



*Routledge Studies in Innovation, Organizations and Technology*

# **OPEN LABS AND INNOVATION MANAGEMENT**

## **THE DYNAMICS OF COMMUNITIES AND ECOSYSTEMS**

Edited by  
Valérie Mérindol and David W. Versailles



# Open Labs and Innovation Management

This book examines returns on experience and managerial practices to generate deeper collaboration, intensify co-creation, support start-ups and established companies to explore, develop, and accelerate their projects thanks to open labs (living labs, fab labs, coworking spaces, “third spaces”, etc.). Open labs are the beatbox to create a rhythm in ecosystems and make all stakeholders move forward, faster, together. This book proposes a framework to understand how open labs, innovation hubs, and collaborative spaces contribute to ecosystems.

The book looks beyond the short-term effects of open labs and identifies four main dimensions: communities, physical spaces, events, and portfolios of services offered to private businesses, entrepreneurs, and start-ups, established companies, or public institutions. Drawing on extensive field research lasting over five years, with more than 40 cases and more than 200 interviews plus direct observation within different environments, this edited book investigates how managers run these labs, and how “users” or “clients” evolve when benefitting from their services. All chapters analyse how an actual management impacts the dynamics of communities, how it shapes the co-evolution between open labs and their ecosystems, and how the management of the physical space impacts the mission of the lab and its role in the ecosystem.

*Open Labs and Innovation Research* is written for scholars and researchers in the fields of innovation studies and management science. This book can also inform teaching, public policymaking, and professional practice.

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Together, Valérie and David co-head the PSB New Practices for Innovation and Creativity (newPIC) chair, which specialises in the investigation of the micro-foundations of innovation and creativity.

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The Dynamics of Communities and Ecosystems

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# Foreword

*Elise Tissier*

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The support to innovative businesses represents the kernel of Bpifrance's mission since its creation. The French government has tasked the Public Bank for Investments (Bpifrance) with the management of a vast programme (the "Deeptech plan") to support disruptive innovation and the creation of start-ups. However, innovation cannot be limited to the transformation of basic research born in academic laboratories. It should be considered from a broader perspective. This is the reason why Bpifrance has taken an interest in new organisational designs hosting all forms of innovation, technological or not. Such designs build a network of resources available all over France, and beyond. Are companies sufficiently aware of services offered by innovation platforms and open laboratories? Are managerial processes in place in companies adapted to interactions with these organisations? Are open labs suited to offer constant support to the development of innovation in companies? These questions were at the origin of interactions between Bpifrance and the newPIC chair at Paris School of Business; they motivated the research projects commissioned to this team of researchers.

## **Open labs as an "object" for entrepreneurs: what are we dealing with?**

Local public policymakers have a vested interest in nurturing their territories, creating wealth, valorising, and retaining local businesses. They converge with innovative entrepreneurs on the need to work with innovation platforms and open innovation laboratories. These new organisational designs take multiple forms, but they are always intended to serve entrepreneurial ventures and innovative projects. They bring new solutions to support innovation, encourage new types of interaction, and promote new ways of working. They represent new links in local ecosystem networks. Bpifrance expected to improve its understanding of these new tendencies, and their roles in innovation ecosystems.

Seventy-four percent of managers explain that they intend to adapt their managerial practices over the coming years (Bpifrance Le Lab, 2020). Innovation platforms and open labs contribute to this evolution, and address

some of the needs identified in companies. However, they do not only represent tools supporting the evolution of managerial practices and represent much more than convivial and disruptive open spaces. They also contribute to a deep transformation of social interactions in companies.

Understanding how to interact with innovation platforms and open labs is no easy task. What are the rationales for their installation? For their management? For their facilitation of innovation projects? For their support to incubation and acceleration processes? Bpifrance's mission is to support entrepreneurs in small and medium-size companies with the identification of available resources for their innovative ventures. A better understanding of the contributions by innovation platforms and open labs therefore makes it possible for Bpifrance to improve its own services, and the execution of its own mission. It is also important for Bpifrance to anticipate new tendencies and follow evolutions over time. Thanks to contributions by academic researchers, Bpifrance Le Lab made it possible to improve its understanding of developments occurring over recent decades and reinforce its *raison d'être*: "serve the future".

### **Essential contributions by academic research**

Interactions with Paris School of Business's newPIC chair were motivated by the need for an analysis going much beyond a simple list describing existing innovation platforms and open labs. Bpifrance was looking for a taxonomy of such organisational designs that could be used to follow these intermediaries of innovation over time. Research projects developed by the team led by Valérie Mérindol and David W. Versailles at the newPIC chair of Paris School of Business were commissioned in partnership with Innovation Factory, a Paris-based innovation platform (also part of Galileo Education group) interested in understanding this then emerging phenomenon.

The first investigation (Mérindol and Versailles, 2017) made an essential and innovative contribution with the first taxonomy of open labs, innovation platforms, and "third places". Field research focused on the Paris region. The taxonomy de-homogenised these notions and identified several forms of innovation intermediaries suiting needs and expectations introduced by several categories of entrepreneurs, and of innovation projects. The diversity of interactions in ecosystems and of constitutive elements leading to the installation of innovation platforms was present in the taxonomic approach. Highly detailed information was collected during field research (interviews, observation), which made it possible to account for the large variety of interdependencies. This rich and dense material revealed all interdependencies and did not treat open labs as isolated agents. This systemic approach was the very reason for Bpifrance to commission the newPIC chair with this research project.

After this first round of activities, it soon appeared relevant to expand this research with a second report covering other regional ecosystems in continental France (Mérindol et al., 2018). A third report (Mérindol and Versailles, 2019) then compared the different evolutions in France and in different Asian

countries. The Paris region may be the sole French “innovation leader” region on the European regional innovation scoreboard (2016), but it is neither the only French region to host innovation platforms, open labs, and “third places”, nor the sole region to host innovation-related initiatives (in the different categories of innovation). Open labs exist in all French regions. New innovation platforms emerge every day. Interactions between local policymakers and companies foster their multiplication, and their diversity. It is then highly relevant for Bpifrance Le Lab to follow these tendencies and take advantage of this knowledge to feed other research projects and field research activities.

## **Lessons learned**

### ***Open labs serve the installation of new organisational designs in companies***

The diversity of fab labs, incubators, makerspaces, coworking spaces, and other organisational designs in relation to innovation was initially difficult to appraise. With their different objectives, services, and ways of working, their potential contributions to entrepreneurial ventures were so diverse that it was difficult to identify their respective added values. The contributions of academic research made it possible to better understand how innovation platforms and open labs support the ever-changing dynamics of entrepreneurial ventures and ecosystems, both established companies and SMEs. They offer complementary and diversified competences and distinctive experiences. Open labs serve communities of entrepreneurs where horizontal relations abound. New modalities prevail for the interactions, beyond statuses (employees or not), hierarchical links, or roles in organigrams. Strong ties emerge and foster the dissemination of sharing and reciprocity values. Open labs also represent a source of creativity. They project a positive value of entrepreneurship in ecosystems that concretises with the creation of new businesses. This renewed environment also contributes to the shedding of a different light on entrepreneurship, where failure is acknowledged as a standard step in any entrepreneurial journey where teams and individuals learn. Failure is not considered as an infamous definitive dead-end anymore; it represents the logical by-product of any entrepreneurial risk and the logical corollary of learning-by-making.

### ***Open labs commit to several missions***

The first main contribution provided by the taxonomy of open labs and innovation platforms focuses on their services, with the important dichotomy between “thinkers” and “makers”. Open labs adhering to the “maker” approach develop a portfolio of activities around prototyping. “Thinker” open labs deliver intellectual services in relation to innovation and creativity. Beyond these two categories, open labs share several features: a physical space, communities of individuals and entrepreneurs, open and collaborative approaches, and an openness to all stakeholders in their respective ecosystems. Open labs define

themselves by their portfolio of services and missions, and by the collective dynamics they foster, develop, or contribute to. It is especially interesting to understand how open labs contribute to start-up creation and business ventures. Some of them focus on a specific sector, others do not. Some organise to support independent workers and craftsmen with the creation of competence networks to mutualise resources and produce joint responses to calls for proposals. The main important societal topics of our time (social and solidary economics, economic and environmental sustainability, “civic techs”) frame activities in lots of open labs. Other open labs elaborate on geeks passionate about technology who commit to developing their projects during their free time. The internal organisation of open labs always demonstrates their originality, with facilitation staff, communities, and mentors in charge of incubation. Whatever their size, small open labs or mega-innovation platforms, all these aspects finally materialise with the emblematic spaces embodying their brand. In all regions, open labs also develop with transport and communication infrastructures, with stakeholders in the ecosystems, and with the other activities present in cities and urban environments.

***Open labs provide new opportunities for developing firms’ open innovation strategy***

Investigations developed by Bpifrance show that the foundations of innovation lie in the confrontation of ideas between services, units, etc. Innovation is always intended as a process leading to value creation. Such confrontation represents a condition for creativity. It is also a reference in the process leading to a go/no-go decision in the innovation process. All activities in place in companies with collaborative processes, decentralised responsibilities, and horizontal participation do not automatically lead to innovation. However, cooperation and the sharing of ideas and returns on experience always represent guarantees for innovation and performance. Fruitful collaboration paves the way for organisations to economise on time and cash (Bpifrance Le Lab, 2020). Research also shows that community-based communication, for instance with internal social networks available in companies, supports interactions about ideas and knowledge, and contributes to creative stimulation.

Following the same rationales, open labs and innovation platforms represent additional and complementary resources worthy of interest for any company. Open labs offer an opportunity to externalise parts of a company’s human resources beyond its traditional boundaries, on a permanent or temporary basis. It is relevant to envision open labs as extensions of companies connecting with new networks of stakeholders and contributors of innovation and creativity projects. Research developed by the newPIC chair clearly identifies that “communities represent the key distinctive assets in open labs and innovation platforms”, “a source of diversity of experience, competencies, and perspectives”. Open labs elaborate on these communities to

provide new intermediation services in the general framework of open innovation and facilitate adaptation to change in always more turbulent business environments.

Whatever their size, firms are today both clients and partners of open labs. As clients, firms take advantage of new opportunities based on new intermediation capabilities proposed by open labs and, also, purchase their services in the domain of innovation and creativity. As partners, firms commit to long term interactions that are not only based on commercial rationales. This dual relation shows how much it is relevant to investigate further the new framework by open labs. All categories of firms, in different sectors, with different levels of technological intensity, with different strategic intents and different objectives, will find opportunities to benefit from interactions with open labs. It applies to small companies and entrepreneurial ventures that will find options in open labs to reach out to a large population of stakeholders and grow faster, and in more solid ways, in their ecosystems. It also applies to large established companies that will be supported by open labs to find flexibility and agility lost because of their size. Research on open labs is important because these organisations represent key actors in business ecosystems.

### ***Open labs support firms to cope with increasing levels of complexity***

Among many other variables, globalisation and digitalisation are major elements reshaping the world, illustrating its complexity. Managers and strategic decisionmakers need to create the conditions for the firm's agility to adapt. This constraint applies to all sorts of entrepreneurial ventures, and to all categories of companies, but firms are obviously less agile when their size and complexity increases. In these cases, creativity and innovation must find ways and means to transform into actual evolutions of business models, strategies, or portfolios of products/services. Managers cannot rely on linear modalities anymore: they need to find options to adapt to this complexity, and cope with it to sustain competitive advantages in their organisations and empower innovation processes. Managers shall transform with exceptional competencies to handle the different levers available in firms that can be presented as a sort of complex adaptative system (Heraud et al., 2019). Whatever the theoretical references at hand, the management of creativity and innovation does not fit into models of the firm based on strategic planning and linear reasoning.

New learning processes, new forms of interaction, of cooperation, of sharing, make it possible to address the challenges of complexity. In taking advantage of the dynamics of communities, research about open labs and innovation platforms has identified how these new intermediaries install specific mechanisms fostering innovation and creativity that propose actual solutions to complex problems thanks to dense attention to end users, observation, and communication. Research is still necessary to investigate further how to deliver and manage open labs and innovation platforms, but it is already possible to

conclude that these aspects represent key distinctive contributions made by open labs to ecosystems.

### ***Open labs make direct contributions to local economic policies***

Last, but not least, services delivered by open labs and innovation platforms serve public policies. This explains why local, national, and European public policymakers not only devote increasing attention to them, but also support their development. Local public actors, municipalities, or regional governments do not only bring budgets, but also develop specific innovation programmes based on open labs. This “political” contribution represents an important evolution. Local policymakers and “political” entrepreneurs partner to establish specific open labs or use services intended to support the development of start-ups and SMEs, societal transformation, and the development of local business ecosystems. As soon the open lab gains influence on a territory, it also becomes a part of its public brand and contributes to its global visibility and attractiveness.

France is also characterised by the emergence of mega open labs, or mega-innovation platforms, that elaborate on specific financial resources and directly operate on a very large scale attracting international visibility. Some of these ventures become platforms of platforms and deserve specific attention to better understand the services delivered to communities of entrepreneurs and firms. Research has already identified the tension between size (or scale) and the preservation of strong ties inside communities. Further research is probably necessary to investigate these aspects further and qualify how to preserve the philosophy of “sharing” and reciprocity that constitutes the originality of open labs.

### ***Perspectives for the future***

Thanks to rigorous academic research and well-documented field research, Bpifrance Le Lab is now able to support SMEs and explain the open labs’ added value for the development of entrepreneurial trajectories, and for activities in relation to exploration and innovation. Bpifrance is committed to supporting the development of strong ties between open labs, SMEs, and medium-sized industrial companies. It is the companies’ vested interest to embark on this evolution.

However, managerial modes must adapt. To maximise their attractiveness, open labs and innovation platforms must preserve flexible managerial modes and minimal hierarchies for the facilitation of projects and avoid the traps of unnecessary constraining structures. New management modes also emerge within companies with improved facilitation mechanisms and greater consideration for nonlinear processes of innovation. Open labs and innovation platforms have understood this transition well, but mega open labs will devote

great attention to this issue in the future. This point is important because the world of open labs will most probably reveal restructuring in the future, with more sustainable business models and stabilisation around high value added services.

Bpifrance Le Lab aims to provide SMEs and mid-size companies the keys for their expansion, growth, and development to contribute to national influence. This research on open labs and innovation platforms contributes to our mission.

## References

- Bpifrance Le Lab. (2020). *Sens et liberté. Revenir aux fondamentaux du management*. Paris: Bpifrance. <https://lelab.bpifrance.fr/Etudes/sens-et-liberte-revenir-aux-fondamentaux-du-management>.
- Bpifrance, DeepTech Plan. <http://www.bpifrance.fr>.
- European Commission, Directorate-General for Internal Market, Industry, Entrepreneurship and SMEs, *Regional Innovation Scoreboard 2016, European Commission, 2017*, <https://data.europa.eu/doi/10.2873/84730>.
- Héraud, J.-A., Kerr, F., and Burger-Helmchen, Th. (2019). *Le management créatif des systèmes complexes* (Vol. 20). London: ISTE Editions.
- Mérindol, V., and Versailles, D. W. (2017). *Créer et innover aujourd'hui en Île-de-France : le rôle des plateformes d'innovation*. Projet de recherche financé par Bpifrance Le Hub, Innovation Factory et Paris&Co (avec des contributions d'Ignasi Capdevila, Alexandra Le Chaffotec, Nicolas Aubouin, Marion Desnost et Marianne Cohen pour la recherche de terrain). Paris: PSB.
- Mérindol, V., and Versailles, D. W. (2019). *Créer et innover aujourd'hui en France et en Asie : le rôle des plateformes d'innovation et des open labs d'entreprise*. Projet de recherche financé par Bpifrance Le Lab et Innovation Factory. Paris: PSB.
- Mérindol, V., Versailles, D. W., Le Chaffotec, A., Aubouin, N., and Capdevila, I. (2018). *Créer et innover aujourd'hui en France : le rôle des plateformes d'innovation dans les écosystèmes régionaux*. Projet de recherche financé par Bpifrance Le Lab et Innovation Factory (avec des contributions d'Océane Duyck et Salim Moulmaaz pour la recherche de terrain). Paris: PSB.

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We thank all the authors for their contributions, ideas, and patience in the elaboration of this book. We are specially indebted to Patrick Cohendet, for his encouragement and companionship over all these years. Only Patrick's support made it possible to expand the ambition of this book beyond France.

During the difficult months of the pandemic, we had the opportunity to organise a digital workshop to discuss our respective contributions. Let's hope that the months to come will give us the opportunity to meet during physical events and enjoy many more discussions on this great topic.

We hope this book encourages more research on open labs and, in turn, causes the science of innovation intermediaries to evolve and mature.





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# Introduction

*Valérie Mérindol and David W. Versailles*

This book shows the importance of open labs as catalysts of innovation, or as innovation intermediaries, to handle mutations and challenges in knowledge-based economies.

Working spaces, living labs, fab labs, incubators, makerspaces, and hackerspaces are considered as new phenomena best suited to improve the management of creativity and of innovation (Merkel, 2017; Bouncken and Reuschl, 2018). These new workplaces and spatial constructs (Burkner and Lange, 2020), developed over the 2010 decade. Howell and Bingham (2019) identify around 14,000 active coworking spaces in the USA in 2017. In France, the number of coworking spaces has multiplied by a factor of ten over the last ten years. Fablab Studio assesses 250 active fab labs and 2,500 active makerspaces in 2020 in France. In China and in India, the same phenomenon does exist but with a twin focus on incubators and coworking spaces.

In this book, we call these new organisations “open labs” to zoom out from the different specificities introduced by labelling and certification networks (fab labs, living labs) and other societal claims (coworking spaces). Despite their diversity and various labels, they are all built on three pillars: a community of contributors, a physical space to host social interactions and knowledge processes, and a portfolio of services (such as an incubation programme, flex office, or consulting activities). Even though they share many properties and managerial challenges with open labs, this book deliberately leaves out innovation platforms affiliated with companies, because they respond to different rationales (business models, managerial practices, relations with intrapreneurship, reappropriation of innovation outcomes inside business units), and usually make an impact on business ecosystems through the adaptation of the business models and business portfolios of established firms.

The purpose of this book is to appraise the originality of open labs and the dynamics of their evolution. It offers the opportunity to investigate their multifaceted contributions to the management of innovation and creativity. The chapters explain that open labs require proactive managerial practices, with events, and adapted physical and organisational designs. To accommodate the demands and expectations introduced by stakeholders and users, mindsets must adapt. Open labs are the beatbox to create a rhythm in ecosystems and

make all stakeholders move forward, faster, together. To travel this journey, engage key stakeholders, and make an impact, new attitudes and skills are required to empower collective competences and support communities.

The originality of this book relates to the investigation of managerial issues, usually a black box or a set of implicit, often irrelevant, transpositions from other contexts. In all chapters, the main conclusion is simple: setting up a physical space or installing a portfolio of “open lab-related” activities without adapted management makes no impact. Actual management is a mandatory condition for success. The chapters analyse these managerial specificities and key success factors necessary to make an impact on ecosystems. The book explains how managers orchestrate all activities to deliver services to “users”, and to create value through the empowerment of communities.

The book originated in a discussion between the editors when they were sitting under the sun of the Praça de Comercio in June 2019, between sessions of the European Academy of Management annual conference held in Lisbon, Portugal. The discussion soon reached out to our colleagues at the Mosaic research centre in Montréal. We all realised that our dense field research activities were contributing to propose an original light on this important phenomenon with a large sample of original cases that were accessible to English-speaking audiences with difficulty.

On the French side, activities started in late 2014 with an expert group organised and facilitated by the editors of this book for the newPIC chair at Paris School of Business, in partnership with the FutuRIS platform of the French Association Nationale de la Recherche et de la Technologie (ANRT). The publication of a white paper ensued, that was among the first publications on the topic in France (Mérindol et al., 2016). This document drew the attention of different institutional audiences in France, and motivated Innovation Factory (a Paris-based open lab) and Bpifrance Le Lab (the research lab of the French governmental institution supporting innovation, Bpifrance) to commission several research projects to the newPIC chair, all of them being directed and supervised by the editors. All projects compared open labs with innovation platforms hosted by (large) companies. The first research project investigated the open lab phenomenon in the Paris region (Mérindol and Versailles, 2017). The second one expanded the analysis to continental France’s main regional hubs (Mérindol et al., 2018). The third investigation introduced updates about the phenomenon in France, but mainly compared the recent evolutions in France and in different countries in Asia (Mérindol and Versailles, 2019). For this last project, some aspects of field research activities were performed by *Innovation is Everywhere*, a Singapore-based consulting firm commissioned *ad hoc* for the project. In parallel, Ignasi Capdevila was focusing on specific aspects of coworking spaces, a specific category of open labs, in supervising and contributing to several research projects funded by the regional government of Catalonia in Spain (Cowocat Rural), or by the European Union (Coral project on collaborative spaces).

All over these years, the Mosaic team at HEC Montréal, headed by Patrick Cohendet and Laurent Simon, was organising several projects about local

open lab initiatives, and promoting the originality of this phenomenon during the different editions of the Summer School on Management of Creativity organised in Montréal (Canada), Barcelona (Spain), or Strasbourg (France). Several authors or co-authors of this book are (were) PhD students in the Mosaic research team. They have investigated or are investigating open labs for their PhD projects.

As a follow-up to this dense field research endeavour operated over eight years, the book offers an outline of more than 40 open labs located in France, Canada, Spain, China, and other countries in Asia. The ten chapters in this book are all original contributions. Most case studies analysed in these chapters are published here in English for the very first time.

### **Open labs as a key player of open innovation**

The phenomenon of open labs, innovation hubs (or platforms), and collaborative spaces is anchored in the general dynamics of open innovation, but it has now pervaded lots of different areas of business and economic life. Open innovation is considered as a new paradigm of innovation (Chesbrough, 2003; Bogers et al., 2018): because of the increasing complexity of the knowledge base and the turbulence of business and technological environments, public and private actors cannot innovate alone anymore. Large organisations cannot rely solely on internal resources to innovate. Smaller companies and start-ups must embed themselves in networks that become even more critical than before to find the resources appropriate to develop innovation projects or new ventures. In the context of open innovation, the combination of internal and external resources is necessary to explore, identify new opportunities, experiment with new solutions, and bring them to the market.

Two categories of consequences of this new paradigm ensue. First, open innovation implies collective strategies between public and private actors to develop new projects. Open innovation requires the development of ecosystems strategy (Jacobides et al., 2018) and to nurture various communities of innovation, interests, and practices (West and Lakhani, 2008; Amin and Cohendet, 2004; Roberts, 2017). Second, open innovation requires the connection of profiles with various backgrounds and different types of competencies. This implies the installation and development of the conditions of relational trust and common/mutual understanding to nurture new multisided collaboration (Ollila and Elmquist, 2011). When appraised from a knowledge management perspective, the exploration and exploitation of new solutions in an open innovation context requires the articulation of heterogeneous knowledge.

“Open labs” directly contribute to the management of creativity and innovation in the context of open innovation by designing new ecosystems and communities (Mérindol and Versailles, 2017). They make it possible to break silos by connecting people from various institutions and environments. Open labs progressively become the focal point in an economy of serendipitous encounters (Jakonen et al., 2017) and a locus of creativity in the context of

globalisation (Bathelt and Cohendet, 2014; Capdevila, 2015; Suire, 2019). They also offer the opportunity to develop new managerial practices to support collaboration between public and private actors and to experiment new creative methods (Sarpong et al., 2017).

This book illustrates, with actual cases, recent tendencies and development trajectories. It investigates, in particular, their contributions to innovation ecosystems in sectors such as healthcare, smart cities, or tertiary education. The book also offers perspectives to explain how open labs progressively become focal actors in their respective ecosystems. In addition, it shows how open labs present a unique opportunity to install new connections with stakeholders who are not traditional parts of the innovation processes or entrepreneurial journeys, such as artists. Furthermore, the book also shows how open labs diffuse their organisational model from urban areas to rural environments.

### **Conceptual approaches of open labs as original intermediaries**

From a conceptual perspective, open labs belong to the category of organisational intermediaries inside ecosystems. In line with the analysis of networks developed by Hargadon and Sutton (1997), Howells (2006) considers that intermediaries do not only act “linkers” but also as “brokers”. It means that open labs actively participate in the creation of value in ecosystems, and progressively transform into a knowledge repository to develop new solutions. Agogue et al. (2013) suggest two complementary functions to investigate the role of these intermediaries: they act as “brokers of networks” and as “brokers of content” by offering various services to develop collective strategies and collaboration.

Several forms of organisational intermediaries exist (Howells, 2006; Agogue et al., 2013): firms, not-for-profit organisations, informal groups of individuals. In this book, we consider open labs as an original type of organisational intermediaries based on the dynamics of communities. They gather people coming from various economic spheres and contribute to progressively create a sense of community among people who do not know each other (Garret et al., 2017; Bouncken and Alsam, 2019): entrepreneurs, artists, designers, employees coming from large companies, and scientists. This book investigates open labs as specific instances of organisational intermediaries based on the dynamics of communities, and the installation of physical spaces for interactions. Open labs contribute to build new cognitive architectures by animating events, coaching for innovation and creativity methods, and organising collaboration. This book shows that open labs act as catalysts in new ecosystems of innovation and contribute to the rejuvenation of industrial wastelands in urban areas and peripheral regions.

Open innovation requires the installation of new models of governance at the local level to install new dynamics of knowledge production based on collective strategies. Open labs contribute to installing these new modalities of interaction and coordination modes among the main actors of ecosystems.

Because communities are located at the kernel of their development, open labs can be considered as promoters of three forms of governance. In this perspective, the open lab phenomenon locates at the intersection between three conceptual frameworks.

First, open labs represent a “*middleground*” as defined by Cohendet et al. (2014). It means that they characterise a link, an intermediary framework based on communities and on dynamics that are not only led by prices and commercial mechanisms, between an informal underground culture, and formal organisations (the “*upperground*”). As instances of the “*middleground*”, open labs contribute to make visible (or available) ideas and solutions already present in the underground, and to transform them into innovation for the “*upperground*” (Bathelt and Cohendet, 2014; Schmidt and Brinks, 2017; Brown, 2017). This book shows that the concept of “*middleground*” is useful to understand how open labs contribute to knowledge intensive sectors such as healthcare ecosystems.

Second, open labs represent the trigger of the Triple and Quadruple Helix models of innovation (Etzkowitz and Leydesdorff, 2000; Carayannis and Campbell, 2009). The Triple Helix describes virtuous interactions and collaboration between policymakers, firms, and universities (Etzkowitz and Zhou, 2017). The Quadruple Helix extends the collaboration between these three institutional spheres to civil society, most notably citizens, artists, and media (Carayannis and Rakhmatullin, 2014). Open labs contribute to the emergence of a climate of trust suited to install the dynamics of the Triple or Quadruple Helix models of innovation at territorial level. They represent new spaces of interactions to create collaborative projects and to build a common picture of priorities that is shared by public and private actors (Ranga and Etzkowitz, 2013; Heraud, 2017). Open labs also contribute to experiment in new ways to involve citizens, artists, and “*normal*” users in creativity or innovation processes.

More recently, open labs have also been considered as a place suited for the organisation of the “*innovation commons*” (Potts, 2019). Innovation commons create the institutional conditions for an effective common pool of knowledge to accelerate the development of entrepreneurial opportunities (Allen and Potts, 2017). Innovation commons are considered as a model of innovation complementing the firm seen as a “*nexus of contracts*” as in Coase (1937, 1991) and Williamson (1990), and to the exploitation of knowledge assets, as in the resource-based view of the firm (Barney, 1991, 2001) and market mechanisms. Potts (2018) has explained that “*innovation commons*” are specifically relevant during the early stages of exploration during innovation processes. They reduce information access costs and knowledge articulation costs for entrepreneurs (Potts, 2018; 2019). Allen and Potts (2017) and Cohendet et al. (2021) directly mention open labs as illustrations of innovation commons even though they do not use this generic term: Allen and Potts (2017) refer to hackerspaces while Cohendet et al. (2021) analyse fab labs. Both explain that open labs make a direct contribution to install the dynamics of innovation commons

by managing communities where people with a heterogeneous background work and live together.

Middle ground, Triple and Quadruple Helix, innovation commons: this book expands on these three conceptual bodies and investigates the conditions for open labs to develop a large pool of shared knowledge to encourage creativity and innovation. Even though the Triple and Quadruple Helix concepts emerged as a concept used to analyse macroeconomic phenomena and innovation-related public policies, the conceptual frameworks provide opportunities to discuss the interaction between micro, meso, and macro levels in the management of innovation and creativity.

### **Managerial approaches of open labs as agile organisations**

The multifaceted contribution of open labs in the open innovation context directly relates to their internal ways of working and managerial originalities. Open labs cannot be considered as classical organisations, like companies, because they serve the dynamics of communities. Mérindol et al. (2021) call them “communities-based organisations” because the dynamics of communities explain their development. Because of the self-organisation schemes inherent in communities, the boundaries of the open labs are blurred and change over time. By nature, open labs therefore represent flexible organisations.

Explicit organisational and managerial challenges underlie operations in open labs when connecting together several “worlds” and contributing to the design of new forms of collaboration. This managerial perspective represents another originality of open labs as organisations. This book explains that such managerial specificities do not emerge at random, and that original managerial competencies are required to offer the boundary conditions for knowledge exchange and value creation identified by Goermar et al. (2021). If open labs represent boundary organisations or organisational intermediaries, the teams in charge of the development of open labs therefore represent boundary spanners in ecosystems.

They use tools and physical spaces that can be respectively considered as boundary objects and boundary spaces. Boundary objects offer the opportunity to mediate collaboration and generate the appropriate mechanisms for knowledge articulation during the emergence of new innovative solutions (Versailles and Mérindol, 2019). Boundary spaces offer the opportunity to work inside a neutral space suited to the emergence of unexpected encounters and to collaboration across cognitive and organisational paradigms (Micek, 2020; Champenois and Etzkowitz, 2018). Sarpong et al. (2017) point out that the challenge of the development of these boundary spaces is to change practices related to innovation. Open labs represent both a cognitive and physical space; Hussenet (2021) has already applied the concept of organisational fluidity to analyse them.

This book shows how the key components of open labs (physical spaces, community, and portfolio of services) evolve over time. It investigates how

open labs represent an agile organisation and handle, enact, or combine, the three managerial dimensions of boundary spanners, boundary spaces, and boundary objects. This book investigates managerial challenges underlying their constant evolution to adapt to the needs of communities and ecosystems. Specific organisational and managerial challenges apply to open labs because of their links with communities that still require further investigation. However, this book will show that these managerial modalities must be proactively considered for open labs to perform their role and make an impact on ecosystems. The same holds for the business model of open labs, that still presents a series of open questions to generate sustainable and independent ventures. Open labs must still find effective solutions to break even and balance their mission, cost structure, and revenues. This book shows that the business model of open labs remains a traditional one, adhering to the rationales of the “old economy”, even though it does also confront the challenge of handling the different variables supporting the analysis of the dynamics of communities. In traditional organisations, managerial processes aim at the production of specific “outputs”; in open labs, managerial processes aim at serving the community. The book will show that the sustainability of open labs depends entirely on the lifecycle of their communities.

### **Structure of the book**

In the Foreword, Elise Tissier, Bpifrance Le Lab director, draws on perspectives about the open lab phenomenon and shows the relevance of this phenomenon for public policies.

This book is then divided into three parts and ten chapters. All chapters opt for a qualitative approach based on interviews, visits to open labs, and direct observation. In the chapters, field research elaborates on unique or multiple cases, investigating open labs located in France, Spain, Canada, and Asia.

The first part of this book investigates common features of open labs as agile organisations. Two chapters provide an analysis of their main strategic and organisational dimensions.

In Chapter 1, Valérie Mérindol and David W. Versailles offer a taxonomy of open labs based on key organisational attributes. The chapter zooms out from eight years of field research investigations in France and in Asia (funded by Bpifrance Le Lab and Innovation Factory or developed in partnership with the ANRT FutuRIS platform) and develops an analysis of communities hosted by open labs, their interaction with physical space and the evolutions of service portfolios. This taxonomy represents a tool for further research.

In Chapter 2, David W. Versailles investigates the rationales behind the elaboration of business models for the open labs, and perspectives for their sustainability. The chapter explains rationales for profitability and sustainability, in building links with strategic intentions. The chapter explains that these aspects are most often difficult to appraise, because open labs are often encapsulated into complex organisational and legal designs. The chapter explains that the business



models of open labs instantiate rationales prevailing in the old economy, with a strong emphasis on occupancy rates, threshold effects, and the management of fixed costs. The main visible tension is between sustainability and scale, but the main distinctive assets lie in the dynamics of the community. This means that the root causes for sustainability relate to the dynamics of knowledge lifecycles and the preservation of strong ties inside the open lab communities, nurtured by a proactive management of the different components of their operations. Handling all these aspects at the same time proves to be a difficult equation that ultimately wraps up in the size of available working capital, and in the survival of communities. It is difficult to define *ex abrupto* the optimal size of a community, but field research already made it possible to point out that an open lab will find it difficult to create value beyond genuine consulting if its community dies.

The second part of the book investigates the multifaceted contribution of open labs as innovation intermediaries.

Chapter 3 specifically investigates open labs active in the domain of arts and culture. In this chapter, Nicolas Aubouin calls them “open art labs”. He analyses how they create value with different configurations to serve the traditional functions of open labs in a renewed and transversal approach. The chapter focuses on three open art labs in France to describe the diversity of roles enacted by artists when they contribute or support innovation processes: explorers (promoters of a new vision creating bridges between different worlds), boundary spanners (Levina and Vaast, 2005) serving the articulation of different expertise, and co-producers of innovation (Imbert and Chauvet, 2013). The dialogue between artists and open art labs creates a fertile environment where the artists’ contributions can take three contributions to make an impact on the innovation process: pollination, hybridisation, or pervasion. The chapter shows the issues at stake when creating value around artistic projects, or working with artists, and identifies expected managerial contributions to facilitate these activities.

Chapters 4 and 5 both work on healthcare ecosystems.

In Chapter 4, Alexandra Le Chaffotec and Valérie Mérindol focus on living labs in healthcare ecosystems. They show that living labs have three different contributions as open labs: energise healthcare innovation ecosystems by bringing together hospitals, private companies, and other institutions in reference to the user-centric approach of innovation; act as architects of innovation through the organisation of specific events (e.g., hackathons) enabling co-creation activities; or promote the emergence of communities of practice in enrolling end users into innovation processes. Beyond the rejuvenation of existing ecosystems, the chapter unveils the importance of the physical space to serve different options in the dynamics of communities. Building on the difference between their interstitial, user-friendly, or functional attributes, the chapter shows that different designs of the physical space and different managerial activities around it serve the dynamics of communities in original ways. Interstitial spaces foster the emergence of communities of

innovation. User-friendly spaces support the development of communities of practice.

In Chapter 5, Luc Sirois and Karl-Emanuel Dionne investigate the temporal dynamics at play in innovation ecosystems. They analyse the tempo of events to nurture the dynamics of communities and of innovation projects. This chapter is based on a unique case study, Montréal-based Hacking Health network, where both authors are/have been “insiders”. This chapter shows that events are essential tool orchestrators to be used in connection with innovation spaces to orchestrate the dynamics of ecosystems and handle the tempo of innovation. The authors explain that a space without events is like hardware without software, or bodies without souls. The authors claim that, in the absence of events, nurturing communities becomes impossible and open labs cannot deliver results. The authors show that the temporality of events feeds the epistemic contributions made by open labs: events are used to train, teach, create, and share knowledge at moments in time, therefore nurturing tacit and explicit knowledge inside innovation communities. The chapter shows the importance of synchronicity and temporality in the management of knowledge articulation processes in open labs, and in their interaction with innovation communities.

Chapter 6 by Luc Sirois, Octave Niamie, and Patrick Cohendet investigates the open lab “Communittech” in the Kitchener-Waterloo region, Canada, that act as an ecosystem of entrepreneurs. The authors show the various managerial processes in place to support the emergence of this open lab, and the importance of the culture of collaboration prevailing in that region to create a momentum around this open lab. The chapter shows how the Communittech open lab has progressively developed an associative model strengthening the sense of belonging for entrepreneurs, and a physical space reflecting the values of collaboration. The open lab was initially focused on start-ups, and gradually expanded to handle interactions with large companies. This development trajectory illustrates rationales for the focalisation of innovation-related activities around this open lab and the parallel development of the associated community of innovation. The chapter also shows how the agility of this open lab made it possible to handle specific shows in the ecosystem and become the “Silicon Valley of the North” leading to the formation of hundreds of technology start-ups, creating tens of thousands of jobs. The chapter explains the importance of managing and planning activities in and around this open lab, and it also identifies a long series of questions to address the sustainability of the model and ensure the resilience of the ecosystem after the pandemic crisis.

In Chapter 7, Ignasi Capdevila analyses the transposition of the open lab concept into rural ecosystems, most notably around the function of coworking spaces. The chapter provides an analysis of the role and of the management of open labs in rural environments and focuses on the development of new communities in this specific context. Capdevila investigates the Cowocat Rural case, coworking spaces located in rural Catalonia, Spain. He explains that the dynamics of communities tend to be limited to the physical space in urban

environments, while it is expanded to territorial embeddedness in rural cases. Because of the low density of people in rural environments, the main challenge of the coworking spaces is to overcome the gap between external and internal communities, and the limitations incurred by the physical space hosting the coworking space. To ensure the development of communities, the chapter explains that coworking spaces need to deploy the management of the physical spaces beyond their boundaries, and to animate the dynamics of interactions outside them. The management must feed a virtuous circle of community development where activities and events hosted in the space progressively diffuse throughout the community, ensure its attractiveness, and diffuse to new members. While the emphasis always goes on internal collaborative dynamics for urban coworking, the chapter explains that the key to sustainability and success in rural coworking lies in the embeddedness of coworking practices into the local environment, with an explicit attention paid to reasons making the territory a focal point of attractivity in regional policies.

The last part of the book investigates how open labs influence the emergence of new governance models for innovation that were introduced earlier in this introduction. Three chapters contribute to this analysis. In Chapter 8, Olivier Irrmann introduces a link with the “middleground” concept. In Chapter 9, the authors working around Patrick Cohendet and Laurent Simon at MOSAIC research centre in HEC Montreal illustrate the link between open labs and the concept of innovation commons. In Chapter 10, Valérie Mérindol and David W. Versailles refer to the Triple and Quadruple Helix models of innovation. Even if they join different theoretical debates and illustrate different concepts, all three chapters stress show the importance of open labs in the emergence or in the facilitation of epistemic mechanisms in innovation processes.

Chapter 8 focuses on the emergence of communities of innovation in tertiary education and in the public service. Olivier Irrmann explains the bottom-up introduction of multi-disciplinarity in the educational system, and of design-based approaches in public administrations. He shows how local initiatives progressively percolated to the rest of their respective organisations in local ecosystems. In both cases, the processes started with an epistemic community (Cohendet et al., 2014) and a local physical space, to then gain leverage with projects and progressively build the “middleground”. The cases explain the conditions for independence and interstitiality in these (constrained) environments. They show that the concept of “middleground” can be applied beyond the traditional frameworks of the management of creativity and that open labs play a prominent role in the transformation of the respective ecosystems.

Chapter 9 has been prepared by a large team of authors with a twin expertise as researchers and practitioners about the TransMedTech (iTMT) case, an open lab (living lab) installed in Montréal, Canada: Nathalie Tremblay, Patrick Cohendet, Geneviève Cyr, Margaux Manent, Laurent Simon, Marie-Pierre Faure, and Carl-Eric Aubin. Marie-Pierre Faure is currently Deputy Director in this open lab; Carl-Eric Aubin is the Founding Director, currently

Executive and Scientific Director. iTMT was one of the first open lab initiatives in Canada, with a focus on medical technologies and user-centric innovation processes. The chapter shows the sequences progressively building the community in interaction with “knowledge commons”, but it stresses the need for the articulation of different “commons” to establish interdisciplinary boundary-crossing. The chapter shows how knowledge, innovation, social, and symbolic commons follow each other in a logical and temporal sequence around an open lab adhering to the rationales of a “middleground” and becoming an actual hub for innovation in medical technologies.

In Chapter 10, Valérie Mérindol and David W. Versailles explain that open labs have become the catalysts of many collaborations between the public and private actors, acting as boundary spaces supporting the development of the dynamics of Triple or Quadruple Helix innovation governance modes. They analyse cases in the fields of healthcare and smart cities to show the interplay between knowledge, consensus, and innovation spaces to build this catalyst role. They also show the necessity to install trust and legitimation mechanisms when these do not exist before open labs start their operations. The authors also explain the importance of appraising the contribution made by open labs from the “knowledge-based view” perspective of organisations, and the major importance of open lab managerial teams to facilitate the social learning cycles inside the open labs, and between the different contributors of interactions between the Triple or Quadruple Helixes.

The book concludes with an Afterword by Michel Ida, currently in charge of supervising and heading projects on societal impact of sciences and technologies at the French CEA (French Alternative Energies and Atomic Energy Agency), and formerly the Founding Vice president heading the open lab networks at CEA Tech. Michel Ida has been supporting, and contributing to, the newPIC chair initiatives on open labs since the beginning of our research in this area. In his Afterword, he shares his 20 years’ experience in the domain. Michel Ida shows the importance of building meaning for the future to best anticipate issues in relation to the diffusion of technologies and innovation. He explains the fallacies following the resurgence of “magical thinking” (Levi-Strauss, 1966) and points out the main challenges incurred by the transition towards the new patterns of “sustainability centric” innovation.

## References

- Agogue, M., Ystrom, A., & Le Masson, P. (2013). Rethinking the role of intermediaries as an architect of collective exploration and creation of knowledge. *International Journal of Innovation Management*, 17(2), 1350005-1-1350005-24.
- Allen, D. W. E., & Potts, J. (2016). The origin of the entrepreneur and the role of the innovation commons. *SSRN Electronic Journal*, (November), 14 pages, article 2867850, Conference paper for the 86<sup>th</sup> annual meeting of the Southern Economic Association conference, Washington DC, Nov. 2016.

- Amin, A., & Cohendet, P. (2004). *Architecture of knowledge: Firms, capabilities and communities*. New York: Oxford University Press.
- Barney, J. B. (1991). Firm resources and sustained competitive advantage. *Journal of Management*, 17(1), 99–120.
- Barney, J. B. (2001). Is the resource-based “view” a useful perspective for strategic management research? Yes. *Academy of Management Review*, 26(1), 41–56.
- Bathelt, H., & Cohendet, P. (2014). The creation of knowledge: Local building, global accessing and economic development—toward an agenda. *Journal of Economic Geography*, 14(5), 1–14.
- Bogers, M., Chesbrough, H., & Moedas, C. (2018). Open innovation: Research, practices, and policies. *California Management Review*, 60(2), 5–16.
- Bouncken, R., & Aslam, M. M. (2019). Understanding knowledge exchange processes among diverse users of coworking-spaces. *Journal of Knowledge Management*, 23(10), 2067–2085.
- Bouncken, R. B., & Reuschl, A. J. (2018). Coworking-spaces: How a phenomenon of the sharing economy builds a novel trend for the workplace and for entrepreneurship. *Review of Managerial Science*, 12(1), 317–334. <https://doi.org/10.1007/s11846-016-0215-y>.
- Brown, J. (2017). Curating the “third place”? Coworking and the mediation of creativity. *Geoforum*, 82(April), 112–126.
- Bürkner, H. J., & Lange, B. (2020). New geographies of work: Re-scaling micro-worlds. *European Spatial Research and Policy*, 27(1), 53–74. <https://doi.org/10.18778/1231-1952.27.1.03>.
- Capdevila, I. (2015). Co-working spaces and the localised dynamics of innovation in Barcelona. *International Journal of Innovation Management*, 19(3), 1540004–1–28.
- Carayannis, E. G., & Campbell, D. F. J. (2009). “Mode 3” and “quadruple helix”: Toward a 21st century fractal innovation ecosystem. *International Journal of Technology Management*, 46(3/4), 201.
- Carayannis, E. G., & Rakhmatullin, R. (2014). The quadruple/quintuple innovation helixes and smart specialisation strategies for sustainable and inclusive growth in Europe and beyond. *Journal of the Knowledge Economy*, 5(2), 212–239.
- Champenois, C., & Etkowitz, H. (2018). From boundary line to boundary space: The creation of hybrid organizations as a triple helix micro-foundation. *Technovation*, 76–77, 28–39.
- Chesbrough, H. (2003). *Open innovation: The new imperative for creating and profiting from technology*. Boston, MA: Harvard Business School Press.
- Coase, R. H. (1937). The nature of the firm. *Economica*, 4(16), 386–405.
- Coase, R. H. (1991). The nature of the firm: Origin, meaning, influence. In O. E. Williamson & S. G. Winter (Eds.), *The nature of the firm* (pp. 34–74). Oxford: Oxford University Press.
- Cohendet, P., Grandadam, D., & Suire, R. (2021). Reconsidering the dynamics of local knowledge creation: Middlegrounds and local innovation commons in the case of FabLabs. *Zeitschrift für Wirtschaftsgeographie/The German Journal of Economic Geography*, 65(1), 1–11.
- Cohendet, P., Grandadam, D., Simon, L., & Capdevila, I. (2014). Epistemic communities, localization and the dynamics of knowledge creation. *Journal of Economic Geography*, 14(5), 929–954.
- Etkowitz, H., & Zhou, C. (2017). *The triple helix: University-industry-government and entrepreneurship*. London: Routledge.

- Etzkowitz, H., & Leydesdorff, L. (2000). The dynamics of innovation: From national systems and 'mode 2' to a triple helix of university-industry-government relations. *Research Policy*, 29(2), 109–101.
- Fab Lab. Studio. <https://fablab.studio/histoire/dans-le-monde/>, consulted in Sept. 2021.
- Garrett, L., Spreitzer, G., & Bacevice, P. (2017). Co-constructing a sense of communities at work: The emergence of communities in coworking spaces. *Organization Studies*, 38(6), 821–842.
- Goemar, L., Barwinski, R. W., Bouncken R. B., & Laudien, S. M. (2021). Co-creation in coworking-spaces: Boundary conditions of diversity. *Knowledge Management Research & Practice*, 19(1), 53–64.
- Hargadon, A., & Sutton, R. I. (1997). Technology brokering and innovation in a product development firm. *Administrative Science Quarterly*, 42(4), 716–749.
- Heraud, J. A. (2017). Science and innovation. In H. Bathelt, P. Cohendet, S. Henn, & L. Simon (Eds.), *The Elgar companion to innovation and knowledge creation* (pp. 56–74). London: Edward Elgar Publishing.
- Howell, T., & Bingham, C. (2019). Coworking spaces: Working alone, together. *Kenan Institute of Private Enterprise, UNC Kenan-Flager Business School, The University of North Carolina at Chapel Hill, NC, USA*.
- Howells, J. (2006). Intermediation and the role of intermediaries in innovation. *Research Policy*, 35(5), 715–728.
- Hussenot, A. (2021). All for one, one for all! From events to organizational dynamics in fluid organization. *M@n@gement*, 24(2), 1–22.
- Imbert, G., & Chauvet, V. (2013). Faire coproduire le client en conception innovante. Les quatre processus mobilisés par les sociétés de conseil en innovation. *Revue française de gestion*, 39(234), 167–183.
- Jacobides, M. G., Cennamo, C., & Gawer, A. (2018). Towards a theory of ecosystems. *Strategic Management Journal*, 39(8), 2255–2276.
- Jakonen, M., Kivinen, N., Salovaara, P., & Hirkman, P. (2017). Towards an economy of encounters? A critical study of affectual assemblages in coworking. *Scandinavian Journal of Management*, 33(4), 235–242.
- Levina, N., & Vaast, E. (2005). The emergence of boundary spanning competence in practice: Implications for implementation and use of information systems. *MIS Quarterly*, 29(2), 335–363.
- Levi-Strauss, C. (1966). *The savage mind*. Chicago, IL: University of Chicago Press.
- Mérindol, V., Aubouin, N., & Capdevila, I. (2021). « Articuler confiance, hiérarchie et prix au sein des communautés : le cas des modes de coordination dans les open labs ». *Management International*, 25(HS), 184–205.
- Mérindol, V., Bouquin, N. Versailles, D. W. Aubouin, N., Capdevila, I., Le Chaffotec, A., Chiovetta, A., & Voisin, Th. (2016). *Le Livre Blanc des Open Labs. Quelles pratiques? Quels changements en France?* Travaux du groupe d'experts co-animé par ANRT/FutuRIS et la chaire newPIC de PSB, Paris: ANRT et PSB (Mars).
- Mérindol, V., & Versailles, D. W. (2017). *Créer et innover aujourd'hui en Île-de-France : le rôle des plateformes d'innovation*. Research funded by Bpifrance Le Hub, Innovation Factory et Paris&Co (with contributions by Ignasi Capdevila, Alexandra Le Chaffotec, Nicolas Aubouin, Marion Desnost et Marianne Cohen for field research). Paris: PSB.
- Mérindol, V., & Versailles, D. W. (2019). *Créer et innover aujourd'hui en France et en Asie : Le rôle des plateformes d'innovation et des open labs d'entreprise*. (Contributions by Innovation is Everywhere for field research). Research Funded by Bpifrance Le Lab and Innovation Factory. Paris: PSB.

- Mérindol, V., Versailles, D. W., Le Chaffotec, A., Aubouin, N., & Capdevila, I. (2018). *Créer et innover aujourd'hui en France : le rôle des plateformes d'innovation dans les écosystèmes régionaux*. Research funded by Bpifrance Le Lab and Innovation Factory (with contributions by Oceane Duyck and Salim Moulmaaz for field research). Paris: PSB.
- Merkel, J. (2017). Coworking and innovation. In H. Bathelt, P. Cohendet, S. Henn, & L. Simon (Eds.), *The Elgar companion to innovation and knowledge creation* (pp. 570–588). London: Edward Elgar Publishing.
- Micek, G. (2020). Studies of Proximity in coworking spaces: The basic conceptual challenges. *European Spatial Research and Policy*, 27(1), 9–35.
- Ollila, S., & Elmquist, M. (2011). Managing open innovation: Exploring challenges at the interfaces of an open innovation arena. *Creativity and Innovation Management*, 20(4), 273–283.
- Potts, J. (2018). Governing the innovation commons. *Journal of Institutional Economics*, 14(6), 1025–1047.
- Potts, J. (2019). *Innovation commons: The origin of economic growth*. Oxford: Oxford University Press.
- Ranga, M., & Etzkowitz, H. (2013). Triple helix systems: An analytical framework for innovation policy and practice in the knowledge society. *Industry and Higher Education*, 27(4), 237–262.
- Roberts, J. (2017). Community, creativity and innovation. In H. Bathelt, P. Cohendet, S. Henn, & L. Simon (Eds.), *The Elgar companion to innovation and knowledge creation* (pp. 342–359). London: Edward Elgar Publishing.
- Sarpong, D., AbdRazak, A., Alexander, E., & Meissner, D. (2017). Organizing practices of university, industry and government that facilitate (or impede) the transition to a hybrid triple helix model of innovation. *Technological Forecasting and Social Change*, 123, 142–152.
- Schmidt, S., & Brinks, V. (2017). Open creative labs: Spatial settings at the intersection of communities and organizations. *Creativity and Innovation Management*, 26(3), 291–299.
- Suire, R. (2019). Innovating by bricolage: How do firms diversify through knowledge interactions with FabLabs? *Regional Studies*, 53(7), 939–950.
- Versailles, D. W., & Merindol, V. (2019). Boundary objects as the missing link in the orchestration of resources: An exploratory study of Dassault Aviation Mirage IV and Rafale programs. *Management International*, 23(4), 102–117.
- West, J., & Lakhani, K. R. (2008). Getting clear about communities in open innovation. *Industry and Innovation*, 15(2), 223–231.
- Williamson, O. E. (1990). A comparative of alternative approaches to economic organization. *Journal of Institutional and Theoretical Economics*, 146(1), 61–71.

## Introduction

- Agogue, M. , Ystrom, A. , & Le Masson, P. (2013). Rethinking the role of intermediaries as an architect of collective exploration and creation of knowledge. *International Journal of Innovation Management*, 17(2), 1350005-1–1350005-24.
- Allen, D. W. E. , & Potts, J. (2016). The origin of the entrepreneur and the role of the innovation commons. *SSRN Electronic Journal*, (November), 14 pages, article 2867850, Conference paper for the 86th annual meeting of the Southern Economic Association conference, Washington DC, Nov. 2016.
- Amin, A. , & Cohendet, P. (2004). *Architecture of knowledge: Firms, capabilities and communities*. New York: Oxford University Press.
- Barney, J. B. (1991). Firm resources and sustained competitive advantage. *Journal of Management*, 17(1), 99–120.
- Barney, J. B. (2001). Is the resource-based “view” a useful perspective for strategic management research? Yes. *Academy of Management Review*, 26(1), 41–56.
- Bathelt, H. , & Cohendet, P. (2014). The creation of knowledge: Local building, global accessing and economic development-toward an agenda. *Journal of Economic Geography*, 14(5), 1–14.
- Bogers, M. , Chesbrough, H. , & Moedas, C. (2018). Open innovation: Research, practices, and policies. *California Management Review*, 60(2), 5–16.
- Bouncken, R. , & Aslam, M. M. (2019). Understanding knowledge exchange processes among diverse users of coworking-spaces. *Journal of Knowledge Management*, 23(10), 2067–2085.
- Bouncken, R. B. , & Reuschl, A. J. (2018). Coworking-spaces: How a phenomenon of the sharing economy builds a novel trend for the workplace and for entrepreneurship. *Review of Managerial Science*, 12(1), 317–334. <https://doi.org/10.1007/s11846-016-0215-y>.
- Brown, J. (2017). Curating the “third place”? Coworking and the mediation of creativity. *Geoforum*, 82(April), 112–126.
- Bürkner, H. J. , & Lange, B. (2020). New geographies of work: Re-scaling micro-worlds. *European Spatial Research and Policy*, 27(1), 53–74. <https://doi.org/10.18778/1231-1952.27.1.03>.
- Capdevila, I. (2015). Co-working spaces and the localised dynamics of innovation in Barcelona. *International Journal of Innovation Management*, 19(3), 1540004-1-28.
- Carayannis, E. G. , & Campbell, D. F. J. (2009). “Mode 3” and “quadruple helix”: Toward a 21st century fractal innovation ecosystem. *International Journal of Technology Management*, 46(3/4), 201.
- Carayannis, E. G. , & Rakhmatullin, R. (2014). The quadruple/quintuple innovation helixes and smart specialisation strategies for sustainable and inclusive growth in Europe and beyond. *Journal of the Knowledge Economy*, 5(2), 212–239.
- Champenois, C. , & Etzkowitz, H. (2018). From boundary line to boundary space: The creation of hybrid organizations as a triple helix micro-foundation. *Technovation*, 76–77, 28–39.
- Chesbrough, H. (2003). *Open innovation: The new imperative for creating and profiting from technology*. Boston, MA: Harvard Business School Press.
- Coase, R. H. (1937). The nature of the firm. *Economica*, 4(16), 386–405.
- Coase, R. H. (1991). The nature of the firm: Origin, meaning, influence. In O. E. Williamson & S. G. Winter (Eds.), *The nature of the firm* (pp. 34–74). Oxford: Oxford University Press.
- Cohendet, P. , Grandadam, D. , & Suire, R. (2021). Reconsidering the dynamics of local knowledge creation: Middlegrounds and local innovation commons in the case of FabLabs. *Zeitschrift für Wirtschaftsgeographie/The German Journal of Economic Geography*, 65 (1), 1–11.
- Cohendet, P. , Grandadam, D. , Simon, L. , & Capdevila, I. (2014). Epistemic communities, localization and the dynamics of knowledge creation. *Journal of Economic Geography*, 14(5), 929–954.
- Etzkowitz, H. , & Zhou, C. (2017). *The triple helix: University-industry-government and entrepreneurship*. London: Routledge.
- Etzkowitz, H. , & Leydesdorff, L. (2000). The dynamics of innovation: From national systems and ‘mode 2’ to a triple helix of university-industry-government relations. *Research Policy*, 29(2), 109–101.
- Fab Lab . Studio. <https://fablab.studio/histoire/dans-le-monde/>, consulted in Sept. 2021.
- Garrett, L. , Spreitzer, G. , & Bacevice, P. (2017). Co-constructing a sense of communities at work: The emergence of communities in coworking spaces. *Organization Studies*, 38(6), 821–842.



- Goermar, L. , Barwinski, R. W. , Bouncken R. B. , & Laudien, S. M. (2021). Co-creation in coworking-spaces: Boundary conditions of diversity. *Knowledge Management Research & Practice*, 19(1), 53–64.
- Hargadon, A. , & Sutton, R. I. (1997). Technology brokering and innovation in a product development firm. *Administrative Science Quarterly*, 42(4), 716–749.
- Heraud, J. A. (2017). Science and innovation. In H. Bathelt , P. Cohendet , S. Henn , & L. Simon (Eds.), *The Elgar companion to innovation and knowledge creation* (pp. 56–74). London: Edward Elgar Publishing.
- Howell, T. , & Bingham, C. (2019). Coworking spaces: Working alone, together. Kenan Institute of Private Enterprise, UNC Kenan-Flager Business School, The University of North Carolina at Chapel Hill, NC, USA.
- Howells, J. (2006). Intermediation and the role of intermediaries in innovation. *Research Policy*, 35(5), 715–728.
- Hussenot, A. (2021). All for one, one for all! From events to organizational dynamics in fluid organization. *M@n@gement*, 24(2), 1–22.
- Imbert, G. , & Chauvet, V. (2013). Faire coproduire le client en conception innovante. Les quatre processus mobilisés par les sociétés de conseil en innovation. *Revue française de gestion*, 39(234), 167–183.
- Jacobides, M. G. , Cennamo, C. , & Gawer, A. (2018). Towards a theory of ecosystems. *Strategic Management Journal*, 39(8), 2255–2276.
- Jakonen, M. , Kivinen, N. , Salovaara, P. , & Hirkman, P. (2017). Towards an economy of encounters? A critical study of affectual assemblages in coworking. *Scandinavian Journal of Management*, 33(4), 235–242.
- Levina, N. , & Vaast, E. (2005). The emergence of boundary spanning competence in practice: Implications for implementation and use of information systems. *MIS Quarterly*, 29(2), 335–363.
- Levi-Strauss, C. (1966). *The savage mind*. Chicago, IL: University of Chicago Press.
- Mérindol, V. , Aubouin, N. , & Capdevila, I. (2021). « Articuler confiance, hiérarchie et prix au sein des communautés : le cas des modes de coordination dans les open labs ». *Management International*, 25(HS), 184–205.
- Mérindol, V. , Bouquin, N. , Versailles, D. W. , Aubouin, N. , Capdevila, I. , Le Chaffotec, A. , Chiovetta, A. , & Voisin, Th. (2016). *Le Livre Blanc des Open Labs. Quelles pratiques? Quels changements en France? Travaux du groupe d'experts co-animé par ANRT/FutuRIS et la chaire newPIC de PSB*, Paris: ANRT et PSB (Mars).
- Mérindol, V. , & Versailles, D. W. (2017). *Créer et innover aujourd'hui en Île-de-France : le rôle des plateformes d'innovation. Research funded by Bpifrance Le Hub, Innovation Factory et Paris&Co (with contributions by Ignasi Capdevila, Alexandra Le Chaffotec, Nicolas Aubouin, Marion Desnost et Marianne Cohen for field research)*. Paris: PSB.
- Mérindol, V. , & Versailles, D. W. (2019). *Créer et innover aujourd'hui en France et en Asie : Le rôle des plateformes d'innovation et des open labs d'entreprise. (Contributions by Innovation is Everywhere for field research)*. Research Funded by Bpifrance Le Lab and Innovation Factory. Paris: PSB.
- Mérindol, V. , Versailles, D. W. , Le Chaffotec, A. , Aubouin, N. , & Capdevila, I. (2018). *Créer et innover aujourd'hui en France : le rôle des plateformes d'innovation dans les écosystèmes régionaux. Research funded by Bpifrance Le Lab and Innovation Factory (with contributions by Oceane Duyck and Salim Moulmaaz for field research)*. Paris: PSB.
- Merkel, J. (2017). Coworking and innovation. In H. Bathelt , P. Cohendet , S. Henn , & L. Simon (Eds.), *The Elgar companion to innovation and knowledge creation* (pp. 570–588). London: Edward Elgar Publishing.
- Micek, G. (2020). Studies of Proximity in coworking spaces: The basic conceptual challenges. *European Spatial Research and Policy*, 27(1), 9–35.
- Ollila, S. , & Elmquist, M. (2011). Managing open innovation: Exploring challenges at the interfaces of an open innovation arena. *Creativity and Innovation Management*, 20(4), 273–283.
- Potts, J. (2018). Governing the innovation commons. *Journal of Institutional Economics*, 14(6), 1025–1047.
- Potts, J. (2019). *Innovation commons: The origin of economic growth*. Oxford: Oxford University Press.
- Ranga, M. , & Etkowitz, H. (2013). Triple helix systems: An analytical framework for innovation policy and practice in the knowledge society. *Industry and Higher Education*, 27(4), 237–262.

- Roberts, J. (2017). Community, creativity and innovation. In H. Bathelt , P. Cohendet , S. Henn , & L. Simon (Eds.), *The Elgar companion to innovation and knowledge creation* (pp. 342–359). London: Edward Elgar Publishing.
- Sarpong, D. , AbdRazak, A. , Alexander, E. , & Meissner, D. (2017). Organizing practices of university, industry and government that facilitate (or impede) the transition to a hybrid triple helix model of innovation. *Technological Forecasting and Social Change*, 123, 142–152.
- Schmidt, S. , & Brinks, V. (2017). Open creative labs: Spatial settings at the intersection of communities and organizations. *Creativity and Innovation Management*, 26(3), 291–299.
- Suire, R. (2019). Innovating by bricolage: How do firms diversify through knowledge interactions with FabLabs? *Regional Studies*, 53(7), 939–950.
- Versailles, D. W. , & Merindol, V. (2019). Boundary objects as the missing link in the orchestration of resources: An exploratory study of Dassault Aviation Mirage IV and Rafale programs. *Management International*, 23(4), 102–117.
- West, J. , & Lakhani, K. R. (2008). Getting clear about communities in open innovation. *Industry and Innovation*, 15(2), 223–231.
- Williamson, O. E. (1990). A comparative of alternative approaches to economic organization. *Journal of Institutional and Theoretical Economics*, 146(1), 61–71.

## Appraising the diversity of open labs with a taxonomy

- Adler, P. S. (2001). Market, hierarchy, and trust: The knowledge economy and the future of capitalism. *Organization Science*, 12(2), 215–234.
- Amin, A. , & Cohendet, P. (2004). *Architectures of knowledge: Firms, capabilities, and communities*. Oxford: Oxford University Press.
- Bouncken, R. , and Aslam, M. M. (2019). Understanding knowledge exchange processes among diverse users of coworking-spaces. *Journal of Knowledge Management*, 23(10), 2067–2085.
- Bouncken, R. B. , and Reuschl, A. J. (2018). Coworking-spaces: How a phenomenon of the sharing economy builds a novel trend for the workplace and for entrepreneurship. *Review of Managerial Science*, 12(1), 317–334. <https://doi.org/10.1007/s11846-016-0215-y>.
- Capdevila, I. (2015). Co-working spaces and the localised dynamics of innovation in Barcelona. *International Journal of Innovation Management*, 19(3), 154004.
- Cohendet, P. , Grandadam, D. , & Suire, R. (2021). Reconsidering the dynamics of local knowledge creation: Middlegrounds and local innovation commons in the case of FabLabs. *Zeitschrift fur Wirtschaftsgeographie/The German Journal of Economic Geography*, 65(1), 1–11.
- Gandini, A. (2015). The rise of coworking spaces: A literature review. *Ephemera: Theory and Politics in Organization*, 15(1), 193–205.
- Garrett, L. , Spreitzer, G. , and Bacevice, P. (2017). Co-constructing a sense of communities at work: The emergence of communities in coworking spaces. *Organization Studies*, 38(6), 821–842.
- Howell, T. , and Bingham, C. (2019). *Coworking spaces : Working alone, together*. Kenan Institute of Private Enterprise. Kenan Institute Working Paper. Retrieved from [https://www.kenaninstitute.unc.edu/wp-content/uploads/2019/04/Coworking\\_04042019.pdf](https://www.kenaninstitute.unc.edu/wp-content/uploads/2019/04/Coworking_04042019.pdf).
- Hussenot, A. (2021). All for one, one for all! From events to organizational dynamics in fluid organization. *M@n@gement*, 24(2), 1–22.
- Jakonen, M. , Kivinen, N. , Salovaara, P. , and Hirkman, P. (2017). Towards an economy of encounters? A critical study of affectual assemblages in coworking. *Scandinavian Journal of Management*, 33(4), 235–242.
- Merindol, V. , Aubouin, N. , and Capdevila, I. (2021). « Combiner confiance résiliente et réflexive, hiérarchie formelle et prix au sein des communautés : Le cas des open labs », *Management International*, sous presse.
- Merindol, V. , & Versailles, D. W. (2017). *Créer et Innover aujourd'hui en Ile de France : Le rôle des plateformes d'innovation, rapport d'étude commandée par Bpifrance LE LAB et Innovation Factory, Newpic Chair, PSB*. <http://www.newpic.fr/02proj2016openlabsidf.html>.
- Merkel, J. (2017). Coworking and innovation. In H. Bathelt , P. Cohendet , S. Henn , & L. Simon (Eds.), *The Elgar companion to innovation and knowledge creation* (pp. 750–597). London:

Edward Elgar Publishing.

- Oksanen, K. , & Ståhle, P. (2013). Physical environment as a source for innovation: Investigating the attributes of innovative space. *Journal of Knowledge Management*, 17(6), 815–827. <https://doi.org/10.1108/JKM-04-2013-0136>
- Parrino, L. (2013). Coworking: Assessing the role of proximity in knowledge exchange. *Knowledge Management Research and Practice*, 13(3), 261–271.
- Potts, J. (2019). *Innovation commons: The origin of economic growth*. Oxford: Oxford University Press.
- Spinuzzi, C. (2012). Working alone, together: Coworking as emergent collaborative activity. *Journal of Business and Technical Communication*, 26(4), 399–441.
- Spinuzzi, C. , Bodrožić, Z. , Scaratti, G. , and Ivaldi, S. (2019). “Coworking is about community”: But what is “community” in coworking? *Journal of Business and Technical Communication*, 33(2), 112–140.
- Suire, R. (2019). Innovating by bricolage: How do firms diversify through knowledge interactions with FabLabs? *Regional Studies*, 53(7), 939–950.
- Yunus, M. , Moingeon, B. , and Lehmann-Ortega, L. (2010). Building social business models: Lessons from the Grameen experience. *Long Range Planning*, 43(2–3), 308–325.

## The business model of open labs

- Agogué, M. , Yström, A. and Le Masson, P. (2013). “Rethinking the role of intermediaries as an architect of collective exploration and creation of knowledge in open innovation”. *International Journal of Innovation Management*, 17(2), pp. 1–24.
- Andreini, D. , Bettinelli, C. , Foss, N. J. and Mismetti, M. (2021). “Business model innovation: A review of process-based literature”. *Journal of Management and Governance*. Retrieved August 14, 2021, from 10.1007/s10997-021-09590-w.
- Barney, J. (1991). “Firm resources and sustained competitive advantage”. *Journal of Management*, 17(1), pp. 99–120.
- Barney, J. B. and Hesterly, W. (2005). *Strategic management and competitive advantage*. Upper Saddle River, NJ: Prentice Hall.
- Batheld, H. , Malmberg, A. and Maskell, P. (2004). “Clusters and knowledge: Local buzz, global pipelines, and the process of knowledge creation”. *Progress in Human Geography*, 28(1), pp. 31–56.
- Boisot, M. H. (1998). *Knowledge assets: Securing competitive advantage in the information economy*. New York: Oxford University Press.
- Boisot, M. H. and Li, Y. (2006). “Organizational versus market knowledge: From concrete embodiment to abstract representation”. *Journal of Bioeconomics*, 8(3), pp. 219–251.
- Budler, M. , Zupic, I. and Trkman, P. (2021). “The development of business model research: A bibliometric review”. *Journal of Business Research*, 1935(June), pp. 480–495.
- Carroll, A. B. (1991). “The pyramid of corporate social responsibility: Toward the moral management of organisational stakeholders”. *Business Horizons*, 34(4), pp. 39–47.
- Capdevila, I. (2017). “The local and global knowledge dynamics through communities: The case of communities of makers and social entrepreneurs in Barcelona”. *Management International*, 21(3), pp. 59–70.
- Elkington, J. and Hartigan, P. (2008). *The power of unreasonable people: How social entrepreneurs create markets that change the world*. Boston, MA: Harvard Business Press.
- Foss, N. J. and Klein, P. G. (2012). *Organizing entrepreneurial judgement: A new approach to the firm*. Cambridge: Cambridge University Press.
- Foss, N. J. and Saebi, T. (2017). “Fifteen years of research on business model innovation: How far have we come, and where should we go?” *Journal of Management*, 43(1), pp. 200–227.
- Foss, N. J. and Saebi, T. (2018). “Business models and business model innovation: Between wicked and paradigmatic problems”. *Long Range Planning*, 51(1), pp. 9–21.
- French Law #2014-856 published on July 31st, 2014.
- Granovetter, M. S. (1973). “The strength of weak ties”. *American Journal of Sociology*, 78(6), p. 136080.

- Gruber, M. and McMillan, I. (2017). "Entrepreneurial behavior: A reconceptualization and extension based on identity theory". *Strategic Entrepreneurship Journal*, 11(3), pp. 271–286.
- Johnson, M. W. , Christensen, C. M. and Kagermann, H. (2008). "Reinventing your business model". *Harvard Business Review*, 86(12), pp. 15–36.
- McMullen, J. S. and Bergman, B. J. Jr. (2017). "Social entrepreneurship and the development paradox of prosocial motivation: A cautionary tale". *Strategic Entrepreneurship Journal*, 11(3), pp. 243–270.
- Merindol, V. and Versailles, D. W. (2017). *Créer et Innover aujourd'hui en Ile de France : le rôle des plateformes d'innovation*. Research co-funded by Bpifrance Le Lab et Innovation Factory, newPIC Chair, Paris School of Business. <http://www.newpic.fr/02proj2016openlabsidf.html>.
- Mérindol, V. , Versailles, D. W. and Le Chaffotec, A. (2022). "Les organisations intermédiaires et l'innovation : les multiples facettes de l'intermédiation de réseau". *Innovations*, 2(65), pp. 49–80.
- Santos, F. M. (2012). "A positive theory of social entrepreneurship". *Journal of Business Ethics*, 111(3), pp. 335–351.
- Short, J. C. , Moss, T. W. and Lumpkin, G. (2009). "Research in social entrepreneurship: Past contributions and future opportunities". *Strategic Entrepreneurship Journal*, 3(2), pp. 161–194.

## Art, entrepreneurs, and open labs

- Agogué, M. , Yström, A. and Le Masson, P. (2013). "Rethinking the role of intermediaries as an architect of collective exploration and creation of knowledge in open innovation." *International Journal of Innovation Management*, 17(2): 1350007.
- Alter, N. (2015). *L'innovation ordinaire*. Paris, France: Presses Universitaires de France.
- Amabile, T. , Conti, R. , Coon, H. and Lazenby, J. (1996). "Assessing the work environment for creativity." *The Academy of Management Journal*, 39(5): 1154–1184.
- Amin, A. and Cohendet, P. (2004). *Architectures of knowledge: Firms, capabilities, and communities*. Oxford: Oxford University Press.
- Anderson, N. , Potocnik, K. and Zhou, J. (2014). "Innovation and creativity in organizations: A state-of-the-science review, prospective commentary, and guiding framework." *Journal of Management*, 40(5): 1297–1333.
- Aubouin, N. (2018). "Dynamiques organisationnelles, modes de gestion et institutionnalisation de différents tiers-lieux culturels." *L'Observatoire*, 2: 39–42.
- Aubouin, N. and Capdevila, I. (2019). "La gestion des communautés de connaissances au sein des espaces de créativité et innovation : une variété de logiques de collaboration." *Innovations*, 1(58): 105–134.
- Baker, G.-P. and Gil, R. (2008). "Clinical papers in organizational economics." In: Gibbons, R. , & Roberts, J. (Eds.), *The handbook of organizational economics*. Princeton, NJ and Oxford: Princeton University Press: 193–212.
- Becker, H. S. (1988). *Les mondes de l'art*. Paris, France: Flammarion.
- Brechet, J. P. , Schieb-Bienfait, N. and Desreumaux, A. (2009). "Les figures de l'entrepreneur dans une théorie de l'action fondée sur le projet." *Revue de l'Entrepreneuriat*, 1(8): 37–53.
- Capdevila, I. (2015). "Les différentes approches entrepreneuriales dans les espaces ouverts d'innovation." *Innovations*, 3: 87–105.
- Chesbrough, H. (2006). *Open innovation: The new imperative for creating and profiting from technology*. Boston, MA: Harvard Business Press.
- Chiapello, E. (1998). *Artistes versus Managers. Le management culturel face à la critique artiste*. Paris: Métailié Editions.
- Cohendet, P. and Simon L. (2016). "Always playable: Recombining routines for creative efficiency at Ubisoft Montreal's video game studio." *Organization Science*, 27(3): 614–632.
- Dougherty, D. (2001). "Reimagining the differentiation and integration of work for sustained product innovation." *Organization Science*, 12(5): 612–631.
- Eisenhardt, K. M. and Schoonhoven, C. B. (1996). "Resource-based view of strategic alliance formation: Strategic and social effects in entrepreneurial firms." *Organization Science*, 7(2): 136–150.

- Espinosa, J. A. , Cumplings, J. N. , Wilson, J. and Pearce, B. M. (2003). "Team boundary issues across multiple global firms." *Journal of Management Information Systems*, 19(4): 157–190.
- Galison, P. (1999). "Trading zone: Coordinating action and belief." In Biagioli, M. , (Ed.), *The science studies reader* (pp. 137–160). London and New York: Routledge.
- Fabri, J. and Charue-Duboc, F. (2013). "Un modèle d'accompagnement entrepreneurial fondé sur des apprentissages au sein d'un collectif d'entrepreneurs: le cas de La Ruche." *Management International*, 17(3): 86–99.
- Furnari, S. (2014). "Interstitial spaces: Micro-interaction settings and the genesis of new practices between institutional fields." *Academy of Management Review*, 39(4): 439–462.
- Goglio-Primard, K. and Crepin-Mazet, F. (2011). "Organizing open innovation in networks- the role of boundary relations." *Management International*, 19: 135–147.
- Hargadon, A. B. and Bechky, B. A. (2006). "When collections of creatives become creative collectives: A field study of problem solving at work." *Organization Science*, 17(4): 484–500.
- Iaquinto, B. , Ison, R. and Faggian, R. (2011). "Creating communities of practice: Scoping purposeful design." *Journal of Knowledge Management*, 15(1): 4–21.
- Imbert, G. and Chauvet, V. (2013). "Faire coproduire le client en conception innovante. Les quatre processus mobilisés par les sociétés de conseil en innovation." *Revue française de gestion*, 39(234): 167–183.
- Kritensen, T. (2004). "The physical context of creativity." *Creativity and Innovation Management*, 13(2): 89–96.
- Levina, N. and Vaast, E. (2005). "The emergence of boundary spanning competence in practice: Implications for implementation and use of information systems." *MIS Quarterly*, 29(2): 335–363.
- Lingo, E. L. and Mahony, S. O. (2010). "Nexus work: Brokerage on creative projects." *Administrative Science Quarterly*, 55(1): 47–81.
- Menger, P. M. (2002). *Portrait de l'artiste en travailleur. Métamorphoses du capitalisme*. Paris, France: Seuil.
- Mérindol, V. , Bouquin, N. , Versailles, D.W. , Capdevila, I. , Aubouin, N. , Le Chaffotec, A. , Chiovetta, A. and Voisin, T. (2016). *Le Livre Blanc des Open Labs. Quelles pratiques ? Quels changements en France ?*, Publication of the expert group facilitated by ANRT / FutuRIS PSB newPIC chair. Paris: ANRT et PSB (March).
- Mustar, P. (1994). *Science et innovation 1995. Annuaire raisonné de la création d'entreprises par les chercheurs*. Collection Innovation. Paris: Economica.
- Napier, N. K. and Nilsson, M. (2006). "The development of creative capabilities in and out of creative organizations: Three case studies." *Creativity and Innovation Management*, 15(3): 268–278.
- Oakley, K. (2009). "The disappearing arts: Creativity and innovation after the creative industries." *International Journal of Cultural Policy*, 15(4): 403–413.
- Penrose, E. (1959). *The theory of the growth of the firm*. Oxford: Oxford University Press.
- Peredo, A. M. and Chrisman, J. J. (2006). "Toward a theory of community based enterprise." *Academy of Management Review*, 31(2): 309–328.
- Pierre, X. and Burret, A. (2014). "Animateur d'espaces de coworking, un nouveau métier?" *Entreprendre et Innover*, 23(4): 20–30.
- Schmidt, S. and Brinks, V. (2017). "Open creative labs: Spatial settings at the intersection of communities and organizations." *Creativity and Innovation Management*, 26(3): 291–299.
- Sharma, P. and Chrisman, S. J. J. (2007). "Toward a reconciliation of the definitional issues in the field of corporate entrepreneurship." In: Cuervo, Á., Ribeiro, D., & Roig, S. (Eds.), *Entrepreneurship*. Berlin and Heidelberg: Springer: 83–103. The article has been reproduced from *Entrepreneurship Theory and Practice*, 1999, 23(3): 11–27.
- Sternberg, R. J. (Ed.). (1999). *Handbook of creativity*. New York: Cambridge University Press.
- Tushman, M. L. (1977). "Special boundary roles in the innovation process." *Administrative Science Quarterly*, 22(4): 587–605.
- Verstraete, T. and Fayolle, A. (2005). "Paradigmes et entrepreneuriat." *Revue de l'Entrepreneuriat*, 4(1): 33–52.
- Von Krogh, G. and Geilinger, N. (2014). "Knowledge creation in the eco-system: Research imperatives." *European Management Journal*, 32(1): 155–163.

Vyas, D. , Heylen, D. and Nijholt, A. (2009). "Collaborative practices that support creativity in design." 11th European Conference on Computer Supported Cooperative Work, ECSW09: 151–170.

Wilson, G. and Herndl, C. G. (2007). "Boundary objects as rhetorical exigence: Knowledge mapping and interdisciplinary cooperation at the Los Alamos national laboratory." *Journal of Business and Technical Communication*, 21(2): 129–154.

Yin, R. K. (2009). *Case study research: Design and methods*. Los Angeles, CA and London: Sage Publications.

## Living labs

Agogu , M. , Ystr m, A. and Le Masson, P. (2013). Rethinking the role of intermediaries as an architect of collective exploration and creation of knowledge in open innovation. *International Journal of Innovation Management*, 17(2): 1–24.

Amin, A. and Cohendet, P. (2004). *Architectures of knowledge: Firms, capabilities, and communities*. Oxford: Oxford University Press.

Champenois, C. and Etzkowitz, H. (2018). From boundary line to boundary space: The creation of hybrid organizations as a triple helix micro-foundation. *Technovation*, 76–77: 28–39.

Creplet, F. (2000). The concept of "ba": A new path in the study of knowledge in firms. *European Journal of Economic and Social Systems*, 14(4): 365–379.

Dedehayir, O. , M kinen, S. J. and Roland Ortt, J. (2018). Roles during innovation ecosystem genesis: A literature review. *Technological Forecasting and Social Change*, 136: 18–29.

Dube, P. , Sarraih, J. , Grillet, C. , Zingraff, V. , & Kosteck, I. (2014). *Le livre blanc des livings labs*. Montr al: EMVELT.

Frow, P. , McColl-Kennedy, J. R. and Payne, A. (2016). Co-creation practices: Their role in shaping a health care ecosystem. *Industrial Marketing Management*, 56: 24–39.

Furnari, S. (2014). Interstitial spaces: Microinteraction settings and the genesis of new practices Between institutional fields. *Academic Management Review*, 39(4): 439–462.

Hakkarainen, L. , & Hyysalo, S. (2016). The evolution of intermediary activities: Broadening the concept of facilitation in living labs. *Technology Innovation Management Review*, 6(1), 45–58.

Kodoma, M. (2015). *Collaborative innovation: Developing health support ecosystems*. New York: Routledge.

Levina, N. and Vaast, E. (2005). The emergence of boundary spanning competence in practice: Implications for implementation and use of information systems. *MIS Quarterly*, 29(2): 335–363.

Merindol, V. and Versailles, D. W. (2019). « Cr er et Innover aujourd'hui en France et en Asie : le r le des plateformes d'innovation et des open labs d'entreprises ». Research co-funded by Innovation Factory and Bpifrance le Lab. <http://innovasia.newpic.fr>.

Merindol, V. , Versailles, D. W. and Le Chaffotec, A. (2019). R pondre aux d fis du management de l'innovation en sant . Le r le des dispositifs d'interm diation en France. Research funded by Genopole, Evry: France. <http://innov-sante.newpic.fr>.

Merindol, V. , Versailles, D. W. and Le Chaffotec, A. (2021). Les organisations interm diaires et l'innovation : les multiples facettes de l'interm diation de r seau. *Innovations*, 2(65): 49–80.

Nystr m, A. G. , Leminen, S. , Westerlund, M. and Kortelainen, M. (2014). Actor roles and role patterns influencing innovation in living labs. *Industrial Marketing Management*, 43(3): 483–495.

Oksanen, K. and St hle, P. (2013). Physical environment as a source for innovation: Investigating the attributes of innovative space. *Journal of Knowledge Management*, 17(6): 815–827.

Picard, R. (2017). *Co-design in living labs for healthcare and independent living*. London: Wiley.

Pikkarainen, M. , Ervasti, M. , Hurmelinna-Laukkanen, P. and N tti, S. (2017). Orchestration roles to facilitate networked innovation in a healthcare ecosystem. *Technology and Innovation Management Review*, 7(8): 30–43.

Pop, O. M. , Leroi-Wereds, S. , Roijackers, N. and Andreassen, T. W. (2018). Institutional types and institutional change in healthcare ecosystems. *Journal of Service Management*, 29(4): 593–614.

Saidi, T. , De Villiers, K. and Douglas, T. S. (2017). The sociology of space as a catalyst for innovation in the health sector. *Social Science and Medicine*, 180: 6–44.

- Schiavone, F. (2020). User innovation in healthcare how patients and caregivers react creatively to illness. Springer Nature. <https://doi.org/10.1007/978-3-030-44256-9>.
- Thakur, R. , Hsu, S. H. Y. and Fontenot, G. (2012). Innovation in healthcare: Issues and future trends. *Journal of Business Research*, 65(4): 562–569.
- UMVELT . (2014). *Le Livre Blanc des Living Labs*. Montreal. <https://www.montreal-invivo.com>.
- Villani, E. and Phillips, N. (2020). Formal organizations and interstitial spaces: Catalysts, complexity, and the initiation of cross-field collaboration. *Strategic Organization*, 19(1): 5–36.
- Wenger, E. (2000). Communities of practice and social learning systems. *Organization*, 7(2): 225–246.
- West, J. and Lakhani, K. R. (2008). Getting clear about communities in open innovation. *Industry and Innovation*, 15(2): 223–231.
- Yin, R. K. (2009). *Case study research: Design and methods* (4th ed.). Thousand Oaks, CA: Sage.

## From spatiality to temporality

- Aarikka-Stenroos, L. , and Ritala, P. (2017). “Network management in the era of ecosystems: Systematic review and management framework.” *Industrial Marketing Management*, 67: 23–36.
- Adner, R. (2006). “Match your innovation strategy to your innovation ecosystem.” *Harvard Business Review*, 84(4): 98.
- Adner, R. (2017). “Ecosystem as structure: An actionable construct for strategy.” *Journal of Management*, 43(1): 39–58.
- Adner, R. , and Kapoor, R. (2010). “Value creation in innovation ecosystems: How the structure of technological interdependence affects firm performance in new technology generations.” *Strategic Management Journal*, 31(3): 306–333.
- Almirall, E. , Lee, M. , and Majchrzak, A. (2014). “Open innovation requires integrated competitioncommunity ecosystems: Lessons learned from civic open innovation.” *Business Horizons*, 57(3): 391–400.
- Autio, E. , and Thomas, L. (2014). “Innovation ecosystems.” In: Dodgson, M. , Gann, D. M. and Phillips, N. (eds.), *The Oxford handbook of innovation management*, pp. 204–288. Oxford: Oxford University Press.
- Boudreau, K. J. , Lacetera, N. , and Lakhani, K. R. (2011). “Incentives and problem uncertainty in innovation contests: An empirical analysis.” *Management Science*, 57(5): 843–863.
- Briscoe, G. (2014). “Digital innovation: The hackathon phenomenon.” *Computer Science*. <https://www.semanticscholar.org/paper/Digital-Innovation%3A-The-Hackathon-Phenomenon-Briscoe/cb8e44ec1bcd6062e5fcca6b6837030be334731d>.
- Bullinger, A. C. , Neyer, A. K. , Rass, M. , and Moeslein, K. M. (2010). “Communitybased innovation contests: Where competition meets cooperation.” *Creativity and Innovation Management*, 19(3): 290–303.
- Citroni, S. (2015). “Civic events in a dynamic local field: The role of participation for social innovation.” *Industry and Innovation*, 22(3): 193–208.
- Cohendet, P. , Grandadam, D. , Simon, L. , and Capdevila, I. (2014). “Epistemic communities, localization and the dynamics of knowledge creation.” *Journal of Economic Geography*, 14(5): 929–954.
- Corley, K. G. , and Gioia, D. A. (2004). “Identity ambiguity and change in the wake of a corporate spinoff.” *Administrative Science Quarterly*, 49(2): 173–208.
- Dedehayir, O. , Mäkinen, S. J. , and Ortt, J. R. (2018). “Roles during innovation ecosystem genesis: A literature review.” *Technological Forecasting and Social Change*, 136: 18–29.
- Eisenhardt, K. M. (1989). “Building theories from case study research.” *Academy of Management Review*, 14(4): 532–550.
- Fine, G. A. (1990). “Organizational time: Temporal demands and the experience of work in restaurant kitchens.” *Social Forces*, 69(1): 95–114.
- Granqvist, N. , and Gustafsson, R. (2016). “Temporal institutional work.” *Academy of Management Journal*, 59(3): 1009–1035.

- Granstrand, O. , and Holgersson, M. (2020). "Innovation ecosystems: A conceptual review and a new definition." *Technovation*, 90: 102098.
- Johnson, P. , and Robinson, P. (2014). "Civic hackathons: Innovation, procurement, or civic engagement?" *Review of Policy Research*, 31(4): 349–357.
- Jolly, S. , and Raven, R. P. J. M. (2016). "Field configuring events shaping sustainability transitions? The case of solar PV in India." *Technological Forecasting and Social Change*, 103: 324–333.
- HH Website . (2020). [www.hacking-health.org](http://www.hacking-health.org).
- Kaplan, S. , and Orlikowski, W. J. (2013). "Temporal work in strategy making." *Organization Science*, 24(4): 965–995.
- Lampel, J. , and Meyer, A. D. (2008). "Field-configuring events as structuring mechanisms: How conferences, ceremonies, and trade shows constitute new technologies, industries, and markets." *Journal of Management Studies*, 45(6): 1025–1035.
- Lampel, J. , Jha, P. P. , and Bhalla, A. (2012). "Test-driving the future: How design competitions are changing innovation." *Academy of Management Perspectives*, 26(2): 71–85.
- Mérindol, V. , and Versailles, D. (2017). "Développer des capacités hautement créatives dans les entreprises: le cas des laboratoires d'innovation ouverte." *Management International/International Management/Gestión Internacional*, 22(1): 58–72.
- Moore, J. F. (1993). "Predators and prey: A new ecology of competition." *Harvard Business Review*, 71(3): 75–86.
- Murray, F. , Stern, S. , Campbell, G. , and MacCormack, A. (2012). "Grand innovation prizes: A theoretical, normative, and empirical evaluation." *Research Policy*, 41(10): 1779–1792.
- Nambisan, S. , and Sawhney, M. (2011). "Orchestration processes in network-centric innovation: Evidence from the field." *Academy of Management Perspectives*, 25(3): 40–57.
- Phillips, M. A. , and Ritala, P. (2019). "A complex adaptive systems agenda for ecosystem research methodology." *Technological Forecasting and Social Change*, 148: 119739.
- Puckrein, G. (2016). "Nothing about me without me: Patient research exchange." <https://www.patientresearchexchange.org/stories/detail/nothing-about-me-without-me>.
- Walrave, B. , Talmar, M. , Podoyntsyna, K. S. , Romme, A. G. L. , and Verbong, G. P. (2018). "A multilevel perspective on innovation ecosystems for path-breaking innovation." *Technological Forecasting and Social Change*, 136: 103–113.
- Yin, R. K. (2009). *Case study research, Design and methods*. Los Angeles and London: Sage.

## Communitech in Waterloo, Canada

- Architectural Record . 2011. The tannery. *Architectural Record*, February 15. Accessed 11 August 2021. <https://www.architecturalrecord.com/articles/7385-the-tannery>.
- Bathelt, H. , Kogler, D. and Munro, A. 2011. Social foundations of regional innovation and the role of university spin-offs: The case of Canada's technology triangle. *Industry and Innovation*, 18(5), 461486.
- Bergek, A. and Norrman, C. 2008. Incubator best practice: A framework. *Technovation*, 28(1–2), 20–28. <https://doi.org/10.1016/j.technovation.2007.07.008>.
- Bramwell, A. 2008. L'université, clé de la compétitivité du cluster TIC de Waterloo. *Le journal de l'école de Paris du management*, 70(2), 31.
- Bruneel, J. , Ratinho, T. , Clarysse, B. and Groen, A. 2012. The evolution of business incubators: Comparing demand and supply of business incubation services across different incubator generations. *Technovation*, 32(2), 110–121.
- CBC News . 2019. Waterloo region tech leaders predict change on new year horizon. *CBC News*, January 2. Accessed 30 April 2021. <https://www.cbc.ca/news/canada/kitchener-waterloo/waterlooregion-tech-sector-predictions-1.4963521>.
- CBRE . 2020. Toronto remains Canada's top market for tech talent as smaller cities make gains during pandemic. *CBRE*, November 17. Accessed 30 April 2021. <https://www.cbre.ca/en/about/mediacenter/toronto-remains-canadas-top-market-for-tech-talent-as-smaller-cities-make-gains-duringpandemic>.
- Cohen, S. 2013. What do accelerators do? Insights from incubators and angels. *Innovations: Technology, Governance, Globalization*, 8(3), 19–25.



- Communitech . 2016, 2017, 2020. Reports, Communitech. Accessed 30 April 2021. <https://www.communitech.ca/about-us/media-reports/>.
- Communitech . 2021a. Our story, est. 1997. Communitech. Accessed 30 April 2021. <https://www.communitech.ca/about-us/our-story.html>.
- Communitech . 2021b. Digital main street. Communitech. Accessed 30 April 2021. <https://www.communitech.ca/about-us/our-operation/digital-main-street.html>.
- Communitech News . 2017. Communitech @20: Two decades in, this is where we're headed. Communitech News, November 2, Accessed 30 April 2021 <https://news.communitech.ca/communitech-20-two-decades-in-this-is-where-were-headed/>.
- Dingman, S. 2015. Startup city: The high-tech fever reshaping Kitchener-Waterloo. The Globe and Mail, July 17. Accessed 30 April 2021. <https://www.theglobeandmail.com/technology/kitchenerwaterloo-startup/article25558263/>.
- Drori, I. and Wright, M. 2018. Accelerators: Characteristics, trends and the new entrepreneurial ecosystem. In M. Wright and I. Drori (Ed.), *Accelerators: Successful venture creation and growth* (pp. 1–20). Edward Elgar Publishing Ltd, Cheltenham, UK; Northampton, MA.
- Gillmor, D. 2012. The invention of Waterloo. The Walrus, January 12. Accessed 23 March 2021. <https://thewalrus.ca/the-invention-of-waterloo/>.
- Goswami, K. , Mitchell, J. R. and Bhagavatula, S. 2018. Accelerator expertise: Understanding the intermediary role of accelerators in the development of the Bangalore entrepreneurial ecosystem. *Strategic Entrepreneurship Journal*, 12(1), 117–150.
- Grandadam, D. , Cohendet, P. and Simon, L. 2013. Places, spaces and the dynamics of creativity: The video game industry in Montreal. *Regional Studies*, 47(10), 1701–1714.
- Grimaldi, R. and Grandi, A. 2005. Business incubators and new venture creation: An assessment of incubating models. *Technovation*, 25(2), 111–121.
- Imai, R. and Ban, M. 2016. Disrupting workspace: Designing an office that inspires collaboration and innovation. *Ethnographic Praxis in Industry Conference Proceedings*, 2016(1), 444–464.
- Klugman, I. 2015. Lean, agile and engaged: The Communitech corporate innovation model. *Tech News*, October 08. Accessed 30 April 2021 <https://www.communitech.ca/technews/lean-agile-and-engaged-the-communitech-corporate-innovation-model.html>.
- Mérindol, V. and Versailles, D. W. 2016. Les laboratoires d'innovation ouverte comme dispositif entrepreneurial. *Entreprendre & Innover*, 31(4), 52.
- Moultrie, J. , Nilsson, M. , Dissel, M. , Haner, U.-E. , Janssen, S. and Van der Lugt, R. 2007. Innovation spaces: Towards a framework for understanding the role of the physical environment in innovation. *Creativity and Innovation Management*, 16(1), 53–65.
- Oksanen, K. and Ståhle, P. 2013. Physical environment as a source for innovation: Investigating the attributes of innovative space. *Journal of Knowledge Management*, 17(6), 815–827.
- Pauwels, C. , Clarysse, B. , Wright, M. and Van Hove, J. 2016. Understanding a new generation incubation model: The accelerator. *Technovation*, 50–51, 13–24.
- Peters, L. , Rice, M. and Sundararajan, M. 2004. The role of incubators in the entrepreneurial process. *The Journal of Technology Transfer*, 29(1), 83–91.
- Roundy, P. T. 2021. Leadership in startup communities: How incubator leaders develop a regional entrepreneurial ecosystem. *Journal of Management Development*, 40(3), 190–208.
- Schmidt, S. and Brinks, V. 2017. Open creative labs: Spatial settings at the intersection of communities and organizations. *Creativity and Innovation Management*, 26(3): 291–299.
- Spigel, B. and Bathelt, H. 2019. Questioning cultural narratives of economic development: An investigation of Kitchener-Waterloo. *The Canadian Geographer/Le Géographe canadien*, 63(2), 267–283.
- Spigel, B. and Stam, F. C. 2016. Entrepreneurial ecosystems. *USE Discussion Paper Series* 16.13.
- Stam, E. 2015. Entrepreneurial ecosystems and regional policy: A sympathetic critique. *European Planning Studies*, 23(9), 1759–1769.
- Stam, E. and Welter, F. 2020. Geographical contexts of entrepreneurship: Spaces, places and entrepreneurial agency. Working Paper, No. 04/20 (Institut für Mittelstandsforschung (IfM) Bonn, Bonn).
- Startup, G. 2020. The global startup ecosystem report. GSER 2020, Startup Genome. <https://startupgenome.com/all-reports>.

Steelcase . 2015. Innovation center ideabook. Accessed 30 April 2021. <https://www.steelcase.com/content/uploads/2018/08/innovationcenterideabook.pdf>.

University of Waterloo . 2021. Policy 73 – Intellectual property rights. Accessed 30 April 2021. <https://uwaterloo.ca/secretariat/policies-procedures-guidelines/policies/policy-73-intellectual-property-rights>.

University of Waterloo . 2016. "UWaterloo's Velocity Garage now largest free startup incubator in the world. " Accessed 30 April 2021 <https://uwaterloo.ca/news/news/uwaterloos-velocity-garage-nowlargest-free-startup>.

Welter, F. 2011. Contextualizing entrepreneurship-conceptual challenges and ways forward. *Entrepreneurship: Theory and Practice*, 35(1), 165–184.

## Building communities in rural coworking spaces

Adler, Paul S. , and Charles. Heckscher . 2006. 'Towards Collaborative Community'. In: *The Firm as a Collaborative Community: Reconstructing Trust in the Knowledge Economy*, edited by Charles. Heckscher and Paul S. Adler . New York: Oxford University Press. <https://doi.org/10.1023/A:1021258713850>.

Akhavan, Mina. , Ilaria. Mariotti , Lisa. Astolfi , and Annapaola. Canevari . 2019. 'Coworking Spaces and New Social Relations: A Focus on the Social Streets in Italy'. *Urban Science* 3(2): 1–11. <https://doi.org/10/ggvfcj>.

Avdikos, Vasilis. , and Eirini. Iliopoulou . 2019. 'Community-Led Coworking Spaces: From Co-location to Collaboration and Collectivization'. In: *Creative Hubs in Question*, edited by Rosalind. Gill , Andy C. Pratt , and Tarek E. Virani , 111–129. Cham: Springer International Publishing. [https://doi.org/10.1007/978-3-030-10653-9\\_6](https://doi.org/10.1007/978-3-030-10653-9_6).

Avdikos, Vasilis. , and Janet. Merkel . 2020. 'Supporting Open, Shared and Collaborative Workspaces and Hubs: Recent Transformations and Policy Implications'. *Urban Research and Practice* 13(3): 348–357. <https://doi.org/10/ggvfdh>.

Blagoev, Blagoy. , Jana. Costas , and Dan. Kärreman . 2019. "'We Are All Herd Animals": Community and Organizationality in Coworking Spaces'. *Organization* 26(6): 894–916. <https://doi.org/10.1177/1350508418821008>.

Brown, Julie. 2017. 'Curating the 'Third Place'? Coworking and the Mediation of Creativity'. *Geoforum* 82: 112–126. <https://doi.org/10/gbf8nk>.

Butcher, Tim. . 2018. 'Learning Everyday Entrepreneurial Practices through Coworking'. *Management Learning* 49(3): 327–345. <https://doi.org/10/gf37h8>.

Cabral, Victor. , and Willem. van Winden . 2016. 'Coworking: An Analysis of Coworking Strategies for Interaction and Innovation'. *International Journal of Knowledge-Based Development* 7(4): 357–377. <https://doi.org/10/ggv8n>.

Capdevila, Ignasi. 2015. 'Co-Working Spaces and the Localised Dynamics of Innovation in Barcelona'. *International Journal of Innovation Management* 19(3): 1540004. <https://doi.org/10/gd3wg8>.

Capdevila, Ignasi. 2021. ' Spatial Processes of Translation and How Coworking Diffused from Urban to Rural Environments'. In: *Culture, Creativity and Economy*, edited by Brian J. Hacs , Taylor. Brydges , Tina. Haisch , Atle. Hauge , Johan. Jansson , and Jenny. Sjöholm , 1st ed., 95–108. London: Routledge. <https://doi.org/10.4324/9781003197065-8>.

Clifton, Nick. , Anita. Fūzi , and Gareth. Loudon . 2019. 'Coworking in the Digital Economy: Context, Motivations, and Outcomes'. *Futures*, July: 102439. <https://doi.org/10/ggvff6>.

Coll-Martínez, Eva. , and Carles. Méndez-Ortega . 2020. 'Agglomeration and Coagglomeration of CoWorking Spaces and Creative Industries in the City'. *European Planning Studies*, November: 1–22. <https://doi.org/10.1080/09654313.2020.1847256>.

de Peuter, Greig. , Nicole S. Cohen , and Francesca. Saraco . 2017. 'The Ambivalence of Coworking: On the Politics of an Emerging Work Practice'. *European Journal of Cultural Studies* 20(6): 687–706. <https://doi.org/10.1177/1367549417732997>.

Fasshauer, Ingrid. , and Cathy. Zadra-Veil . 2016. 'Quel Entrepreneur Pour le Coworking en Milieu Rural ?' *Entreprendre et Innover* 2016(4): 17–24.

Flipo, Aurore. . 2020. 'Espaces de Coworking et Tiers-Lieux: Les Réseaux d'une Nouvelle Ruralité ?' *Études Rurales* 206(December): 154–174.

<https://doi.org/10.4000/etudesrurales.23887>.

Fuzi, Anita. . 2015. 'Co-Working Spaces for Promoting Entrepreneurship in Sparse Regions: The Case of South Wales'. *Regional Studies, Regional Science* 2(1): 462–469. <https://doi.org/10/ggvfb7>.

Gandini, Alessandro. . 2015. 'The Rise of Coworking Spaces : A Literature Review'. *Ephemera: Theory and Politics in Organization* 15(1): 193–205.

Gandini, Alessandro. . 2016. 'Coworking: The Freelance Mode of Organisation?' In: *The Reputation Economy. Understanding Knowledge Work in a Digital Society*, 97–105. London: Palgrave Macmillan UK. [https://link.springer.com/chapter/10.1057/978-1-137-56107-7\\_7#citeas](https://link.springer.com/chapter/10.1057/978-1-137-56107-7_7#citeas).

Gandini, Alessandro. , and Alberto. Cossu . 2019. 'The Third Wave of Coworking: "Neo-Corporate" Model versus "Resilient" Practice'. *European Journal of Cultural Studies*, December, 136754941988606. <https://doi.org/10/ggvfgf>.

Garrett, Lyndon E. , Gretchen M. Spreitzer , and Peter A. Bacevice . 2017. 'Co-Constructing a Sense of Community at Work: The Emergence of Community in Coworking Spaces'. *Organization Studies* 38(6): 821–842. <https://doi.org/10/ggvd8z>.

Institut Cerdà/AMB . 2019. *Els Espais de Coworking a les Ciutats.*». Informe d'aprofundiment De l'economia Metropolitana. 17. Barcelona: Institut Cerdà/Àrea de Desenvolupament Social i Econòmic de l'AMB.

[amb.cat/es/web/desenvolupamentsocioeconomic/actualitat/publicacions/detall/-/publicacio/els-espais-de-coworking-a-lesciutats/7982091/11708](http://amb.cat/es/web/desenvolupamentsocioeconomic/actualitat/publicacions/detall/-/publicacio/els-espais-de-coworking-a-lesciutats/7982091/11708).

Jakonen, Mikko. , Nina. Kivinen , Perttu. Salovaara , and Piia. Hirkman . 2017. 'Towards an Economy of Encounters? A Critical Study of Affectual Assemblages in Coworking'. *Scandinavian Journal of Management* 33(4): 235–242. <https://doi.org/10/gfzszr>.

Jamal, Audrey C. 2018. 'Coworking Spaces in Mid-sized Cities: A Partner in Downtown Economic Development'. *Environment and Planning a: Economy and Space* 50(4): 773–788. <https://doi.org/10/gdwjct>.

Leclercq-Vandelannoitte, Aurélie. , and Henri. Isaac . 2016. 'The New Office: How Coworking Changes the Work Concept'. *Journal of Business Strategy* 37(6): 3–9. <https://doi.org/10/ggvd7p>.

Liimatainen, Karoliina. . 2015 *Supporting Inter-Organizational Collaboration in Coworking Clusters: The Role of Place, Community and Coordination*. Espoo, Finland: Aalto University.

Mariotti, Ilaria. , and Mina. Akhavan . 2020. 'Exploring Proximities in Coworking Spaces: Evidence from Italy'. *European Spatial Research and Policy* 27(1): 37–52. <https://doi.org/10.18778/1231-1952.27.1.02>.

Mérindol, Valérie. , Nicolas. Aubouin , and Ignasi. Capdevila . 2021. 'Combiner Confiance Résiliente et Réflexive, Hiérarchie Formelle et Prix au Sein des Communautés : Le Cas des Open Labs'. *Management International* 25: 184–205.

Merkel, Janet. 2019. "'Freelance Isn't Free.'" Coworking as a Critical Urban Practice to Cope with Informality in Creative Labour Markets'. *Urban Studies* 56(3): 526–547. <https://doi.org/10/gfkgb8>.

Micek, Grzegorz. . 2020. 'Studies of Proximity in Coworking Spaces: The Basic Conceptual Challenges'. *European Spatial Research and Policy* 27(1): 9–35. <https://doi.org/10.18778/1231-1952.27.1.01>.

Parrino, Lucia. . 2015. 'Coworking: Assessing the Role of Proximity in Knowledge Exchange'. *Knowledge Management Research and Practice* 13(3): 261–271. <https://doi.org/10.1057/kmrp.2013.47>.

Rus, Andrej. , and Marko. Orel . 2015. 'Coworking: A Community of Work'. *Teorija in Praksa* 52(6): 1017–1038.

Spinuzzi, Clay. 2012. 'Working Alone Together: Coworking as Emergent Collaborative Activity'. *Journal of Business and Technical Communication* 26(4): 399–441. <https://doi.org/10.1177/1050651912444070>.

Spinuzzi, Clay. , Zlatko. Bodrožić , Giuseppe. Scaratti , and Silvia. Ivaldi . 2019. "'Coworking Is About Community": But What Is "Community" in Coworking?' *Journal of Business and Technical Communication* 33(2): 112–140. <https://doi.org/10/ggvd9c>.

## Cracking the nut from the inside

- Alauzen, M. , & Malivel, C. (2020). Le design est-il en passe de devenir une science de gouvernement? Réflexion sur les espoirs suscités par les sciences du design dans la modernisation de l'État en France (2014–2019). *Sciences du Design*, 12(2), 36–47. <https://doi.org/10.3917/sdd.012.0036>.
- Allouch, A. (2017). *La société du concours: L'empire des classements scolaires*. Paris: Seuil, Coll. La République des idées.
- Bátora, J. (2013). The 'mitrailleuse effect': The EEAS as an interstitial organization and the dynamics of innovation in diplomacy. *JCMS: Journal of Common Market Studies*, 51(4), 598–613. <https://doi.org/10.1111/jcms.12026>.
- Coblence, E. , & Vivant, E. (2017). Le design est-il soluble dans l'administration ? Trois trajectoires d'institutionnalisation de l'innovation publique. *Sciences du Design*, 5(1), 52–68.
- Cohendet, P. , Grandadam, D. , & Simon, L. (2010). The anatomy of the creative city. *Industry and Innovation*, 17(1), 91–111.
- Cohendet, P. , Grandadam, D. , Simon, L. , & Capdevila, I. (2014). Epistemic communities, localization and the dynamics of knowledge creation. *Journal of Economic Geography*, 14(5), 929–954. <https://doi.org/10.1093/jeg/lbu018>.
- Cohendet, P. , Simon, L. , & Mehouchi, C. (2020). From business ecosystems to ecosystems of innovation: The case of the video game industry in Montréal. *Industry and Innovation*, 28(8), 1046–1076.
- Cole, A. (2010). State reform in France: From public service to public management? *Perspectives on European Politics and Society*, 11(4), 343–357.
- Grandadam, D. , Cohendet, P. , & Simon, L. (2012). Places, spaces and the dynamics of creativity: The video game industry in Montreal. *Regional Studies*, 47(10), 1701–1714.
- Haas, P. M. (1989). Do regimes matter? Epistemic communities and Mediterranean pollution control. *International Organization*, 43(3), 377–403.
- Haas, P. M. (1992). Epistemic communities and international policy coordination. *International Organization*, 46(1), 1–35.
- Iribarne, P. d'. (2008). *L'étrangeté française*. Paris: Éd. du Seuil.
- Irrmann, O. (2020). *Le design au service des territoires et des politiques publiques*. Horizons publics, Hiver 2020, Hors-série. La 27e Région, <http://la27eregion.fr>.
- Mukherjee, A. (2017). *Organizational space collapsed, organizational space expanded: Experiencing space with ICT, affordance and the body [Doctoral dissertation]*. Paris: Université Paris Dauphine.
- Ostrom, E. , & Hess, C. (2007). *Understanding knowledge as a commons: From theory to practice*. Cambridge, MA: MIT Press.
- Sarazin, B. , Cohendet, P. , & Simon, L. (Eds.). (2017). *Les communautés d'innovation*. Caen, France: EMS Management & Société.
- Slaughter, S. , & Rhoades, G. (2004). *Academic capitalism and the new economy: Markets, state and higher education*. Baltimore, MD: Johns Hopkins University Press.
- Taddei, F. (2013). Pour un enseignement interdisciplinaire. *Hermès, La Revue*, 67(3), 57–61.
- Weiler, H. N. (1988). The politics of reform and nonreform in French education. *Comparative Education Review*, 32(3), 251–265.
- Zanten, A. V. , & Robert, A. (2000). "Plus ça change..."? Changes and continuities in education policy in France. *Journal of Education Policy*, 15(1), 1–4.

## Living labs and innovation commons in healthcare ecosystems

- Allen, D. , Potts, J. (2016) "How innovation commons contribute to discovering and developing new technologies." *International Journal of the Commons*, 10(2): 1035–1054. <http://doi.org/10.18352/ijc.644>.
- Amin, A. , Roberts, J. (2008) "Knowing in action: Beyond communities of practice." *Research Policy*, 37(2): 353–369.
- Berthou, V. , Picard, R. (2017) "Les living labs, ces leviers d'innovation en santé publique." *Annales Des Mines – Réalités Industrielles*, 2: 68–68. <https://doi.org/10.3917/rindu1.172.0068>.

- Brunet, F. , Malas, K. (2019) *L'innovation en santé : réfléchir, agir et valoriser*. Montréal, QC: Éditions CHU Sainte-Justine.
- Clayton, P. , Feldman, M. , Lowe, N. (2018) "Behind the scenes: Intermediary organizations that facilitate science commercialization through entrepreneurship." *Academy of Management Perspectives*, 32(1): 104–124. <https://doi.org/10.5465/amp.2016.0133>.
- Coase, R. H. (1988) "The nature of the firm: Origin, meaning, influence." *Journal of Law, Economics and Organization*, 4: 3–59.
- Cohendet, P. , Grandadam, D. , Simon, L. (2010) "The anatomy of the creative city." *Industry and Innovation*, 17(1): 91–111. <https://doi.org/10.1080/13662710903573869>.
- Cowan, R. , David, P. A. , Foray, D. (2000) "The explicit economics of knowledge codification and tacitness." *Industrial and Corporate Change*, 9(2): 211–253.
- Defalvard, H. (2017) "From social commons to the commons society." *RECMA*, 345: 42–56. <https://doi.org/10.7202/1040794ar>.
- Denning, S. (2016) "How to make the whole organization 'Agile'." *Strategy and Leadership*. <https://doi.org/10.1108/sl-06-2016-0043>.
- de Reuver, M. , Sørensen, C. , Basole, R. C. (2018) "The digital platform: A research agenda." *Journal of Information Technology*, 33(2): 124–135.
- DiMaggio, P. J. , Powell, W. W. (Eds.). (1991) *The new institutional in organizational analysis*. Chicago, IL: The University of Chicago Press. <http://catdir.loc.gov/catdir/toc/uchi051/91009999.html>.
- Dubé, P. , Sarrailh, J. , Billebaud, C. , Grillet, C. , Zingraff, V. , KostECKI, I. (2014) *Le livre Blanc des Living Labs*. Montréal, QC: Umvelt Service Design.
- Eisenhardt, K. M. (1989) "Building theories from case study research." *Academy of Management Review*, 14(4): 532–550. <https://doi.org/10.2307/258557>.
- Fleming, L. , Waguespack, D. M. (2007) "Brokerage, boundary spanning, and leadership in open innovation communities." *Organization Science*, 18(2): 165–180. <https://doi.org/10.1287/orsc.1060.0242>.
- Ford, G. S. , Koutsky, T. , Spiwak, L. (2007) *A valley of death in the innovation sequence: An economic investigation*, Commerce Department, Technology Administration, Phoenix Center for Advanced Legal & Economic Public Policy Studies, revision 2018.
- Gawer, A. , Cusumano, M. A. (2014) "Industry platforms and ecosystem innovation." *Journal of Product Innovation Management*, 3(3): 417–433. <https://doi.org/10.1111/jpim.12105>.
- Hakkarainen, L. , Hyysalo, S. (2016) "The evolution of intermediary activities: Broadening the concept of facilitation in living labs." *Technology and Innovation Management Review*, 6(1): 45–58. <http://doi.org/10.22215/timreview/960>.
- Helfrich, S. , Jörg, H. (2009) "The commons: A new narrative for our times." In: Helfrich, S. (ed.), *Genes, bytes and emissions: To whom does the world belong*. Berlin: Herinrich Boell Foundation (Die Gruene Stiftung), p. 15.
- Hess, C. , Ostrom, E. (2007) *Understanding knowledge as a commons: From theory to practice*. Cambridge, MA: MIT Press.
- Lundvall, B. , Johnson, B. (1994) "The learning economy." *Journal of Industry Studies*, 1(2): 23–42. <https://doi.org/10.1080/13662719400000002>.
- Maguire, S. , Hardy, C. , Lawrence, T. B. (2004) "Institutional entrepreneurship in emerging fields: HIV/AIDS treatment advocacy in Canada." *Academy of Management Journal*, 47: 657–679. <https://doi.org/10.2189/asqu.2010.55.2.189>.
- Mauss, M. (1950) *Sociologie et anthropologie*. Paris: Presses Universitaires de France.
- Meyer, M. (2010) "The rise of the knowledge broker." *Science Communication*, 32(1): 118–127. <https://doi.org/10.1177/1075547009359797>.
- Mérindol, V. , Versailles, D. W. (2017) "Développer des capacités hautement créatives dans les entreprises : le cas des laboratoires d'innovation ouverte." *Management International*, 22(1): 5872.
- Mérindol, V. , Versailles, D. W. , Le Chaffotec, A. (2019) *Répondre aux défis de management de l'innovation en santé, le rôle des dispositifs d'intermédiation en France*. Rapport d'étude commandé par Genopole en partenariat avec BiFrance. <http://www.newpic.fr/newpicopendoc/newpic-genopole-rapport-innov-sante-a4-2p-highdef.pdf>.
- Miller, F. A. , French, M. (2016) "Organizing the entrepreneurial hospital: Hybridizing the logics of healthcare and innovation." *Research Policy*, 45(8): 1534–1544. <https://doi.org/10.1016/j.respol.2016.01.009>.

- Pallot, M. , Trousse, B. , Senach, B. , Scapin, D. (2010). Living Lab Research Landscape: From User Centred Design and User Experience towards User Cocreation. First European Summer School "Living Labs", Inria (ICT Usage Lab), Userlab, EsoceNet, Universcience, Aug 2010, Paris, France. [ffinria-00612632f](https://doi.org/10.1017/S1744137417000479).
- Potts, J. (2018). "Governing the innovation commons." *Journal of Institutional Economics*, 14(6), 1025–1047. <https://doi.org/10.1017/S1744137417000479>
- Potts, J. (2019) *Innovation commons: The origin of economic growth*. Oxford: Oxford University Press.
- Reay, T. , Hinings, C. (2009) "Managing the rivalry of competing institutional logics." *Organization Studies*, 30(6): 629–652. <https://doi.org/10.1177/0170840609104803>.
- Rogers, E. (2003) *Diffusion of innovations* (5th ed.). New York: Free Press.
- Sarasvathy, S. D. (2009) *Effectuation: Elements of entrepreneurial expertise*. Cheltenham and Northampton, MA: Edward Elgar.
- Sarazin, B. , Cohendet, P. , Simon, L. (2017) *Les communautés d'innovation : De la liberté créatrice à l'innovation organisée*. Caen: EMS Editions. <https://doi.org/10.3917>.
- Simon, L. (2009) "Underground, upperground et middleground: Les collectifs créatifs et la capacité créative de la ville." *Management International*, 13: 37. <https://doi.org/10.7202/037503ar>.
- Simon, L. et al. (2021) "Reassessing Innovation Ecosystems through the Lens of Multiple Commons: MOVIN'ON LAB, A Case-Study in Sustainable Mobility." Working Paper Mosaic. HEC Montréal.
- Suchman, M. (1995) "Managing legitimacy: Strategic and institutional approaches." *Academy of Management Review*, 20(3): 371–610. <https://doi.org/10.5465/amr.1995.9508080331>.
- Wenger, E. (1998) *Communities of practice: Learning, meaning, and identity*. Cambridge: Cambridge University Press. ISBN 978-0-521-66363-2.
- Wilden, R. , Garbuio, M. , Angeli, F. , & Mascia, D. (2018). *Entrepreneurship in healthcare*. New York, NY and Abingdon, Oxon: Routledge. ISBN 9780367734176.
- Yin, R. K. (2009). *Case study research: Design and methods* (4th ed.). Thousand Oaks, CA: Sage.
- Zimmerman, J. B. (2020) *Les Communs : Des jardins partagés à Wikipédia*. Paris: Éditions libre & solidaire.

## Open Labs in the transition from Triple to Quadruple Helix

- Bjørkquist, C. , Ramsdal, H. and Ramsdal, K. (2015). User participation and stakeholder involvement in health care innovation – does it matter? *European Journal of Innovation Management*, 18(1): 2–18.
- Boisot, M.H. (1998) *Knowledge assets: Securing competitive advantage in the information economy* (revised edition, paperback 1999). Oxford: Oxford University Press.
- Carayannis, E. G. and Campbell, D. F. J. (2009). 'Mode 3' and 'Quadruple Helix': toward a 21st century fractal innovation ecosystem. *International Journal of Technology Management*, 46(3/4): 201–234.
- Carayannis, E.G. , David, F. and Campbell, J. (2006) "Mode 3": Meaning and implications from a knowledge systems perspective. In: E.G. Carayannis and D.F.J. Campbell (eds.), *Knowledge creation, diffusion, and use in innovation networks and knowledge clusters: A comparative systems approach across the United States, Europe and Asia*. Westport, CT: Praeger, pp. 1–25.
- Carayannis, E.G. and Rakhmatullin, R. (2014) The quadruple/quintuple innovation helixes and smart specialisation strategies for sustainable and inclusive growth in Europe and beyond. *Journal of the Knowledge Economy*, 5(2): 212–239.
- Champerois, C. and Etzkowitz, H. (2018) From boundary line to boundary space: The creation of hybrid organizations as a triple helix micro-foundation. *Technovation*, 76–77: 28–39.
- Chesbrough, H. (2003). *Open Innovation: The new imperative for creating and profiting from technology*. Boston, MA: Harvard Business School Press.
- Dzisah, J. and Etzkowitz, H. (2008) Triple helix circulation: The heart of innovation and development. *International Journal of Technology Management and Sustainable Development*,

7(2): 101–115.

Etzkowitz, H. (2003) Innovation in innovation: The triple helix of university-industry-government relations. *Social Science Information sur les Sciences Sociales*, 42(3): 293–337.

Etzkowitz, H. and Leydesdorff, L. (eds.). (1997) *Universities in the global economy: A triple helix of university-industry-government relations*. London: Cassell Academic.

Etzkowitz, H. and Leydesdorff, L. (2000) The dynamics of innovation: From national systems and "mode 2" to a triple helix of university-industry-government relations. *Research Policy*, 29(2): 109–123.

Etzkowitz, H. and Zhou, C. (2017) *The triple helix: University-industry-government and entrepreneurship*. London: Routledge.

Gibbons, M. (2000) Mode 2 society and the emergence of context-sensitive science. *Science and Public Policy*, 27(3): 159–163.

Hasche, N. , Höglund, L. and Linton, G. (2020). Quadruple helix as a network of relationships: creating value within a Swedish regional innovation system. *Journal of Small Business and Entrepreneurship*, 32(6): 523–544.

Heraud, J. A. (2017). Science and innovation. Chapter 4. In: H. Bathelt , P. Cohendet , S. Henn and L. Simon (Eds.), *The Elgar companion to innovation and knowledge creation*. London: Edward Elgar, pp. 56–74.

Höglund, L. and Linton, G. (2018) Smart specialization in regional innovation systems: A quadruple helix perspective. *R and D Management*, 48(1): 60–72.

Ihrig, M. and MacMillan, I. (2013) The strategic management of knowledge, chapter 7. In: J. Child and M. Ihrig (eds.), *Knowledge, organization and management, Building on the work of Max Boisot*. Oxford: Oxford University Press, pp. 129–139.

Lettl, C. , Herstatt, C. and Gemuenden, H. G. (2006). Users' contributions to radical innovation: Evidence from four cases in the field of medical equipment technology. *R&D Management*, 36(3): 251–272.

Leydesdorff, L. and Deakin, M. (2011) The triple helix model of smart cities: A neo-evolutionary perspective. *Journal of Urban Technology*, 18(2): 53–63.

Lundberg, H. (2013) Triple helix in practice: The key role of boundary spanners. *European Journal of Innovation Management*, 16(2): 211–226.

Merindol, V. , Le Chaffotec, A. and Versailles, D. W. (2022). The role of organization intermediaries in science-/techno-push versus user-centric approaches in health care innovation. *European Journal of Innovation Management*, forthcoming.  
<https://doi.org/10.1108/EJIM-02-2021-0119> – online first Nov. 5th, 2021.

Paskaleva, K. , Evans, J. and Watson, K. (2021) Co-producing smart cities: A quadruple helix approach to assessment. *European Urban and Regional Studies*, 28(4), 395–412.

Petersen, A.M. , Rotolo, D. and Leydesdorff, L. (2016) A triple helix model of medical innovation: Supply, demand, and technological capabilities in terms of medical subject headings. *Research Policy*, 45(3): 666–681.

Ranga, M. and Etzkowitz, H. (2013) Triple helix systems: An analytical framework for innovation policy and practice in the knowledge society. *Industry and Higher Education*, 27(4): 237–262.

Sarpong, D. , AbdRazak, A. , Alexander, E. and Meissner, D. (2017) Organizing practices of university, industry and government that facilitate (or impede) the transition to a hybrid triple helix model of innovation. *Technological Forecasting and Social Change*, 123: 142–152.

Schiavone, F. (2020) *User innovation in healthcare: How patients and caregivers react creatively to illness*. Heidelberg, Germany: Springer Briefs in Healthcare Management and Economics, Springer.

von Hippel, E. (2005). *Democratizing innovation*. Cambridge, MA and London: The MIT Press.

Wachelder, J. (2003) Democratizing science: Various routes and visions of Dutch science shops. *Science, Technology, and Human Values*, 28(2): 244–273.

## Afterword

Atelier Art Science. <https://www.atelier-arts-sciences.eu/English-47>.

Balconi, M. , Brusoni, S. and Orsenigo, L. (2010). "In defence of the linear model: An essay". *Research Policy*, 39(1), pp. 1–13.

Chesbrough, H. W. (2003). *Open innovation: The new imperative for creating and profiting from technology*. Boston, MA: Harvard Business School Press.

Christian, D. and Maruani, G. (2020). «L'érudition... dans la corbeille de l'ordinateur». *Hermès, La Revue*, 87(2), pp. 259–261.

Christian, D. and Flamant, S. (2005). «Narration stratégique : autour d'une intervention de récit assisté». *Revue française de gestion*, 159(6), pp. 283–302.

Experimenta. <https://www.experimenta.fr/en/experimenta-the-expo/>.

Gabriel, M. (2020). *The meaning of thought*. Cambridge: Polity Press, translated from the German, *Der Sinn des Denkens*, 2018, Berlin: Ullstein Buchverlag.

IDEO . <https://www.ideo.com/about>.

Kelley, T. and Kelley, D. M. (2013). *Creative confidence, unleashing the creative potential within us all*. New York: Currency Books, Crown Publishing Group (Penguin Random House).

Le Masson, P. , Hatchuel, A. and Weil, B. (2016). "Design theory at Bauhaus: teaching "splitting" knowledge". *Research in Engineering Design*, 27, pp 91–115.

<https://doi.org/10.1007/s00163-015-0206-z>.

Le Monde . (2016). March 25th. [https://www.lemonde.fr/campus/article/2016/04/13/au-c-ur-de-lamythique-d-school-de-stanford\\_4900964\\_4401467.html](https://www.lemonde.fr/campus/article/2016/04/13/au-c-ur-de-lamythique-d-school-de-stanford_4900964_4401467.html).

Levi-Strauss, C. (1966). *The savage mind*. Chicago, IL: University of Chicago Press.

Menissier, T. (2021). *Innovations, Une enquête philosophique*. Paris: Hermann (see in particular chapter VIII, pp. 187–205).

Merindol, V. and Versailles, D. W. (2017). *Créer et innover aujourd'hui en Île-de-France : le rôle des plateformes d'innovation*. Projet de recherche financé par Bpifrance Le Hub, Innovation Factory et Paris&Co (avec des contributions d'Ignasi Capdevila, Alexandra Le Chaffotec, Nicolas Aubouin, Marion Desnost et Marianne Cohen pour la recherche de terrain). Paris: PSB.

Merindol, V. and Versailles, D. W. (2019). *Créer et innover aujourd'hui en France et en Asie : le rôle des plateformes d'innovation et des open labs d'entreprise*. Projet de recherche financé par Bpifrance Le Lab et Innovation Factory. Paris: PSB.

Merindol, V. , Bouquin, N. , Versailles, D. W. , Aubouin, N. , Capdevila, I. , Le Chaffotec, A. , Chiovetta, A. and Voisin, T. (2016). *Le Livre Blanc des Open Labs. Quelles pratiques ? Quels changements en France ?*, Travaux du groupe d'experts co-animé par ANRT / FutuRIS et la chaire newPIC de PSB. Paris: ANRT et PSB (Mars).

Raymond, E. S. (2001). *The Cathedral and the Bazaar: Musings on Linux and open source by an accidental revolutionary*. Beijing, Cambridge, MA and Farnham: O'Reilly Media.

Shahabi, A. R. (1965). *The Bauhaus and its contributions to design with suggestions for improvement of design in college industrial arts programs*, PhD Thesis, North Texas State Univ. Denton (TX), June, [https://digital.library.unt.edu/ark:/67531/metadc163870/m2/1/high\\_res\\_d/n\\_03193.pdf](https://digital.library.unt.edu/ark:/67531/metadc163870/m2/1/high_res_d/n_03193.pdf).

Simondon, G. (1960). «L'effet de halo en matière technique: vers une stratégie de la publicité» In *Sur la Technique*. Paris: Presses Universitaires de France (2014), pp. 279–294.

Viatch . (2005). May 25th. <https://www.viatech.com/en/2005/05/itri-creativity-lab-directoraddresses-vtf2005-on-innovation-and-technology/>.