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STRATEGIES FOSTERING THE CROSS-FERTILIZATION OF NANOTECHNOLOGIES TO LEVERAGE INNOVATION IN HEALTHCARE

Cristina Paez-Aviles[a], **Esteve Juanola-Feliu**[a], **Josep Samitier**[a,b,c]
[a]University of Barcelona, Spain
[b]IBEC-Institute for Bioengineering of Catalonia, Spain
[c]CIBER-BBN-Biomedical Research Networking Centre in Bioengineering, Spain

The current aim to successfully overcome the valley-of-death for emergent technologies is leading to the reassessment of several priority action lines in technological-based public policies. In this regard, Horizon 2020 is fostering the cross-fertilization of Key Enabling Technologies (KETs), considered strategic for the economic growth of Europe. The relevance of this convergent process lies on the improvement or creation of new unique product properties or technology features, which could not have been obtained with a single technology. In the field of healthcare, this scenario could strongly change the healthcare landscape by improving biomedical systems offering personalized, less invasive, smart oriented, and energy harvesting solutions.

The present work analyses several strategies developed in EU-funded nanotechnology projects with healthcare applications in order to identify those characteristics that foster the cross-fertilization of KETs. For that end, the composition and structure of the innovation ecosystem was analysed, as well as the absorptive capacities and dynamic capabilities of five different types of participant organisations. Network and text mining techniques were complemented with interviews of project leaders. Principal findings showed that the degree of clustering of the network as well as the technological diversity of projects are important factors to consider in order to foster the successful cross-fertilization in nano-related projects.

Additionally, it was evidenced that cross-fertilization of KETs is being boosted by organisations that apply of nano-related knowledge in their processes, highlighting the importance of enhancing the capacity to absorb external knowledge, and the ability to integrate and reconfigure this knowledge and competences in a changing environment. These several contributions have scope to diverse organizations involved in the sector and that aim to foster the interdisciplinary integration of technologies and collaboration in healthcare. This study could also guide policy makers for reshaping and improving nanotechnology related priority lines and health economic policies.

Biography

Cristina Paez Aviles has a doctoral degree on Nanosciences from the University of Barcelona, Spain. After obtaining her degree as Biotechnology Engineer by the Army Polytechnic School ESPE in Quito-Ecuador (2012), she went to Barcelona to complete her Master degree in Pharmaceutics Industry and Biotechnology from the University Pompeu Fabra (2013). Her research is focused on the processes and ecosystems of innovation, challenges of technology transfer and commercialization for Nanobiotechnologies and Nanomedicine with a multi-KET approach in European and Latin American regional innovation systems. Additional research interests include innovation in medical devices, entrepreneurship and innovation in developing societies.

cpaezeviles@el.ub.edu

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