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KIM Trends

'Tech transfer': transferring technology to make it more profitable


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Tech transfer (TT) ensures that technological advances are not left in universities or institutes but can instead be used and accessed by the greatest number of users.

In Spain, it is mistakenly viewed as an investment in science rather than an investment per se, making the increasingly necessary process more cumbersome and less strategic.

Experts agree that the current model needs to be revised to give visibility to the role of these intermediaries and international networks need to be created to achieve efficient collaborative processes that promote the development of various aspects of society.

Technological mediators are essential in R+D

Having reached this stage in the digital age, technology transfer or tech transfer has become a hot topic in general, including in Spain. So, we did not want to miss the opportunity to launch a wide-ranging debate on **its current situation in our country** at the **KIM Conference 2015**.

t is undeniable that technological mediators are very necessary to society, as they are able to transfer knowledge, skills, technology, manufacturing methods, etc., and to ensure that a large number of users can use and develop the latest inventions. However, expert speakers wanted to talk about the next steps. There needs to be a **change in the transfer model** to **elevate the role of experts in TT** and strengthen collaboration between all stakeholders, such as universities and companies, via Public Administration.

According to the experts, the next target for TT in the business environment therefore lies in achieving **better**

"A great scholar is equally as important as a great transferor of technology. They have to be so for advances in innovation to take place"

-Marc Ramis

cooperation between science and business, so that stakeholders can approach researchers and convey their real needs, and in turn, researchers can develop their talents and research for a more responsive and involved business environment. Another objective is to **maintain a level of more informed and less improvised cooperation** than that which currently takes place. To this end, all stakeholders need to **achieve a common strategic vision**, whilst always starting with a clear definition of what is meant by the transfer of technology and what is expected of it.

The problems

The current state of technology transfer in Spain merits a great degree of reflection on the subject, to help identify the next steps, based on the current difficulties. According to experts consulted by **KIM Global**, the main **difficulties** that need to be overcome in order to achieve advances in the area of transfer are the following:

Misinformation about TT

In Spain, there is a misconception that technological transfer is used to fund science, when the **transfer should be considered as an investment in itself** that is capable of benefitting multiple sectors of society.

"Technology transfer is an investment in terms of development rather than a means of paying for science"
-Reimund Fickert

Mediators and the blurring of TTOs

As a result of this misinformation, experts in the field do not have sufficient influence or adequate support. Yet the figure of an expert or entity respected by both academia and business could be a solution for mediating, recognising opportunities and proposing specific projects. Secondly,

the debate highlighted the need to redefine the role of **technology transfer offices (TTO)** in Spain, to reduce their red tape and administration, and to get them to fully engage in implementing effective TT projects.

An infertile business environment

"What we are lacking is a real expert who is capable of identifying opportunities and knowledge, who is respected by both parties and who takes on the role of proposing the transfer project".
-Xavier Marcet

As a result of the recent re-industrialisation process undertaken by the Spanish economy, there has been a reduction in the number of companies that have a real capacity to take on the transfer of existing technology[1]. And it has become more necessary than ever **to strengthen the role of the business environment as an adopter of technology transfer**. The new channels have to ensure the participation of all stakeholders as "key players" to generate opportunities for a "transfer market".

An improvised and inefficient model

According to the authors taking part in the debate, there is a lack of coordination between the stakeholders involved in TT, and the current processes are based on improvised, isolated and inflexible actions.

So it is important to develop a new common long-term vision, to establish **more informed and efficient models of collaboration**, to ensure a **direct connection between businesses and universities, and to simplify the laws**, all in the search for more agile process to transfer technology and market innovation.

"It is important to define a strategy that allows companies to take on the country's technological transfer, without being limited to government funding".
-Marc Ramis

Based on the views expressed by the experts, one can identify **three sources of problems for the current TT**, as shown in the following table:

1 According to the Report on the status of R+D in Spain and its impact on competitiveness and employment for 2012, the percentage of innovation companies that benefitted from closer collaboration with universities was 9.1% in Spain, significantly below the EU-15 average of 13.1%.

In addition, significant differences can be seen, depending on a company's size, with large companies being significantly more willing to collaborate in innovation with universities (23%) compared to 8.4%.

ACADEMIC ISSUES

- TT experts have little influence over academic curricula
- Traditional views which are far removed from the marketing of research
- TTOs have too much red tape and lack flexibility
- A very localised view of transfer markets

ADMINISTRATIVE ISSUES

- Lack of a common strategy
- Limited long-term vision of TT processes
- Complexity of laws
- Model based on the dichotomy of innovation logic ≠ research logic
- Underinvestment in the productive and commercial infrastructure for TT

BUSINESS ISSUES

- Tendency to improvise TT processes
- Difficulties in absorbing technology transfer
- Under-use of international networks
- Reduced business base participating in TT
- Limited development of the venture capital market
- Limited participation in international networks

"There is no current alignment in our views of what is necessary in the process of transferring technology"
-Pablo Cironi

It is the opinion of the authors of this article that these business, administrative and academic issues should be dealt by developing and implementing specific, concrete measures that target their root causes.

However, these measures should be seen as an integrated and holistic effort that approaches the problem from all different angles and that considers all those involved in the transfer chain at all times.

ISSUES FOR DEBATE

1. How should the TT model be transformed within the Administration?

2. How should all the stakeholders be conceptually aligned?

3. How should the process be developed so it does not remain on a local level?

4. How can a long-term, common strategic vision be encouraged?

5. How can the chances of interaction between stakeholders be increased?

6. How can the intermediary be strengthened and afforded the value they deserve?

KIM Recommendations

Whilst considering these objectives, the experts consulted by KIM have formulated the specific recommendations for direct and streamlined implementation presented in the following table:

1. Review the governance model

The current model of technology transfer is based on the dichotomy of innovation logic ≠ research logic. According to this model, the TT is viewed as a model of funding science and not as an investment in itself where future profitability would follow. The introduction of values and private management models to this process should be viewed as an opportunity to strengthen the whole system.

2. Specific training

The strategic vision and long-term transfer process requires a common approach from all the stakeholders. To prevent the process being founded on improvised, isolated actions, it is essential that all stakeholders have a detailed knowledge of all phases of the process. It is therefore advisable to develop cross-cutting, integrated training models and processes.

3. Opt for a model that combines global and local visions

The current technology transfer model has a focus on "localising" the process. Both companies and academic institutions focus on identifying supply and demand in their immediate surroundings. However, this process is not accompanied by the identification of supply and demand which facilitates the provision of global services and is not confined to a single potential market. In this regard, promoting "glocalisation" in technology transfer should be viewed as an opportunity to enhance its development.

4. Incorporate the strategy throughout the architecture of the system and the transfer model

As mentioned above, technology transfer processes have been hampered by a limited common strategy and long-term vision. It is therefore important to incorporate a joint, long-term strategic vision throughout the whole architecture, by involving all stakeholders in the process of technology transfer, as well as providing smaller companies and sectors with access to transfer processes and adapting the process to industry needs.

5. Creating, consolidating and maintaining international networks

It is clear that the success of technology transfer processes lies in efficient collaborative processes and interaction between a variety of stakeholders. Creating and maintaining international networks ensures smooth interaction and cooperation between such stakeholders and ensures that the three key components of the process are present: Observers (stakeholders who see and know the needs of the market), Perceivers (stakeholders who listen and advise on transfer opportunities) and Evaluators (those who offer their opinions on and discuss the market). The use of resources provided by these stakeholders, through participation in international networks, is critical to the success of the process.

6. The role of intermediaries

Intermediaries and experts in technology transfer play an important pivotal role amongst the various stakeholders in the process. Their knowledge of the market and interaction with local and international stakeholders help to streamline, simplify and ensure the chances of success in the technological transfer and marketing processes. Reinforcing this role is essential for strengthening the transfer chain. How do you elevate the role of the TT expert, increase their profile in the system and increase their influence in university curricula? It involves strengthening the expert's technical skills as well as their language, communication and science/industry public relations skills.

Autors

KIM would like to thank the experts whose opinions and knowledge have made the preparation of this report possible:

Moderator

Xavier Marcet *LTCproject*

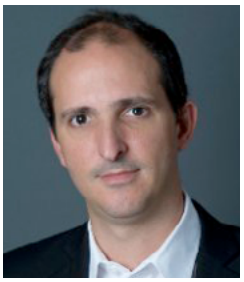
President of the Lead To Change (LTC Project), a strategic innovation consultancy firm based in Barcelona, Madrid, Boston and Santiago de Chile. Throughout his career, Marcet has presided over the start-up Innovative Protect Textiles (2010 – 2014) and has served on the boards of Aguas de Terrassa and the social e-commerce company, Worldcoo. He is currently president of the Barcelona Drucker Society and was formerly the president of the Think Tank, Barcelona Breakfast. For the past 10 years, he has regularly participated in the "Economia i Empresa" radio show on "Catalunya Informació".

Speakers

Manel Balcells *LEITAT Technological Centre*

Manel Balcells holds a PhD in Medicine and Surgery from the Autonomous University of Barcelona (UAB) and is a specialist in Orthopaedic Surgery and Medicine in Physical Education and Sport. He holds a Diploma in Healthcare Management from EADA Business School and from PASE-IESE Business School. He was the Medical Director at the Hospital General de Granollers, worked as the Strategy and Coordination Director for Catalonia's Health Department, and was Minister of Universities, Research and the Information Society. He was also the CEO of BioCat and Area Director of "Conocimiento Consorcio Sanitario de Terrassa". He is the current Strategic Director of RDI for the CST group - Consorcio Sanitario de Terrassa – on the Health Commission at the Leitat Technological Centre, a CASOST member, and a member of the Advisory Board for Sustainability and Progress in the Health System.

Pablo Cironi *Center for Genomic Regulation, CRG*



He holds a Degree in Chemistry from the University of Buenos Aires, and a PhD in Organic Chemistry from the University of Barcelona. From 2005 to 2009, he was a Fulbright Postdoctoral Fellow of Systems Biology at Harvard University. In 2009, he joined the Botín Foundation as a Senior Manager of Innovation and Technology Transfer, moving in 2013 to head the Department of Technology Transfer for the Genomic Regulation Centre in Barcelona.

Enric Claverol *The Catalan Foundation for Research and Innovation*

He holds a Degree in Advanced Telecommunications Engineering from the Polytechnic University of Catalonia (UPC), and a PhD in Electronic Engineering and Computer Science from the University of Southampton (UK), as well as a PDP Business Management from ESADE Business School. He graduated in Fund Management research, and has extensive international and business experience, as well as skills in connecting public scientific projects to private industry. He also managed the Institute for Bioengineering of Catalonia.

Reimund Fickert *Barcelona Biomedical Research Park, PRBB*

Project Manager for the Barcelona Biomedical Research Park since 2003. He has been a Lecturer on the Masters course in Management and Management Science at IDEC - UPF. He holds a PhD in Molecular Genetics from the Institute of Genetics at Cologne University. Throughout his career, he has gained experience working for public relations agencies in Germany, has served as a spokesman for the pharmaceutical company, Rhône-Poulenc Rorer, and has worked as an administrator for a research alliance in gene therapy. He is a founder of Bio-Med Visions S.L., working as a business consultant specialising in biotechnology.

Oscar Flores *Genomcore*

He holds a Degree in Computer Engineering from the Polytechnic University of Catalonia, a PhD in Biomedicine from the University of Barcelona and an MBA from ESADE Business School. Over the past six years, he has researched aspects relating to Epigenomics in the Molecular Modelling and Bioinformatics Group, a joint programme between the Institute of Biomedical Research of Barcelona (IRB) and the Barcelona Supercomputing Centre (BSC). He is the founder and CEO of the start-up, Genomcore, dedicated to the management and analysis of genomic data.

Katarzyna Opalińska *Maritime University of Szczecin*

As a graduate in Economics and Public Relations from the West Pomeranian Business School, she developed her expertise in the Ministry of Regional Development at the Maritime University of Szczecin through her own projects. She has acted as a spokesperson and events organiser for Dominika Hirsch International Spain, as well as being an SMEs Adviser on brand building and risk management. In addition, she is responsible for tech transfer and is a specialist in the relationship between businesses and education.

Marc Ramis Castelltort *Tech & Business Innovation, TBI*

General Manager for Technology and Business Innovation, an academic partnership focused on the exchange of knowledge and academic and corporate partnerships. He is a manager, co-founder and advisory member to several organisations and businesses. He has served as an Associate Consultant in Spain and Latin America for Isis/University of Oxford, and has been responsible for R&D and business development for the nanomedicine company, Endor. He has collaborated with research institutions such as Cancer Research UK and Boston University. He holds a degree in Chemical Engineering and a PhD in Biochemistry from the University of Oxford (2006). He graduated from the Harvard Business School PLD Programme in 2011.

José María Viedma Martí *Intellectual Capital Management Systems*

He holds a PhD in Industrial Engineering, a degree in Economics and is president of Intellectual Capital Management Systems. He is a founding member of M.A. Fusiones y Adquisiciones, and is a Professor Emeritus at the Polytechnic University of Catalonia. He has been a worldwide pioneer in the management of intangible assets and intellectual capital management, and has made unique contributions in this field, not only in the theoretical sphere but also in practical applications.