
Editorial

Andrea Fronzetti Colladon*

Department of Engineering,
University of Perugia,
Via G. Duranti, 93, Perugia 06125, Italy
Email: andrea.fronzeticolladon@unipg.it
*Corresponding author

Francesca Grippa

College of Professional Studies,
Northeastern University,
360 Huntington Ave,
Boston MA 02115, USA
Email: f.grippa@northeastern.edu

Peter Gloor

Massachusetts Institute of Technology,
Center for Collective Intelligence,
245 First Street, E94-1509,
Cambridge, MA 02142, USA
Email: pgloor@mit.edu

Biographical notes: Andrea Fronzetti Colladon is an Assistant Professor at the University of Perugia. He has been a Research Fellow and Adjunct Professor of Engineering Economics at the University of Rome Tor Vergata, and visiting PhD student at the MIT Center for Collective Intelligence – where he now collaborates on several research projects. He is a member of the ICKN core team and instructor of four courses on social network and big data analysis. His research and scholarship interests include social network analysis, text mining, innovation management, organizational communication and brand management.

Francesca Grippa is a Professor of Business Strategy and Faculty Director at Northeastern University. Her research interests include: collaborative innovation networks, entrepreneurship and change management. She is a member of a research project at the MIT Center for Collective Intelligence that focuses on the application of dynamic network analysis to investigate the diffusion of innovation. She obtained her PhD in e-Business Management from University of Salento, Italy, and was a Visiting Scholar at the MIT Center for Digital Business.

Peter Gloor is a Research Scientist at the Center for Collective Intelligence at MIT where he leads a project exploring Collaborative Innovation Networks. He is also the Founder and Chief Creative Officer of software company Galaxyadvisors, and Honorary Professor at University of Cologne and Jilin University, Changchun, China. Earlier he was a partner with Deloitte and PwC,

and a manager at UBS. He earned his PhD in Computer Science from University of Zurich and was a Post-Doc at the MIT Lab for Computer Science. His most recent books are *Sociometrics and Human Relationships* and *Swarm Leadership and the Collective Mind*.

1 Introduction

This special issue highlights the contribution of an interdisciplinary group of researchers in the fields of management science, computer science, sociology, anthropology and system design, whose case studies and models move forward the discussion around the role of collaborative innovation networks (COINs) in fostering entrepreneurship and generating societal change. The selected papers offer valuable insights from a variety of industries and sectors across different countries, including telecommunications, the fashion industry, tourism, higher education, as well as NGOs and the US Department Defense.

The common denominator for the eight contributions included in the special issue is the assumption that any entrepreneurship strategy should involve symbiotic relationships and collaboration among all players. Symbiosis is an approach that allows entrepreneurs and their firms to benefit from a multi-polar distribution of power and control (Dana et al., 2008). While various players in the innovation ecosystem hold various roles during specific phases of the entrepreneurship process, it is the symbiotic relationship among them that enables increased performance and sustained economic development. The lens we chose in this special issue to study these symbiotic relationships is provided by the concept of COINs, defined by Gloor et al. (2006) as teams of self-motivated people with a collective vision, who are enabled by technology to collaborate, challenge the status-quo and innovate by sharing ideas, information, resources and work.

Identifying COINs supports the development of start-up or spinoff opportunities as they organically emerge within organisations and from symbiotic exchanges among innovators. The underlying broad questions we address in this special issue include: what can we learn from the development of successful COINs? How can collaborative networks between SMEs and/or research centres be optimised to foster firm's performance? What can we learn in terms of creativity and problem solving by looking at the dynamic evolution of COINs? What are the benefits of being embedded in a COIN when designing and executing R&D activities? How can COINs promote the launch of start-ups and spinoffs?

In this special issue we bring together some of the latest research results using methodologies and tools of social network analysis, semantic analysis and sentiment analysis. The goal is to advance the understanding of the mechanisms facilitating collaboration in a networked global environment, and describe cases where new methods to detect and promote innovation are described, both within and across organisational boundaries (Dana et al., 2008; Etemad et al., 2001; Wright and Dana, 2003).

Some of the papers in this issue explore the advantages of collaboration for startups firms, as well as the distinctive individual characteristics (Battistoni and Colladon, 2014), leadership traits and network positions of entrepreneurs (Gloor et al., 2011, 2018) and communication styles (Iba, 2014).

We hope that the collected contributions will offer new directions and solutions that can lead to both theoretical insights and practical applications as scholars and practitioners debate the mechanisms enabling collaborative innovation within and across organisations.

2 The papers in this special issue

In a case study conducted at the Pardis Science and Technology Park in Teheran (Iran) Sazvar and Yahyazadehfar focus on the impact that venture capital has on promoting innovation in knowledge-based SMEs. Based on insights from structured questionnaires, the authors discuss the important role of technology parks to promote the scientific-economic development of countries. Their work demonstrates how venture capitalists act as hub in a networked system that fosters the creation of a positive entrepreneurial culture, improvement of business environment and investment security, as well as the establishment of supportive rules, recognition of intellectual property rights, and the education of human resources.

In a paper combining social network analysis and semantic analysis, Fronzetti Colladon and Scettri measured the communication behaviours of 8,000 employees at a big Italian company, analysed 48,000 news and comments left over their intranet, and were able to predict organisational performance in terms of company stock price. Their study demonstrates how internal communication behaviours can affect and partially mirror business performance (Gloor et al., 2017), thus influencing a company's stock price. From their work we learn how a more 'democratic' network structure with fewer actors dominating the information exchange is predictive of higher stock prices.

In their case of the Dutch fashion industry, Song and Berger study the interaction effect of gender and network diversity on the performance of 15 Dutch start-ups. The goal was to explore how male and female entrepreneurs used strong and weak ties to enhance the diversity of their online social networks, which in turn positively influences performance. Their survey demonstrated that start-ups established by male entrepreneurs displayed better performance, which can be attributed to the diversity of their online social networks compared to female entrepreneurs.

To further study the individual traits of successful innovators, the work of Colbry explores interpersonal resilience as a means for groups to navigate uncertainty more effectively. Based on a qualitative study completed over a decade and involving 150 military personnel or civilians of various NGOs, higher education institutions and agencies in the US Department of Defense, Colbry introduces the dynamic resolve model (DRM) to help individuals engage in best practices to strengthen their collaborative capabilities.

After introducing different network models to support entrepreneurship in organisations, Ferraro et al. focus on the hierarchical and heterarchical models and propose a new set of processes and activities under a model called choreography. Choreography is defined as the network's capacity to address collaboration among multiple members by shaping the level of connectivity and cohesion among network members.

Another paper describes the design and application of a dashboard for visualising and monitoring the interaction of content providers and online users with cultural objects

within digital environments. Capodieci et al. explore the collaborative dynamics within the cultural heritage ecosystem and apply social network analysis techniques and content analysis to shed light on the processes and connection flows that can support the socio-cultural development of a territory. The authors apply their dashboard to two case studies, the DiCet project and <http://www.europeana.eu>, a European platform for the storage and sharing of cultural digital objects.

In order to improve cultural events management and encourage the cooperation between the different stakeholders involved, Corallo et al. propose a new methodology that combines text analytics techniques, including semantic and sentiment analysis, and spatial analysis techniques. By applying the dashboard to a real case study, the Italian folk music festival La Notte della Taranta, the authors detected sentiment changes of users on social media based on their location and event participation.

The final paper by Iba et al. describes three design patterns to facilitate thinking, reflection, and dialogue on designing innovative projects. The authors conducted a survey and interviewed workshop participants to support the development of a series of patterns for sharing practical knowledge and design innovative projects.

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