Check for updates

Received: 29 March 2021 | Revised: 13 January 2022 | Accepted: 16 March 2022

DOI: 10.1111/caim.12491

SPECIAL ISSUE ARTICLE

WILEY

Exploring intermediary practices of collaboration in university–industry innovation: A practice theory approach

Stefano Cirella[1,2] | Stephen Murphy[3]

[1]Essex Business School, University of Essex, Colchester, UK

[2]Department of Industrial Engineering, University of Trento, Trento, Italy

[3]Trinity Business School, Trinity College Dublin, Dublin, Ireland

Correspondence
Stefano Cirella, Essex Business School, University of Essex, Wivenhoe Park, Colchester CO4 3SQ, UK.
Email: scirella@essex.ac.uk

The intensity of the global and distributed economy requires innovative efforts that single organizations often cannot develop alone. Collaborative innovation is traditionally studied in terms of collaborative process to maintain and outcomes to implement. However, collaborations relating to innovation often take place in difficult-to-explore spaces in-between. This study adopts a practice-based approach to explore practices of collaboration developed by the university as an intermediary in innovative projects. Drawing on a case study, we identify four micro-practices that appear crucial to initiating and sustaining collaboration: networking, partnering, culture making and supporting. We outline the purpose and constituent objects, doings and knowledge of each practice. This article contributes to ongoing debate around improving the effectiveness of collaborative innovation and provides insights into how a set of apparently insignificant, routinized micro-practices contribute to intermediaries' success in initiating and sustaining collaborations.

KEYWORDS
collaboration, innovation intermediary, micro-practices, practice theory, university–industry collaboration

1 | INTRODUCTION

Innovation is 'a social and interactive process in which collaboration and exchange of knowledge and information play crucial roles' (Hemphälä & Magnusson, 2012, p. 3). Among the heterogeneity of collaborative relationships (e.g., Chasanidou et al., 2018), those involving universities are particularly interesting, as 'collaborative research by academia with industry can be a powerful source of innovation' (Ankrah et al., 2013, p. 50), and may comprise different models of innovation (Li et al., 2018). University–industry (U-I) collaboration is depicted in well-established frameworks, including the Triple, Quadruple and Quintuple Helix models (Carayannis et al., 2012; Etzkowitz & Leydesdorff, 2000). Existing research on U-I collaboration focuses mainly on formal knowledge transfer mechanisms at the macro and meso levels, for example, in relation to patents, licenses and spin-offs (Rajalo & Vadi, 2017). Universities' role in open innovation is typically studied by focusing on how such interactions impact innovative performance (e.g., Howells et al., 2012a).

In this context, 'there is insufficient knowledge on several aspects that influence the collaboration process', and it is recognized that 'the process of working together is not well understood at the micro level'. This gap is particularly relevant given that collaborative practices require 'matching the levels of preconditions between partners' (Rajalo & Vadi, 2017, p. 42). Ankrah et al. (2013) confirm the importance of concentrating on the micro-practices (i.e., the mundane things that people do) to initiate and sustain collaboration. Studies of collaborative innovation typically focus on which key actors should be involved, which collaborative processes should be maintained and which outcomes should be implemented (Arnaboldi & Spiller, 2011). In this journal, Ystrom and Agogué (2020, p. 141) recently called on researchers to turn attention to the 'spaces in-between', where the social interactions that constitute

This is an open access article under the terms of the Creative Commons Attribution License, which permits use, distribution and reproduction in any medium, provided the original work is properly cited.
© 2022 The Authors. *Creativity and Innovation Management* published by John Wiley & Sons Ltd.

collaboration actually take place. The first research gap relates to this dearth of understanding concerning what individuals and collectives actually do when creating collaborations in these in-between spaces (Cirella & Yström, 2018). As it is evident from the most recent research in this area (e.g., Faccin et al., 2020), consideration of the actual doing of the process of collaboration is undoubtedly beneficial for identifying managerial implications related to improving innovation processes by understanding and complementing the set of everyday, mundane practices that, taken together, can support successful collaborations.

The second research gap concerns 'collaborative situations where third parties, intermediaries … are present to facilitate the collaboration between the two groups of collaborators' (Ankrah et al., 2013, p. 50). Prior research shows that intermediaries play a crucial role in the development and maintenance of collaborations between industry and science-based actors (Du et al., 2014; Tether & Tajar, 2008). But these studies offer little insight into the things that intermediaries actually do to support successful collaboration (Al-Tabbaa & Ankrah, 2019). In particular, 'much more research needs to be undertaken into the nature of the relationships that intermediaries exist in, over and above this more detailed outline of their functions and activities' (Howells, 2006, p. 725).

Taking up Yström and Agogué's (2020) call, this study turns attention to the micro-practices that support and sustain collaboration in an innovation context, with the aim of identifying what people *actually* do when initiating and maintaining innovative projects based on U-I collaboration. The research objective is to explore micro-practices of collaboration developed by universities when playing an intermediary role in innovative projects based on U-I collaboration. The focus on universities is motivated by the assumption that, as intermediaries in U-I collaboration, they may be able to activate mechanisms that initiate and sustain successful collaborations between different actors (Canhoto et al., 2016). For example, universities have the potential to build conditions that promote innovative projects, including collaboration between organizations that would not otherwise spontaneously collaborate, for example, because they compete in the same industry, are not linked to a network or fail to take opportunities for collaboration (OMalley et al., 2014).

To pursue this aim, and in line with the most recent theoretical advancements on collaboration (Alpenberg & Scarbrough, 2021), a *practice theory* perspective is brought to bear on a case study of the 'Fondazione Politecnico di Milano' (hereafter Fondazione), one of the most successful university-based intermediaries focusing on U-I collaboration in Italy. It is a relevant case to meet our aim, as Fondazione is an institution focused exclusively on the challenge of building relationships between the university, industry and public administration. At the same time, theories of practice are well suited to meet our aim because they provide an analytic lens to examine the *everyday doings* and *interactions* that support collaboration (Echeverri & Skålén, 2011; Kohtamäki et al., 2020). Practice theory focuses attention to the 'mundane, everyday praxis, and practices developed in the nitty gritty of the micro level' (Alpenberg & Scarbrough, 2021), which is overlooked in prior research on U-I collaborations.

To provide a background to these concerns, the next section reviews research on the context of collaborative innovation, U-I collaboration and the role of intermediaries, before narrowing the focus to intermediary practices of collaboration and outlining our practice theory approach. Next, we outline our qualitative approach and explain its suitability to the Fondazione case. Then, we present and discuss our findings and develop two important contributions. First, our study provides novel insights into the everyday doings that universities develop as intermediaries for collaboration. To this end, we identify four micro-practices that appear crucial to initiating and sustaining collaboration: networking, partnering, culture making and supporting and outline the purpose and constituent elements of each practice. Second, this contributes to ongoing debates around improving the effectiveness of collaborative innovation, by using these four interrelated practices as a managerial guideline to underpin the everyday, mundane activities of collaboration.

2 | THEORETICAL BACKGROUND

2.1 | The context of collaborative innovation

The global knowledge economy necessitates faster and more complex creative and innovative efforts over shorter time cycles (Cirella, 2021) to deal with increasingly complex demands such as combining different domain-specific knowledge and expertise (Ollila & Yström, 2016; Sundgren & Styhre, 2003). This is often 'more than one organization can do alone' (Ollila & Yström, 2016, p. 363), so organizations are continually exploring new ways to organize for innovation, for example, through vertical and horizontal alliances, networks, partnerships and the involvement of intermediaries (e.g., Teece, 1992).

The predominant concept concerning collaboration across organizational boundaries is 'open innovation' (Chesbrough, 2003a, 2003b). This refers to all kinds of distributed innovation processes that cross organizational boundaries and involve different organizations, ranging from large firms to small and medium-sized enterprises (Grama-Vigouroux et al., 2020), along with intermediaries, external agencies, communities of consumers and user innovators. Indeed, this concept 'has grown in popularity within academia and among managers and business practitioners' (Ollila & Elmquist, 2011, p. 273). Open innovation frames cooperation between multiple actors as a knowledge-based innovation system where cross-organizational knowledge integration and sharing is key (Ardito et al., 2019). In knowledge intensive projects, collaborative efforts combine and recombine knowledge generated by collaborators with knowledge originated elsewhere (e.g., Pancholi et al., 2015); thus, along with traditional roles associated with knowledge providers and co-creators, these collaborations require collaborators acting as knowledge intermediaries and gatekeepers as well (Ardito et al., 2019; Messeni Petruzzelli, 2008).

The concept of 'collaborative innovation' emphasizes the value of organizing for innovation through collaboration. Collaborative innovation is a 'phenomenon in which organizations' activities are virtually co-designed, implying a coordination of decision making across

organizational boundaries' (Ollila & Yström, 2016, p. 365). Co-design and coordination are essential for building collaboration across different domains of expertise while sharpening the collaborative practices necessary to integrate diverse contributions and knowledge (Bruns, 2013; Patricio et al., 2020).

Collaboration also brings new challenges that must be addressed. For example, organizations often underestimate the complexity of collaborative relations (Ollila & Elmquist, 2011). Multiple actors each bring their own views on innovation and specific representations of the collaboration. The implication is that 'opening up the innovation process to partners outside the organizational boundaries is likely to be difficult, as it challenges established practices, norms and organizational cultures, which can result in a perception that the innovation process has become "messy"' (Ollila & Yström, 2016, p. 363). Ollila and Yström (2016, p. 364) suggest that messy relations do not necessarily mean mismanaged organizing but may rather represent ways of organizing to be utilized 'for their specific nature, in order to achieve the desired innovation'.

In considering the emergent nature of such organizing, further enquiry should focus on the dynamics, behaviours and other *soft* features of collaborative innovation. An interdisciplinary perspective, and particularly dialogue between different bodies of literature, such as innovation management, organization studies and organizational behaviour, would be beneficial in addressing this specific challenge that spans innovation processes and behaviours (e.g., Yström et al., 2019).

2.2 | An introduction to University-Industry collaborations

In a knowledge economy, the Triple, Quadruple and Quintuple Helix models envisage the interactions between academia, industry, government, society and environment to develop innovation for sustainable development (e.g., Carayannis et al., 2012, 2021; Etzkowitz & Leydesdorff, 2000). In this context, 'scientific research conducted at universities and knowledge institutes is an important input for industrial innovation' (Du et al., 2014, p. 829). This resonates with the role that universities usually play in innovation-related collaborations with industry, making U-I relationships particularly vital for driving open innovation processes (Perkmann & Walsh, 2007).

Collaborations that include science-based partners may have various potential benefits. These collaborations gain early access to the latest research findings, and especially to tacit scientific knowledge and unpublished codified knowledge (Du et al., 2014), and to collaborative know-how that enhances intangible benefits, such as the generation of new knowledge (Bellini et al., 2019). This may lead, for example, to a first mover advantage in launching innovations onto the market (e.g., Fabrizio, 2009). Another potential benefit is gaining access to advanced research facilities (e.g., Leten et al., 2013) to enable explorations of new technologies or new applications of an existing technology (Lai, 2011). Science-based collaborations may also 'leverage academic networks in which the involved scientists are embedded' (Du et al., 2014, p. 831).

For all these reasons, university-based collaborations have grown in scale and scope over time (Ferraris et al., 2020). For universities, knowledge production is key (Maietta, 2015), and exchanges of knowledge between university and industry are essential (Scandura, 2016). U-I knowledge transfer is 'a broad concept identifying a wide set of interactions between firms and universities that are aimed at the exchange of knowledge related to research, science and technology. In particular, research collaborations include research partnerships, contract research, research consortia, consulting and founding of co-operative research centres' (Scandura, 2016, p. 1908). In this context, the positive effects include both tangible benefits deriving from codified knowledge, which may be transferred under various arrangements, such as contracts, collaborative research or licensing (e.g. DEste et al., 2013); and intangible benefits related to acquisition and generation of new knowledge, and thus learning, due to the collaborative know-how (e.g., Bellini et al., 2019). Universities also play a key role in integrating and combining knowledge from different institutional contexts and domains (Natalicchio et al., 2019).

Although the nature and effects of such collaborations vary across disciplines, sectors and types of firm (Howells et al., 2012a), previous research confirms that academic research quality and some forms of proximity between firm and university have major impacts on U-I collaboration (e.g., Maietta, 2015; Messeni Petruzzelli & Murgia, 2021). In particular, cognitive, social and geographical proximity, via different mechanisms, enhance interactive learning processes within U-I collaborations (Messeni Petruzzelli & Murgia, 2021), due to interactions 'with a high level of information richness' facilitating 'the exchange of, especially tacit, knowledge between actors' (Messeni Petruzzelli, 2011, p. 311). At the same time, local innovation systems can be successfully complemented by the knowledge reachable through global pipelines (Messeni Petruzzelli & Murgia, 2020).

Universities' contributions have been studied in relation to various different dimensions and roles (Ardito et al., 2019; Howells et al., 2012b; Kreiling et al., 2020). The open innovation literature focuses on the most appropriate ways of managing projects to sustain better financial performance. In contrast to other types of partnership, 'science-based partnerships are associated with higher project revenues for loosely managed projects only' (Du et al., 2014, p. 829). This further reinforces the importance of gaining a better understanding of the specifics of relationships in collaborations involving universities. For example, rather than managerial mechanisms, cooperative research partnerships are based on reciprocal information mechanisms that enhance learning processes (Feldman & Kelley, 2006; Yström et al., 2019).

2.3 | The role of intermediaries

As systems of innovation have become more open and distributed over time, this 'has led the analysis to investigate more closely the role of the nodes and links in this process' (Howells, 2006, p. 715). Multi-actor relations relating to collaborative innovation may involve engaging with a variety of external partners, including 'a set of actors

who may be broadly termed as "intermediaries" and who perform a variety of tasks within the innovation process' (Lakhani & Jeppesen, 2007, p. 715). Innovation intermediaries are described in various ways, for example, as brokers, bridgers or networkers, consultants or third parties (e.g., Bessant & Rush, 1995; Hargadon & Sutton, 1997). These intermediaries are 'external providers of the services connecting organizations with well-defined problems, to actors that can provide solutions and thus enabling collaboration between organizations and many individual experts' (Ollila & Elmquist, 2011, p. 275). Howells (2006) provides an overview of notions relating to intermediary roles, including third parties, intermediary firms, bridgers, brokers, information intermediaries and superstructure organizations. The innovation management perspective typically examines intermediaries as organizations and investigates the types of activities in which they are involved (Howells, 2006).

Most studies acknowledge the role of intermediaries mainly in relation to information scanning and exchange and technology transfer but often 'still see them as being tangential to their main field of enquiry', failing to address 'the interactions by the intermediary between the different parties' (Howells, 2006, pp. 718–719). A traditional assumption is that intermediaries operate between 'supplier' and 'customer' in a simple, vertical 'one-to-one-to-one' relationship. However, 'in distributed innovation systems, intermediaries are increasingly involved in more complex relationships, such as "many-to-one-to-one", "one-to-one-to-many", "many-to-one-to-many", or even "many-to-many-to-many" collaborations, forming both vertical and horizontal relationships in increasingly distributed innovation networks', with linked networks of intermediaries becoming more important (Howells, 2006, p. 724). The result is that innovation intermediaries not only provide immediate intermediary services but also seek to offer longer-term, 'relational' innovation capabilities, for example, in collaborations lasting for years (Howells, 2006).

Therefore, it is important to focus on the network relationships developed by intermediaries and how they deal with multi-actor relationships. In the context of U-I collaborations, the presence of intermediaries is key (Acworth, 2008; Tether & Tajar, 2008; Yusuf, 2008) to ensuring beneficial outcomes and reducing the potential for drawbacks (Ankrah et al., 2013). If intermediaries are able to identify strongly with both university and industry actors, perceiving the motives and benefits for both, they can facilitate these relationships and relate industry needs to university capabilities and vice versa (Ankrah et al., 2013). In particular, Mora-Valentin (2000) suggests that intermediaries can help university and industry partners to overcome institutional, cultural and social barriers.

2.4 | Focus of the study: Framing intermediary practices of collaboration

Previous studies provide comprehensive coverage of intermediary practices concerning knowledge creation and the handling of complex knowledge, that is, practices relating to knowledge search, problem solving and connecting and coordinating knowledge between actors (e.g., Agogué et al., 2013; De Silva et al., 2018). Intermediary practices relating to collaboration, such as managing formal and informal contacts (Howells et al., 2012a), are less visible but still complement the practices of knowledge creation and handling. Furthermore, different types of collaboration must be managed in different ways to unlock their full potential (Du et al., 2014), so each type of collaboration requires specific analysis. To address our research gaps, this study specifically focuses on U-I collaborations where universities play an intermediary role. This perspective relates particularly to collaborative practices developed by the intermediary to manage relationships.

Multi-actor collaborations include the 'contribution of several actors who interact through a complex set of relationships' (DellEra et al., 2018, p. 389), so practices relating to these relationships are key (Marullo et al., 2018). Such collaborations benefit from the development of relationships based on trust (e.g., Canhoto et al., 2016; Rajalo & Vadi, 2017) and are deployed through less formal project management approaches (e.g., Du et al., 2014; Kitchener, 2002). A less formal management style is coherent with the diversity of the two sides involved, as 'science-based partners have their own expertise and objectives which may be completely different from the R&D team: researchers at universities follow an institutionalized way of doing (scientific) research and they have their own academic (slow) clock-speed which is hard to be influenced from the outside' (Du et al., 2014, p. 831). Thus, the focus shifts from formal management of the collaboration to contextual elements that enable and shape it (Canhoto et al., 2016).

'Although evidence indicates that the most successful collaboration projects are those that adopt a relatively loose and informal management style … achieving this informality of approach is not necessarily straightforward' (Canhoto et al., 2016, p. 88), for example, owing to clashes between academic and managerial logics or lack of stability within the university (Canhoto et al., 2016; Edmondson et al., 2012; Un et al., 2010). In this context, the most common form of linkage is informal contacts, which 'are as significant, if not more significant, than formal collaborations' (Howells et al., 2012a, p. 714). Practices of collaboration should be formed around informal contacts: 'informal links often provide the "envelope" and conduit for more formal links and vice versa. … This is borne out by other studies that highlight the complex interplay of not only formal and informal links, but also that differing partners and prior contacts may be involved in influencing such collaborative networks' (Howells et al., 2012a, p. 715).

Collaborative practices are key in both the initiation and implementation phases (Rajalo & Vadi, 2017). For example, at the initiation stage, the choice of appropriate contacts for a potential collaboration is important for success and means 'matching the levels of preconditions between partners' (Rajalo & Vadi, 2017, p. 42). Intermediaries can assist in linking potential partners (Canhoto et al., 2016) because they 'have a clear view of the motives of both actor groups and appear to be successful in facilitating successful collaboration between both groups' (Ankrah et al., 2013, p. 50). At the implementation stage, intermediaries should create the conditions necessary for smooth communications between actors collaborating on the project,

as well as interacting and sharing information in accessible ways (Canhoto et al., 2016). Collaborative practices based on contacts and interactions are also key to overcoming the various barriers to knowledge exchanges between universities and industry, relating to the profoundly different sets of institutional norms that regulate them (Bruneel et al., 2010; Dasgupta & David, 1994).

Overall, the emphasis is on collaborative practices that focus on the 'human side', referring mainly to interactions between people. Amabile et al. (2001) underline that collaborations between academic researchers and business practitioners are ultimately between individuals or teams, rather than between organizations. Individuals are the 'cornerstone' of successful U-I collaboration (Canhoto et al., 2016). In order to understand this 'human side' (Bogers et al., 2018), it is essential to explore what individuals do in intermediary positions in these kinds of collaboration (Bogers et al., 2017).

2.5 | Approach of the study: Practice theory

We mobilize practice theory to identify and explain micro-practices of collaboration in an innovative context. Practice-based approaches draw on a range of foundational scholarship, including the works of Bourdieu (1977), Foucault (1969), Giddens (1979) and De Certeau (1984). A more recent, second wave of practice-inspired theorists set about testing these theoretical foundations and extending its conceptual and empirical range (Reckwitz, 2002; Schatzki, 1996, 2001, 2012; Shove et al., 2012; Warde, 2005). The 'practice turn' is informed by the understanding that 'phenomena such as knowledge, meaning, human activity, science power, language, social institutions and human transformations occur within and are aspects or components of the field of practices' (Schatzki, 2001, p. 2). Practice theory's appeal lies in its capacity to illuminate organizational life as it is made and re-made in routine everyday practices (Nicolini, 2012).

Practice theory differs from other modes of organizational theorizing in numerous ways (Nicolini, 2012, pp. 3–6). First, practice theory frames organizational life as an ongoing, routinized and recurrent accomplishment. It emphasizes activity, performance and work in creating and perpetuating organizations. Second, practices are conceived as everyday embodied activities that necessitate material resources. Third, practice theory reconceptualizes the role of agency, conceiving of agents as carriers of practice. In other words, a body/mind 'carries' and 'carries out' social practices (Reckwitz, 2002, p. 256). Fourth, and perhaps most significantly for this research, practice theory radically alters how we understand knowledge, framing it as a practical accomplishment through which people develop know-how and understanding.

In organization studies, practice theory has been fruitfully employed to extend the fields of strategy (Gherardi, 2000; Jarzabkowski, 2005, 2008; Whittington, 2006) and organizational knowledge (Brown & Duguid, 1998; Gherardi & Nicolini, 2000; Orlikowski, 2002; Wenger, 1998). Nevertheless, further work is needed to understand the 'spaces in-between' and softer features of collaborative innovation. As Yström and Agogué (2020, p. 142) note, 'previous research does not offer much guidance regarding how the collaborating actors interact, what they do together and why'. Similarly, relatively little is known about the types of tacit knowledge and embodied competencies that support collaborative innovation (Bogers et al., 2017). A notable exception is Alpenberg and Scarbrough's (2021) recent study, which successfully applies practice theory to explain how integrative practices support collaborations surrounding lean production.

As an enabling theory, practice theory focuses empirical attention on the everyday micro-practices that shape knowledge creation and exchange, while reminding us that collaborative competence arises from 'a contingent logic of action' (Corradi et al., 2010, p. 267). To achieve this end, we mobilize a body of practice-inspired research that frames practice as an elemental configuration (Shove et al., 2012; Murphy & Patterson, 2011). In so doing, attention turns to interrelations between embodied doings, background knowledge and understandings and material objects. The appeal of this approach lies in its capacity to reveal the social organization of collaboration as it is continuously made and re-made in this nexus between bodies, knowledge and materiality (Caccamo, 2020).

3 | METHODOLOGY

Data were collected from 'Fondazione Politecnico di Milano' (hereafter 'Fondazione') in Milan, Italy. Fondazione is a well-established university-based institution (as a key founder is the Polytechnic University of Milan), specifically devoted to building relationships between the university, industry and public administration. The nature and complexity of this challenge, developed in a university setting, suggested an appropriate fit with this study, offering an opportunity to better understand practices of collaboration promoted by a university-based intermediary. As the following case description shows, the case is particularly relevant in consideration of its structure and size and can provide insights into to the complexities involved in the everyday doing of collaboration. This choice is also in line with similar research in innovation management based on an exploratory case study (e.g., the Polytechnic University of Turin in Messeni Petruzzelli, 2008).

In line with the practice theory approach of this study, a qualitative methodology seemed particularly appropriate. In particular, we adopted an exploratory, single case-study design (Eisenhardt, 1989; Eisenhardt & Graebner, 2007; Yin, 1984) to address the research aims discussed above. Despite its limitations, this is particularly appropriate for exploring micro-practices constituting the practice of collaborative innovation that is related to innovative and multi-actor contexts. The case, intimately related to intermediary practices in U-I innovation, represented a relevant theoretical sample of the phenomenon of interest (Eisenhardt, 1989).

3.1 | Case description

Fondazione is a not-for-profit institution established within the Polytechnic University of Milan in 2003. It was created from a joint effort

between the Polytechnic University of Milan and its other founders, which are key institutions in Milan and Lombardy, including the Lombardy region and the municipality of Milan, relevant associations and a few large companies from various industries. This hybrid foundation aligns with goals shared by the university, industry and public administration, including participating in joint innovative projects, enhancing academic research and offering creative opportunities for innovation. The Fondazione's motto is 'technology and innovation to reinforce entrepreneurial activities', and its mission is to 'support and enhance the research of the Polytechnic University of Milan, contributing to innovating and developing the economic, production and administrative context'. In line with this mission, all of its activities focus on relationships between universities, companies and public administrations. In particular, Fondazione aims to support a 'constructive conversation between academic departments, businesses and the region', as an 'interpreter of dialogue and change'.

To achieve these objectives, Fondazione works in four main areas relating in various ways to innovation: development of innovative interdisciplinary projects; support for business creation through management of the university incubator; development of initiatives for social responsibility; and development of activities in continuing education.

In the first area, Fondazione works with departments in the Polytechnic University of Milan, businesses and public administrations to identify international, European, national and regional funding opportunities; to facilitate and manage innovation projects in response to direct requests by companies and public administrations or specific funding opportunities or based on continuous collaborations led by Fondazione; to participate in various tenders; and to build networks of stable relationships with actors capable of addressing the key challenges of innovation, which in the most structured cases may involve creating a joint research centre.

Fondazione has 19 'institutional participants', which are public and private organizations that regularly participate in its activities. A large group of participants also takes part in specific initiatives and projects. Between 2004 and 2016, Fondazione worked with more than 2000 actors, including about 1200 businesses (926 small and medium-sized companies and 324 large companies) and about 430 universities and research centres. Within this network, Fondazione followed 164 projects in 2014, 181 in 2015 and 203 in 2016.

Two examples of current innovative projects relevant to the respondents are briefly described here to depict the typical innovative context of the findings. The first concerns the railway transport sector. Fondazione has promoted a joint research centre involving the participation of academics from the Department of Mechanical Engineering and individuals from the most important firms in the industry (Trenitalia, RFI, ABB Italy, Alpiq, Hitachi Rail Italy, Bombardier Transportation, Contact). The research objectives relate to environmental impact, energy efficiency and innovative systems for control and security. The second example is in healthcare. Funded by the Lombardy Region and promoted by Fondazione, this project includes academics from the Department of Chemistry, Materials and Chemical Engineering 'Giulio Natta' and the Department of Management, Economics and Industrial Engineering and researchers from two firms (Novaura e Veespo). It focuses on research to develop an optical instrument without ionizing radiation that would allow earlier diagnosis of breast pathologies and envisions the introduction of a new screening path that would integrate morphological and functional information on the breast.

3.2 | Sampling and data collection

Following the practice approach, we used semi-structured interviews to explore the routinized, mundane practices that our respondents engaged in during the doing of collaboration. Our questions were action orientated and designed to give respondents the opportunity to reflect on practical aspects of their daily lives that may otherwise be taken for granted (Halkier et al., 2011). An example of such a question is: 'Can you tell me about what you do when building relationships with potential collaborators?' Following Halkier and Jensen (2011), we conceived of interviews as enactments of action and thus illustrative of practice. To prepare for and contextualize the interviews, we consulted other data sources, namely, the University 2017–2019 Strategic Plan and the website of Fondazione. Interviews lasted between 50 and 90 min, and each interview was recorded and transcribed verbatim. Where necessary, follow-up interviews were conducted to elicit more information concerning our emergent themes.

Considering the focus on intermediaries, we identified potential respondents from different areas of Fondazione. To complement these perspectives, we also recruited actors from Fondazione's collaborators. The study involved a total of 12 respondents—10 from Fondazione (all managers in the four main areas and project managers involved in collaborative projects) and two from key partners (one representing an education partner and the other a cluster). In line with previous practice-orientated research (Hitchings, 2012; La Rocca et al., 2017), this set of in-depth interviews orientated towards action was essential in enabling us to access the oftentimes overlooked routines and habits that initiated and sustained collaboration. Table 1 summarizes key information about the informants.

TABLE 1 Brief profiles of informants

Informants	Brief profile
Top managers	Managers from different areas, i.e., innovation and European projects, PoliHub (business incubator of the university), social responsibility, lifelong learning
Project managers	Six project managers from the innovation and European projects area, working on projects on mobility and transport, energy, smart cities, healthcare, green chemistry and public sector
Other practitioners	A manager from a management education consortium, a partner of Fondazione and a manager from a cluster on mobility and transport co-developing projects with Fondazione

3.3 | Data analysis

Data analysis aimed to identify elements illustrative of the micro-practices of collaboration. An iterative coding process (Saldaña, 2009) was followed until agreement was reached on categorizing and making sense of the findings. All the transcriptions were read through several times. A first analysis was performed on the transcripts to identify key emerging issues and views on collaboration. In line with Patton (1990) and Saldaña (2009), these themes were organized into initial categories. Then, moving to a more practice-orientated mode of analysis, a second process of iterative analysis examined these findings to identify and characterize emerging practices of collaboration. These tentative proposals for practices were continuously revised as the data analysis continued. We focused on the elemental configuration of each practice and particularly micro-practices (*doings*) along with *objects* and *knowledge* (Murphy & Patterson, 2011; Shove et al., 2012). The conceptualization for the identification of practices was used to determine selective coding categories. Empirical codes were generated for these emerging practices.

Building iteratively on these empirical codes, we identified four practices observed repeatedly in the empirical material: networking, partnering, culture making and supporting. The first two related to the objective of initiating and updating the collaboration, and the second two related to the objective of sustaining the collaboration. The results were also discussed with two key respondents from Fondazione to strengthen their internal validity. Lastly, for triangulation purposes, we discussed the results with two academics and two representatives of firms involved in collaborations with Fondazione.

4 | FINDINGS

The findings suggest that collaborative practices in Fondazione relate primarily to two objectives: (1) initiating and updating the collaboration and (2) sustaining the collaboration. In particular, the findings allow us to identify two practices relating to initiating and updating collaborations (networking and partnering) and two practices relating to sustaining them (culture making and supporting). Figure 1 provides an overview of the findings.

The next two sections illustrate practices relating to these objectives. Each is described in relation to its main purpose (teleological goals of the practice) and the configuration of its constitutive elements (objects, doings and knowledge). Although the findings are presented in a linear form, the practices are actually enacted simultaneously in a manner that ensures that the overarching practice of collaboration is continuously being made and re-made.

4.1 | Initiating and updating the collaboration

This objective is achieved mainly through the two collaborative practices of networking and partnering.

4.1.1 | Networking

The practice of *networking* is associated with the teleological goals of identifying, managing and matching a network of contacts in order to facilitate the initiation and updating of innovation-related

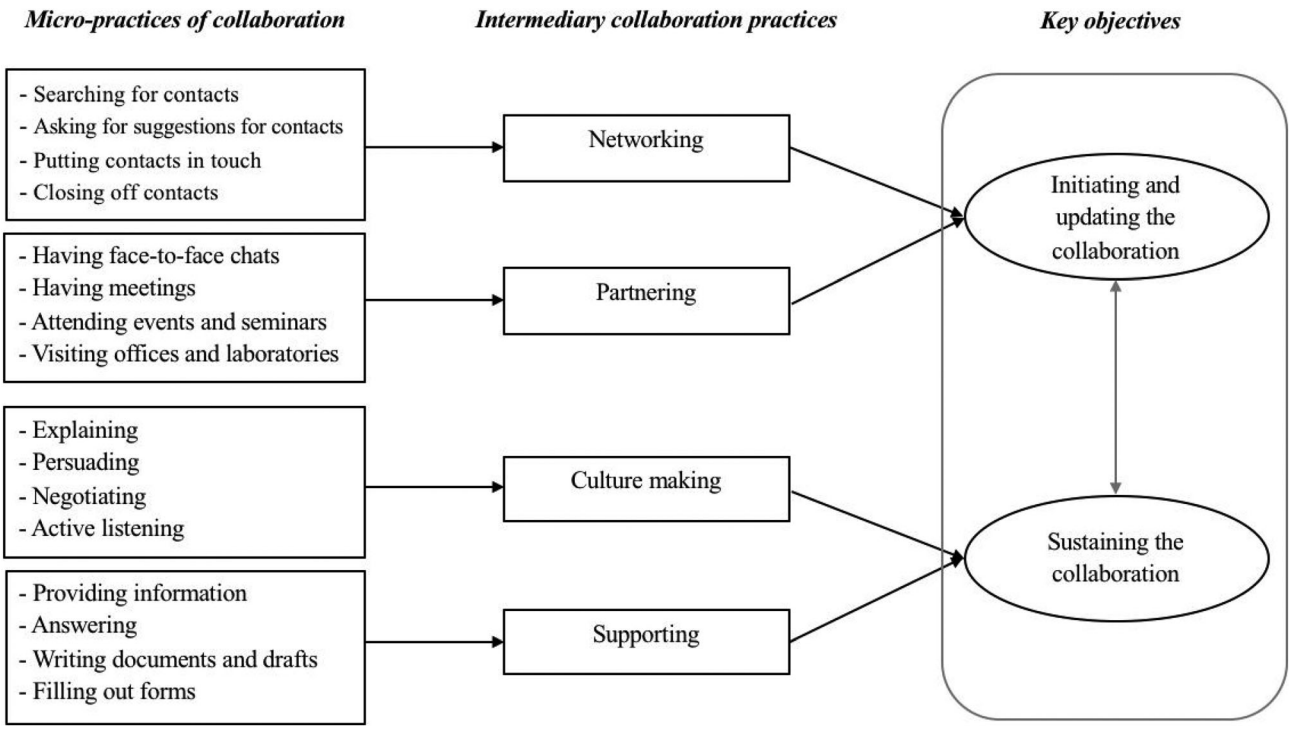

FIGURE 1 Overview of the findings

collaborations. This practice impacts particularly on the probable success of collaborations and on speeding up project team composition. Our analysis highlights the significant role played by material and immaterial *objects* (such as address books, contact lists, databases of projects, newsletters, mobile phones, social networks, Skype and e-mail) in the practice of managing collaborative networks. Fondazione's overall set of contacts is undoubtedly a powerful object:

> The value of Fondazione is the network of relationships that has been created over the years, in the sense that we have more than 2,000 contacts between universities, companies and public administration, and therefore subjects of different types, dimensions, backgrounds, activities (manager).

However, this list of contacts is viewed as a necessary but insufficient condition for networking: *Doings* are also essential. Doings relate to various forms of communication, including searching for and making contacts; receiving contacts; asking colleagues, academics and trade associations 'Who should I contact?'; putting contacts in touch with each other; and closing them off. For example, searching and making contacts may be particularly important when exploring new possibilities or looking for new potential collaborators to extend, reinforce, complement or fill particular skills gaps in collaborative groups. These searches are careful and focused:

> To involve new subjects, well, we try to insert someone else who has a competence that we do not have; we really look high and low for it (partner).

> In some industries, there are some key words where it seems everyone is competent, everyone does trendy things. Knowing who really did projects, did research, published on the specific topic is actually a value, so either in the research of academics who are competent within the Polytechnic University of Milan or when we are looking for someone externally who does certain topics, knowing whether it is a declared competence or a substantial competence makes the difference, and this also applies to companies (manager).

If contacts are identified, they can be approached directly. At other times, searches may be supported by other doings, particularly by making contacts with intermediaries, such as trade associations or consortia, or brainstorming potential ideas for contacts with colleagues and academics. Fondazione also sometimes receives proactive approaches from potential collaborators who call saying, for example, 'I had this idea, what should I do with it?' (an input for a sort of *exaptation* process). For Fondazione, successful networking encompasses being equipped for and receptive to these kinds of exchanges. This practice is useful in generating new contacts. In the doing of networking, Fondazione actively searches for new contacts and also maintains contact with its established network using electronic modes of communication. Closing off contacts is also important in maintaining the manageability and potency of the network. As a respondent said,

> If you find someone who does not do the job, or always arrives late on objectives and priorities, you keep it in mind (project manager).

Another important doing in networking is matching and putting contacts in touch with each other, for example, around a potential innovative project or funding opportunity. First, this involves being in touch with relevant contacts to attract their attention and awaken their interest in a specific issue or opportunity. Second, choosing which actors (firms, academics) to match is crucial. The aim is to achieve complementarity at the technical-scientific level, while seeking 'compatibility':

> When we try to identify the best competence to solve that specific problem, this is not only about solving a problem technically, but also in terms of the timings and modalities we need (manager).

> The interlocutors must be on the same page, must have openness or the potential to work with others. 'Among similar, we get each other!' (project manager).

This example emphasizes the background *knowledge* involved in the practice of networking. Most significantly, this kind of knowledge refers to understanding the 'ingredients' that make a good collaboration, in terms of people and expertise. The different doings relating to networking are deployed by using (and simultaneously developing) knowledge and understanding of what other actors do, their expertise and their activities, and how they generally behave and approach work. In this context, a 'manageable' number of contacts are considered an advantage more than a limit.

4.1.2 | Partnering

As an essential component of initiating and updating the collaboration, the practice of *partnering* is directed towards the teleological goal of *deep* relationship building and maintenance. Its impact relates to encouraging ambitious and innovative projects, as well as encouraging longer-term collaboration goals. Our analysis highlights the significant role of *objects* in the practice of partnering. In contrast to the practice of networking, partnering highlights the role played by the body in the development of successful collaborations. Our respondents drew attention to the physicality of connections elicited through the embodied doings of partnering:

> For our contacts, we do not simply have a business card. They are real contacts for us; for each of them there is a technical representative, a CEO, a mayor, that is people with an ability to choose, with whom we have already interacted or made projects (manager).

> We have realised that, anyway, the value of the relationship and of the physical relationship is very important; it creates trust with the interlocutor (manager).

The practice of partnering illustrates how the material environment is organized and utilized in order to create physical spaces for embodied partnerships to develop. Meeting rooms, laboratories and the university campus are examples of spaces in which the embodied practice of partnering and the ensuing practices of collaboration are enacted in physical form as socio-material practices.

Successful partnerships are established when collaborators are afforded opportunities to meet in person, chat at events and seminars and visit and research in laboratories. These situated *doings* emphasize that relationship building is a physical, embodied practice. The physical aspect is reinforced by the embodied nature of building and maintaining relations:

> Companies are made of people, who make things turn around. There is a human component that is fundamental; in a way, we 'smell' each other in meetings and projects (project manager).

As a successful facilitator of collaborative innovation, Fondazione recognizes the need to provide potential partners with opportunities to get to know each other in practical ways. It tends to avoid staging large events, which are considered too impersonal, at least for the purpose of this practice, and as generally too great a commitment for firms if requested to attend for long hours. Smaller events are more suited to the context of this practice. For example, Fondazione decided to open up a few small physical spaces that it rents in town (off campus), which are used particularly for innovative projects relating to social responsibility issues. These spaces host meetings, research and smaller events such as open cultural seminars. In this example, objects and doings consist of bodies meeting in physical spaces:

> This dimension of exit from the boundaries of the university and dialogue with the territory and with the actors operating in it, is important (project manager).

Moving to *knowledge*, these doings of partnership are underpinned by background knowledge and necessitate empathy with and understanding of the needs, wants and desires of the other parties involved. For example:

> It works a lot as it works in relationships with people: we go for empathy, we know each other, we understand if there are potentialities to develop things together (project manager).

This kind of knowledge is intimately related to the objects and doings illustrated above. As a respondent suggested, as opposed to interacting at large events, visiting a key company (object) for a 1-h meeting with more informal chat and asking/answering questions (doing) relate to building empathy and focusing in detail on needs and desires relating to innovation (knowledge):

> We make the effort to go to the companies … This allows us, to stop in the company an hour, an hour and a half, to deepen certain topics. If the company opens the doors, it means that they are interested in spending time for you. If they say 'come, let us have a chat', we discover aspects and activities of that company that we would never have discovered in one hundred thousand public events. It creates a kind of empathy; they become people with names; and then we can also understand their fears, but also the possibilities for collaboration. If you can create a more private meeting, then you can also ask the more delicate questions (manager).

In contrast to the practice of networking, the embodied doing of partnering is usually interlinked with material rather than immaterial objects:

> We do not rely on newsletters, but we know in person – and I know it is also a weakness, in the sense that the scale with which you can do this is less, but also we cannot grow indefinitely anyway. If there is an opportunity, we call, explain, tell. We have seen that it is the only way you have value back (manager).

4.2 | Sustaining the collaboration

The objective of sustaining the collaboration is achieved mainly through the two collaborative practices of culture making and supporting.

4.2.1 | Culture making

The practice of *culture making* is directed towards agreeing on shared values, establishing shared principles and, ultimately, supporting a shared identity for the established group of collaborators. Its impacts are to bring different points together, foster innovative ideas and overcome obstacles (e.g., different attitudes) that limit collaboration. The *objects* in this practice represent the success of previous innovations, such as products, reports and study results. In terms of culture making, these objects are embedded with values from previous collaboration and denote its results.

Doings include various forms of talking, such as explaining, persuading, negotiating, asking for feedback and listening. Interactions, exchanges and debates contribute to this practice and its aim of continuously and incrementally building shared values, principles and identity. For example, occurrences of persuasion relate not to selfish individual or hidden agendas but to promoting a culture of collaboration, as the respondents summarized:

> We aim at having a team, with the same culture (partner).

> In reality, for us the tool is to develop a culture of collaboration so that companies do not let themselves be held back by various fears (manager).

One type of doing is particularly relevant: Previous collaborators are asked to share their past experiences of collaborative innovation, illustrating the pros and cons, along with the results and outcomes. This helps new collaborators to understand and often overcome fears about the complexities of collaboration:

> We try to have previous experiences, especially positive, presented directly by the people who were involved, so that we can put you in touch with another company who can tell you 'I did this, I had these difficulties, but also had these benefits', and maybe touching the right keys to at least let companies consider a potential collaboration (manager).

Another example is Fondazione's effort to persuade collaborating practitioners and academics that they are more similar than different. At the cultural level, the U-I divide is particularly prominent, so Fondazione has to persuade and even negotiate with both parties. For example, concerning the academics:

> Professors are sometimes prima donnas who do not cooperate very easily (manager).

> Very often, we have to convince academics to open up, because academics often have this tendency to fall back on the contents of their research and the contents of their own world (project manager).

At the same time, concerning the practitioners:

> Some companies did not trust the results they obtained from the university. Some of them basically said 'ah, these are things for professors, they do not interest us, they will not be usable' (manager).

> The first major obstacle was to make companies understand that there is some good in what is being done in the research world; it is clear that it is not a result ready to be industrialised, for example, but it is the beginning of a path that we can do together (manager).

With culture making, *knowledge* is multifaceted. Background knowledge from previous experiences of collaboration is central (tacit knowledge). Engagement in prior collaborations reinforces relevant values, such as openness and the desire to grow. This is complemented by knowledge from the specific field (explicit knowledge). Respondents mentioned several examples, such as many practitioners' engagement in lifelong learning and family business leaders' increasing educational achievements compared with past generations. These examples of explicit knowledge are seen as boosting tacit knowledge concerning collaboration. Actors new to the specific field may also make more original contributions in terms of background knowledge, thanks to their 'fresh' perspectives:

> For those who work as a project manager on a project, in a meeting you should be not very carefully focused on the topic of research, but attentive to relational dynamics and operational dynamics. The fact of not being too passionate about the subject allows you to take a moment off the table and be more focused on other things (manager).

4.2.2 | Supporting

The purpose of the practice of *supporting* relates to the joint development of activities with an emphasis on seeking and giving help. It has an impact on developing project content, promoting best practices, giving visibility to results and improving their impact. The *objects*, in this case, include a variety of material and immaterial elements. First, various documents and contracts are used. These objects are a way to organize the collaboration space in specific ways that promote and develop (collaborative) innovation. For example, a contract is used when creating an innovation-related district or cluster as a physical space for collaboration:

> Clusters are formalised groupings, in the sense that they are governed by an agreement document in which companies and universities come together to do common activities (manager).

Second, various forms (e.g., application forms and forms seeking authorization) are common objects in this practice: 'For example, we help with how to write a letter to the public administration to ask for something' (project manager). Lastly, archives of shared information, if needed, are put in place for a specific collaboration. These are virtual platforms where all the collaborators can upload and download relevant materials for sharing.

Doings relating to the use of these objects are associated with providing information, answering questions, drafting documents and supporting with the filling in the relevant forms. For example: 'We support companies in managing relationships with the public administration, in particular when there is a fund at stake' (project manager). In terms of *knowledge*, background residual knowledge is central. In addition to specific, codified competence on relevant issues, 'insider' knowledge, for example, about how to fill in a form or the style in which to write a funding application is particularly relevant to this practice.

The (apparent) paradox is that little codified competence is needed, relating to the idea that 'gurus' or 'prima donnas' do not really help in this kind of collaboration. The practice of supporting relates more to actual experience of collaborations (which builds the reliability of a collaborator) than to high-level competence:

> Competence is not enough to collaborate. Unskilled people also tend to be unreliable. Competent people can be reliable, but sometimes if they are too competent they risk being unreliable in a collaboration, for example because they have too many things to do. In a collaborative relationship, you eventually have to find a compromise (manager).

This emphasizes that the background knowledge central to this practice comes from previous experiences and is built through the cumulative doings of collaboration.

4.3 | Key elements common to collaborative practices

Finally, two overarching elements relate to all collaborative practices: the need for specific common objectives and the value of trust. Our findings highlight the importance of objective setting to guide collaboration, particularly in terms of defining the end purposes to which it is directed. Objectives should be synchronous and consistent with the expectations of the various actors. In the collaborations studied in our case, the objectives related to sharing the risk of an innovative project and securing funds to develop innovative ideas. From the perspective of Fondazione, funding opportunities are a sort of 'Trojan horse', that is, a way to engage with new potential collaborators and then maintain these relationships over the longer term.

The second general element relates to trust. Trust is traditionally associated with collaboration, and this case is no exception. According to the respondents, trust is considered important in all the various kinds of relationships involved, for example, between firm and university, between one firm and other firms, between the firm and Fondazione and between the university (academics) and Fondazione. All respondents mentioned that the different actors must particularly trust 'the third party', that is, Fondazione. No specific practice is associated with trust; rather, trust seems to come with a series of doings involving the various actors.

Table 2 summarizes the key findings.

5 | DISCUSSION

Our analysis illustrates the collaboration practices developed by a university-based intermediary role relating to both initiating/updating and sustaining collaborations. We conceive these collaboration practices as being distilled into three interlinking elements: doings, objects and knowledge (Magaudda, 2011; Murphy & Patterson, 2011; Shove et al., 2012). In line with Schatzki (2012), who reminds us that people always act '*for the sake of* something and *because of* such and such', our analysis also identifies the teleological goals towards which each practice is directed. In doing so, the findings indicate the purposes of these practices. Figure 2 visually illustrates the framework emerging from the findings, particularly positioning the practices of collaboration in the broader innovative context.

Concerning the objective of initiating (and updating) a collaboration, the two relevant practices are networking and partnering. Networking emerges as a key practice, which is in line with previous studies that emphasize the importance of networking capabilities, although in different contexts (e.g., Bodas Freitas et al., 2013; Tether & Tajar, 2008). The practice of networking is directed towards identifying, managing and maintaining a collaborative network. Networking involves utilizing communication methods (communications devices, databases, newsletters) to actively populate, manage and maintain the collaborative network. Thus, activities relating to this practice include different forms of communication (e.g., searching for new contacts, searching for specific contacts and terminating contacts) to maintain contacts suitable for collaboration. This provides a living database from which to choose appropriate contacts for potentially successful collaborations (Rajalo & Vadi, 2017). It necessitates a background knowledge and understanding of the 'ingredients' needed to create a successful collaboration.

The second emergent practice is partnering, which is directed towards building and maintaining relationships with collaborators. It has been suggested that deep knowledge and relationships with collaborators in U-I linkages are essential (Giuliani & Arza, 2009), as are previous collaborative experiences (Barnes et al., 2002). Therefore, partnering necessitates material environments (meeting rooms, laboratories) to create physical spaces that facilitate the development of hands-on relationships between collaborators (Ciaramella et al., 2018). In fact, the findings on this practice highlight the deeply embodied nature of these relationships, whereby bodies are moved in particular ways in order to foster tangible connections between collaborators. Although these doings undoubtedly require embodied competencies on the part of the collaborators, the intermediary's empathetic understanding of the needs, wants and desires of collaborators is also essential to the practice of partnering (Ankrah et al., 2013). In our case, the university-based intermediary was able to gain a particularly clear view of the two actor groups—academic researchers and business practitioners.

Concerning the objective of sustaining a collaboration, the two relevant practices are culture making and supporting. The practice of culture making is aimed at establishing shared values and principles that support a sense of shared identity among collaborators. These shared values are actively negotiated by intermediary actors through interactions with other actors, which involve explaining, persuading, negotiating, feeding back and listening. This is consistent with the understanding that rather than relying on formal managerial approaches, U-I relations envision loosely managed deployment and protect some room for autonomy (Du et al., 2014). Culture making is therefore important for sustaining cooperation and developing shared

TABLE 2 Partial illustration of the results

			Configuration of the practice			
	Practices	**Teleological goals**	**Doings (micro-practices)**	**Objects**	**Knowledge**	**Impact**
Initiating and updating the collaboration	Networking	Identifying, managing and matching a network of contacts	- Searching for contacts - Asking for suggestions for contacts - Putting contacts in touch - Closing off contacts	- Material objects (address books, contact lists) - Immaterial objects (emails, newsletters, social networks)	- Knowledge about contacts expertise - Knowledge about contacts attitudes	- Strengthening the probability of successful collaborations - Speeding up team composition - Creating reliable collaborations
	Partnering	Building, deepening and maintaining relationships with partners	- Having face-to-face chats - Having meetings - Attending events and seminars - Visiting offices and laboratories	- Bodies and material environments (meeting rooms, offices, laboratories, university campus)	- Background knowledge about needs of other parties	- Encouraging ambitious projects - Encouraging longer-term goals - Improving lobbying actions
Sustaining the collaboration	Culture making	Agreeing on shared values, establishing shared principles and supporting a shared identity	- Explaining - Persuading - Negotiating - Active listening	- Material objects about successful innovation (products, technologies, reports, study results)	- Background knowledge from collaboration experiences - Knowledge about the specific field	- Bringing different points of view together to foster innovative ideas - Overcoming obstacles (e.g., different attitudes) - Supporting public–private dialogue
	Supporting	Developing joint activities, seeking and giving help	- Providing information - Answering - Writing documents and drafts - Filling out forms	- Material objects (contracts, documents) - Immaterial objects (virtual platform)	- Background knowledge (e.g., how to fill out forms)	- Developing project contents - Promoting best practices - Giving visibility to results and improving their impact

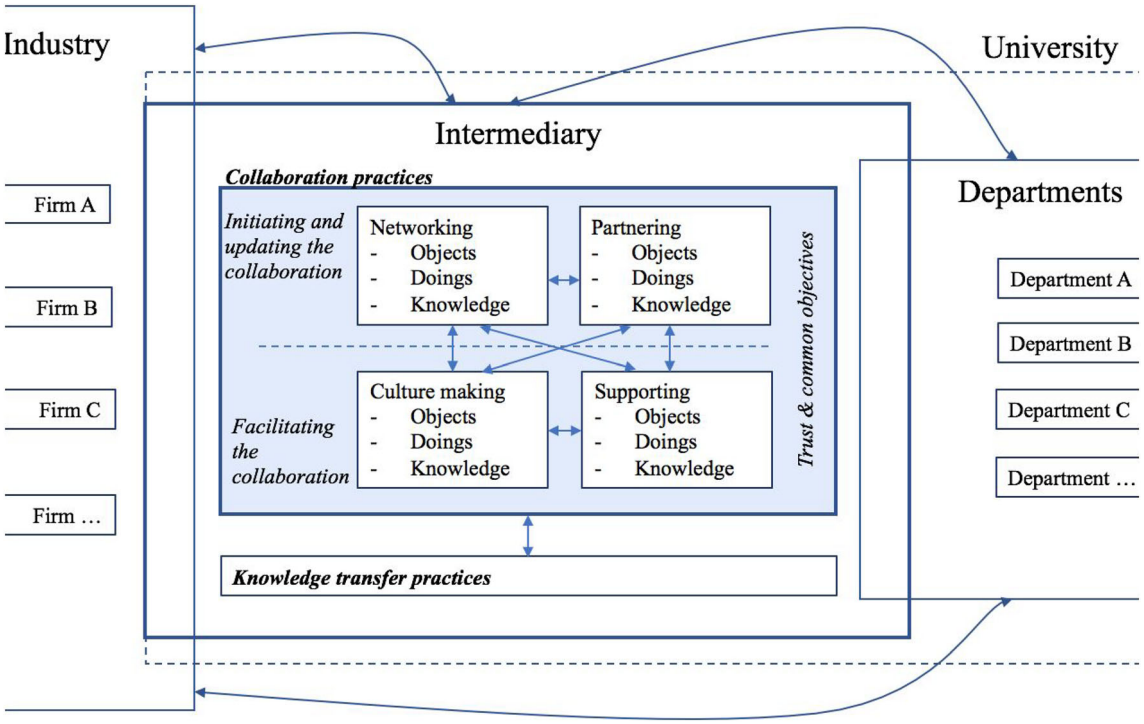

FIGURE 2 Framework of intermediary collaboration practices [Colour figure can be viewed at wileyonlinelibrary.com]

values and principles as coordination mechanisms in a more informal context (Canhoto et al., 2016; Kitchener, 2002). Objects such as study results and previous innovations are essential to culture-making practices, as they are imbued with symbolic meanings representing the successes of collaboration. Culture making is aided by knowledge gained through previous experiences of collaboration, particularly regarding fostering shared values around openness and willingness to grow.

The practice of supporting is directed towards the development of joint activities, with an emphasis on seeking and giving help. With less need for formal monitoring and control of scope (Du et al., 2014), the intermediary's role shifts towards activities relating to support (giving support, promoting reciprocal support). In fact, this practice includes doings revolving around providing information, answering questions and assisting with drafting documents. The practice of supporting is sustained by shared information made available to collaborators, as well as residual knowledge developed through previous experiences of success in such endeavours. This is intimately related to the absorptive capacity of different collaborators, that is, their dynamic capability to identify, assimilate and utilize outside knowledge based on prior related knowledge (Cohen & Levinthal, 1990).

Furthermore, 'trust is essential for the success of collaborative projects' (Canhoto et al., 2016, p. 94). This is confirmed in our study, in which all intermediary actors identified trust as a determining mechanism facilitating collaboration and collaborative practices (Bäck & Kohtamäki, 2015; Lee et al., 2010; Rajalo & Vadi, 2017; Salampasis et al., 2014). In turn, in line with Canhoto et al.'s (2016) finding, incremental development of mutual trust is supported by the activities included in the four practices deployed by Fondazione, for example, in the deeply embodied nature of the relationships (e.g., regular face-to-face meetings). Alignment of general common objectives is another overarching element that facilitates collaboration (in line with Bodas Freitas et al., 2013, and Ollila & Yström, 2016).

In conclusion, it is essential to note the interlinking dynamics of practices, as each practice continuously circulates, connects and influences the overall process of collaboration (Murphy & Patterson, 2011; Shove et al., 2012). Overall, the practice-based approach adopted in this study has enabled us to identify, from an intermediary's perspective, the practices that combine to initiate and sustain collaboration. By focusing analytically on the interlinkages between everyday doings, objects and knowledge, we have been able to show what actually happens in the everyday practice of collaborative innovation.

6 | MANAGERIAL IMPLICATIONS

This study has implications for managers. The findings suggest specific *embodied doings* in which university-based intermediary actors should be prepared to engage in the context of collaborative innovation. In particular, we identify four practices of collaboration that provide practitioners and project managers with practical guidance on initiating, updating and sustaining collaborations from a relational point of view. The identified interrelationships between practices have a key managerial implication: In collaborative innovations, relationships can be practically developed and supported by combining all four interrelated practices. Embodied socio-material practices appear to be a

necessity for organizing spaces that facilitate engagement, allow different objects to link and foster a culture of innovation in U-I collaborations.

This study provides insights for practitioners and project managers who are keen to understand and improve their practices of collaboration, offering a view that emphasizes the importance of intuitive—but usually underestimated—everyday mundane activities, such as chatting with colleagues, word of mouth, physical face-to-face interactions, visits to collaborators, use of physical space for collaboration, involvement of previous collaborators and use of background knowledge. Rather than adding further, and probably superfluous, management advice, and in line with the need for a looser approach to managing such collaborations (Du et al., 2014), this study may help practitioners to identify and appreciate the value of simple, everyday activities and reinterpret them in the context of necessary added-value practices of collaboration.

7 | LIMITATIONS AND FUTURE RESEARCH

In terms of limitations, we acknowledge that this study is based on a single case with a limited set of informants. Therefore, future research might develop comparative studies of different contexts of collaboration in which universities play an intermediary role. This would help understand whether the proposed practices of collaboration are generalizable to other configurations of collaborative innovation.

In this study, the practices relate to collaboration between actors with some degree of geographical proximity. Future research might inquire how these practices change when geographical proximity becomes an issue and relationships are mediated only by virtual media. Also, studying these practices of collaboration in other cultures might be of particular interest, because different cultures may place very different emphases on embodiments of relationships. Another particularly interesting perspective might be to study practices of collaboration developed by university-based intermediaries under different university governance models. Further studies might also consider other contextual conditions.

This study was based on cross-sectional data. Future research might develop longitudinal studies that follow collaborations throughout their development (e.g., at different stages of the collaboration lifecycle) and examine the evolution and interrelation of these practices over time.

In this study, the focus was intentionally only on the intermediary. We did include other actors in the data collection but only for the purpose of data triangulation. Future research might extend this approach to all other actors involved in the innovation community and potentially identify further practices of collaboration.

Lastly, further studies should especially analyse the interplay between practices of collaboration and practices of knowledge transfer, as well as the specific impact of each practice of collaboration on innovative performance, in line with Howells et al. (2012a). Overall, this research avenue seems particularly promising for furthering understanding of practices of collaboration and helping collaborative innovation actors cope with the complexity of these collaborations and achieve successful collective outcomes.

8 | CONCLUSIONS

This study identifies and discusses four practices of collaboration relating to a university's intermediary role in initiating, updating and sustaining U-I innovation projects. Initiating and updating the collaboration includes the practices of networking and partnering, and sustaining the collaboration includes the practices of culture making and supporting. This contribution aligns with Howells et al.'s (2012a) view on the importance of analysing the role of universities, especially in terms of interactions among different actors. It is thus an attempt to 'stress, or detail, the interactions by the intermediary between the different parties' (Howells, 2006, p. 719) and progress debate on this topic.

Although some of the findings, on the surface at least, may appear to be mundane, the novel contributions of this study lie in its analysis of practices of collaboration at the micro-level and its characterization of each practice in greater detail in terms of constituent objects, doings and knowledge. This focus is particularly relevant given that formal managerial practices are not entirely suitable for U-I collaborations (Du et al., 2014). A key merit of this study is that it draws attention to the often overlooked *mundane practical activities* involved in the practices of collaboration and uncovers some of the micro-foundations that support successful collaborations.

ACKNOWLEDGEMENTS

We would like to thank Manuela Pizzagalli for the important support on the empirical part of the research, making this study possible. We would also like to thank the reviewers for their insightful help in improving and strengthening this article.

ORCID

Stefano Cirella https://orcid.org/0000-0001-5972-7739
Stephen Murphy https://orcid.org/0000-0003-1737-2049

REFERENCES

Acworth, E. B. (2008). University–industry engagement: The formation of the knowledge integration community (KIC) model at the Cambridge-MIT Institute. *Research Policy*, *37*, 1241–1254. https://doi.org/10.1016/j.respol.2008.04.022

Agogué, M., Yström, A., & 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. https://doi.org/10.1142/S1363919613500072

Alpenberg, J., & Scarbrough, D. P. (2021). Practice theory in a collaborative context. *Journal of Business Research*, *123*, 415–422. https://doi.org/10.1016/j.jbusres.2020.09.046

Al-Tabbaa, O., & Ankrah, S. (2019). 'Engineered' university–industry collaboration: A social capital perspective. *European Management Review*, *16*, 543–565. https://doi.org/10.1111/emre.12174

Amabile, T. M., Patterson, C., Mueller, J., Wojcik, T., Odomirok, P. W., Marsh, M., & Kramer, S. J. (2001). Academic–practitioner collaboration in management research: A case of cross profession collaboration. *Academy of Management Journal*, *44*, 418–431. https://doi.org/10.5465/3069464

Ankrah, S. N., Burgess, T. F., Grimshaw, P., & Shaw, N. E. (2013). Asking both university and industry actors about their engagement in knowledge transfer: What single-group studies of motives omit. *Technovation*, *33*(2–3), 50–65. https://doi.org/10.1016/j.technovation.2012.11.001

Ardito, L., Ferraris, A., Messeni Petruzzelli, A., Bresciani, S., & Del Giudice, M. (2019). The role of universities in the knowledge management of smart city projects. *Technological Forecasting and Social Change*, *142*, 312–321. https://doi.org/10.1016/j.techfore.2018.07.030

Arnaboldi, M., & Spiller, N. (2011). Actor-network theory and stakeholder collaboration: The case of cultural districts. *Tourism Management*, *32*, 641–654. https://doi.org/10.1016/j.tourman.2010.05.016

Bäck, I., & Kohtamäki, M. (2015). Boundaries of R&D collaboration. *Technovation*, *45–46*, 15–28. https://doi.org/10.1016/j.technovation.2015.07.002

Barnes, T., Pashby, I., & Gibbons, A. (2002). Effective university–industry interaction: A multi-case evaluation of collaborative R&D projects. *European Management Journal*, *20*, 272–285. https://doi.org/10.1016/S0263-2373(02)00044-0

Bellini, E., Piroli, G., & Pennacchio, L. (2019). Collaborative know-how and trust in university–industry collaborations: Empirical evidence from ICT firms. *The Journal of Technology Transfer*, *44*(6), 1939–1963. https://doi.org/10.1007/s10961-018-9655-7

Bessant, J., & Rush, H. (1995). Building bridges for innovation: The role of consultants in technology transfer. *Research Policy*, *24*, 97–114. https://doi.org/10.1016/0048-7333(93)00751-E

Bodas Freitas, I. M., Marques, R. A., & Mirro de Paula e Silva, E. (2013). University–industry collaboration and innovation in emergent and mature industries in new industrialized countries. *Research Policy*, *42*, 443–453. https://doi.org/10.1016/j.respol.2012.06.006

Bogers, M., Foss, N. J., & Lyngsie, J. (2018). The 'human side' of open innovation: The role of employee diversity in firm-level openness. *Research Policy*, *47*, 218–231. https://doi.org/10.1016/j.respol.2017.10.012

Bogers, M., Zobel, A. K., Afuah, A., Almirall, E., Brunswicker, S., Dahlander, L., … Ter Wal, A. L. J. (2017). The open innovation research landscape: Established perspectives and emerging themes across different levels of analysis. *Industry and Innovation*, *24*, 8–40. https://doi.org/10.1080/13662716.2016.1240068

Bourdieu, P. (1977). *Outline of a theory of practice*. Cambridge University Press. 10.1017/CBO9780511812507

Brown, J. S., & Duguid, P. (1998). Organizing knowledge. *California Management Review*, *40*(3), 90–111. https://doi.org/10.2307/2F41165945

Bruneel, J., DEste, P., & Salter, A. (2010). Investigating the factors that diminish the barriers to university–industry collaboration. *Research Policy*, *39*, 858–868. https://doi.org/10.1016/j.respol.2010.03.006

Bruns, H. C. (2013). Working alone together: Coordination in collaboration across domains of expertise. *Academy of Management Journal*, *56*, 62–83. https://doi.org/10.5465/amj.2010.0756

Caccamo, M. (2020). Leveraging innovation spaces to foster collaborative innovation. *Creativity and Innovation Management*, *29*, 178–191. https://doi.org/10.1111/caim.12357

Canhoto, A. I., Quinton, S., Jackson, P., & Dibb, S. (2016). The co-production of value in digital, university–industry R&D collaborative projects. *Industrial Marketing Management*, *56*, 86–96. https://doi.org/10.1016/j.indmarman.2016.03.010

Carayannis, E. G., Barth, T. D., & Campbell, D. F. (2012). The quintuple Helix innovation model: Global warming as a challenge and driver for innovation. *Journal of Innovation and Entrepreneurship*, *1*(1), 1–12. https://doi.org/10.1186/2192-5372-1-2

Carayannis, E. G., Campbell, D. F., & Grigoroudis, E. (2021). Helix trilogy: The triple, quadruple, and quintuple innovation helices from a theory, policy, and practice set of perspectives. *Journal of the Knowledge Economy*, 1–30. https://doi.org/10.1007/s13132-021-00813-x

Chasanidou, D., Sivertstøl, N., & Hildrum, J. (2018). Exploring employee interactions and quality of contributions in intra-organisational innovation platforms. *Creativity and Innovation Management*, *27*, 458–475. https://doi.org/10.1111/caim.12290

Chesbrough, H. W. (2003a). The era of open innovation. *MIT Sloan Management Review*, *44*, 35–41.

Chesbrough, H. W. (2003b). The logic of open innovation: Managing intellectual property. *California Management Review*, *45*, 33–58. https://doi.org/10.1177/000812560304500301

Ciaramella, G., Lamastra, C. R., Rovelli, P., & Tagliaro, C. (2018). Who talks about collaborative spaces, how, and why. *CERN IdeaSquare Journal of Experimental Innovation*, *2*(1), 3–7. https://doi.org/10.23726/cij.2018.758

Cirella, S. (2021). Managing collective creativity: Organizational variables to support creative teamwork. *European Management Review*, *18*(4), 404–417. https://doi.org/10.1111/emre.12475

Cirella, S., & Yström, A. (2018). Creativity and science parks: More than just a physical platform? *CERN IdeaSquare Journal of Experimental Innovation*, *2*(1), 8–13. https://doi.org/10.23726/cij.2018.752

Cohen, W. M., & Levinthal, D. A. (1990). Absorptive capacity: A new perspective on learning and innovation. *Administrative Science Quarterly*, *35*, 128–152. https://doi.org/10.2307/2393553

Corradi, G., Gherardi, S., & Verzelloni, L. (2010). Through the practice lens: Where is the bandwagon of practice-based studies heading? *Management Learning*, *41*, 265–283. https://doi.org/10.1177/1350507609356938

Dasgupta, P., & David, P. A. (1994). Toward a new economics of science. *Research Policy*, *23*, 487–521. https://doi.org/10.1016/0048-7333(94)01002-1

De Certeau, M. (1984). *The Practice of Everyday Life*. University of California Press.

De Silva, M., Howells, J., & Meyer, M. (2018). Innovation intermediaries and collaboration: Knowledge-based practices and internal value creation. *Research Policy*, *47*, 70–87. https://doi.org/10.1016/j.respol.2017.09.011

DellEra, C., Altuna, N., & Verganti, R. (2018). Designing radical innovations of meanings for society: Envisioning new scenarios for smart mobility. *Creativity and Innovation Management*, *27*, 387–400. https://doi.org/10.1111/caim.12276

DEste, P., Iammarino, S., & Guy, F. (2013). Shaping the formation of university–industry research collaborations: What type of proximity does really matter? *Journal of Economic Geography*, *13*, 537–558. https://doi.org/10.1093/jeg/lbs010

Du, J., Leten, B., & Vanhaverbeke, W. (2014). Managing open innovation projects with science-based and market-based partners. *Research Policy*, *43*, 828–840. https://doi.org/10.1016/j.respol.2013.12.008

Echeverri, P., & Skålén, P. (2011). Co-creation and co-destruction: A practice-theory based study of interactive value formation. *Marketing Theory*, *11*, 351–373. https://doi.org/10.1177/1470593111408181

Edmondson, G., Valigra, L., Kenward, M., Hudson, R. L., & Belfield, H. (2012). *Making Industry–University Partnerships Work: Lessons from Successful Collaborations*. Science-Business Innovation Board AISBL.

Eisenhardt, K. M. (1989). Building theory from case study research. *Academy of Management Review*, *14*, 532–550. https://doi.org/10.5465/amr.1989.4308385

Eisenhardt, K. M., & Graebner, M. E. (2007). Theory building from cases: Opportunities and challenges. *Academy of Management Journal*, *50*(1), 25–32. https://doi.org/10.5465/amj.2007.24160888

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*, 109–123. https://doi.org/10.1016/S0048-7333(99)00055-4

Fabrizio, K. R. (2009). Absorptive capacity and the search for innovation. *Research Policy*, *38*, 255–267. https://doi.org/10.1016/j.respol.2008.10.023

Faccin, K., Wegner, D., & Balestrin, A. (2020). How to orchestrate R&D networks? The role of orchestration subprocesses and collaborative practices over time. *Creativity and Innovation Management*, *29*, 161–177. https://doi.org/10.1111/caim.12355

Feldman, M. M., & Kelley, M. (2006). The ex-ante assessment of knowledge spillovers: Government R&D policy, economic incentives and private firm behavior. *Research Policy*, *35*, 1509–1521. https://doi.org/10.1016/j.respol.2006.09.019

Ferraris, A., Belyaeva, Z., & Bresciani, S. (2020). The role of universities in the Smart City innovation: Multistakeholder integration and engagement perspectives. *Journal of Business Research*, *119*, 163–171. https://doi.org/10.1016/j.jbusres.2018.12.010

Foucault, M. (1969). *The Archaeology of Knowledge*. Routledge.

Gherardi, S. (2000). Practice-based theorizing on learning and knowing in organizations. *Organization*, *7*, 211–223. https://doi.org/10.1177/135050840072001

Gherardi, S., & Nicolini, D. (2000). To transfer is to transform: The circulation of safety knowledge. *Organization*, *7*, 329–348. https://doi.org/10.1177/135050840072008

Giddens, A. (1979). *Central problems in social theory: Action, structure and contradiction in social analysis*. MacMillan. https://doi.org/10.1007/978-1-349-16161-4

Giuliani, E., & Arza, V. (2009). What drives the formation of 'valuable' university–industry linkages? Insights from the wine industry. *Research Policy*, *38*, 906–921. https://doi.org/10.1016/j.respol.2009.02.006

Grama-Vigouroux, S., Saidi, S., Berthinier-Poncet, A., Vanhaverbeke, W., & Madanamoothoo, A. (2020). From closed to open: A comparative stakeholder approach for developing open innovation activities in SMEs. *Journal of Business Research*, *119*, 230–244. https://doi.org/10.1016/j.jbusres.2019.08.016

Halkier, B., & Jensen, I. (2011). Methodological challenges in using practice theory in consumption research. Examples from a study on handling nutritional contestations of food consumption. *Journal of Consumer Culture*, *11*(1), 101–123. https://doi.org/10.1177/1469540510391365

Halkier, B., Katz-Gerro, T., & Martens, L. (2011). Applying practice theory to the study of consumption: Theoretical and methodological considerations. *Journal of Consumer Culture*, *11*(1), 3–13. https://doi.org/10.1177/1469540510391765

Hargadon, A. B., & Sutton, R. I. (1997). Technology brokering and innovation in a product development firm. *Administrative Science Quarterly*, *42*, 716–749. https://doi.org/10.2307/2393655

Hemphälä, J., & Magnusson, M. (2012). Networks for innovation—But what networks and what innovation? *Creativity and Innovation Management*, *21*, 3–16. https://doi.org/10.1111/j.1467-8691.2012.00625.x

Hitchings, R. (2012). People can talk about their practices. *Area*, *44*(1), 61–67. https://doi.org/10.1111/j.1475-4762.2011.01060.x

Howells, J. (2006). Intermediation and the role of intermediaries in innovation. *Research Policy*, *35*, 715–728. https://doi.org/10.1016/j.respol.2006.03.005

Howells, J., Ramlogan, R., & Cheng, S. L. (2012a). Innovation and university collaboration: Paradox and complexity within the knowledge economy. *Cambridge Journal of Economics*, *36*, 703–721. https://doi.org/10.1093/cje/bes013

Howells, J., Ramlogan, R., & Cheng, S. L. (2012b). Universities in an open innovation system: A UK perspective. *International Journal of Entrepreneurial Behavior & Research*, *18*, 440–456. https://doi.org/10.1108/13552551211239483

Jarzabkowski, P. (2005). *Strategy as Practice: An Activity Based Approach*. Sage.

Jarzabkowski, P. (2008). Shaping strategy as a structuration process. *Academy of Management Journal*, *51*, 621–650. https://doi.org/10.5465/amr.2008.33664922

Kitchener, M. (2002). Mobilising the logic of managerialism in professional fields: The case of AHC mergers. *Organization Studies*, *23*, 391–420. https://doi.org/10.1177/0170840602233004

Kohtamäki, M., Heimonen, J., Sjödin, D., & Heikkilä, V. (2020). Strategic agility in innovation: Unpacking the interaction between entrepreneurial orientation and absorptive capacity by using practice theory. *Journal of Business Research*, *118*, 12–25. https://doi.org/10.1016/j.jbusres.2020.06.029

Kreiling, L., Serval, S., Peres, R., & Bounfour, A. (2020). University technology transfer organizations: Roles adopted in response to their regional innovation system stakeholders. *Journal of Business Research*, *119*, 218–229. https://doi.org/10.1016/j.jbusres.2019.08.031

La Rocca, A., Hoholm, T., & Mørk, B. E. (2017). Practice theory and the study of interaction in business relationships: Some methodological implications. *Industrial Marketing Management*, *60*, 187–195. https://doi.org/10.1016/j.indmarman.2016.04.002

Lai, W. H. (2011). Willingness-to-engage in technology transfer in industry–university collaborations. *Journal of Business Research*, *64*, 1218–1223. https://doi.org/10.1016/j.jbusres.2011.06.026

Lakhani, K. R., & Jeppesen, L. B. J. (2007). Getting unusual suspects to solve R&D puzzles. *Harvard Business Review*, *85*(5), 30–32.

Lee, S., Park, G., Yoon, B., & Park, J. (2010). Open innovation in SMEs: An intermediated network model. *Research Policy*, *39*, 290–300. https://doi.org/10.1016/j.respol.2009.12.009

Leten, B., Vanhaverbeke, W., Roijakkers, N., Clerix, A., & Vanhelleputte, J. (2013). IP models to orchestrate innovation ecosystems: IMEC, a public research institute in nano-electronics. *California Management Review*, *55*(4), 51–64. https://doi.org/10.1525/cmr.2013.55.4.51

Li, F., Chen, J., & Su, Y. S. (2018). Managing the university–industry collaborative innovation in China: The case of Zhejiang NHU company. *Journal of Organizational Change Management*, *31*, 62–82. https://doi.org/10.1108/JOCM-04-2017-0148

Magaudda, P. (2011). When materiality 'bites back': Digital music consumption practices in the age of dematerialization. *Journal of Consumer Culture*, *11*, 15–36. https://doi.org/10.1177/1469540510390499

Maietta, O. W. (2015). Determinants of university–firm R&D collaboration and its impact on innovation: A perspective from a low-tech industry. *Research Policy*, *44*, 1341–1359. https://doi.org/10.1016/j.respol.2015.03.006

Marullo, C., Casprini, E., Di Minin, A., & Piccaluga, A. (2018). 'Ready for take-off': How open innovation influences startup success. *Creativity and Innovation Management*, *27*, 476–488. https://doi.org/10.1111/caim.12272

Messeni Petruzzelli, A. (2008). Proximity and knowledge gatekeepers. The case of the Polytechnic University of Turin. *Journal of Knowledge Management*, *12*, 34–51. https://doi.org/10.1108/13673270810902920

Messeni Petruzzelli, A. (2011). The impact of technological relatedness, prior ties, and geographical distance on university–industry collaborations: A joint-patent analysis. *Technovation*, *31*(7), 309–319. https://doi.org/10.1016/j.technovation.2011.01.008

Messeni Petruzzelli, A., & Murgia, G. (2020). University–industry collaborations and international knowledge spillovers: A joint-patent investigation. *The Journal of Technology Transfer*, *45*(4), 958–983. https://doi.org/10.1007/s10961-019-09723-2

Messeni Petruzzelli, A., & Murgia, G. (2021). A multilevel analysis of the technological impact of university-SME joint innovations. *Journal of Small Business Management*, in press, 1–33. https://doi.org/10.1080/00472778.2021.1874003

Mora-Valentin, E. M. (2000). University–industry cooperation: A framework of benefits and obstacles. *Industry and Higher Education*, *14*, 165–172. https://doi.org/10.5367/000000000101295011

Murphy, S., & Patterson, M. (2011). Motorcycling edgework: A practice theory perspective. *Journal of Marketing Management*, *27*, 1322–1340. https://doi.org/10.1080/0267257X.2011.627366

Natalicchio, A., Ardito, L., Messeni Petruzzelli, A., & Del Giudice, M. (2019). The origins of external knowledge inflows and the impact of university technologies. *R&D Management*, *49*(4), 639–651. https://doi.org/10.1111/radm.12354

Nicolini, D. (2012). *Practice Theory, Work, and Organization: An Introduction*. Oxford University Press.

Ollila, S., & Elmquist, M. (2011). Managing open innovation: Exploring challenges at the interfaces of an open innovation arena. *Creativity and Innovation Management*, *20*, 273–283. https://doi.org/10.1111/j.1467-8691.2011.00616.x

Ollila, S., & Yström, A. (2016). Exploring design principles of organizing for collaborative innovation: The case of an open innovation initiative. *Creativity and Innovation Management*, *25*, 363–377. https://doi.org/10.1111/caim.12177

OMalley, L., ODwyer, M., McNally, R. C., & Murphy, S. (2014). Identity, collaboration and radical innovation: The role of dual organisation identification. *Industrial Marketing Management*, *43*, 1335–1342. https://doi.org/10.1016/j.indmarman.2014.08.007

Orlikowski, W. J. (2002). Knowing in practice: Enacting a collective capability in distributed organizing. *Organization Science*, *13*, 249–273. https://doi.org/10.1287/orsc.13.3.249.2776

Pancholi, S., Yigitcanlar, T., & Guaralda, M. (2015). Public space design of knowledge and innovation spaces: Learnings from kelvin grove Urban Village, Brisbane. *Journal of Open Innovation: Technology, Market, and Complexity*, *1*(1), 13. https://doi.org/10.1186/s40852-015-0015-7

Patricio, R., Moreira, A., Zurlo, F., & Melazzini, M. (2020). Co-creation of new solutions through gamification: A collaborative innovation practice. *Creativity and Innovation Management*, *29*, 146–160. https://doi.org/10.1111/caim.12356

Patton, M. Q. (1990). *Qualitative Evaluation and Research Methods* (2nd ed.). Sage.

Perkmann, M., & Walsh, K. (2007). University–industry relationships and open innovation: Towards a research agenda. *International Journal of Management Reviews*, *9*, 259–280. https://doi.org/10.1111/j.1468-2370.2007.00225.x

Rajalo, S., & Vadi, M. (2017). University–industry innovation collaboration: Reconceptualization. *Technovation*, *62*, 42–54. https://doi.org/10.1016/j.technovation.2017.04.003

Reckwitz, A. (2002). Toward a theory of social practices: A development in culturalist theorizing. *European Journal of Social Theory*, *5*, 243–263. https://doi.org/10.1177/13684310222225432

Salampasis, D. G., Mention, A. L., & Torkkeli, M. (2014). Trust embeddedness within an open innovation mindset. *International Journal of Business and Globalisation*, *14*, 32–57. https://doi.org/10.1504/IJBG.2015.066099

Saldaña, J. (2009). *The Coding Manual for Qualitative Researchers*. Sage.

Scandura, A. (2016). University–industry collaboration and firms R&D effort. *Research Policy*, *45*, 1907–1922. https://doi.org/10.1016/j.respol.2016.06.009

Schatzki, T. R. (1996). *Social Practices: A Wittgensteinian Approach to Human Activity and the Social*. Cambridge University Press. 10.1017/CBO9780511527470

Schatzki, T. R. (2001). Introduction: Practice theory. In T. R. Schatzki, K. Knorr-Cetina, & E. von Savigny (Eds.), *The Practice Turn in Contemporary Theory* (pp. 1–14). Routledge.

Schatzki, T. R. (2012). A primer on practices. In J. Higgs, R. Barnett, S. Billett, M. Hutchings, & F. Trede (Eds.), *Practice-Based Education: Perspectives and Strategies* (pp. 13–26). SensePublishers. https://doi.org/10.1007/978-94-6209-128-3_2

Shove, E., Pantzar, M., & Watson, M. (2012). *The Dynamics of Social Practice: Everyday Life and How It Changes*. Sage. https://doi.org/10.4135/9781446250655

Sundgren, M., & Styhre, A. (2003). Creativity—A volatile key of success? Creativity in new drug development. *Creativity and Innovation Management*, *12*, 145–161. https://doi.org/10.1111/1467-8691.00278

Teece, D. J. (1992). Competition, cooperation, and innovation: Organizational arrangements for regimes of rapid technological progress. *Journal of Economic Behavior & Organization*, *18*, 1–25. https://doi.org/10.1016/0167-2681(92)90050-L

Tether, B. S., & Tajar, A. (2008). Beyond industry–university links: Sourcing knowledge for innovation from consultants, private research organisations and the public science-base. *Research Policy*, *37*, 1079–1095. https://doi.org/10.1016/j.respol.2008.04.003

Un, C. A., Cuervo-Cazurra, A., & Asakawa, K. (2010). R&D collaborations and product innovation. *Journal of Product Innovation Management*, *27*, 673–689. https://doi.org/10.1111/j.1540-5885.2010.00744.x

Warde, A. (2005). Consumption and theories of practice. *Journal of Consumer Culture*, *5*, 131–153. https://doi.org/10.1177/1469540505053090

Wenger, E. (1998). Communities of practice: Learning as a social system. *Systems Thinker*, *9*(5), 2–3.

Whittington, R. (2006). Learning more from failure: Practice and process. *Organization Studies*, *27*, 1903–1906. https://doi.org/10.1177/0170840606071945

Yin, R. K. (1984). *Case Study Research: Design and Methods* (2nd ed.). Sage.

Yström, A., & Agogué, M. (2020). Exploring practices in collaborative innovation: Unpacking dynamics, relations, and enactment in in-between spaces. *Creativity and Innovation Management*, *29*, 141–145. https://doi.org/10.1111/caim.12360

Yström, A., Ollila, S., Agogué, M., & Coghlan, D. (2019). The role of a learning approach in building an interorganizational network aiming for collaborative innovation. *The Journal of Applied Behavioral Science*, *55*, 27–49. https://doi.org/10.1177/0021886318793383

Yusuf, S. (2008). Intermediating knowledge exchange between universities and businesses. *Research Policy*, *37*, 1167–1174. https://doi.org/10.1016/j.respol.2008.04.011

AUTHOR BIOGRAPHIES

Stefano Cirella is a part time Senior Lecturer (Associate Professor) in Organisation Studies and Human Resource Management at the Essex Business School, University of Essex, UK. He also holds a part time position at the Department of Industrial Engineering, University of Trento, Italy. He has been a visiting scholar at the Orfalea College of Business, California Polytechnic State University, USA. His main research interests focus on collective creativity, collaboration, organisational change and collaborative research methodologies. He teaches courses/modules in the areas of Organisational Behaviour, Human Resource Management and Organisation Development.

Stephen Murphy is an Assistant Professor in Marketing at Trinity Business School, Trinity College Dublin, Ireland. Previously, he

was a Lecturer in Marketing at Essex Business School, University of Essex, UK. His research explores some of the interconnections between consumption, embodiment and identity. Current research interests include conspiracy theories, creativity and boredom. His research has been published in *Marketing Theory*, *European Journal of Marketing*, *Industrial Marketing Management* and *Journal of Marketing Management*.

How to cite this article: Cirella, S., & Murphy, S. (2022). Exploring intermediary practices of collaboration in university–industry innovation: A practice theory approach. *Creativity and Innovation Management*, 1–18. https://doi.org/10.1111/caim.12491