



## Industry-Academia collaboration

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In today's competitive economic environment, the need of being open and staying connected with the eco-system actors has become crucial for firms' performance (especially for science-intensive companies)<sup>1,2</sup>. Particularly, collaboration with universities has proved itself as an instrument for companies' generating radical innovations – products/services that are novel to the market<sup>3</sup>. However, several barriers like differences in organisational culture and internal characteristics keep the university-industry collaboration particularly challenging<sup>4</sup>.

On the other side, universities and other HEIs in Europe are operating in an increasingly competitive environment where they need to cater to diverse stakeholders. Research evaluation increasingly considers the impact of university research outside academia. Thus, the universities and HEIs are increasingly expected to develop links with the business community. At the same time, SMEs need to improve their skills and knowledge base so that they can develop their innovation capabilities and improve their competitiveness. Universities and other HEIs seek links with large businesses for reasons of prestige and possibly access to funding. Hence, the links between university departments/research centres and SMEs may have been side-lined although they can be beneficial to both sides (Piterou & Birch2 2014). The term university here means the universities and their associated/local colleges and schools. In any case vocational colleges are key actors. Many universities have established their own colleges and work closely with vocational providers to support the industry, for instance, the apprentice scheme, especially higher apprentices, has provided a golden opportunity in the UK to link the two world of academia and work together.

Employability is emerging as a key concern in Higher Education policy (Pedagogy for Employability Group 2012). It is suggested that the development of stronger industry links can enable HEIs to improve the employability of their graduates. However, it has been identified by Karlsson, et.al 2007 that academics working with SMEs face hindrances within existing structures. Simultaneously, SMEs need access to external expertise so that they can improve their knowledge base and their long-term competitiveness. Increased collaboration between SMEs and HEIs can help foster the innovative potential of SMEs and at the same time enable HEIs to improve the employment prospects of their graduates.

In many publications going back to EU's first network of innovative projects (Eurotecnet) Ziarati (Chair of C4FF, and Eurotecnet Director of Factories of the Future Project) in 1994 suggested that business-academia collaboration could help SMEs to enhance their capacity to innovate and become more competitive (EU's People and Technology conference, UK, 1995). The need to develop an online space for academia-business collaboration has been acknowledged globally

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<sup>1</sup>Chesbrough, H., & Eichenholz, J. M. (2013). Open innovation in photonics. *SPIE Professional*, 8, 24-25

<sup>2</sup>Hung, K. P., & Chou, C. (2013). The impact of open innovation on firm performance: The moderating effects of internal R&D and environmental turbulence. *Technovation*, 33(10), 368-380.

<sup>3</sup>Belderbos, R., Carree, M., & Lokshin, B. (2004). Cooperative R&D and firm performance. *Research policy*, 33(10), 1477-1492.

<sup>4</sup>Galán- Muros, V., & Plewa, C. (2016). What drives and inhibits university- business cooperation in Europe? A comprehensive assesment. *R&D Management*, 46(2), 369-382.



and on an EU level<sup>5</sup>, and now, at the age of interconnectivity, it's time to turn an idea of such a platform into reality.

The article aims to create an effective framework of partners to support business-academia collaboration with several tools and services which will allow companies to launch innovation challenges to the HEIs so the students can contribute with their ideas. By bringing businesses and HEIs together, European companies can benefit by accessing cutting-edge research, high-tech infrastructure and highly skilled people, while universities will get an opportunity to develop their applied research and demonstrate the impact of their work.

#### **Technological Objectives:**

- Creating a new methodology for enabling systematic business-academia collaboration to support the innovation processes.
- Designing and developing a cloud-based collaboration platform that will implement as services the concepts arisen in UniBus methodology.
- Design and development of Grading framework that will provide guidelines on how will the HEI assess and give credit for students' work carried out on the platform and how will companies assess the ideas/solutions proposed by students.
- Assessing and validating the methodology and platform with participating HEIs and partner SMEs. The UniBus partner SMEs will present business scenarios, which will deal with different views of innovation within any organization: Innovation for Management Improvement, Innovation for Product Improvement/Creation etc. During the assessment, different pre-defined indicators will be captured to quantify results.

#### **Business Objectives:**

- Defining 5 business challenges (BCs) at each SME (a total of 20 BCs will be proposed). Each BC will set the focus on different areas of the value chain, identifying specific business objectives to achieve using UniBus methodology and platform. The fulfilment of these objectives will be measured by means of specific indicators.
- Supporting the innovation processes in SMEs anywhere within the value chain.

#### **Socio-Economic Objectives:**

- Generating awareness about the importance of business-academia collaboration in the actual socioeconomic context in 100 SMEs and HEIs directly related to the organisations participating in the preparation of this article.

Every HEI in Europe has their own unique practices to collaborate with business. Therefore, it is important to form the proposed consortia transnationally to avoid any bias in the intend framework/consortia.

#### **Why - Framework/consortia innovative and/or complementary to other similar networks already in place?**

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<sup>5</sup>Debackere, K., Andersen, B., Dvorak, I., Enkel, E., Krüger, P., Malmqvist, H., ... & Vermeulen, E. (2014). Boosting open innovation and knowledge transfer in the European Union, Independent Expert Group Report on open innovation and knowledge transfer. European Commission, Directorate General Research. Luxembourg: Publications Office of the European Union.



Academia-Business collaboration has been the subject and focus of attention for many years on several levels. This article came about as a result of an article in MarineDeal (reporting on an article from the Chair of C4FF in July 2013 edition, issue 67, pages 32-33) arguing that universities should be a centre of excellence in what they teach and to do this they must create opportunities for their students to be involved with the real world of work in their projects and should be given opportunity to support industry and commerce.

There are many examples of initiatives that have nurtured student entrepreneurship and encouraged graduate employability in SMEs (such as ICT21S and Aalto's IDBM programme); however good practice from these examples has not been widely disseminated. The researchers have also argued that there is no single model of effective collaboration (Mike Alderson, 2014), and few are generally applicable solutions to the barriers that challenge interaction.

A study of university-business cooperation in Europe by Science-Business Innovation Board AISBL has found only a few evidences of business-academia collaboration. This statement was further proved by a study of TNS Political & Social in 2014, which revealed that 82% of total participants' companies did not get any contribution from universities or research institutions in their innovation activities. And when universities in Europe form partnerships with industry, too often the potential for synergy is thwarted by failures of communication.

Several software and services for both idea management and university-industry collaboration do currently exist. However, when it comes to technical characteristics of the existing solutions, those are missing integration across different functions – from partner search, to idea collection, idea categorization, assessment, analysis and management specifically in the educational context. For instance, the EduSourced platform provides the project management tool, but it is missing the idea management component. At the same time, NimbleBee platform supports idea sourcing among students, but when it comes to idea assessment, the automation component is still missing. Particularly, even though in the NimbleBee platform allows idea collection and all the data exchange, the actual assessment is done by the companies and end-users keeping the process time consuming and relevant for large-scale projects (within a half a year university course), while small-scale challenges are not in the platform scope. UniBus in response to these drawbacks of the current state-of-the-art aims to develop a platform with a flexible scheme of challenges to be processed: from quick brainstorming and express idea assessment and grading to long-term research projects and related iterative idea management procedures involved.

In term of technology, the intended network is proposing to adapt platform and methodology of existing FP7-ICT research project called ExtremeFactories (Project reference: 285164). The project has successfully demonstrated its ability to boost and manage innovation processes in an agile manner within networked manufacturing SMEs.

The network aims at having a positive impact on both confidence and skills of European youth by enabling:



1. a platform where real enterprises (big or small) and students meet, so the companies can provide students with first-hand knowledge about the real needs of the market, reducing the high risk of technology push business ideas. Companies can also use the platform to launch challenges to the students and to establish incentives for those who solve the challenges.

2. a platform that educators and mentors in entrepreneurial skills can use as a support of their daily teaching activity, from which they can stimulate students to collaborate in real business contexts and follow-up all the process, from the ideation of a start-up/business idea to its implementation or launch to the market.

The network ambitions are aligned with the European Development Programmes and their expected impacts. Particularly, in relation to ERASMUS Plus initiatives the project aims at making education more relevant to the labour market needs with means of enabling students to get experience of working on real business challenges, increasing ICT in learning, making the knowledge Triangle work. In addition to this, the project is also in-line with EU's key "Europe 2020" initiatives proposed by Innovation Union which are strengthening Europe's knowledge base via Business-Academia Collaboration and Innovation Partnerships. Furthermore, this cross-collaboration is also beneficial for the Academia, since they will also be able to use the tool to build new capacities in the students (and evaluate them by means of a specific methodology) oriented to boost innovation within companies.