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edited by
Anne-Laure Mention
Massimo Menichinelli

From Research to Innovation: Exploring the Translation Journey with OpenInnoTrain



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6 A research template for understanding Research Translation cases

Massimo Menichinelli, Elena Casprini

1 Introduction

There is an increasing concern about making sure that the results of research activities achieve the desired societal outcomes (Banzi et al., 2011); how to speed up the transfer of research findings into practice (Graham et al., 2006); how to make sure it keeps pace with the rapid advances in knowledge (Grol and Grimshaw, 2003); how to make sure research is better accessed and adopted by stakeholders and decision-makers (Brownson et al., 2009), policymakers (Brownson et al., 2006), citizens (Israel et al., 1998).

These have been particularly a concern in the healthcare sector where the origins and history of Research Translation can be traced to (Mention et al., 2021). As defined by Searles et al., *“Research translation is a process of knowledge generation and transfer that enables those utilising the developed knowledge to apply it. This definition acknowledges that, once generated, knowledge flows can be multidirectional and non-sequential”* (2016, p. 2). Research Translation is thus a multidirectional and non-sequential process of knowledge generation and transfer that enables its application in practice through the engagement of the actors of an innovation ecosystem. Research Translation is done by moving back and forward from basic sciences and labs to practical implementation, between University and Industry.

Research Translation is an emerging topic still to be studied, especially in other sectors than the healthcare one. The Horizon 2020 MSCA-RISE OpenInnoTrain project aims at studying Research Translation in Open Innovation within the University-Industry Cooperation (UIC) framework in the 4 sectors of FinTech (Lee and Shin, 2018; Mention, 2020, 2019), Industry 4.0 (Alcácer and Cruz-Machado, 2019; Ibarra et al., 2018; Obradović et al., 2021; Schwab, 2017), CleanTech (Aagaard et al., 2021; Caprotti, 2012; Cumming et al., 2016; Jensen et al., 2020) and FoodTech (D’Antino et al., 2020; Piatti et al., 2019; Renda, 2019).

Among the many activities of the OpenInnoTrain project, during October 20th and 27th 2020, a Masterclass explored how to identify and analyse Open Innovation cases developed between universities and industries within the emerging approach of Research Translation, in the sector of FinTech, Industry 4.0, CleanTech and FoodTech. The goal of this masterclass was to share and learn

new approaches for understanding cases of Open Innovation between University and Industry through Research Translation. During the masterclass, the authors presented a proposal of an analytical framework for understanding Research Translation case studies: this contribution documents such a framework and details its theoretical background and adoption. Our working definition of Research Translation for this framework is a process-oriented Open Innovation initiative taking place within University-Industry Cooperation through multiple knowledge transfers in a network of interactions that are part of an innovation ecosystem.

How can we analyse Research Translation case studies? After this Introduction (1), the following section (2) provides a literature review of the background concepts behind Research Translation and the analysis of its case studies. The next section (3) details the proposal of a template for research protocols for analysing case studies of Research Translation, starting from goals and research questions through presenting the workflow and the structure of the interview protocol. Finally, conclusions (4) detail the overview of this contribution, its limitations and potential future development and applications.

2 Theoretical Models behind the concept of Research Translation

Understanding Research Translation requires embracing the multidirectional knowledge flows happening among parties (Searles et al., 2016). This leads us to consider at least three streams of research when approaching the phenomenon. First, the *what*: this has to do with *research* and, consequently, with the broader concepts of *knowledge* and *innovation*. Then, the *how* and the *who*: these have to do with what we mean with *translation* and the process that is involved with making research understandable and usable and the narrow set of *actors*, with particular reference to universities and industries (Bercovitz and Feldman, 2006), involved in these processes. Finally, the *where*, and therefore the context where research translation happens, with particular reference to the whole *innovation ecosystem*.

2.1 The “What”: from knowledge to innovation

Knowledge is a core concept for science advancement; in this chapter we follow this definition: “*Knowledge is information possessed in the mind of individuals: it is personalized information (which may not be new, unique, useful or accurate) related to facts, procedures, concepts, interpretations, ideas, observations, and judgements*” (Alavi and Leidner, 2001, p. 109). Knowledge derives from information, and information from data (Alavi and Leidner, 2001). In a context such as the current one, with the increased amount of data due to technologies and the wider diffusion of information, knowledge even more represents a key resource to

be managed. In a very simplified scheme, knowledge, in fact, is conducive, throughout research and development, to innovation.

We suggest that, in approaching research translation cases, scholars would ask themselves “*what is the innovation of this research translation case?*”. In order to identify innovation, we would like to distinguish among three different ways of approaching innovation (Kahn, 2018): innovation as an outcome (e.g., product, process, marketing, business model etc.), innovation as a process (how the output becomes usable) and innovation as a mindset (i.e. the internalisation of innovation in the culture). Once defined the focus on innovation (outcome, process or mindset), our framework moves a step ahead considering the “how” and the “who”.

2.2 The “How” and the “Who”: Knowledge Flows and Actors Interactions

The “how” innovation is translated is clearly related to the processes by which an innovation is implemented and diffused and who the involved actors are. Traditionally, scholars have advanced the innovation funnel, where product innovation (as a product launch in the market) results from several steps starting from idea generation, for example in the steps described in the stage-gate model (Cooper, 1990). However, such types of models focus on the company as the main actor involved in the innovation process. Here, the employees - mainly employees working in the R&D department - are the key actors dealing with the whole process. As we know, in the last two decades the innovation-related literature has been shaped by the concept of Open Innovation that has instead broadened the set of actors and the ways that are involved in innovation.

Open innovation is defined as “*the use of purposive inflows and outflows of knowledge to accelerate internal innovation, and expand the markets for external use of innovation, respectively*” (Chesbrough, 2006, p. 1). Literature on Open Innovation has distinguished among multiple types of actors that could help companies in developing innovation such as market actors (e.g. customers, suppliers, competitors) and institutional actors (e.g. universities, government research organisations) (Laursen and Salter, 2006). The impact that these actors may have on the innovation outcome varies according to the focal actor’s characteristics. Just as examples, we could cite the peculiarities of open innovation in small- and medium-sized companies (e.g. see the book by Frattini et al., 2018), the capabilities that family firms may leverage upon when executing open innovation (Casprini et al., 2017), but also the structural positioning within a network (Huggins et al., 2020).

We also might consider the different types of relationships linking actors that could shape how innovation is developed. For example, Bercovitz and Feldman (2006), in analysing the university-industry relationships, propose a conceptual model encapsulating economic, social and political influences that could impact how universities may develop knowledge. We think that Bercovitz’s and Feldman’s

paper (2006) is particularly useful since it provides five mechanisms of how university transfers knowledge namely sponsored research, licenses, recruitment of students, spin-offs and serendipity.

Furthermore, there are different ways for pursuing Open Innovation, for example with pecuniary (e.g., via licensing) and non-pecuniary (e.g., by revealing means) strategies (Dahlander and Gann, 2010). In such a context, scholars have also considered how companies may use different tools, such as social media (Mount and Martinez, 2014) and digital technologies (Urbinati et al., 2020), in involving several actors that could contribute at different levels of the innovation funnel (from idea generation to product launch, but also its end of life).

More recently, Bogers et al. (2018) argue that *“at the core of open innovation is the ability to create an ecosystem where people, organizations, and sectors can foster co-creation. It involves business models - the logic of creating and capturing value - that dynamically transcend organizational boundaries within that innovation ecosystem”* (p. 10).

2.3 The “Where”: Ecosystems

Literature on ecosystems has bloomed in the last decades, with several definitions (Aarikka-Stenroos and Ritala, 2017; Adner, 2017; Bogers et al., 2019) and frameworks proposed. According to Adner (2017), the concept of ecosystem is different from others (that focus on) such as platforms (technology) and multi sided markets (transactions), networks (patterns of connectivity) and alliances (connectivity at firm level), business model (focal firm and firm strategy), project management (coordination of multiple activities towards a goal), supply chain (there is a critical path and the focus is on make or buy decisions), among others. Furthermore, there are also start-up ecosystems and service ecosystems (Aarikka-Stenroos and Ritala, 2017).

Defining an ecosystem has been at the core of some recent papers. Adner (2017) distinguishes between two main approaches in studying ecosystems. The first, that he is advancing, is the *“ecosystem-as-structure”* (focus on activity) according to which ecosystem is *“the alignment structure of the multilateral set of partners that need to interact in order for a focal value proposition to materialize”* (p. 40). The second one, that has dominated the field and traces its roots back to biology, is the *“ecosystems-as-affiliation”* (focus on actors) where there are several actors who are loosely interconnected and whose survival depends on each other. These two approaches, which change in terms of focus (value proposition vs actor), present the same constituting elements, i.e. activities, actors, positions and links. Jacobides et al. (2018) identify three streams of research about ecosystems namely related to business (firm-environment), innovation (innovation/value proposition and the related actors) and platform (i.e. *“how actors organize around a platform”*, p. 2257). Bogers et al. (2019) define an ecosystem as *“an interdependent network of self-interested actors jointly creating value”* (p. 2), thus

identifying four components (i.e. interdependence, network, self-interested actors, creating value).

As a consequence of these perspectives, scholars have advanced some tools/principles to help managers in designing ecosystems. For example, Talmar et al. (2018) propose an *ecosystem pie model* that distinguishes between ecosystem level constructs (i.e. the ecosystem's value proposition, the target user segments, the interdependent actors) and the actor level constructs (resources, activities, value addition, value capture, dependence and risk). Peppard and Rylander (2006) introduce the *Network Value Analysis* as a way to analyse competitive ecosystems and apply it to the mobile operators. Konietzko et al., (2020) advance a set of principles for the circular ecosystem innovation.

3 A proposal of a research template for analysing Research Translation case studies

3.1 A perspective on Research Translation

Considering the main concepts emerging from the literature review of the previous section, we propose here a framework for analysing Research Translation case studies. More than a prescriptive framework, this proposal should rather be considered as a template for preparing interview protocols and for studying the resulting data of Research Translation cases. The next sections detail the research questions, workflow and set of questions of such a framework; this section details the perspective that informs the framework. We propose a framework with a systemic and network perspective based on four main elements: Innovation, Process, Networks, Ecosystem. We consider this approach relevant as "*networks are becoming the paradigm to uncover the hidden architecture of complexity*" (Caldarelli and Catanzaro, 2012, p. 6). Such a systemic approach goes beyond the traditional view of studying only the innovation as a case study with a product, process or service as the unit of analysis with clearly defined and limited boundaries of the context (Figure 1).

In this framework, innovation (as a product and/or service, and as a process) is not seen as a single entity to be studied alone but instead as an entity developed through processes which should be considered together with it (Figure 2). More specifically, going deeper in the understanding of such processes, which should be considered as networks of interactions (collaborations) and flows (of ideas, projects, artifacts, material and financial resources and so on) within an innovation ecosystem (Figure 3).



Figure 1 Analytical Framework: Innovation as the traditional focus of case studies

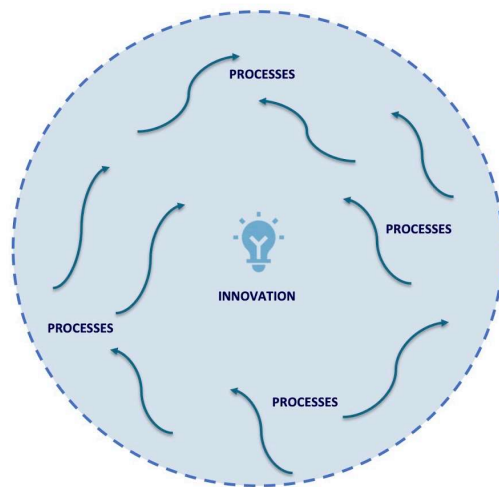


Figure 2 Analytical Framework: Innovation emerging from a set of processes

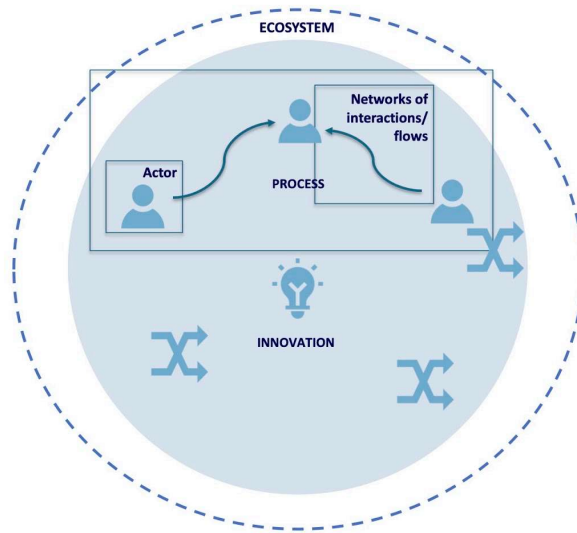


Figure 3 Analytical Framework: Unit of Analysis: Innovation emerging from networks of interactions among actors within an Innovation Ecosystem

Our working definition of Research Translation for this framework is: *Research Translation can be understood as a process-oriented Open Innovation initiative taking place within University-Industry Cooperation through multiple knowledge transfers in a network of interactions part of an innovation ecosystem.* The main features of Research Translation therefore are:

- 1) a process-oriented initiative
- 2) with an Open Innovation approach
- 3) taking place within University-Industry Cooperation
 - a) through multiple knowledge transfers
 - b) in a network of interactions
 - c) in an innovation ecosystem.

3.2 Research Questions

The overall objective of this analytical framework is to provide the foundation for analysing Research Translation cases studies with a systemic perspective, and in general, a way for studying such an emergent innovation phenomenon and framework. Starting from a first and main research question RQ0, the starting point for thinking about a Research Translation case study would be this:

- RQ0. How does Research Translation take place in this case study?

Which can be refined and developed into a more structured RQ0 with these main elements:

- RQ0. How is this Research Translation case study:
 - organised? and
 - how was it developed (and then organised)? and
 - how could it be replicated?

And summarised in this longer research question RQ0:

- RQ0. How was this Research Translation case study developed and organised and how could this shed light on its replicability?

As this is still a broad research question, a set of three sub-research questions (RQ1-2-3) can be added in order to unpack several dimensions of RQ0, and that will ultimately contribute to it (Figure 4). It shall be noted how RQ2 works at two levels: at individual actor's level and at collective actors' level (the innovation ecosystem):

1. RQ1. What is the innovation of the RT case?
2. RQ2. Who are the actors involved in the innovation ecosystem of the RT case?
3. RQ3. How have actors interacted within the RT case?



Figure 4 Analytical Framework: Framework, Research Questions Unit of Analysis and sub-Units of Analysis

3.3 Workflow

We suggest this workflow for analysing Research Translation case studies, by starting from an innovation and moving then to the organisations behind it:

1. STEP 01: Identify an innovation developed with Research Translation.
2. STEP 02: Contact and interview the identified organisations behind the innovation.
3. STEP 03: Repeat STEP 02 for the other relevant organisations identified during the interviews of STEP 02.
4. STEP 04: Data analysis.
5. STEP 05: Elaborate findings: from descriptive case study (organising the collected material) towards an exploratory case study with theoretical lenses.

This workflow informs the questions of the interview detailed in the following sections. There are several possible workflows for studying a case study, and consequently different entry points: one could start from an organisation, then identify its Research Translation processes and later only identify innovations, and so on. In case of a different workflow and entry point, the following questions should be reorganised.

3.4 Interview

3.4.1 Introduction

Introduction of the interviewers and of the scope of the interview:

1. Introduction of the interviewers.
2. Purpose of the interview.
3. Definitions of concepts of Research Translation, Innovation Ecosystem, University-Industry Cooperation.
4. Overview of the whole interview.
5. Informed consent for the participation of the interviewee.

3.4.2 Interview – Organisation (RQ2)

Questions about the profile of the organisation (an individual actor):

1. How was the organisation founded? (by whom, how the idea was developed, ...)
2. What are the key activities of the organisation?
3. Why is the organisation unique in respect to its main competitors?

3.4.3 Interview – Innovation (RQ1)

Questions about the innovation at the centre of the Research Translation:

1. How has the organisation developed the innovation?
2. How was the idea generation phase?
3. What is the Problem that this innovation has addressed both in terms of research and practice?
4. What is the Goal of this innovation?
5. What are your main Findings gathered working on the innovation?
6. Who might benefit from this?
7. How could this innovation be replicated by others?

3.4.4 Interview – Innovation Ecosystem (RQ2)

Questions about the actors of the innovation ecosystem behind the Research Translation (all the actors):

1. How would you define the innovation ecosystem behind this innovation?
2. What has been the role of university, business, government and other types of actors?
3. Who are the actors who have been involved in the innovation ecosystem? List and describe 10 other actors in the innovation ecosystem your organisation has interacted with during the life cycle of the innovation. In the next questions, we will ask you about the interactions with them from your organisation’s focal point of view:

Table 1. List of the 10 actors the interviewed actor has interacted the most in the development of this Research Translation initiative

Actors	Actors’ descriptions
Actor 1	...
Actor 2	...
Actor 3	...
Actor 4	...
Actor 5	...
Actor 6	...
Actor 7	...
Actor 8	...
Actor 9	...
Actor 10	...

3.4.5 Interview – Interactions / Flows of research activities (RQ3)

Please rate the interactions between your organisation and the other actors of the innovation ecosystem in terms of **research activities**.

How often (from 1 “very rarely”, to 5 “very frequently”) has your organisation interacted with each of them in each phase?

Table 2. Likert scale for frequency of interactions in research activities

1	2	3	4	5
Very rarely	Rarely	Occasionally	Frequently	Very frequently

Table 3. Frequency of interactions in research activities between the interviewed actor and all actors along all the phases

	Idea generation & collection	Scoping (idea selection)	Build business case	Development	Testing & validation	Launch
Actor 1	1		2			
Actor 2		3				3
Actor 3				4		
Actor 4						5
Actor 5		1	1	2		
Actor 6					2	
Actor 7			1			
Actor 8				2		
Actor 9	1					
Actor 10		2		2		

Overall, in all the phases, how positive or negative have your interactions with each of them been?

Table 4. Likert scale for quality of interactions in research activities

-2	-1	0	1	2
Very negative	Negative	Moderate	Positive	Very positive

Table 5. Overall quality of interactions in research activities between the interviewed actor and all actors in all the phases

Actors	Quality of interactions in all phases with each actor
Actor 1	-1
Actor 2	0
Actor 3	2
Actor 4	1
Actor 5	2
Actor 6	-1
Actor 7	1
Actor 8	0
Actor 9	2
Actor 10	-2

3.4.6 Interview – Interactions / Flows of business & implementation activities (RQ3)

Please rate the interactions between your organisation and the other actors of the innovation ecosystem in terms of **business & implementation activities**.

How often (from 1 “very rarely”, to 5 “very frequently”) has your organisation interacted with each of them in each phase?

Table 6. Likert scale for frequency of interactions in business & implementation activities

1	2	3	4	5
Very rarely	Rarely	Occasionally	Frequently	Very frequently

Table 7. Frequency of interactions in business & implementation activities between the interviewed actor and all actors along all the phases

	Idea generation & collection	Scoping (idea selection)	Build business case	Development	Testing & validation	Launch
Actor 1	1		2			
Actor 2		3				3
Actor 3				4		
Actor 4						5
Actor 5		1	1	2		
Actor 6					2	
Actor 7			1			
Actor 8				2		
Actor 9	1					
Actor 10		2		2		

Overall, in all the phases, how positive or negative have your interactions with each of them been?

Table 8. Likert scale for quality of interactions in business & implementation activities

-2	-1	0	1	2
Very negative	Negative	Moderate	Positive	Very positive

Table 9. Overall quality of interactions in business & implementation activities between the interviewed actor and all actors in all the phases

Actors	Quality of interactions in all phases with each actor
Actor 1	-1
Actor 2	0
Actor 3	2

Actor 4	1
Actor 5	2
Actor 6	-1
Actor 7	1
Actor 8	0
Actor 9	2
Actor 10	-2

3.4.7 Interview – Interactions / Flows of partnership & collaboration activities (RQ3)

Please rate the interactions between your organisation and the other actors of the innovation ecosystem in terms of partnership management & other collaboration activities.

How often (from 1 “very rarely”, to 5 “very frequently”) has your organisation interacted with each of them in each phase?

Table 10. Likert scale for frequency of interactions in partnership management & other collaboration activities

1	2	3	4	5
Very rarely	Rarely	Occasionally	Frequently	Very frequently

Table 11. Frequency of interactions in partnership management & other collaboration activities between the interviewed actor and all actors along all the phases

	Idea generation & collection	Scoping (idea selection)	Build business case	Development	Testing & validation	Launch
Actor 1	1		2			
Actor 2		3				3
Actor 3				4		
Actor 4						5

Actor 5		1	1	2		
Actor 6					2	
Actor 7			1			
Actor 8				2		
Actor 9	1					
Actor 10		2		2		

Overall, in all the phases, how positive or negative have your interactions with each of them been?

Table 12. Likert scale for quality of interactions in partnership management & other collaboration activities

-2	-1	0	1	2
Very negative	Negative	Moderate	Positive	Very positive

Table 13. Overall quality of interactions in partnership management & other collaboration activities between the interviewed actor and all actors in all the phases

Actors	Quality of interactions in all phases with each actor
Actor 1	-1
Actor 2	0
Actor 3	2
Actor 4	1
Actor 5	2
Actor 6	-1
Actor 7	1
Actor 8	0
Actor 9	2
Actor 10	-2

3.4.8 Interview – Impact

What is the impact of the innovation? Think at local, regional, national and international level, and at the organisational level.

Table 14. Overall quality of interactions in partnership management & other collaboration activities between the interviewed actor and all actors in all the phases

		Economic	Environmental	Social	On your organisation
Existing	So far				
Expected	Short term (<12 months)				
	Medium term (1-3 years)				
	Long term (> 3 years)				

4 Conclusions

Research Translation is an emerging approach for understanding and managing knowledge transfer within an innovation ecosystem. Our working definition of Research Translation is that it can be understood as a process-oriented Open Innovation initiative taking place through multiple knowledge transfers in a network of interactions part of an innovation ecosystem, between University and Industry. Considering the main concepts emerging from the literature review, we propose here a framework for analysing Research Translation case studies based on four main elements: Innovation, Process, Networks, Ecosystem. This framework is a template for preparing interview protocols and for studying the resulting data of Research Translation cases.

As this chapter is a first proposal of a template for interview protocols for studying Research Translation case studies, it still lacks a proper application and testing

with case studies. The next steps for this line of research should be on developing full interview protocols and analyses for case studies. The testing on such cases should be documented both in terms of processes, protocols and tools, for example by sharing protocols with other researchers with an Open Science approach or by exploring the adoption of new interactive tools such as Network Canvas (Birkett et al., 2021). Beside testing and improving the protocol itself, further research should align its development to research about Research Translation and ideally contribute to it by producing insights from case studies towards the founding concepts of Research Translation, validating thus the conceptual framework at the foundation of this template.

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Icons: Light Bulb, Crossed Arrows Photo Frame by Vectors Market from the Noun Project. <https://thenounproject.com/vectorsmarket/>

References

- Aagaard, A., Saari, U.A., Mäkinen, S.J., 2021. Mapping the types of business experimentation in creating sustainable value: A case study of cleantech start-ups. *J. Clean. Prod.* 279, 123182. <https://doi.org/10.1016/j.jclepro.2020.123182>
- Aarikka-Stenroos, L., Ritala, P., 2017. Network management in the era of ecosystems: Systematic review and management framework. *Industrial Marketing Management* 67, 23–36. <https://doi.org/10.1016/j.indmarman.2017.08.010>
- Adner, R., 2017. Ecosystem as Structure: An Actionable Construct for Strategy. *Journal of Management* 43, 39–58. <https://doi.org/10.1177/0149206316678451>
- Alavi, M., Leidner, D.E., 2001. Review: Knowledge management and knowledge management systems: conceptual foundations and research issues. *MIS Q.* 25, 107–136. <https://doi.org/10.2307/3250961>
- Alcácer, V., Cruz-Machado, V., 2019. Scanning the Industry 4.0: A Literature Review on Technologies for Manufacturing Systems. *Eng. Sci. Technol. Int. J.* <https://doi.org/10.1016/j.jestch.2019.01.006>
- Banzi, R., Moja, L., Pistotti, V., Facchini, A., Liberati, A., 2011. Conceptual frameworks and empirical approaches used to assess the impact of health research: an overview of reviews. *Health Res. Policy Syst.* 9, 26. <https://doi.org/10.1186/1478-4505-9-26>
- Bercovitz, J., Feldman, M., 2006. Entrepreneurial Universities and Technology Transfer: A Conceptual Framework for Understanding Knowledge-Based Economic Development. *J. Technol. Transf.* 31, 175–188. <https://doi.org/10.1007/s10961-005-5029-z>
- Birkett, M., Melville, J., Janulis, P., Phillips, G., Contractor, N., Hogan, B., 2021. Network Canvas: Key decisions in the design of an interviewer-assisted network data collection software suite. *Soc. Netw.* 66, 114–124. <https://doi.org/10.1016/j.socnet.2021.02.003>
- Bogers, M., Chesbrough, H., Moedas, C., 2018. Open Innovation: research, practices, and policies. *California Management Review* 60, 5–16.
- Bogers, M., Sims, J., West, J., 2019. What Is an Ecosystem? Incorporating 25 Years of Ecosystem Research. *Proceedings 2019*, 11080. <https://doi.org/10.5465/AMBPP.2019.11080abstract>

- Brownson, R.C., Fielding, J.E., Maylahn, C.M., 2009. Evidence-Based Public Health: A Fundamental Concept for Public Health Practice. *Annu. Rev. Public Health* 30, 175–201. <https://doi.org/10.1146/annurev.publhealth.031308.100134>
- Brownson, R.C., Royer, C., Ewing, R., McBride, T.D., 2006. Researchers and Policymakers: Travelers in Parallel Universes. *Am. J. Prev. Med.* 30, 164–172. <https://doi.org/10.1016/j.amepre.2005.10.004>
- Caldarelli, G., Catanzaro, M., 2012. *Networks: a very short introduction*, 1st ed. ed, Very short introductions. Oxford University Press, Oxford.
- Caprotti, F., 2012. The cultural economy of cleantech: environmental discourse and the emergence of a new technology sector: The cultural economy of cleantech. *Trans. Inst. Br. Geogr.* 37, 370–385. <https://doi.org/10.1111/j.1475-5661.2011.00485.x>
- Casprini, E., De Massis, A., Di Minin, A., Frattini, F., Piccaluga, A., 2017. How family firms execute open innovation strategies: the Loccioni case. *J of Knowledge Management* 21, 1459–1485. <https://doi.org/10.1108/JKM-11-2016-0515>
- Chesbrough, H., Vanhaverbeke, W., West, J. 2006. *Open Innovation: Researching a new paradigm*, Oxford University Press
- Cooper, R.G., 1990. Stage-gate systems: A new tool for managing new products. *Business Horizons* 33, 44–54. [https://doi.org/10.1016/0007-6813\(90\)90040-I](https://doi.org/10.1016/0007-6813(90)90040-I)
- Cumming, D., Henriques, I., Sadorsky, P., 2016. 'Cleantech' venture capital around the world. *Int. Rev. Financ. Anal.* 44, 86–97. <https://doi.org/10.1016/j.irfa.2016.01.015>
- Dahlander, L., Gann, D.M., 2010. How open is innovation? *Res. Policy* 39, 699–709. <https://doi.org/10.1016/j.respol.2010.01.013>
- D'Antino, A., Leveau, M., Dingemans, A., Yuksel, B., Redshaw, M., 2020. The state of global Foodtech report 2020. Talent Garden / Forward Fooding.
- Frattini, F., Usman, M., Roijackers, N., Vanhaverbeke, W., 2018. Researching open innovation in SMEs, Researching Open Innovation In SMEs. World Scientific Pub Co Inc.
- Graham, I.D., Logan, J., Harrison, M.B., Straus, S.E., Tetroe, J., Caswell, W., Robinson, N., 2006. Lost in knowledge translation: Time for a map? *J. Contin. Educ. Health Prof.* 26, 13–24. <https://doi.org/10.1002/chp.47>
- Grol, R., Grimshaw, J., 2003. From best evidence to best practice: effective implementation of change in patients' care. *The Lancet* 362, 1225–1230. [https://doi.org/10.1016/S0140-6736\(03\)14546-1](https://doi.org/10.1016/S0140-6736(03)14546-1)
- Huggins, R., Prokop, D., Thompson, P., 2020. Universities and open innovation: the determinants of network centrality. *J Technol Transf* 45, 718–757. <https://doi.org/10.1007/s10961-019-09720-5>
- Ibarra, D., Ganzarain, J., Igartua, J.I., 2018. Business model innovation through Industry 4.0: A review. *Procedia Manuf.* 22, 4–10. <https://doi.org/10.1016/j.promfg.2018.03.002>
- Israel, B.A., Schulz, A.J., Parker, E.A., Becker, A.B., 1998. REVIEW OF COMMUNITY-BASED RESEARCH: Assessing Partnership Approaches to Improve Public Health. *Annu. Rev. Public Health* 19, 173–202. <https://doi.org/10.1146/annurev.publhealth.19.1.173>
- Jacobides, M.G., Cennamo, C., Gawer, A., 2018. Towards a theory of ecosystems. *Strat Mgmt J* 39, 2255–2276. <https://doi.org/10.1002/smj.2904>
- Jensen, F., Lööf, H., Stephan, A., 2020. New ventures in Cleantech: Opportunities, capabilities and innovation outcomes. *Bus. Strategy Environ.* 29, 902–917. <https://doi.org/10.1002/bse.2406>
- Kahn, K.B., 2018. Understanding innovation. *Business Horizons* 61, 453–460. <https://doi.org/10.1016/j.bushor.2018.01.011>
- Konietzko, J., Bocken, N., Hultink, E.J., 2020. Circular ecosystem innovation: An initial set of principles. *Journal of Cleaner Production* 253, 119942. <https://doi.org/10.1016/j.jclepro.2019.119942>
- Laursen, K., Salter, A., 2006. Open for innovation: the role of openness in explaining innovation performance among U.K. manufacturing firms. *Strat. Mgmt. J.* 27, 131–150. <https://doi.org/10.1002/smj.507>

- Lee, I., Shin, Y.J., 2018. Fintech: Ecosystem, business models, investment decisions, and challenges. *Bus. Horiz.* 61, 35–46. <https://doi.org/10.1016/j.bushor.2017.09.003>
- Mention, A.-L., 2020. The Age of FinTech: Implications for Research, Policy and Practice. *J. FinTech* 2050002. <https://doi.org/10.1142/S2705109920500029>
- Mention, A.-L., 2019. The Future of Fintech. *Res.-Technol. Manag.* 62, 59–63. <https://doi.org/10.1080/08956308.2019.1613123>
- Mention, A.-L., Bhimani, H., Menichinelli, M., 2021. D1.1 Executive Report on State of Play in UIC and Research Translation in Europe and Australia (OpenInnoTrain No. D1.1).
- Mount, M., Martinez, M.G., 2014. Social Media: A Tool for Open Innovation. *California Management Review* 56, 124–143. <https://doi.org/10.1525/cm.2014.56.4.124>
- Obradović, T., Vlačić, B., Dabić, M., 2021. Open innovation in the manufacturing industry: A review and research agenda. *Technovation* 102221. <https://doi.org/10.1016/j.technovation.2021.102221>
- Peppard, J., Rylander, A., 2006. From Value Chain to Value Network: Insights for mobile operators. *European Management Journal* 24, 128–141. <https://doi.org/10.1016/j.emj.2006.03.003>
- Piatti, C., Graeff-Hönniger, S., Khajehei, F. (Eds.), 2019. *Food Tech Transitions: Reconnecting Agri-Food, Technology and Society*. Springer International Publishing, Cham. <https://doi.org/10.1007/978-3-030-21059-5>
- Renda, A., 2019. The Age of Foodtech: Optimizing the Agri-Food Chain with Digital Technologies, in: Valentini, R., Sievenpiper, J.L., Antonelli, M., Dembska, K. (Eds.), *Achieving the Sustainable Development Goals Through Sustainable Food Systems*. Springer International Publishing, Cham, pp. 171–187. https://doi.org/10.1007/978-3-030-23969-5_10
- Schwab, K., 2017. *The Fourth Industrial Revolution*, Illustrated edition. ed. Currency, New York.
- Searles, A., Doran, C., Attia, J., Knight, D., Wiggers, J., Deeming, S., Mattes, J., Webb, B., Hannan, S., Ling, R., Edmunds, K., Reeves, P., Nilsson, M., 2016. An approach to measuring and encouraging research translation and research impact. *Health Res. Policy Syst.* 14, 60. <https://doi.org/10.1186/s12961-016-0131-2>
- Talmar, M., Walrave, B., Podoyntsyna, K.S., Holmström, J., Romme, A.G.L., 2018. Mapping, analyzing and designing innovation ecosystems: The Ecosystem Pie Model. *Long Range Plann.* <https://doi.org/10.1016/j.lrp.2018.09.002>
- Urbinati, A., Chiaroni, D., Chiesa, V., Frattini, F., 2020. The role of digital technologies in open innovation processes: an exploratory multiple case study analysis. *R and D Management* 50, 136–160. <https://doi.org/10.1111/radm.12313>

