Editorial

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1   Introduction

Deep and broad economic integration in Europe and especially within the EU has been taking place mostly on an intra- and cross-regional basis transcending national frontiers and identities and being driven by affinities, complementarities and synergies at the regional level.

The presence, role and impact of this phenomenon as a driver of regional economic development and especially in the form of small and medium enterprise formation and growth is the motivation for this *IJIRD* special issue. In particular, the focus of this special issue is on profiling, analysing, benchmarking, and modelling in socio-technical terms, ways and means that creativity, invention and innovation are manifested and drive economic development in regions such as i.e., the Balkan and Baltic regions within the EU as well as other parts of the world. Our focus is on deriving insights from comparing and contrasting similarities and differences and critical success and failure factors within and across the regions under study.

Particular focus is meant to be placed on the role that knowledge-based *innovation networks* (Carayannis and Alexander, 2004) and *knowledge clusters* (Carayannis and Campbell, 2005a) (*see definitions below*) in this regard play as catalysts and accelerators of new, sustainable and scalable technological venture formation and growth. In this context, innovation-triggering *technological entrepreneurship* is viewed as a core element of local, intra-regional and cross-innovation systems, as well as 'global/local' (glocal) knowledge production and innovation-triggering networks (Carayannis and Zedwitz, 2005).

In this context, we welcome papers dealing with heterogeneity[1] within regions (national differences within seemingly homogeneous regions such as the Nordic countries e.g.) and homogeneity between seemingly heterogeneous regions to drive policy learning and identify successful catching-up strategies between leaders and followers or between countries with similar economic and societal challenges.

Moreover, EU-USA comparative issues are of interest here, at the regional level. For instance, there are few studies on innovation practices and polices at the state level within the USA and this is something we would like to mitigate with this special issue. A well-designed comparative study between two US regions (or even between two US states) could be an important contribution to ongoing policy discussions and would be welcome for this issue. For example, how do the state-based (not federal) innovation policies in Virginia, Maryland and Florida (or Texas) differ and why?

Other issues of interest and relevance could be framed by questions such as:

•   Do innovation policies differ with the economic structure of a region or they remain more or less the same between regions and if so why)?

•   What does this say about the quality and the societal relevance of the innovation policy measures in the respective states or countries (within the regions)?

In this context, papers related to projects such as TrendChart, ERAWATCH and ETEPS would also be of interest and relevance. The targeted audience for this special issue of the *IJIRD* includes policy makers as well as academic researchers and practitioners of technology innovation and entrepreneurship in the regions of focus as well as the EU and the world as a whole as the inter-regional and cross-regional integration, development and convergence phenomenon is replicated around the earth.

In this context, this issue will promote the identification and articulation of insights that could inform *both public sector policies and private sector practices* to render them more effective and efficient. A series of recommendations for policy makers and practitioners would ideally emerge from this comparative, conceptual and empirical research contributing to the growing literature on the role of knowledge on *technology, innovation and entrepreneurship* and in particular with regards to the role of knowledge creation, diffusion and use in *local, national, regional, and global* innovation networks and knowledge clusters that form the underpinnings of the knowledge economy and society.

2 Key working concepts defined (Carayannis and Campbell, 2005b)

We provide here a set of working definitions developed in the context of this and prior related research projects that are meant to inform the author contributions:

- 'MODE 3': 'Mode 3' for knowledge creation, diffusion and use (Carayannis et al., 2006): 'Mode 3' is a multi-lateral, multi-nodal, multi-modal, and multi-level systems approach to the conceptualisation, design, and implementation of Government-University-Industry Public-Private Research and Technology Development Coopetitive Partnerships (Carayannis and Alexander, 2004, 1999)[23].

- *Knowledge clusters* (Carayannis et al., 2006): Knowledge clusters are agglomerations of co-specialised, mutually complementary and reinforcing knowledge assets in the form of 'knowledge stocks' and 'knowledge flows' and management of real and virtual, 'knowledge-stock' and 'knowledge-flow', modalities that catalyse, accelerate, and support the creation, diffusion, sharing, absorption, and use of co-specialised knowledge assets. 'Mode 3' is based on a system-theoretic perspective of socio-economic, political, technological, and cultural trends and conditions that shape the co-evolution of knowledge with the 'knowledge-based and knowledge-driven, glocal economy and society' (Carayannis and Zedwitz, 2005).

- *Innovation networks* (Carayannis et al., 2006): Innovation networks[4] are real and virtual infra-structures and infra-technologies that serve to nurture creativity, trigger invention and catalyse innovation in a public and/or private domain context (i.e., govern that exhibit self-organising, learning-driven, dynamically adaptive competences and trends in the context of an open systems perspective.

This *IJIRD* special issue aims to cover a number of conceptual and empirical issues focusing on regions including the USA and the EU as well as on a cross-regional comparative basis and leading to a better understanding of the role of specialised knowledge stocks and flows in triggering and catalysing economic development driven by technological entrepreneurship. These studies will help illustrate and clarify intra- and cross-regional *socio-technical, knowledge-based innovation networks and knowledge clusters architecture design, form and function*.

The intent is to encompass and integrate diverse theoretical perspectives, including, regional development economics and sociology of innovation, as well as regional science, and, technology, innovation and knowledge management research as follows:

- Select industries of focus would be biotechnology, advanced materials and ICT (as well as cross-disciplinary, emerging threads such as nano/bio-technology, MEMS, bio-informatics, etc.) and in each region and/or country therein, innovation networks and knowledge clusters based on such industries would be identified and studied.

- This is not to exclude low and medium technology sectors and regional innovation networks. For instance, innovation practices, clusters and networks in areas and sectors such as, construction, services, maritime and marine technologies, cleaner forms of energy production, eco-innovation, etc.

- Public-private partnerships for research and technology development, transfer, deployment and commercialisation would also be studied in this context, and in particular, their relationships and roles in catalysing and accelerating the formation and growth of networks, clusters and individual new ventures.

- Top-down policies and bottom-up initiatives would be documented and reviewed to identify what works and what does not, how and why in each region, country and industry.

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Carayannis, E.G. and Zedwitz, M. (2005) 'Architecting GloCal (global-local), real-virtual incubator networks (G-RVINs) as catalysts and accelerators of entrepreneurship in transitioning and developing economies: lessons learned and best practices from current development and business incubation practice', *International Journal of Technovation*, February, Vol. 25, No. 2.

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Notes

1 'Diversity in the knowledge economy and society: heterogeneity, innovation and entrepreneurship', Edited by Elias G. Carayannis, Professor of Science, Technology, Innovation and Entrepreneurship, School of Business, George Washington University, US, Aris Kaloudis and Åge Mariussen, *NIFU STEP Studies in Innovation Research and Education*, Norway, May 2008 c 384 pp Hardback 978 1 84720 211.

2 Inter alia see: Carayannis and Alexander (2004).

3 Inter alia see: Carayannis and Alexander (1999). Note: Awarded 1999 Lang-Rosen Award for Best Paper by the Technology Transfer Society.

4 Networking is important for understanding the dynamics of advanced and knowledge-based societies. Networking links together different modes of knowledge production and knowledge use, and also connects (sub-nationally, nationally, trans-nationally) different sectors or systems of society. Systems theory, as presented here, is flexible enough for integrating and reconciling systems and networks, thus creating conceptual synergies.