
Editorial

Anne-Laure Mention*

Centre de Recherche Public Henri Tudor
29 Avenue JF Kennedy, 1855, Luxembourg
Email: anne-laure.mention@list.lu
*Corresponding author

Marko Torkkeli

Lappeenranta University of Technology,
Prikaatintie 9, FI-45100 Kouvola, Finland
Email: Marko.torkkeli@lut.fi

Firms do not innovate in isolation. In contrast, they belong to networks and systems with which they have multiple and complex interactions. The wide range of actors and institutions involved in business and innovation systems and the way these stakeholders interact, cooperate, compete or complement each other's resource base, remain a critical area for researchers, business leaders and policy makers alike. National, regional, sectoral, technology innovation systems have received much attention in the literature (e.g., Edquist, 1993; Freeman, 1987; Lundvall, 1992; Malerba, 2002). Nevertheless, the changing nature of the business environment, the advent of the knowledge society and the emergence of the open innovation paradigm raise new challenges for innovation systems.

This special issue precisely addresses the novelties in innovation systems, and examines their features, structures, composition, rules, mechanisms and effects on innovation propensity and innovation performance. It embraces contributions of conceptual and empirical natures, relying on quantitative and qualitative research methods, and includes papers that adopt an innovative approach to innovation systems, encompassing new forms of networked organisations.

The first four papers concentrate on firm-level analysis and attempt to explore the relationship between various sources of innovation interacting in an open and networked process and performance, in both emerging and developed economies. The following paper aims at developing new indicators for capturing innovation dynamics in small economies, still relying on firm-level data. After this set of quantitative papers comes a conceptual contribution which resonates with the fifth contribution in that it pursues a similar aim. This purpose is the development of alternative measurement systems and indicators, through challenging the role of the accounting system, which is qualified as backward-looking and inappropriate to capture the innovation dynamics and processes. Public-private partnerships as well as university-industry cooperation are discussed in the following two contributions by Iskanius and Pohjola and by Isomursu et al., which both implement a qualitative research design. We then turn to the very topical sustainability concerns and how new structures such as living labs operate to produce sustainable innovations. So and Xu's conceptual contribution goes along the same lines in elaborating a conceptual model in the process of explaining the adoption of sustainable

supply chain management as a practice of green innovation. Using case study method, the following two papers address among others, the human side of innovation, and investigate the drivers of change in business portfolios and in business practices, through the enhanced use of knowledge sharing approaches. The following contribution by Brink reviews the literature on organising innovation from a multidisciplinary perspective while Fulgencio and Le Fever attempt to define a social innovation system. This variety of contributions shows the richness of the field, as well as the multiple approaches and disciplinary perspectives that can be used to apprehend it. Overall, it also suggests that these research and studies raise more questions than provide answers, which is what we believe, research is all about!

Abdallah et al. distinguish two main innovation types, namely managerial and technological innovations, and investigate their effects on performance, adopting a multifaceted approach to this concept. Based on a dedicated survey of 214 manufacturing plants in seven countries, their findings reveal that both types of innovation have direct and indirect effects on customer satisfaction through the concept of operational performance.

Fry et al. investigate the role of inbound open innovation practices, taking the forms of information sourcing and cooperation with multiple partners, in a leading emerging economy which boundaries span across Europe and Asia. Part of the originality of this paper stems from the merging of multiple waves of innovation surveys, and the use of a bootstrap method, which allow capturing the time lag effects of these organisational practices on innovation performance.

Oluwatope et al. explore the role of knowledge sources from multiple stakeholders on innovative performance, measured as the degree of novelty, in an emerging economy. Relying on a national innovation survey, their empirical study reveals that firms are increasingly dependent on information from market sources for their innovation activities. Their results also demonstrate that depth of knowledge sources is positively related to innovation performance, while this is not the case for breadth. They further suggest that there is an optimal level of openness, which remains to be unveiled.

Podmetina and Volchek use a large-scale survey administered to 182 Russian firms to investigate the relationship between market expansion, environmental and technology turbulence, environmental considerations, and product development on R&D and further on innovation capabilities, performance, and cost savings. Based on structural equation modelling, their findings uncover some drivers of cooperation for innovation, as well as the effect of cooperation on the company's innovation capability.

Analysing innovation systems in six European small countries, which face similar challenges in terms of lack of resources due to their size, brain drain, difficulties in prioritising the allocation of resources and skewed economic structures, Asikainen builds new indicators for internationalisation as well as a specialisation index using the community innovation survey data.

In his conceptual paper, Mohammad challenges the relevance of the current accounting framework to adequately capture the dynamics of the innovation process. Referring to the accounting, management control and intangibles literature, the scholar adopts a critical attitude to the instruments currently in use so as to re-architect and restructure the accounting model to match the mantra of the innovation business model.

The paper by Iskanius and Pohjola touches upon the contemporary interplay of the university-industry collaboration. By using the concept of communities of practice the author presents a targeted case study in the framework of the arctic research and the

development of the Northern Research and Innovation Platform. The generation and sharing of knowledge between academia and practice share highly valuable implications for the solution of multidisciplinary problems and confront the way innovation is produced and established into the promotion of knowledge and know-how to address global challenges and tackle problems.

The commercialisation challenges of European collaborative innovation projects addressing silver markets is the focus of the research by Isomursu et al. With this paper the authors aim at investigating the reasons behind the challenges the organisations developing ICT-based solutions targeted for silver markets within various public-private-partnerships collaboration frameworks face to get results into the market. Using a multiple case study approach the paper suggests that collaborative innovation initiatives present challenges towards the successful commercialisation of results and there is a strong need for the establishment of prior preconditions and the development of a safe environment that would both facilitate favourable market conditions for commercialisation and safeguard the provision for tools and methods that would determine market entry challenges.

Schuurman et al. present an astute and in-depth case study while reflecting on how innovation can become sustainable. The authors debate on the importance of Living Labs and their potential perception as open innovation systems that pave the way for the creation, dissemination and value creation of new knowledge. Grasping the network perspective, differentiating from the dominant firm-centric approach the paper strives towards highlighting the emerging importance of the existence of Living Labs which can foster the generation of innovation within a multi-actor ecosystem while driving a user-centric character.

The paper by So and Xu develops a stimulating conceptual model in the process of explaining the adoption of sustainable supply chain management as a practice of green innovation. The authors acknowledge the importance of sustainability for many businesses, highlighting the perceived behavioural attributes especially in the framework of senior management commitment. In the realms of the innovation diffusion theory the authors resort to the literature review and the case studies methods arguing that six adoption factors including the perceived values, information transparency, organisational readiness, enabling technology and management system are important for the adoption of sustainable supply chain management practices. In this context the authors argue that the existence of organisational dynamics, enabling technology and management systems act a prerequisites for the systematic adoption of sustainable supply chain management practices.

Mäkimatilla et al. address the multifaceted systemic nature of innovation and highlight the interplay between endogenous and exogenous drivers, as well as their impact on the outcomes of the innovation process. Based on their longitudinal analysis, case-study-based research, they herald that social, individual and business drivers emerge as the leading contributors to changes in business portfolios.

The interaction between leadership and knowledge flows through practice-based innovation processes is addressed in the paper by Hyypiä et al. who, by means of the complexity leadership theory as a theoretical foundation and a case study approach in Finnish companies, develop a conceptual model that fosters the assimilation of different roles of complexity leadership. The foundation of leadership skills promotes the development of practices that enhance knowledge flows and co-create value.

In the paper 'Organising to enable innovation', Brink offers a cross-disciplinary literature review aiming at unveiling how to foster innovation across organisational layers and units. The findings emphasise the need to permanently nurture different behaviours, continuously reconstruct structures, ensure employees are self-organised and hold broad and deep capabilities and use managers as boundary spanners and facilitators for achieving simultaneously explorative and exploitative organisational learning.

Fulgencio and Le Fever conduct an insightful literature review towards defining what a social innovation system is. The paper contributes to the ongoing debate of framing social innovation by defining several social innovation systems quadrants and emanating the social element and side of innovation towards the emerging importance of the human aspect of innovation. The paper encourages further research in the field towards the understanding of the role of the societal element in the innovation lifecycle and how value created can be transformed into a societal impact.

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