research and innovation and have a transformation allowing a quantum leap instead.

Two of the three pacts, the French and the Flemish one, introduce very significant changes in the governance of the research and innovation system (e.g. research agency, science and technology policy council, assessment agency). In all cases, there is a focus on the role of clusters in strengthening the synergetic links between the stakeholders in the system (e.g. pôles de compétitivité in France). Moreover, the main strategies and policies are set out to spend agreed resources as well as other key aspects such as the scientific career and science and society.

From the perspective of the agreement between stakeholders, the German and Flemish processes involved their research and innovation players. In the case of France, the process was led by the government and a parallel law, aimed at implementing changes, served to set the main points of the pact.

## The context and complexity of the NPRI

Two main points were considered to plan the process that shall lead to the NPRI agreement. On the one hand, the context in which the process occurs, as to both the players and the general research and innovation context. On the other, the scope and complexity of the research and innovation system and the multiple details to take into account for a general view of the system were also considered.

### Context

First of all, when tackling a pact with different players, their previous relations and interactions on the subject to be dealt with are relevant. It is also necessary to visualise in how far there is a common basis for agreement on fundamentals, future vision and top priorities. In this respect, signatories to the NPRI do not have any previous experience on in-depth discussions on research and innovation with a long-term view, though the strategic agreement for competitiveness of Catalan economy, which most of them have signed, is a noticeable forerunner, albeit with a limited scope.

Further, mutual trust and knowledge of the situation of research and innovation is noteworthy. In this respect, the different stakeholders experience research and innovation in very different ways. For universities, for instance, research is one of their missions, while trade unions consider research and innovation an important factor for competitiveness of companies and the public sector, although it is not their *raison d'être*.

Apart from the previously existent relations between the main stakeholders of the pact, research and innovation are not precisely an area of collective action considered a priority by Catalan society. Besides, the current situation has pushed Catalonia into discussions about basic infrastructures

and there is unfortunately not a clear drive towards thinking of the «infrastructures of the future» that are research and innovation.

Nevertheless, there are positive signs. On the one hand, we can see an increasing, though still insufficient media presence of research and innovation and of researchers and entrepreneurs. On the other, impending recession or change of economic cycle predicted by some also raises voices about the convenience of reviewing the foundations upon which our economy and welfare system rest.

### Catalonia produced 0.85% of global (and 25% of Spanish) scientific production in 2006.

It is quite unknown that Catalonia does not start from scratch in research and innovation, although we are very far from top countries and regions by some indicators. Nevertheless, Catalonia produced 0.85% of global (and 25% of Spanish) scientific production in 2006, a figure clearly above our demographic rate and the compared investment made in research. Furthermore, Catalonia ranked fifth among OECD regions as to workforce increase in manufacturing industries. This is a definitely remarkable situation in the context of globalisation and competition created over this period, which has affected especially the manufacturing industry. And it is also relevant because this branch would hardly have managed to stay competitive without any kind of innovation (perhaps not the technology-based one first and foremost but other kinds of processes that are not always measured properly).

In any case, we can generally state that Catalan society and some of its social and economic stakeholders still do not have a sufficient perspective of the importance of research and innovation for the future of the country. Under such circumstances, the leadership of the government as the driving force behind the pact and participating players is crucial.

## Complexity

The research and innovation system affects a wide range of elements, as Svend Remoe describes it in his article for this same monograph, including policies, government and governance of research and innovation, the higher, continuous and permanent education system, the research system as such, the entrepreneurial system (SMEs, big companies, new technology-based companies) and the public service system (e.g. health, education, welfare).

External conditions (e.g. tax system, entrepreneurial culture), (cyber)infrastructures, intellectual property management etc. are also relevant.

This apparent complexity, in which different players with different missions and views intervene, requires internal and external benchmarks to compare results and draw a balance between different realities, such as university and companies, over the whole process.

## The NPRI process

### An independent expert committee drafts the NPRI principles

Given the points raised so far, the decision was taken to appoint an independent committee with members from different backgrounds to work out a base document for the NPRI. This option shall allow to have a starting position equivalent to the agents that are to sign the Pact, based on a solid and participatory process.

The government appointed two co-chairmen with a reputed background, Ramon Ollé for business and Lluís Arola for universities. This duality was applied to the composition of the remaining thirteen committee members appointed by the co-chairmen that can be seen at the end of this article.



The working dynamics between people from so different backgrounds is enriching and requires a very big effort to understand different ideas and concepts. It is interesting to observe, however, that there are key elements all agree with: driving for excellence and the excellent wherever they are, assessing and being demanding, etc.

### Members of the permanent committee of PNRI experts

**Lluís Arola Ferrer.** Full professor of Biochemistry and Molecular Biology at the Rovira i Virgili University. Former rector of the URV. Scientific director of the Camp Technology Park (co-chairman of the committee).

**Ramon Ollé Ribalta.** Executive president of the Business Engineering School La Salle and president of the Epson Foundation (co-chairman of the committee).

**Eva Bastida Tubau.** Scientific director of Grifols, SA.

**Joaquim Boixareu Antolí.** CEO of Irestal Group.

**Ramon Gomis de Barbarà.** Research director at the Hospital Clínic.

**Guillem López Casanovas.** Full professor of Economics at the Pompeu Fabra University. Director of the Economy and Health Research Centre of the UPF.

**Montse Ollé Valls.** Professor of Corporate Policy at ESADE.

**Miquel Àngel Pericàs Brondo.** Full professor of Organic Chemistry at the University of Barcelona. Director of the Catalan Institute of Chemical Research.

**Lluís Rullán Colom.** Executive president of Port Aventura, SA.

**Miquel Teixidor Castej.** Managing director of Genaker.

**Mireia de la Rubia Garrido.** Director of the Innova programme of the Polytechnic University of Catalonia.

**Salvador Barberà Sández.** Full professor of Economics at the Autonomous University of Barcelona. Former secretary general of science and technology policy at the Spanish Ministry of Education and Science.

**Xavier Cardona Torrandell.** President of Prysmian Cables & Systems.

**Josep Maria Pujol Artigas.** President of FICOSA.

### An «outside» view: the international advisory panel

One of the elements considered when laying out the process was the necessary international dimension it needed, since despite apparent circumstances related to research and innovation, a qualified outside view is indispensable in such processes. The international panel (cf. attached table) is composed of highly experienced people with a diverse background. The presence of two

### Members of the NPRI international advisory panel

**Leena Peltonen.** Full professor of Molecular Genetics at the Academy of Finland. Member of the Scientific Council of the European Research Council.

**John Seely-Brown.** He was the scientific director at the Xerox research centre in Palo Alto, California, until 2002. A computer engineer specialised in artificial intelligence, he is considered one of the main personalities in interaction between science and technological business innovation worldwide.

**Giovanni Dosi.** Full professor of Economics at the Santa Anna Business School in Pisa. He is one of the most reputed European experts in economic analysis of technology and innovation policies.

**José M. Castellanos.** A businessman, he was a key figure at Inditex. He is a member of the Adolfo Domínguez, SA board and chairman of the Bankinter Foundation for Innovation.

**Bengt Holmstrom.** Director of the Department of Economy at the MIT, he is one of the great names in the development of modern theory of organisations.

**Andreu Mas-Colell.** Full professor of Economics at the Pompeu Fabra University. Former Minister of Universities, Research and Information Society of the Government of Catalonia. He has been appointed (2009-2011) secretary general of the Scientific Council of the European Research Council.

**Manuel Castells.** Professor of Research at the UOC. Emeritus full professor of Sociology and Urban and Regional Planning at the University of California. Full professor at the University of Southern California and the MIT.

Catalan members with an international view such as Andreu Mas-Colell and Manuel Castells further makes sure that observations by the panel consider Catalonia's past and present background.

The international advisory panel has the task of making recommendations at the beginning of the process (on the first working document drafted by the permanent expert committee) and later on the drafted base document.

### A key diagnose: governance of the Catalan research and innovation system

Although the situation of research and innovation is quite well diagnosed, though not treated in Catalonia, this is not the case of system governance. This is a key element that is turning out to be crucial during the elaboration of the NPRI base document to envisage the future correctly.

With this aim, one of the coordinators of the MONIT project by the OECD, Svend Remoe, was asked to lead an external assessment. This project analysed the research and innovation systems in different countries by comparing governance and changes made towards so-called third generation systems in the last years, which among others strengthen the coordination of policies from different governmental areas, the assessment and learning capacity of the system, valuable interaction between players and the creation of specialised agencies executing policies and allocating resources given by the government.

### Participation: discussion panels and personal interviews

future out of the present is based on listening, understanding and incorporating opinions, ideas and views from people in the research and innovation system. Participatory activities are indispensable but some inherent difficulties need definitely to be considered.

On the one hand, it is difficult that participants have a global view of the research and innovation system as everyone experiences it from a particular viewpoint. On the other hand, the absence of previous agreements on research and innovation means that there are going to be very different views. Furthermore, such processes are usually met by initial reluctance that may hamper the exchange of ideas in some case, with things like «what is that good for», «how is that going to be implemented» or «we are good at having great common ideas but then everyone does as suits them best».

Finally, participatory analysis creates thoughts and ideas at different levels (macro, medium, micro) that can not all be included into a long-term pact. If this is not explained thoroughly, it can affect the credibility of the process with participating stakeholders.

### The situation of research and innovation in Catalonia is quite well diagnosed. This is not the case of system governance.

Having said that, yet believing that participation was a crucial point to the process, two main tools have been activated, namely discussion panels and personal interviews.

Interviews with 130 people (e.g. rectors and presidents of social councils, researchers, business-people, young entrepreneurs, professionals, representatives of different social and economic stakeholders) are being completed right now and represent a considerable amount of information and ideas that, although not always in line with the NPRI, will be of great help for meeting its targets.

The discussion panels were divided into three types – thematic, sectorial and territorial panels. In all, there are 22 panels in which over five hundred people took part.



The four thematic panels dealt with research and its value, innovation, research and innovation policies and the relation between science, technology, innovation and society. The twelve sectorial panels intended to analyse the conditions under which research and innovation operate in different sectors, from industry and manufacturing to creative industries, tourism and leisure and public administration. Finally, the six territorial panels involved the main social and economic stakeholders from different areas in Catalonia to analyse the challenges and opportunities of each territory in knowledge society. This panel typology in which sectors and territories had a specific relevance corresponds to one of the most significant features of the most advanced innovation systems, which emphasise the sectorial and territorial dimension.

### Believing that participation was a crucial point to the process, discussion panels and personal interviews have been activated.

The analysis and conclusions of the panels were, generally speaking, very positive and reflect a great variety of ideas and views. Some cases also

were an evidence that it was the first time that such issues were discussed by attending stakeholders.

### The base document and reaching consensus

All contributions are analysed by the permanent expert committee with the support of the NPRI technical office in order to set up the base document that is expected to be finished by late April. Afterwards, the formal agreement process will be developed within the government, which will then submit a proposal to the stakeholders: universities, business organisations, trade unions and political parties.

### Post-pact

The conclusion of the pact is a truly important element but it is obviously not enough. The application of the agreements in public and private budgets, necessary legislative changes and adequate planning and execution by the government and stakeholders will then become the key to meet the target of a collective commitment for progress in Catalonia.

#### JORDI CARTANYÀ

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