Editorial

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This special issue on 'Communities, networks and ecosystems in R&D management' is based on selected papers presented at the 2012 R&D Management Conference that it was held at the Grenoble Ecole de Management (GEM), France, in May 2012. These papers were discussed in early form in the conference track on 'networks and communities' organised by the Learning and Innovation in Networks and Communities (LINC) Lab at GEM. The main theme of the conference centred on 'Creating and capturing value through R&D management'.

In a new era of dispersed innovation, firms around the globe rethink the patterns of their R&D activities from within and beyond their boundaries drawing on resources from a range of technological communities and networks (Assimakopoulos, 2007; Assimakopoulos and Yan, 2008). They widen their vision and explore how to create and capture value from innovation communities, networks and related entrepreneurial ecosystems. This volume reflects on the state-of-art and presents original research findings from both developed and emerging economies to contribute new knowledge for both researchers and managers interested in the management of technological and organisational innovation. The selected papers discuss empirical findings across multiple levels of analysis and organisational contexts, spanning R&D management in a range of sectors, and deploying theoretical perspectives from interactive, nested communities, innovation networks and ecosystems; including contributions from France, Germany, England, Denmark, Finland, China, Taiwan and Australia. The research methodologies for acquiring empirical data vary from quantitative surveys to exploratory case studies based solely on semi-structured interviews and qualitative data. Further rounds of peer review and empirical analysis resulted in the final form of this set of papers in the spring of 2013 for publication here.

The first two papers deal with a set of questions regarding the micro level analysis of nested communities that create and capture value for firms, in particular, user communities (von Hippel and von Krogh, 2003) and expert communities of practice (Nonaka et al., 2000). There is a growing body of literature that suggests innovation it does not only stem from a firm's internal knowledge community but also relies on input from external sources. Lauritzen, Salomo and La Cour consider here the importance of user communities in the process of creating and capturing value in R&D. They argue that firms ought to engage in collaboration with these user communities and focus on the creative tensions at the interfaces between communities and firms. They also put forward a new boundary construct which combines the notion of power, identity and competence in order to explain their roles in value creation for firms. Rathnappulige and Daniel turn to the internal communities which create value for firms: communities of practice and study the 'black box' of unique social processes and the role of expert communities of practice in the continuous knowledge sharing and new idea generation. They focus on three case studies of groups of medical researchers. Their findings identify the complex social processes of consensus, negotiation and mutual engagement in the internal communities of practice, and the key institutional determinants which impact the social interactions and knowledge sharing in the focal firm. These two papers combine internal and external perspectives of communities in R&D management, and contribute to theoretical discussions of how firms can sustain and manage community-based innovation.

The next two papers explore the value creation process focusing on the perspective of innovation networks: scientists' networks across the Eurasian continent and managers' of innovation clusters (Baptista and Swann, 1998). Chen et al. focus on the dynamics of regional scientific collaboration networks on emerging nano-sciences between China and the EU-15 countries. Using co-authorship data between Chinese and European scientists for the period 1990–2011, they map and identify the evolutionary collaboration networks in nano-sciences between China and the most productive EU countries. The driving forces for engaging in cross-border scientists' networks are identified. The rapid growth of Chinese-European nano co-publications is largely due to the scientists' personal communities and mobility of overseas students within the Eurasian continent. Lefebvre investigates the management teams of 'cluster managers', focusing on French high-tech clusters, and how they boost innovation by stimulating the emergence of joint R&D projects initiatives, applying three main tactics – cluster-wide networking, permanent workgroups on the various strategic themes of the cluster, and *ad hoc* working groups based on emerging subthemes. His empirical results increase our understanding of innovation intermediation processes.

The following two papers explore how to create and capture value in business innovation ecosystems. The concept of business ecosystem defined as a co-evolving organisation of inter-dependent and inter-connected actors, encompassing customers, sellers of complementary products and services, intermediaries, suppliers, and the firm itself. The notion of an innovation ecosystem stems from strategy as ecology (Iansiti and Levien, 2004; see also, Adner, 2006). Ritala et al. explore the tangible and intangible mechanisms related to how leading firms may facilitate value creation and capture in the context of business innovation ecosystems. They focus on the mechanisms of two different phases of: building and management of ecosystems, illustrating these mechanisms with two comparative case studies, on two European-led ecosystems from the ICT and aerospace and defence sectors. Their research findings advance a conceptual

framework and add new knowledge on the facilitating initiatives, underlying mechanisms and structures that are related to the leading firms' orchestration of innovation ecosystems (Dhanaraj and Parkhe, 2006). In the sixth paper, Rong et al. combine the notion of business ecosystem around a focal technology (rather than firm) by linking the supply and demand side as well as complementary assets to examine technology substitution processes in emerging countries (Adner and Kapoor, 2010). Conducting in-depth interviews on an emerging technology, i.e., low-speed electric vehicle industry in mainland China, they advance a bottom-up ecosystem extension analysis by comparing with the traditional car industry top-down ecosystem, to illustrate the technology substitution process in an emerging industry.

Last but not least, Kuo et al. adopted a case study method to explore the open innovation process on new product development (NPD) of a medical device. They explore the process of value creation and capture in the interactive NPD network by integrating professional physicians, external groups, and individuals through a knowledge cluster platform. They argue that adequate incentives and trust to external individuals or groups willing to contribute their expertise and knowledge to this knowledge cluster platform, should be provided in the value creating process to support an effective NPD process.

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