
Editorial: Reflecting on the status quo of university-business collaboration in Europe: an overview of current trends and challenges

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1 Background

Collaboration between universities and businesses, in the following referred to as ‘university-business collaboration’ (UBC) has been increasing in relevance (e.g., Healy et al., 2014) for a number of several reasons. For instance, while universities depend on additional third-party funding for their activities and, therefore, for their long-term existence, businesses are in need of external knowledge and innovation-related support to deal with the increased competitive pressure to innovate (e.g., Caldas and Ataíde Cândido, 2013; Hewitt-Dundas, 2012; Michl et al., 2013).

In addition, universities are expected to contribute to societal development by collaborating with partners in the private and public sectors and related activities, particularly with respect to providing knowledge and technologies for solving practical problems and ensuring continuous economic growth on a regional level and beyond. The literature entitles this type of social involvement ‘Third Mission’, i.e., a further task of universities in addition to the traditional core missions teaching and research (Brescia et al., 2016; Etzkowitz and Leydesdorff, 2000; Perkmann et al., 2013). Thus, considering the potential and factual contributions of UBC to societal development, it becomes obvious that such collaboration offers valuable opportunities for all actors involved. From a systemic perspective, universities, businesses and government form a ‘Triple Helix’, i.e., a constellation of collaboration with overlapping tasks (Etzkowitz, 2008).

To shed more light on current trends and challenges in the context of European UBC, we took the opportunity of the 2014 University-Industry Interaction Conference to prepare this special issue. This conference took place in Barcelona, Spain, and was hosted by the University Industry Innovation Network (UIIN), which cooperated with the Catalan Association of Public Universities (ACUP) to organise this event. The UIIN was established in 2012 and is situated in Amsterdam, Netherlands. It is an international network dedicated to bringing together academics and business professionals to promote inter-organisational interactions and collaborative innovation (UIIN, 2016). The University-Industry Interaction Conference therefore provided a well-established platform for this special issue, which highlights the European view on UBC with respect

to trends and challenges by analysing the status quo of collaboration between academia and business practice from multiple perspectives at both the macroeconomic and the microeconomic level. Based on the contributions and their findings, the special issue aims to provide an in-depth, thorough and more diversified understanding of UBC in Europe. This serves to contribute to shed more light into the phenomenon from both a research and a practical perspective, making the phenomenon of UBC more transparent and supporting the decision-making processes of UBC managers and policymakers.

This special issue editorial starts with an introductory overview featuring background information on UBC in Europe, followed by an overview of contributions featured in this issue. It concludes with a summary and outlook.

2 Introduction: UBC in Europe

In times of increasingly dynamic environments and progressing globalisation, both universities and businesses are facing enormous challenges. In fact, Europe has been experiencing considerable new developments concerning economy, research and education within the last years, which have been contributing to raise the relevance of universities as knowledge providers (Etzkowitz, 2008).

In the broadest sense, UBC comprises any kind of interaction between higher education institutions (HEIs) and business for mutual benefits (Mindruta, 2013). Such collaboration may involve numerous activities differing in length of time and complexity, such as contract research, collaborative research or academic consulting as well as real-life business projects carried out by students as part of their academic education (problem-based learning) (Abreu and Grinevich, 2013; Perkmann et al., 2013; Rossano et al., 2016).

The notion of a more organised and formal collaboration between universities and businesses is a relatively recent phenomenon (Wissema, 2009). Moreover, it is increasingly a global one, although it still remains more common in developed countries (Teixeira and Mota, 2012), where HEIs and industry are more sophisticated, research-focussed and interconnected.

The importance of UBC to European HEIs gathered momentum in the mid-1900s, primarily as a result of government and business funding of HEIs, which placed pressure on HEIs to justify a return on investment for these stakeholders, and society in general (Breznitz and Feldman, 2012; Wissema, 2009). Despite this growing cooperation, it was not until the 1970s to 1980s that more extensive cooperation began, primarily in the form of collaborative research and commercialisation (Mowery, 2011) and that the principles for the so-called ‘third generation universities’ emerged (Wissema, 2009), which added the ‘Third Mission’ to the established missions of teaching and research. The past 30 years have seen the further strengthening of the ‘Third Mission’ for HEIs worldwide. However, while the Bayh Dole Act established in 1980 in the USA was a major inflection point (Aldridge and Audretsch, 2011), in Europe, the evolution has been more gradual, with policies at national and European level slowly incorporating a higher degree of engagement. Thus, the role of HEIs has been slowly evolving since their foundation period (Breznitz and Feldman, 2010; Etzkowitz, 2001).

The ‘Third Mission’ requires HEIs to increase the relevance of innovative new discoveries, develop new ways of educating students better aligned with the needs of

businesses and find ways to make a greater contribution to society. The importance of UBC for HEIs nowadays resides in the fact that HEIs consider it a potential source of extra funds (Santoro and Chakrabarti, 2002), a way to gain access to industrial knowledge (Arvanitis et al., 2008) and eventually increase their reputation (Ahrweiler et al., 2011), among other motivations. Additionally, through cooperation and symbiosis with other 'Triple Helix' actors (Etzkowitz and Leydesdorff, 2000), HEIs aim to establish win-win situations that provide benefits for all the stakeholders and contribute to the social and economic development of the whole society (Laukkanen, 2003).

Some of the most innovative initiatives that HEIs have established in order to reach that objective include: integrating an entrepreneurial culture throughout the HEI (Gibb and Hannon, 2006), engaging business people on the boards of HEIs (Plewa et al., 2015), stimulating strengthened academic research units and independent, strong and efficient managerial units with the aim of functioning as centres for enterprise formation (Etzkowitz, 2001) or creating lifelong learning programs for providing business people with new or updated skills (Healy et al., 2014). To answer the question of what have been the forces behind these recent activities will require a closer review of relevant literature.

Not only HEIs, but also the other two Triple Helix actors, namely businesses and governments (Etzkowitz and Leydesdorff, 1995), have become increasingly aware that through collaboration they can achieve mutually beneficial win-win situations and results that they would never be able to achieve individually. HEIs have received large sums of public funding giving rise to an growing need for accountability and an efficiency in utilising those funds. The motivations behind the collaboration efforts of each actor are diverse; however, for one reason or another, each actor considers UBC an important topic on its agenda (Galán-Muros and Plewa, 2016).

Businesses are motivated by other factors to focus on UBC. They proactively look to engage in UBC for a variety of reasons, such as having access to the latest knowledge (Rothaermel et al., 2007), researchers (Perkmann et al., 2013) and students (Jünger, 2013) while sharing R&D risks and expenses (Bekkers and Bodas Freitas, 2008) along with reducing the cost of recruiting (Strunz et al., 2003) and training (Shahabudin, 2006).

With mounting pressure on HEIs to become poles of potential economic and social development in collaboration with businesses, UBC has also become important for governmental bodies and society in general (Geuna and Muscio, 2009). To encourage collaboration, a range of initiatives and incentives has been launched to benefit both HEIs and business to encourage their cooperation as governments simultaneously look for increasing the return on public investment in R&D (Siegfried et al., 2007). The ultimate aim of these ventures has is to promote the development of a knowledge society (Lubango and Pouris, 2007) and overcome some of the major problems currently affecting Europe.

Finally, UBC is a mean to tackle some very relevant societal problems characteristic to European countries, which justified its importance for the society as a whole. One of them is the related with the high unemployment rates, especially youth unemployment (Eurostat, 2015). UBC has the potential to create jobs at all levels, for instance, by creating new technology-based companies (Etzkowitz, 2001), increasing innovation output, upskilling business employees or educating highly skilled future employees or graduates (Gibb and Hannon, 2006; Razvan and Dainora, 2009; Storm, 2008).

Another serious issue that can be addressed by UBC is the lack of competitiveness of many European regions (OECD, 2015). To enable them to recover and advance towards becoming knowledge societies, more innovative and efficient ways to connect science,

talent, technologies and markets, with HEIs as a key stakeholder (Dowling, 2015), often led by an ‘entrepreneurial state’ (Mazzucato, 2011) with science, technology and innovation policies that place UBC at the core to create regional innovation ecosystems (Etzkowitz and Leydesdorff, 2000)

Therefore, due to the justified importance of UBC for all stakeholders involved individually and organisationally along with its key contribution to tackle some essential challenges in the society, the UBC research field and the UBC practice are expected to grow in the future and this special issue aims to contribute to that growth increasing the understanding of the process and influences of the UBC phenomenon. The countries of Europe are faced with the need to recover from the current economic and financial crisis and become knowledge societies. The Europe 2020 Strategy (2016) targets employment, R&D, climate change and energy, education, poverty and social exclusion topics, but they can all be tackled through UBC to remain competitive through ‘smart, sustainable and inclusive growth’ (Europe 2020 Strategy, 2016).

3 Contributions to this special issue

Martin Gjelsvik’s contribution, ‘Universities, innovation and competitiveness in regional economies’, deals with the co-evolution of university strategies and regional development paths using the example of Norway. In his study on Norwegian universities and firms, the author identifies four types of regional development paths, namely new path creation, paths new to the region through transplantation from elsewhere, path renewal through diversification into related industries, and path extension through upgrading of existing industries. He finds that the role universities assume in the course of this development depends on the industrial transformation taking place in the region in question.

Written by Kärt Rõigas, Pierre Mohnen and Urmas Varblane, the article ‘Which firms use universities as cooperation partners? – A comparative view in Europe’ provides a comparison of the determinants of university-industry cooperation in 14 European countries, hereby putting particular emphasis on firms that cooperate with either domestic or foreign universities. In addition, the research identifies country groups which differ concerning core parameters relevant for university-industry cooperation.

In their article entitled ‘A benefit segmentation approach for innovation-oriented university-business collaboration’, Tobias Kesting, Wolfgang Gerstlberger and Thomas Baaken develop a novel multi-step segmentation framework aimed at fostering and improving the underlying conditions of UBC using the example of technical textile businesses in Germany, Belgium and the Netherlands. The framework aims at supporting innovation-based collaboration by providing a better fit and matching between innovation support offered by universities and innovation needs on behalf of businesses, thereby contributing to the development national and trans-national innovation systems.

In their article entitled ‘Industry-university collaboration and absorptive capacity: An empirical study in a Swedish context’, Thomas Biedenbach, Agneta Marell and Vladimir Vanyushyn focus on the moderating role of Swedish firms’ absorptive capacity on their innovativeness in the context of industry-university collaboration. The study findings indicate that higher levels of absorptive capacity result in increased innovation-

related benefits, particularly for firms located in sectors with a lower degree of technology and knowledge intensity.

Nico Kreusel, Natalie Roth and Alexander Brem focus on ‘European business venturing in times of digitisation – an analysis of for-profit business incubators in a triple helix context’. Their article provides a detailed analysis of business incubators in Germany and develops and derives different types and elaborating a set of classification criteria. Further, the authors reflect their findings in the light of the Triple Helix concepts by analysing the Triple Helix dimension effects on the types of incubators. The study eventually derives concrete implications, in particular of how to make better use of existing UBC potential for promoting incubators and considering the internationalisation of their activities.

4 Summary and outlook

As illustrated by the overview of the contributions provided above, this special issue focuses on a variety of UBC aspects and, therefore, gives readers a diversified view on UBC trends and challenges in Europe from both a macroeconomic and a microeconomic perspective.

Gjelsvik emphasises the Third Mission of universities and provides a holistic analysis of UBC in the context of regional development issues. Rõigas et al. extend the view from a regional to a national level and beyond, analysing UBC from an intranational and a transnational perspective. Relying also on a transnational focus, Kesting et al. shift the emphasis towards the organisational level, focussing on specific benefit perceptions of businesses collaborating with universities. The study identifies clusters of differing needs regarding UBC and how UBC partners may more easily come together. The article of Biedenbach et al. goes one step further and analyses the firms’ absorptive capacity in the UBC context. Completing the diversified view on UBC in Europe, Kreusel et al. focus on different kinds of business incubators and derive measures on how policy initiatives on a European level may contribute to fostering internationalisation of incubators and their start-ups, as well as a better exploitation of unused UBC potential in the light of the Triplex Helix concept.

In summing up the focal areas and findings of the papers featured in this issue, it becomes obvious that diversity is in fact the underlying trend in the context of UBC in Europe. This diversity can further be categorised into several sub-trends, such as diversity at a system and policy level, on an organisational level and on an individual level. The high relevance of diversity becomes even more obvious in the light of transnational UBC in Europe, as additional issues with respect to cultural particularities, legal aspects and other country characteristics must be considered when aiming at successful and beneficial collaboration on each level. It is therefore evident that a ‘one size fits it all’-approach is no appropriate way the adequate way of dealing with challenges in the context of UBC. Instead, the challenges arising from diversity at a regional level and at a national level (Rõigas et al.; Gjelsvik) as well as on an organisational and individual level (Biedenbach et al.; Kreusel et al.; Kesting et al.) require specific measures and activities on a policy level, at a policy level, at an organisational level and at an individual level. Triple Helix represents the systemic view on UBC (Etzkowitz, 2008). In the light of the Third Mission, universities are expected to contribute to societal progress and are regarded as predominant protagonists in Europe’s knowledge society (Etzkowitz, 2008; Perkmann

et al., 2013). On an organisational and individual level, UBC activities typically develop and increase in complexity over time. They typically start as a result of being promoted by individuals from academia and business practice (e.g., professors and business managers) and gradually develop towards the organisational level, involving a larger number of actors, financial means and time (Dottore et al., 2010).

Reflecting on the findings provided by the contributions of this special issue, the following avenues for future research can be suggested: Firstly, there being few studies on transnational UBC research which focus in detail on the linkages and particularities of the actors involved, there is a need for additional research adopting an explicit transnational perspective in Europe. Secondly, the individual steps towards initiating, developing and strategically embedding UBC deserve further attention. This particularly includes the intra- and interorganisational levels as well as the more global Triple Helix view. To better understand how UBC relations come to exist and how they are conceptualised may help to make better use of their unused potential and promote further economic regional and transnational development. Considering the above, a detailed study of how UBC develops over specific shorter and longer periods would enable UBC researchers to gain more insights into the specific factors that either hamper or foster such collaboration both at the organisational and the individual level. It may also be relevant to study transnational perceptions on UBC from the perspective of professors to learn about potentially differing views in comparison with business representatives. Finally, maintaining the individual perspective, further studies may highlight UBC with respect to the way it is organised by the actors, for example with respect to the understanding of such collaboration and the mind-set in the light of partnership-based collaboration and the impacts and changes resulting from the development towards entrepreneurial and engaged universities.

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