Editorial to the Special Section on: University spin-off - process and context

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University spin-offs (USOs), i.e. firms based on university research, have attracted a considerable amount of research interest in the last decades (for a review see, Grimaldi et al., 2011). Also policy makers in Europe and elsewhere have taken interest in measures to stimulate and facilitate commercialisation of university research (Jacobsson, Lindholm-Dahlstrand and Elg, 2013). Previous research has focused on issues such as typologies of university spin-offs (Pirnay, Surlemont and Nlemvo, 2003), lack of market knowledge and inferior growth performance compared to corporate spin-offs (Lindholm Dahlstrand, 1997), different forms of research commercialisation such as licensing and spin-offs (Kenney and Patton, 2009; Bengtsson, forthcoming), and the relation to university technology-transfer offices (TTOs) and incubators (Lejpras and Stephan, 2011). While we have learned quite a lot of USOs through this research some
topics are still less researched. Issues regarding process and context of USOs are less
developed in research (Wright, 2014) as well as the issues of internationalisation and
born globals (Bengtsson, 2004).

The US context of USOs has dominated prior research often using the data on
university spin-offs and licenses published annually by AUTM (2014) based on surveys
of North-American TTOs. As this research mostly have relied on cross-sectional data and
taken a university-centric view of the commercialisation of new technology, the research
gap trying to understand the importance and role of the wider commercialisation context,
and processes have increased. This special issue on USOs contributes to narrowing this
research gap in three ways. First, the three papers in the special section on: University
spin-offs - process and context in this issue, present data from countries which are less
visible in the prior USO research; Canada, Portugal, Spain and Sweden. Second, in two
of the papers the research focus is on the wider commercialisation context of USOs; i.e.
the entrepreneurial system and USOs being acquired by established firms. Third, two of
the papers have a process view of the commercialisation efforts.

The first paper by Rodríguez-Gülías, Rodeiro-Pazos and Fernández-López
investigates the relative survival rates between a sample of USOs and a matched sample
of non-USOs. This is a type of study which has been reported before based on data from
other countries than Spain, mostly more innovation intensive countries than Spain
(Wennberg, Wiklund and Wright, 2011). Spain’s university sector has a significantly
larger share of the countries’ R&D expenditure than the Northern European countries
which relies more on R&D performed in the firms. Thus, the survival of Spanish USOs
could be more vital to the country’s economic development than in Northern Europe.
However, the tradition of relatively isolated universities with limited interaction with
firms noticeable in many Southern European countries is a barrier to the efficient
commercialisation of USOs. Rodriguez-Gülías, Rodeiro-Pazos and Fernández-López
(2016, in this issue) show that their sample of USOs has a lower survival rate than the
matched non-USO sample. They also show that USOs with a larger size and access to
financial capital have a better survival rate. Thus, policies strengthening good relations
with entrepreneurial competences and increasing entrepreneurial education as well as
relations with venture capital, banks and other financial capital providers might be
contemplated by Spanish decision makers.

The second paper, by Rodriguez and Gomez, focuses on the role of the national
systems of entrepreneurship for creating USOs, comparing Canada with the Southern
European countries of Spain and Portugal. In the paper, they develop a system dynamics
model of university-industry technology transfer and academic spin-off creation. The
model stresses the importance of finding entrepreneurial competences among scientists
and consumer acceptance, i.e. favourable demand conditions in the country, for the
transferred technologies. The Spanish and Portuguese scientists are usually only focused
on producing good research and doing academic careers, while their Canadian
counterparts also have a focus on entrepreneurial opportunities and careers. Moreover,
the demand conditions for high-technology products and services are usually more
developed in Canada than in Spain and Portugal due to a larger presence of high-tech
industry in Canada. The paper also highlights the importance of nationally and regionally
coordinated policies in order to fuel and develop the national systems of
entrepreneurship.

The third paper, by Öberg investigates in three case studies how the USO’s resource
and configuration is affected by being acquired by an established firm. Öberg adopts the
USO perspective on the acquisition and how the USO gets access to a new set of resources and capabilities when being integrated into the acquiring firm, thereby possibly opening up new development paths to the USO. Öberg’s research shows that the USOs get access to additional managerial, financial and customer-related resources and capabilities but they do not lead to increased commercialisation capabilities for the USO. Instead the USO’s development of their technology becomes constrained by the acquiring firm to fit into their development plans. The same pattern is visible in all three case studies. The results are very interesting and merit further research.

Issues of systemic context and processes of USOs can be linked to Lindholm Dahlstrand, Andersson and Carlsson (2016) who argued that there is a need for a conceptual approach that, with reference to explicit micro-level mechanisms and processes of industrial dynamics, articulates the role and function of entrepreneurial experimentation in innovation systems. Entrepreneurial experimentation comprises both ‘technical’ and ‘market’ experimentation, and at the systems level, the central function of entrepreneurial experimentation is to foster creation, selection and scaling-up of innovations. Spin-offs and acquisitions are proposed as examples of micro-mechanisms that give rise to system-wide entrepreneurial experimentation. Interaction between established organisations and new innovative entrants, through spinoffs and acquisitions, is considered an important characteristic of vibrant entrepreneurial systems of innovation.

However, studies of university spin-offs tend to neglect the long time-frame that often is needed to convert scientific research into commercially viable products and successful ventures. There are usually important time-lags before university spin-offs start to grow. One potential explanation of this is that university spin-offs are better equipped to contribute to disruptive radical innovation and transformative change. The role of university spin-offs in transformative change is not a well-researched topic, and there is a need for additional, systematic, empirical studies. Lindholm Dahlstrand, Andersson and Carlsson (2016) suggested that even though the majority of technology-based new entrants are corporate spin-offs, university spin-offs appear to play a more important role for long-term renewal and transformative change.

Overall this special issue points to a promising research agenda, where USOs are further investigated in relation to issues of context and processes. The particularities of countries, regions and individual universities may in different ways affect the creation, selection and development of USOs. Moreover, while processes inside the universities’ research environments relevant for USOs have attracted some attention the longer term processes after the inception of the USO and possible university incubator period, such as being integrated into other firms and networks, are largely unchartered research territory.

References

AUTM. (2014) Licensing Survey, Association of University Technology Managers, Deerfield, IL.


