
Introduction: towards more entrepreneurial universities – myth or reality?

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It is clear that universities need to become more entrepreneurial, changing their strategies, their structures and their practices, changing their culture and helping students and faculty members to develop their entrepreneurial mindsets and entrepreneurial actions. But universities are professional bureaucracies focused on core missions and values in relation to education and research. Consequently, their ability/capacity to change and adopt new behaviours seems low. This creates a paradox and tension between what universities are and what they should be to deal with the evolutionary trends and the complexity of the world. At the same time, there is much talk of entrepreneurial universities in both the world of practice/politics and research. Much work has been done on entrepreneurial universities, and this book reflects the rich diversity of such literature. But issues can be raised about the usefulness and applicability of this knowledge. Is there a strong relationship/connection between research on entrepreneurial universities and the needs, the awareness, the policies and the strategies of universities? In other words, is the idea of an entrepreneurial university a myth or a reality? Even if we are convinced that universities must change and become more entrepreneurial, this question must be asked. We believe this book responds to the question, highlighting how universities can conceive of and implement strategic changes to better promote entrepreneurship internally and externally.

This book offers a lens through which to view entrepreneurship promotion and implementation at Higher Education Institutions (HEIs). The book also develops a body of knowledge, research and principles that can be extrapolated from case studies. It addresses issues and questions in relation to entrepreneurship strategies at Higher Education Institutions, relationships between university, industry and government, entrepreneurship education, start-up development from graduate entrepreneurs and researchers as well as the design and implementation of systems and structures dedicated to entrepreneurship.

In the first part of this introductory chapter we discuss the concept of

entrepreneurial university before developing, in the second part, the contributions of the book, introducing each of the chapters.

THE CONCEPT OF THE ENTREPRENEURIAL UNIVERSITY

In the classical model of the university, the main missions focus on research and teaching, production and transmission of knowledge within a society. In this model, the researcher is intellectually independent and his or her scientific production is a collective asset. Universities tend to advance universal and objective scientific knowledge.

The modern era acknowledges the importance of a 'Third Mission': the economic and social valorization of knowledge produced by researchers within universities, creating the need for strategies, structures and mechanisms within universities that facilitate and intensify knowledge transfer to the private sector, via various avenues: patents, licensing, and facilitating academic spin-offs and start-ups, among others. Universities also need to develop a more entrepreneurial orientation and culture, and university researchers need to become increasingly entrepreneurial (Etzkowitz and Leydesdorff, 1997). Finally, this new model gives a greater importance to the relationships between three types of stakeholders: governments, universities and businesses.

In the modern knowledge economy the entrepreneurial university is seen as a central force that drives innovation, creativity and economic growth (Audretsch, 1995; Audretsch, et al., 2006; Mueller, 2006). At the core of the entrepreneurial university concept is a connection between the 'ivory tower' and the 'real world'. In Europe, the declarations of Bologna, in 1999, and Lisbon, in 2000, give clear examples of government interest in improving entrepreneurial awareness at all educational levels, and particularly at the university level. More recently both the OECD (2010) and the European Commission (2013) have written about developing strategies for university entrepreneurial support.

There are many definitions of entrepreneurial universities (see, for example, Guerrero and Urbano, 2012). Etzkowitz (2003, pp.111–12) states that 'just as the university trains individual students and sends them out into the world, the Entrepreneurial University is a natural incubator, providing support structures for teachers and students to initiate new ventures: intellectual, commercial and conjoint'. Our intention here is not to debate this question of definition, as we know there is no consensus on it. Rather, we aim to sharpen our view. For us, the entrepreneurial university concept is best utilized if it helps an institution formulate a strategic

direction (Clark, 1998), by both focusing academic goals and by converting knowledge produced at the university into economic and social utility (Etzkowitz, 2003). It must not only incorporate entrepreneurship education but also define how start-ups are supported at the university. It must also partner with organizations and champion a vision on how existing infrastructure can be used to sustain entrepreneurial endeavours.

There is clearly a need for more entrepreneurial universities in the sense we view them. The question is: is it an easy path from the classical model to the new one, including the Third Mission? Despite the growing commitment of universities to this strategy of research commercialization and technology transfer in the developed countries (Siegel et al., 2007), there is strong resistance to change in the university world. These involve the difficulty of avoiding conflicts when combining the three missions. The third one, commercialization of knowledge, can be seen quite differently compared to the other two. Have research and education lost their way in being associated with knowledge commercialization? This is a key question both at the individual (researcher) and organizational levels (universities). The principal success factor in this kind of strategy and in developing the entrepreneurial dimension within the universities relates to the capacity of universities to develop ‘ambidexterity’ at the institutional and individual levels (Chang et al., 2009). Universities, consequently, should change their policies, strategies, structures and organizational rules to allow researchers to engage more easily with university activities in relation to the three missions.

The development of a cross-campus, interdisciplinary approach for the implementation of entrepreneurship initiatives has been gaining momentum as a way to assure quality and build critical mass in fostering graduate entrepreneurship. University strategy, public policy and integrating start-up support are the focus of this book, probing entrepreneurship as a strategy for Higher Education Institutions.

THIS BOOK’S CONTRIBUTION

This book comprises three parts. In Part I, aspects regarding the management and organization of the entrepreneurial university are discussed, as well as country-specific strategies that have been important in improving entrepreneurial university programmes.

The first chapter takes a strategic perspective and examines the ways in which universities need to reconsider their relationships with their stakeholders to become learning organizations. Allan Gibb and Gay Haskins then explore the present and future pressures shaping the entrepreneurial

nature of universities and the response to these pressures. Universities act in a specific environment and they have to deal with and negotiate their freedom and autonomy within this environment. This chapter suggests a framework that could be helpful for each university in rethinking and reorienting its development strategies for the future.

Vincent Blok and his colleagues from Wageningen University compare and discuss several entrepreneurship education programmes in Europe, the USA and Canada. They highlight resources and strategies that universities can use in order to manage and improve their entrepreneurial programmes. According to the authors, the adjustment of missions and strategic plans should function as a roadmap to successful implementation of entrepreneurship education programmes at the university level. Bjørn Åmo, in the following chapter, explains why entrepreneurship programmes at the university level need to be adapted to each country's context, and compares the Nordic countries of Finland, Sweden and Norway. He proposes a framework to help the transfer of educational programmes and syllabi and uses data from the Global Entrepreneurship Monitor project to compare the conditions that the potential entrepreneur faces, the actions entrepreneurs take and the outcomes of their actions.

Markus Reihlen and Ferdinand Wenzlaff, in the fifth chapter, explore the institutional change in the German Higher Educational system, from 'professional dominance' to 'federal involvement and democratization', and then to 'managed education'. While the paradigm of managed education is generally a reality in the Anglo-Saxon world, it is argued as key in reconfiguring the German system of Higher Education. The German version of managed education has been locally adapted and has substantial variations in actors and governance compared to its US and UK counterparts.

In calling attention to Tanzania, Mwasalwiba, Groenewegen and Wakkee highlight the need for more entrepreneurial universities to increase effective entrepreneurial activities in developing countries. The authors argue that commitment and investment from governments is required and that proper alignment of teaching context and student profiles as well as educational processes and objectives are necessary. Guerrero, Urbano and Salamzadeh give us further insight into the entrepreneurial university concept in developing countries by discussing the case studies of two universities located in Tehran. They adopt an integrated entrepreneurial university framework that considers the relevance of universities' environmental and internal factors to fulfil their teaching, research and entrepreneurial activities, as well as the socioeconomic impacts generated by these activities.

The section concludes with Niall MacKenzie and Qiantao Zhang evalu-

ating entrepreneurial performance by investigating the regional economic influences in which universities operate. They present findings that provide greater clarity in the push for universities to act as drivers of regional economic development as well as the effects that regional economic influences have on the ability of universities to act entrepreneurially.

Part II offers an overview of entrepreneurship education at the university level and pedagogic strategies to enhance the entrepreneurial university programmes. The first chapter in this section, by Magdalena Markowska, focuses on entrepreneurial university concepts, specifically how to nurture entrepreneurial values and behaviours. The author argues that this sort of mindset requires a different methodology than the one offered by the traditional educational system. Christine Volkmann and Marc Grünhagen continue this section by shedding light on how to get from entrepreneurial intentions to entrepreneurial behaviour. They point out that, due to the non-entrepreneurial tradition of many European universities, entrepreneurship education policy-makers often try to spark the entrepreneurial spirit of institutions through external support instruments and policy initiatives. They look at the potential influence of such measures on entrepreneurial intentions and behaviour through the case study of the German EXIST policy programme.

In 'Boosting entrepreneurship education within the knowledge network of the Dutch agri-food sciences: the new 'Wageningen approach'', Willem Hulsink et al. present a programme aimed at stimulating Higher Education Institutions to embed entrepreneurship in their educational programmes. The chapter looks at the origins of the entrepreneurial university, with a special reference to the agricultural and life sciences sectors. It provides a historical overview of entrepreneurship programmes and explains the successful turnaround strategy pursued by the DAFNE network to make the agriculture sector innovative and more internationally competitive.

Susanne Steiner compares teacher profiles from several universities that have different levels of entrepreneurial performance and finds that high-performing institutions usually have a high share of educators with entrepreneurial experience. She suggests that universities with medium levels of entrepreneurial performance might be able to influence their entrepreneurship rating by recruiting more interdisciplinary entrepreneurship education staff.

Truls Erikson, Mari Saua Svalastog and Daniel Leunbach end this section by describing the emergence of Gründerskolen, a Norwegian-based school of entrepreneurship that is a model of inter-university cooperation and works as a 'global entrepreneurship learning lab' designed around internships in start-ups abroad.

Part III focuses on interaction between the entrepreneurial university

and enterprises. Simon McCarthy, Gary Packham and David Pickernell discuss intellectual property, university business angels and the potential benefits of university-generated intellectual property. They highlight the potential for universities to engage more closely with business angel networks. Elco van Burg continues this section by reviewing the ethical issues generated by efforts to commercialize research through university spin-offs. He suggests that spin-off creation has three substantial advantages: (1) knowledge utilization, (2) economic growth, and (3) learning from the other 'culture'. He discusses how disadvantages can be mitigated by designing organizational structures that address: (1) the potential change in research directions, (2) the 'anti-commons effect', and (3) the threat to objectivity.

In 'The meandering path: the university's contribution towards the entrepreneurial journey', Elisabeth Muir and Louise-Jayne Edwards bring out the theme of socioeconomic and cultural characteristics of graduate employment. This chapter questions the role of universities in the development of 'future entrepreneurs'. The authors approach this topic from a teaching and learning perspective, proposing that universities must use 'promotional strategies' that enable a student's entrepreneurial journey from university to business. Wim van Vuuren and his collaborators from Canterbury Christ Church University present the IBM 'Universities Business Challenge'. This initiative represented an opportunity for educators and students to reflect and discuss the role of business competition for entrepreneurial learning and the advantages of this type of experience-based form of entrepreneurship education. They also argue that the results strengthen the call for interdisciplinary collaboration and the advantages for taking business competitions beyond the typical business school environment.

To answer the question, 'Where do academic entrepreneurs locate their firms?', Christos Kolympiris, Nicholas Kalaitzandonakes and Ken Schneeberger conducted 16 in-depth interviews with academic entrepreneurs who started life science firms in the USA from 1996 to 2008. They highlight the factors that shaped the firms' location decision and discuss the implications for the regional economic development.

The section ends with a proposal of assessment model for entrepreneurship education, at university level. Kåre Moberg and colleagues from the Danish Foundation for Entrepreneurship – Young Enterprise apply their model of assessment to analyse the strengths and weaknesses of entrepreneurship education in eight Danish universities. By using the model, the authors were able to describe how these universities have developed entrepreneurship education during the past three years. The results suggest that it is important to focus on how to sustain entrepreneurial initiatives

at the university, rather than just continuing to invest in new course development.

CONCLUSION

This book makes it clear that the entrepreneurial university is no myth, but it is also not yet a fully realized reality. The current university situations and contexts discussed in this book reveal the complex and challenging journey ahead and suggest ways and strategies to definitively transform universities into more entrepreneurial institutions, in developed and developing countries.

For us, there are two main conditions necessary for this journey to succeed. First, universities should pay close attention to the coherence between them and their environment. They must avoid the ‘ivory tower’ attitude and take into careful consideration the specificities of their context and the needs of their stakeholders. The second condition relates to the need to change university culture, values and attitudes and promote and broadly diffuse entrepreneurial culture and entrepreneurial values within each university. We know the influence corporate culture may have on a firm’s entrepreneurial orientation (Fayolle et al., 2010) and we expect entrepreneurial culture to have a strong impact on university entrepreneurial orientation and the entrepreneurial behaviours of researchers, students and university staff. Turning the traditional university into a more entrepreneurial one is above all a matter of culture and values, and is the essence in role of embedding entrepreneurship education.

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