
Editorial: Understanding the multidimensional nature of innovation in the era of knowledge-based economy

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‘Knowledge-based economy’ is a term created to describe the trends in advanced economies towards a greater reliance on knowledge, innovation, and highly skilled labour (OECD, 1996). Knowledge-based economy has added the structural aspects of technological trajectories and regimes from a systems perspective (Cooke and Leydesdorff, 2006; Carrillo et al., 2014). The main novelty of the knowledge-based economy consists of the need to manage an intangible asset that, in contrast to material resources, does not depreciate through use but rather becomes more valuable the more it is used (Lonnqvist et al., 2014). Today’s most advanced economies are fundamentally knowledge-based (Yigitcanlar, 2010; Yigitcanlar and Lonnqvist, 2013). Burton-Jones (2001) notes that the gap between rich and poor nations has been constantly increasing during the capitalist movement and the new knowledge capitalism could be an opportunity to bridge the gap. As for Huggins (2011, p.1459), “the evolution towards a knowledge-based economy not only represents a new competitiveness challenge, but a shift in both the nature of organisations and the way in which they devise and implement their strategies. The growing dependency of wealth creation on intangibles is making the global economy more fluid and volatile, and the capacity to access and combine new and existing knowledge effectively has become more important in the context of the competitiveness of companies, regions and nations”. In other words, in the age of knowledge-based economy ‘innovation’ is critical for companies, cities and nations to be able to compete globally (Sabatini-Marques et al., 2015).

In its most simplistic way, innovation is the transformation of knowledge of any kind into new products or services in the market, and presently the perception of innovation is an important factor for knowledge-based economic development (Cooke, 2001; Fagerberg and Srholec, 2008; Yigitcanlar, 2016). According to De Blasio et al. (2015), innovation is commonly invoked as one of the main engines of growth. Furthermore, Schumpeter (1982) treats the economic cycles as periods of prosperity and economic recession. He relates the periods of prosperity to the innovative entrepreneur who, by creating new products, is imitated by non-innovative entrepreneurs who invest resources to produce and copy goods created by their innovative peers. The relationship between innovation and creation of new markets gives rise to an economic change, generating new necessities and wish to consume. Schumpeter’s (1982) points make even more sense at a period of global economic recession that is already upon us. In order to support innovation activities many organisations introduced policies during the recent years. For instance, the OECD innovation strategy relies on five priorities for government action,

which together can support a strategic and broad-based approach to promote innovation. These strategies are:

- 1 empowering people to innovate
- 2 unleashing innovation in firms
- 3 creating and applying knowledge
- 4 applying innovation to address global and social challenges
- 5 improving the governance and measurement of policies for innovation (OECD, 2010).

This issue of the *International Journal of Knowledge-Based Development* contains five papers looking at the innovation issue from a multi-perspective angle in order to provide further understanding on the multidimensional nature of innovation in the era of knowledge-based economy.

Following this editorial introduction, the issue starts with a paper (paper 1: Promoting communities of innovation: do industrial policies matter?) by Gianluca Elia, Claudio Petti and Angela Sarcina that focuses on the policy aspect of innovation. This paper aims to investigate the concept of 'communities of innovation' and address the question of to what extent local governments support the development of such communities. The paper evaluates the efforts of local governments in implementing policies for promoting communities of innovation by undertaking quantitative and qualitative investigations in Italy and China. The results reveal that in both country settings local governments are making significant policy efforts in promoting communities of innovation through mostly similar objectives and approaches.

Paper 2 of the issue by Mariia Molodchik, Carlos Fernandez-Jardon and Angel Barajas (Intangible-driven performance: company size matters) focuses on the company size and intangibles aspects of innovation. The paper examines the impacts of firm size on intangible resources and company performance. The study undertakes econometric analysis of a large number of European public companies by focusing on their intangible resources including: human resources, management resource capabilities, innovation and internal process capabilities, customer loyalty, and networking capabilities. The paper reveals that small and medium size enterprises have less endowment of almost all of the analysed intangible resource areas compare to the large enterprises, and benefit more from developing human resources, innovation, and internal process capabilities.

Next in paper 3, Nicos Komninos (Smart environments and smart growth: connecting innovation strategies and digital growth strategies) focuses on the interface between digital and innovation systems. This review paper explores how innovation and smart environments converge from the bottom up, and how innovation strategies and digital strategies are connected and shape a common set of objectives and actions for growth, discusses. The article examines the digital disruption of business practices, use of digital tools and smart environments for innovation and new product development, rise of cyber-physical infrastructures, and systems of innovation. The findings depict connectors and bridges between innovation and digital strategies, such as sector-specific smart environments, innovation over platforms, and digital solutions for collaborative product development.

Paper 4 (Knowledge markets: a typology and an overview) by Francisco Javier Carrillo focuses on the contemporary knowledge market aspect of innovation. The author provides a thorough review of the concept of knowledge markets – that is value exchange systems where the quantity, quality and terms of interactions amongst agents are determined primordially by the dynamic properties of intellectual capital creation and exchange. The review contains a typology description, where the top level knowledge market types include: intellectual capital dealing, open dealing, crowd dealing, cooperative dealing, non-monetary dealing, social dealing, alternative currencies plus incentive regimes, alternative banking, open knowledge labs, and emerging knowledge markets. The findings contribute in understanding the uniqueness of these novel value-generation arrangements, and capitalise on their transformative power in knowledge and innovation-based activities.

The last contribution of the issue, paper 5 by Niusha Esmailpoorarabi, Tan Yigitcanlar and Mirko Guaralda (Towards an urban quality framework: determining critical measures for different geographical scales to attract and retain talent in cities) focuses on the talent attraction aspect of innovation. This paper highlights the importance of quality measures for making cities appealing to knowledge workers that are the generators of knowledge and innovation. The paper explores the connotations and characteristics of urban quality measures at various geographic scales – i.e., regional, city and cluster – through the review of literature and best practice studies. The study also proposes directions to build a comprehensive urban quality framework with suitable quality measures for each geographic scale. The findings shed light on the urban quality policy and performance assessment issues in the context of knowledge and innovation spaces.

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