

Research and business: collaborating to compete better

Conclusions of the seminar held at the 2014 Festival of Science, Technology and Innovation

Session of the seminar
“Research and
business: collaborating
to compete better,”
on June 5, 2014.
(Source: Pep Herrero)



Key ideas

- Innovation policies still need to be improved and explained to make our technology transfer more effective.
- It is necessary to encourage training in entrepreneurship and innovation, the transfer of knowledge from academia to industry, open innovation in companies, and the incorporation of PhD holders in the business world.
- It is essential to restore the appreciation of the industrial and productive culture in schools, universities and society in general.

Since its first edition in 2007, when it was called the Festival of Science, the Festival of Science, Technology and Innovation has aimed to bring science to the public. With this in mind, the Festival aims to place creative communities in contact with society and to disseminate science and innovation in order to create ecosystems that facilitate citizen participation. Over a hundred researchers and scientific and technical researchers and popularizers from research centres, institutes and universities collaborate in the festival.

This year, the eighth edition of the Festival of Science, Technology and Innovation was dedicated to the relationship between research and business under the title “Science and business together: collaborating to compete better”. About twenty thousand people participated in the activities carried out over two weeks in various parts of the city of Barcelona: performances, workshops, citizen science

projects, audiovisual exhibitions, conferences, and the Festival in Ciutadella park.

The wide range of formats is displayed in three different activities of the Festival of Science, Technology and Innovation.

First, Andrea Ferrari, President of the Executive Council of the Graphene Flagship, a European project that aims to take graphene from the laboratory to society at large, inaugurated the 2014 Festival of Science, Technology and Innovation with the talk “Graphene, research and enterprise. An exceptional commitment to innovation and competitiveness in Europe” at the Saló de Cent of the Barcelona City Hall on June 4, 2014. Ferrari explained the potential of this material with extraordinary properties and urged governments, universities and enterprises to take action because “we need to make a commitment to graphene before it is too late”.

Second, the Festival in the Ciutadella park brought together a variety of exhibitors and was intended as a meeting point between researchers and the public to show the importance of research as a driver of change. The Ciutadella park was transformed into a great laboratory where the general public could discover science, technology and innovation through experiments and demonstrations of all kinds. This year there were several theme tents with names of scientists such as Newton, Darwin, Curie, Turing, Einstein and Margalef. The activities included talks, workshops, demonstrations and exhibitions.

Opening session
of the Festival of
Science, Technology
and Innovation
at the Saló de Cent
of the Barcelona City
Hall, on June 4, 2014.
(Source: Pep Herrero)



The Ciutadella park was transformed into a great laboratory where the general public could discover science, technology and innovation through experiments and demonstrations of all kinds, on June, 14 and 15, 2014. (Source: Pep Herrero)



Third, the conference “Research and enterprise: collaborating to compete better” was held at Disseny Hub Barcelona on Thursday 5 June 2014. This conference was organized by the Creativity and Innovation Directorate of the Institute of Culture of Barcelona (ICUB) together with the following organizations:

- Spanish Association of Managers (AED) and the Foundation of the Spanish Confederation of Managers and Executives (CEDE)
- Acció, Business Competitiveness Agency, Government of Catalonia
- Catalan Association of Scientific Communication (ACCC)
- Catalan Association of Consulting Companies (ACEC)
- Catalan Association of Research Institutions (ACER)
- Catalan Association of Technology (ACTec)
- Catalan Association of Public Universities (ACUP)
- Association for Corporation Growth (ACG)
- Barcelona Design Centre (BCD)
- Barcelona European Finance Centre (BCFE)
- BioCat
- Barcelona Chamber of Commerce
- Research Centres of Catalonia (CERCA)
- Economics Circle
- Spanish National Research Council (CSIC)
- Advisory Board of the Parliament of Catalonia for Science and Technology (CAPCIT)
- Catalan Council for Scientific Communication (C4)
- FemCat, a Private Foundation of Entrepreneurs
- Foment del Treball Nacional
- Catalan Foundation for Research and Innovation (FCRI)
- IESE Business School
- Sarrià Chemical Institute (IQS)

- CEDE Foundation
- La Salle, Ramon Llull University (URL)
- Barcelona Science Park (PCB)
- PIMEC
- Barcelona Economic Society of Friends of the Country (SEBAP)
- Catalan Network of Science and Technology Parks (XPCAT)

The preparatory work for this conference began early this year with the establishment of a joint research-enterprise group that defined the objectives and prepared the discussion.

The conference “Research and enterprise: collaborating to compete better” aimed to gather the feelings, the vision and the experience of different actors in the field of research and innovation in Catalonia and to present success stories to discover the keys to success from the business perspective and give pointers to all the business opportunities offered by advanced technologies.

The conference began with a session that addressed the situation of Catalonia in the knowledge-based economy, moderated by Josep M. Piqué, of the Office of Economic Growth - EEIO - Barcelona City Council, International Association of Science Parks and Areas of Innovation (IASP).

Subsequently, Tomàs Molina, a member of CAPCIT, coordinated a session that presented the exemplary experience of six small, medium and large companies that have found a pillar for development, competitiveness and prosperity in collaboration with research teams. The six experiences represented six different ways in which business and research can work together.

There were also two thematic sessions. The first, entitled “Cutting edge technologies: new business opportunities for companies”, was moderated by Albert Closas, an economist and director of the programme *Valor Afegit* of TV3. The second, entitled “Catalonia in 2022: Emerging sectors and future scenarios”, was moderated by Tomàs Molina and Ricard Jiménez, scientific director of the ASCAMM Foundation. The discussion focussed on cutting-edge technologies such as 3D printing, drones and smart glasses and tissues, and considered their prospects for the future.

Finally, the session “The ‘science’ of private funding and private funding of science” was moderated by Josep Lluís Sanfeliu, a general partner of Ysios Capital.

On 20 June the Parliament of Catalonia hosted the closing ceremony of the Festival of Science, Technology and Innovation. The ceremony was presided by the Second Vice-President of the Parliament, Lluís Maria Corominas and the Deputy Mayor for Culture, Knowledge, Creativity and Innovation of the Barcelona City Council, Jaume Ciurana. Vice-President Corominas stressed the importance of innovation, research and knowledge in Catalonia and said “we

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JORNADA RECERCA I EMPRESA:
 COL·LABORAR PER COMPETIR MILLOR
 Disseny Hub Barcelona, 5 de juny de 2014



must be able to excel”. He also noted that the conclusions of the conference can provide a solid basis for working to become leaders in knowledge, innovation and research.

Tomàs Molina, a member of CAPCIT, moderated a panel with presentations by Miquel A. Pericàs, secretary general of the Catalan Association of Research Institutions; Roberto Fernández, president of the Catalan Association of Public Universities and rector of the University of Lleida; Pau Herrera, president of the Spanish Association of Managers; Pere Pardo, executive director of the Agency for Administration of University and Research Grants, and Pere Torres, secretary for Business and Competitiveness of the Catalan Government.

During the closing ceremony, Lourdes Vega, R&D manager of Carburos Metálicos and director of the MatGas consortium, and Ricard Jiménez, scientific director of ASCAMM, presented the conclusions of the conference resulting from the contributions and the open discussion of the participants representing science and business organizations.

Conclusions

The Catalan innovation system

We must innovate to make a good system

In Catalonia we have a precedent for designing and implementing a Catalan innovation system (SICat): science policy has been well managed, allowing us to position much of our research system at a high international level. The opportunities for Catalonia have also been identified in RIS3 and the European Horizon 2020 programme, but progress must still be made to consolidate an integrated system.

Challenge: *Without neglecting the research system, innovation policies still need to be improved and implemented to make our technology transfer more effective. This plan should be led by the business sector rather than the government.*

Actions: *To help overcome this challenge, the following measures are proposed:*

1. A strategic plan for innovation and knowledge transfer targeting the medium to long term should be created and implemented. It should be properly tied to research policies, taking into

account our real capabilities, and it should be flexible enough to allow continuous adaptation to a changing global market. Mechanisms must also be designed to ensure stable implementation over time without depending on cyclical situations or factors.

2. Industry should provide leadership in identifying challenges and opportunities for this strategic plan in order to define objectives and priorities, both within the RIS3 programme and in other specific actions.

3. Capabilities must be optimized and, if necessary, the map of agents and opinion leaders in the innovation sector in Catalonia should be reduced, with the aim of improving the match between the research offered and the demands of the business world.

4. More incentives should be offered to encourage interaction between the different agents in the innovation sector. There is a need for agents who can successfully operate across sectors and are accepted in all of them.

5. Within this strategic plan there is a need to increase the proportion of financing of the innovation segment in which technology transfer agents operate. The incorporation of private capital into the system should be clearly fostered, and this will start to happen when the innovation strategy is led by the enterprises.

6. We must make it easier for the results of our research to be transferred from laboratories to production plants. We must therefore encourage public capital to make a firm commitment in the building of pilot plants, sharing the risks and the outcomes.

7. The position of Catalan and Spanish governments on the European Patent Act and the consequences of this position must be clarified. We must follow European trends in innovation in general and protection of intellectual capital in particular.

Bringing research and business together

We still have to bring the two worlds closer at the level of the people involved

Despite the policies and actions undertaken to incorporate PhD holders and researchers in industry, the results are not sufficient. The two worlds must be brought closer together. The Catalan government recently designed mechanisms to facilitate the transfer of research results to the productive sector with the implementation of various measures, but more far-reaching actions are needed in order to create a climate of greater trust and professional contact between research and enterprise.

Challenge: *To encourage training in entrepreneurship and innovation, the transfer of knowledge from academia to industry, open innovation in companies, and the incorporation of PhD holders in the business world.*

Actions: *To help overcome this challenge, the following measures are proposed:*

8. The government and universities should clearly establish good incentives for technology transfer for our researchers, similar to the six-yearly increment for research. Participation and leadership in public-private projects, licensing of patents to companies and other incentives should be assessed in the CVs and promotion of researchers.

Conversely, the presence and profile of businesses at universities must be increased. We need to encourage teaching by lecturers from the business world in specific subjects of the curriculum in order to prepare students for what they will encounter when they graduate.

9. We need to encourage interaction between full-time researchers in academia and enterprises through visits to companies for research, development and demonstration projects. These visits should be encouraged by both educational institutions and businesses, with government incentives if necessary.

10. We must provide learning tools for university and pre-university students to stimulate entrepreneurship and entry in industry. This plan must be designed within the curriculum tracks.

11. Industrial doctorates should continue to be fostered. The results should be evaluated and they should be redefined if necessary on the basis of quality, effectiveness and the real impact of the results in industry.

12. Public research institutions must offer businesses a professional treatment. The innovation results transfer offices (OTRI) must be professionalized to free researchers from administrative constraints, create areas of contact between business and research,

and provide results at the rate demanded by business.

Social recognition of innovation

We must make Catalan society more aware and appreciative of innovation

Industry is good and necessary for the progress of our country. We must recover the social recognition that industry and Catalan entrepreneurs enjoyed in the past. To achieve this, we need to increase the prestige and social recognition of the Catalan innovation system. Industrial sites should not be ghettos but rather the places where a modern, sustainable and knowledge-based will allow us to progress.

Challenge: *To restore the appreciation of the industrial and productive culture in schools, universities and society in general.*

Actions: *To help overcome this challenge, the following measures are proposed:*

13. Students should want to be trained to be entrepreneurs or innovators. Vocational training should be at the same level and have the same recognition as upper secondary school education; the new disciplines of innovation (open innovation and co-creation) must be incorporated in training plans to equip students with these tools.

14. Specific plans for communication and information to citizens and society must be designed in order to make them aware of the advances and benefits of innovation and its role in the development of our country.

15. It should be seen that research and innovation are part of the Government's action through the President's scientific and technological adviser.

Closing ceremony of the Festival of Science, Technology and Innovation, Parliament of Catalonia, on June 20, 2014. (Source: CAPCIT)

