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ORIGINAL PAPER

The Effect of Corporate — Start-Up Collaborations on Corporate Entrepreneurship

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Abstract

In an attempt to become more flexible and responsive, corporates increasingly collaborate with start-ups. By doing so, corporates hope to make a transition towards a more entrepreneurial organization or to rejuvenate their organizational culture and working practices. We present the results of a multiple case study in which we compare eight corporate—start-up collaborations that achieved different success rates in terms of promoting corporate renewal. Our focus is on the corporate individuals that participate in the collaboration and we combine literature on corporate entrepreneurship with institutional theory to study the conditions under which these individuals are more likely to exhort transformational agency and to contribute to renewal. Our results indicate that the effect of corporate—start-up collaborations on renewal is mediated by two individual-level mechanisms: reflexivity and intrinsic motivation. In addition, we identify several organizational contingencies that affect both the likelihood that corporate individuals adopt a reflexive orientation and are intrinsically motivated as well as the likelihood that their transformational efforts are successful.

Keywords Corporate entrepreneurship · Corporate—start-up collaboration · Institutional theory · Transformational agency

JEL Classification M10 · M13 · M14 · D02

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1 Introduction

Although entrepreneurial activity might be present at some subsidiaries or organizational levels, many corporates may struggle to promote it throughout the organization (see Birkinshaw 1997; Belousova and Gailly 2013). In order to rejuvenate their organizational structures and to spur innovation, corporates increasingly engage in corporate—start-up collaborations (Bannerjee et al. 2016). The term corporate—start-up collaboration is mainly used to designate situations where organizations temporally insource external innovation by collaborating with a start-up (see Weiblen and Chesbrough 2015). Corporates and start-ups have much to offer to one another. For example, a corporation may have the market intelligence, market access, supply chains, equipment, or know-how that the start-up still lacks (see Bannerjee et al. 2016). The start-up, on the other hand, may provide the corporate with the opportunity to extend its business into emerging domains. In addition, collaborating with multiple start-ups allows for faster learning and more extensive exploration of business opportunities and new technologies than a firm can typically achieve on its own (Weiblen and Chesbrough 2015; Bannerjee et al. 2016). A report by Boston Consulting Group (Brigl et al. 2019) shows that corporate—start-up collaborations are becoming a widespread phenomenon with 65% of all corporates engaging in some form of collaboration with start-ups.

In scholarly literature, corporate entrepreneurship (CE) has emerged as an important field of research that seeks to understand how corporates achieve renewal, venturing, and incorporate entrepreneurial practices in their (managerial) processes (Guth and Ginsberg 1990; Lumpkin and Dess 1996). Yet, while significant progress has been made in terms of explaining how organizational structures and processes (e.g., Lumpkin and Dess 1996; Hornsby et al. 2002), venturing (e.g., Ginsberg and Hay 1994), or entrepreneurial employees (Pinchot 1985; e.g., Gawke et al. 2019) contribute to CE, there is still a significant gap in our understanding how inter-firm collaborations, and corporate—start-up collaborations in particular, affect CE. Corporates may collaborate with a *specific* start-up with the aim of, for example, obtaining access to new technology or improving sustainability (Weiblen and Chesbrough 2015; Urban and Maboko 2020). Learning from start-ups and promoting experimentation throughout the organization are, however, *strategic* reasons to initiate a corporate—start-up collaboration program (Weiblen and Chesbrough 2015; Bannerjee et al. 2016; Kohler 2016; Tarakci et al. 2018). By adopting some of the practices of start-up and their way of working, corporates hope to make a transition towards a more entrepreneurial organization or to rejuvenate their organizational culture (Bannerjee et al. 2016; Kraus and Kauranen 2009; Weiblen and Chesbrough 2015). Despite these strategic goals, adopting working practices and learning from start-ups is not self-evident for corporates. In comparison to a typical start-up, corporates are characterized by more established and complex structures/routines that typically resist change and prevent employees from implementing new ideas and practices that they have been exposed to during a corporate—start-up collaboration (Nelson and Winter 1982; Weiblen and Chesbrough 2015). How and under which conditions the employees that participate in corporate—start-up collaborations contribute to corporate renewal is the main focus of this paper.

The CE literature has paid a lot of attention to the organizational design features that enable entrepreneurial action by employees (e.g., Kanter 1988; Hornsby et al. 2002; Rigtering and Weitzel 2013; Kuratko et al. 2014; De Jong et al. 2015) and to the cognitive processes or characteristics that enable employees to think *beyond* existing rules and structures (e.g., Haynie et al. 2010; Belousova et al. 2020). Yet, by doing so, they neglected that structures also orient an employee's actions and shape his or her assessment of alternative structures, practices, and routines that are being used by other organizations (see Giddens 1984; Battilana 2006; Battilana et al. 2009).[1] In this paper, we build on institutional theory to better understand how social structure (i.e., organizational structures, practices, routines, cultures, etc.) may enable or constrain an employee's ability to *purposely* change the social structures in which they are embedded. Building on Tuominen and Lethonen (2018) we refer to this ability as: transformational agency.

We take an abductive approach (see Suddaby 2006; Arino et al. 2016) and present the results of a comparative case study in which we investigate and compare eight corporate—start-up collaborations. Our focus is on the corporate actors and why they did (or did not) decide to initiate transformational agency after participating in a corporate—start-up collaboration. Our study makes four contributions. First, we seek to identify the individual-level mechanisms through which corporate—start-up collaborations affect strategic renewal, thereby responding to calls in the CE and strategic management literature to better understand under which conditions non-managerial individuals contribute to corporate renewal (see Floyd and Lane 2000; Corbett et al. 2013; Kuratko et al. 2015; Rigtering et al. 2019). Second, institutional theory (DiMaggio and Powell 1983; Battilana 2006; Scott 2013) has received scant attention in CE.[2] We offer a theoretical contribution to CE by conceptualizing individuals and social structures as mutually dependent and by explaining how social structures affect transformational agency. This allows us to more specifically pinpoint why, under certain conditions, it might be difficult for individuals to initiate transformational agency and to establish renewal. Third, entrepreneurial behavior by employees has recently received a lot of attention in CE (e.g., Rigtering et al. 2019; Covin et al. 2020) and organization psychology (e.g., Gawke et al. 2019) while the antecedents of such behavior are not fully understood. Here our study contributes by empirically examining how inter-firm collaborations affects an individuals' tendency to engage in strategic renewal. Finally, corporate—start-up collaborations are becoming more popular. We extend previous work in this area by focusing on the conditions under which insights developed during a collaboration lead to renewal.

[1] A small number of conceptual papers have acknowledged that an individuals' willingness and ability to change structures is depended on the very same structures in they are embedded (see, e.g., Covin and Slevin 1991; Ireland et al. 2009; Wales et al. 2011).

[2] Notable exceptions are Henao-García et al. (2020), Hughes and Mustafa (2017), and Gómez-Hara et al. (2011) but these studies mainly focus on how social structures may constrain entrepreneurial action and do not addresses under which conditions actors may change social structures.

Practitioners can use this information to optimize the design of their corporate—start-up collaboration programs.

We proceed as follows. First, we discuss the concept of CE and the role of corporate—start-up collaborations in CE. We then provide a brief overview of the different views on social structure and transformational agency in institutional theory. Our goal in this part of the paper is by no means to provide an exhaustive overview. Instead, we develop a theoretical foundation that we can, later on, use to analyze the empirical data. After the theoretical foundations, we continue with a description of the research setting and method before we provide an overview of the results. We conclude the paper with a discussion of the theoretical and practical implications. In addition, we provide suggestions for future research.

2 Theoretical foundations

2.1 Corporate entrepreneurship

Since the 1980s, CE has emerged as a dominant perspective that explains why some large organizations are more successful than others in terms of sustaining firm-level innovation, flexibility, and new entry (Kraus and Kauranen 2009; Kuratko et al. 2015; Covin and Lumpkin 2011). CE is commonly defined as 'the process whereby an individual or a group of individuals, in association with an existing organization, create a new organization or instigate renewal or innovation within that organization' (Sharma and Chrisman 1999, p. 18). At the core of CE is thus the intersection between individuals that initiate innovations, push these towards reality, and the organizational context that either stimulates or constrains this type of entrepreneurial behavior (Pinchot 1985; Kanter 1988; Rigtering et al. 2019). Organizations can create units or departments (e.g., corporate incubators see Gassmann and Becker 2006) to spur entrepreneurship in specific parts of the organization. A more dispersed approach to CE—where organizations stimulate entrepreneurial behavior throughout the organization—however, makes use of the entire body of human capital available within a firm and assumes that exploration at all levels and subsidiaries is a key element of CE (see Burgelman 1983a; Birkinshaw 1997; Belousova and Gailly 2013; Belousova et al. 2020).

Researchers have identified multiple factors (e.g., appropriate use of awards, trust, flexible organizational structures, and the availability of resources) that stimulate entrepreneurial behavior amongst managers and employees (Hornsby et al. 1993; Rigtering and Weitzel 2013; Hughes et al. 2018). The CE assessment instrument (CEAI) (Hornsby et al. 2002; Kuratko and Goldsby 2004) is one of the most comprehensive efforts to systematically identify the type of organizational climate that supports CE and comprises five key factors: Top-management support, work discretion, rewards/reinforcement, time availability, and organizational boundaries. Management support refers to the extent that top-level managers encourage innovation and experimentation by providing the required resources (Yariv and Galit 2017). Work discretion is the extent to which the organization tolerates failure and delegates decision-making responsibility to lower-levels (Kanter 1988; De Jong et al. 2015). CE reward and reinforcement systems foster the motivation of employees to engage in entrepreneurial activities by making employees' ideas known to the organization and providing appropriate rewards (Globocnik and Salomo 2015). Time availability fosters entrepreneurial activity by proving employees with the necessary time to explore new ideas and to work on pet projects (Hornsby et al. 2002). Finally, organizational boundaries should be flexible enough to stimulate information exchange between departments and with external partners, but certain enough to coordinate entrepreneurial behavior across the organization (Hornsby et al. 2002; Bjornali and Støren 2012; Kuratko et al. 2014; Razavi and Ab Aziz 2017).

Outcomes such as corporate venturing, strategic renewal, and firm performance are generally associated with CE (Kraus and Kauranen 2009; Bierwerth et al. 2015; Zahra et al. 2016). Corporate venturing refers to the creation of new businesses within existing organizations. Such new business can either reside within (internal corporate ventures) or outside the organizational domain (external corporate ventures) (Sharma and Chrisman 1999). Strategic renewal refers to changes in a business's internal corporate strategy or structure to enhance its ability to react to external shifts in the market (Sharma and Chrisman 1999; Gawke et al. 2019). The principal difference between the two is thus that venturing includes the creation of new businesses whereas strategic renewal leads to internal (process) innovation, management innovation, and/or the rearrangement of organizational structures (Burgelman 1983b; Gawke et al. 2019). Through corporate venturing and strategic renewal, CE can have a crucial impact on the financial performance of an organization and its ability to adapt to new (market) circumstances (Zahra 1995; Rauch et al. 2009; Kraus et al. 2012; Bierwerth et al. 2015).

2.2 Corporate: start-up collaborations

On the basis that large organizations and start-ups have complementary characteristics, researchers recently started investigating corporate—start-up collaborations (see Mocker et al. 2015; Weiblen and Chesbrough 2015; Bannerjee et al. 2016; Kohler 2016). By working together with start-ups, corporates seek to temporally insource external innovation with the aim of experimenting with new technologies, accelerating their innovation processes, or to acquire knowledge about new business models (see Weiblen and Chesbrough 2015 for a detailed discussion). In return, corporates can provide start-ups with the (financial) resources and (market) know-how to translate ideas into scalable business models (Kraus and Kauranen 2009; Weiblen and Chesbrough 2015). Corporate—start-up collaborations *may* result in corporate venture equity investments or the start-up being acquired and integrated into the corporate. For some start-ups, this might be a reason to enter into such a collaboration. A key element of corporate—start-up collaborations is, however, that the collaboration starts as a temporary partnership and that there is, initially, no equity investment by the corporate (Weiblen and Chesbrough 2015).[3]

[3] For our operational definition of corporate—start-up collaborations we follow the typology of corporate—start-up engagement developed by Weiblen and Chesbrough (2015). Other researchers have adopted broader definitions of corporate—start-up collaboartions and have also designated short-term collaborations such as corporate hackathons, co-working spaces or corporate venture equity investments

Although any type of start-up engagement aims to foster corporate innovation, insourcing (technological) innovation and rejuvenating the entrepreneurial practices within an organization are often key goals of corporate—start-up collaboration programs (Weiblen and Chesbrough 2015; Bannerjee et al. 2016). Specifically, as large organizations seek to adopt new managerial paradigms that are based upon small autonomous teams and start-up entrepreneurship such as agile (Darrell et al. 2016), teal (Laloux 2014) or lean start-up (Ries 2011) (see Tarakci et al. 2018), start-ups can provide managers with best practices and the opportunity to gain entrepreneurial experience (also see Bannerjee et al. 2016). Preliminary evidence, however, suggests that several barriers prevent collaboration success (Kohler 2016). In an exploratory study, Bannerjee et al. (2016) group these into cultural barriers (e.g., a lack of entrepreneurial culture at the corporate), procedural barriers (e.g., unclear decision-making and rigid internal processes), and strategic barriers (e.g., the misalignment of firm strategies and collaboration goals). This aligns with research by Blomqvist and Levy (2006) and Hill et al. (2014) who show that cultural fit, strategic alignment, and a firms' capabilities to successfully integrate new knowledge and resources are key drivers of any type of inter-firm collaboration success.

2.3 Social structure, transformational agency, and corporate: start-up collaborations

The relationship between social structure and (transformational) agency has been subject to numerous debates in institutional theory (see Delbridge and Edwards 2013). The term social structure is commonly defined as "recurrent patterns of interaction" or the mechanisms that cause them (Martin 2009: 7). In relation to CE, a social structure thus encompasses the formal (e.g., policies, procedures, strategies, and the vertical and horizontal division of work) and informal (e.g., culture, routines, dominant logics) elements of an organization. Social structures may achieve different levels of institutionalization, ranging from emergent to institutionalized (i.e., not requiring continuous mobilization to be reproduced, see Jepperson 1991) and produce the patterns which "give stability and meaning to social life" (Scott 2013: 56). Transformational agency, on the other hand, refers to how (groups of) individuals purposefully change the structures in which they are embedded (Tuominen and Lehtonen 2018). Such will be the case when actors initiate strategic renewal in a corporate by introducing different practices, when they change organizational structures or initiate new ventures.

The foundational work by Selznick (1949, 1957) on institutions has put significant emphasis on the agentic actions by individuals that are transformational and strategic in nature. In this view, individuals make rational means-to-end

Footnote 3 (continued)

as a form of corporate—start-up collaboration (see, e.g., Bannerjee et al. 2016; Brigl et al. 2019; Kohler 2016; Mocker et al. 2015).

decisions and take decisions free from institutional constraints while changing institutions (Meyer 2006). New institutionalism (DiMaggio and Powell 1983; Scott and Meyer 1983) drifted away from the explicit evaluation of means and ends and, instead, emphasized how institutions shape the cognitive schemes of actors. Although (transformational) agency still has a role in new institutionalism, its main focus is on how institutions create systems of durable transposable (agential) dispositions that function as structuring structures (i.e., habits). In this view, social structures create a "preconscious understanding that organizational actors share" (DiMaggio 1988: 3) and new institutionalism stresses the routinized nature of action (especially in highly institutionalized settings) while leaving little room for (transformational) agency.

Recent work in institutional theory incorporates Giddens (1984) view of social structure as simultaneously constraining and enabling action (see Seo and Creed 2002). A social structure enables action when it opens up new possibilities for action. For example, when an actor is allowed to spend part of his time working together with a start-up he or she might be exposed to practices that are successful but fundamentally different from those that are being used in the corporate (Weiblen and Chesbrough 2015; Bannerjee et al. 2016; Kohler 2016). Under such conditions, the actor may question the legitimacy of the corporate practices and/or might see opportunities for improvement that previously were left unattended. Constrain refers to situations where a social structure restricts the range of alternative actions. This would be the case when an actor considers a practice that he or she is exposed to during a corporate—start-up collaboration as impossible to implement within the corporate due to, for example, bureaucracy or organizational rules. In such cases, social structures, and in particular those that achieve high levels of institutionalization, create objective and/or subjective constrains for actors.

Recently, multiple authors (e.g., Battilana 2006; Battilana et al. 2009; Tuominen and Lehtonen 2018) suggested that neither structure nor agency should hold primacy. Instead, it is important to understand when individuals are most likely to exhort transformational agency and to establish the role of social structure in this process. Depending on their relative position within a certain field (e.g., an organization), the orientations towards change and renewal as well as the bargaining power of individuals differ substantially. For example, actors at lower organizational levels have limited access to resources and a less thorough understanding of firm strategies making it more difficult to initiate renewal, to legitimize their actions, or to create coalitions (see Battilana 2006; Battilana et al. 2009). In CE literature, similar effects have been documented in terms of an individual's power to initiate new ventures and renewal (e.g., Hornsby et al. 2009) or the tendency to display induced versus autonomous strategic behavior (e.g., Burgelman 1983b, a). When individuals exhort transformational agency, they 'somehow break with the rules and practices associated with the dominant institutional logic(s) and thereby develop alternative rules and practices' (Battilana 2006, p. 656). It is this process of purposefully breaking with existing rules and working practices that is recognized as an individual-level driver of CE and organizational renewal in particular (Hughes et al. 2018; Gawke et al. 2019; Rigtering et al. 2019; Covin et al. 2020). Below, we explain our empirical setting, methods, and results.

3 Methods

We conduct a comparative case study of eight corporate—start-up collaboration programs. Given the limited amount of research on corporate—start-up collaborations and how they affect strategic renewal, we adapt an abductive approach. Abduction is 'the process by which a researcher moves between induction and deduction while practicing the constant comparative method' (Suddaby 2006, p. 639). The main goal of abductive research is often not to develop a new theory but to explore an empirical phenomenon through a specific theoretical lens and/or apply existing theory to a new domain (Arino et al. 2016; Uzunca et al. 2018). As such, abductive studies acknowledge that new phenomena are often not inherently new and that extant theory can explain a large part (but not all) of the ongoing dynamics (see Suddaby 2006). Induction and deduction are, therefore, often combined within abductive studies and researchers constantly move between the data and theory by practicing constant comparison (Suddaby 2006). In general, abductive studies are understood as particularly suitable for identifying new empirical patterns that are not adequately explained using existing theory (Arino et al. 2016; Uzunca et al. 2018). In this study, we build on the literature on CE, research on corporate—start-up collaborations, and institutional theory to better understand the mechanisms through which corporate—start-up collaborations, a relatively new phenomenon within CE, lead to renewal. By doing so, we seek to inspire future theory building and theory testing.

3.1 Design and interviews

In order to collect interview data on a sufficient number of corporate—start-up collaboration programs, we worked together with a Dutch consultancy firm. The consultancy firm has helped multiple corporates, within and outside The Netherlands, to create a start-up collaboration program or to improve their existing program. The consultancy firm provided the contact details (names and email addresses) of corporate actors that actively participated in corporate—start-up collaborations. We asked the consultancy firm to identify collaboration programs where learning was formulated as a strategic goal by the company management and where there was no equity involvement by the corporate. This selection criterion is in line with our operational definition of corporate—start-up collaborations as well as our broader focus on learning from start-ups. As a second selection criterion, and in line with our focus on corporates, we asked the consultancy firm to only select large organizations (> 500 employees). The consultancy firm was not involved in the research in any other way.

For each corporate—start-up collaboration program we interviewed the innovation manager that is responsible for the program or the program director. During the interview, we focused on the primary collaboration in which he or she actively participated during the past 12 months. Because implementing meaningful changes in a corporate can be a lengthy process, we use a period of 12 months to ensure that there was sufficient time to implement any of the working practices and/or ideas that he or she was exposed to while working together with the start-up. If possible, also we interviewed other key employees (e.g., a marketing manager or senior consultant of the start-up collaboration program) that participated in the same corporate—start-up collaboration. This focus on managerial actors or actors with a certain level of 'seniority', ensure that our interviewees occupy organizational positions that enable them to initiate transformational agency (see Battilana 2006). An overview of the corporate—start-up collaboration programs and interviews is provided in Table 1. In this table, the corporate—start-up collaboration programs are labeled COL1-8. Per corporate—start-up collaboration program, we label the interviews I1, I2, I3, etc. so that, for example, COL4-I3 refers to program 4, interview 3.

Interviews typically lasted about 40–45 min and were recorded with the interviewee's approval. Afterward, they were transcribed verbatim. A semi-structured interview guide was used for each interview. We structured the interview guide along with the topics that we wanted to discuss and used it as a starting point for the discussion. During the interview, we probed interviewees with follow-up questions and asked clarification questions to gain detailed and elaborate answers. This combination made it possible to identify clear patterns in the answers while retaining a natural conversation and allowing the interviewees to respond authentically (see Leech 2002).

Each interview started with a short introduction after which we discussed the goals of the collaboration and the interviewees' role in the collaboration in detail. The second topic focused on the individual-level learnings by the interviewees and the extent to which their way of working had changed after the collaboration. Afterward, we focused on the organizational level and investigated whether a strategic renewal occurred in terms of the adoption of new practices or a change in existing corporate practices. Finally, we asked the interviewees to reflect on their learnings in relation to the organizational changes and the process as a whole. This final step allowed us to better understand the links between individual learnings and why (or why not) new practices were adopted by the organization.

Being a reflective study, there was a need to reduce the ex-post rationalization risk. We used two different strategies to reduce ex-post rationalization. First, in line with the recommendation by Tulving (2002), we used the 'courtroom' interview technique which involves prompting informants to explain specific examples of events. This forces interviewees to use episodic memories and increases the accuracy of the information obtained during interviews (Tulving 2002; Fisher et al. 2013). For example, we asked interviewees to describe specific difficulties that they experienced while implementing their learnings and how they tried to overcome such difficulties. Second, when there was an opportunity to interview multiple individuals that participated in the corporate—start-up collaboration, we triangulated the data to check for inconsistencies. We continued adding cases until theoretical saturation was achieved (Yin 2009), meaning that no additional insights that are of theoretical importance were obtained in the later interviews.

Table 1 Overview cases and interviews

Code	Company description	No. of interviews	Position interviewee(s) and interview number	Firm size and country	Collaboration goal	Example Project
COL1	Independent research organization for applied scientific research	1	Managing Director of the Corporate—Start-up program (I1)	> 2,500 (NL)	Knowledge transfer programs to scale up external start-ups	Building innovation for sustainable transport
COL2	A regional government	1	Manager corporate—start-up Program (I1)	> 2,500 (NL)	Collaborating with start-ups to solve internal business challenges	New security technologies
COL3	Dutch pension administrator for the public and private sector	4	Innovation manager (I1); Experiment leader at the innovation lab (I2); Senior consultant at the innovation lab (I3); Experiment coach at the innovation lab (I4)	> 2,500 (NL)	Experimenting with start-ups on new business ideas to scale them in or out	Voice technology for customer service
COL4	Dutch insurance cooperative	3	Innovation Manager (I1); Marketeer Innovation Lab (I2); Innovation Manager (I3)	> 2,500 (NL)	Collaborating with start-ups to expand the product portfolio	Meeting app for the 50 + population
COL5	European leader in multi-technical services in the areas of energy and communications	1	Innovation Manager (I1)	> 25,000 (Int.), > 2,500 (NL)	Screen the market to in-house new technologies	Platform to generate insights for energy consumption optimization
COL6	International leader in (health care) technology	1	Innovation Manager (I1)	> 50,000 (Int.), > 5,000 (NL)	Open innovation with start-ups to speed up innovation and enhance internal entrepreneurship	Artificial Intelligence to automate chronic skin disease management

Table 1 (continued)

Code	Company description	No. of interviews	Position interviewee(s) and interview number	Firm size and country	Collaboration goal	Example Project
COL7	International beer producer	1	Innovation Manager (I1)	> 50,000 (Int.), > 2,500 (NL)	Find new revenue streams, speed up the innovation process, get access to new user bases, access to new technologies	App to order and pay drinks in a bar
COL8	Market leader in mobile communication technology		Manager Start-up program (I1)	> 10,000 (NL)	Screen the market for the supplier to solve internal business problems	New technologies in AI, connectivity and mobility

Int, International; NL, The Netherlands

Table 2 A priori codes deducted from the theory

Code level 1	Code level 2
Rejuvenate corporate culture	Strategic goals corporate—start-up collaboration *(based on* Weiblen and Chesbrough 2015*)*
Innovate big brands	
Solve business problems	
Expand into future markets	
Misaligned goals between corporate and start-up	External barriers to corporate—start-up collaborations *(based on* Weiblen and Chesbrough 2015*)*
Different expectations	
Work discretion	Internal corporate entrepreneurship climate *(based on* Hornsby et al. 2002*)*
Time availability	
Rewards and incentives	
Management support	
Organizational boundaries	
Knowledge exchange	Organizational learning practices *(based on* Hayton 2005; Lee and Choi 2003*)*
Decentralized structures	
Rapid decision making	

3.2 Coding procedure and data analysis

Consistent with our abductive approach in which deduction and induction are combined (Suddaby 2006), we use two approaches to code the data. The first approach is a priori coding (also called template coding), where codes are created beforehand and applied to the transcript. A priori codes are defined by the researcher based upon previous literature (Symon and Cassell 2012). We used the CE assessment instrument (Hornsby et al. 2002), research on CE and organizational learning (Lee and Choi 2003; Hayton 2005), and work of Weiblen and Chesbrough (2015) on corporate—start-up collaborations to develop the first set of codes. An overview of these codes can be found in Table 2.

The second coding approach is based on the grounded theory methodology (GTM) which is designed to develop theories from data rather than imposing concepts upon the data. During this part of the data analysis, we explore the phenomena of interest by following an iterative process during which we move back and forth between theory and data. Strauss and Corbin (1990) and Gioia et al. (2012) suggest three stages to this theory-building process: open coding, axial coding, and selective coding. Open coding involves generating categories by deriving them from the transcript. In the next step, the transcripts are linked to the identified categories. During the axial coding, the categories are arranged in a meaningful way by linking categories with each other and bringing them in a hierarchical order. During the selective coding, categories are organized around one identified core explanatory concept to build the theory (Strauss and Corbin 1997). The process of linking text passages to categories, arranging the categories, and interpreting them is very similar within a priori coding and open coding (Blair 2015). However, by combining the two approaches we can triangulate the coding process which increases accuracy

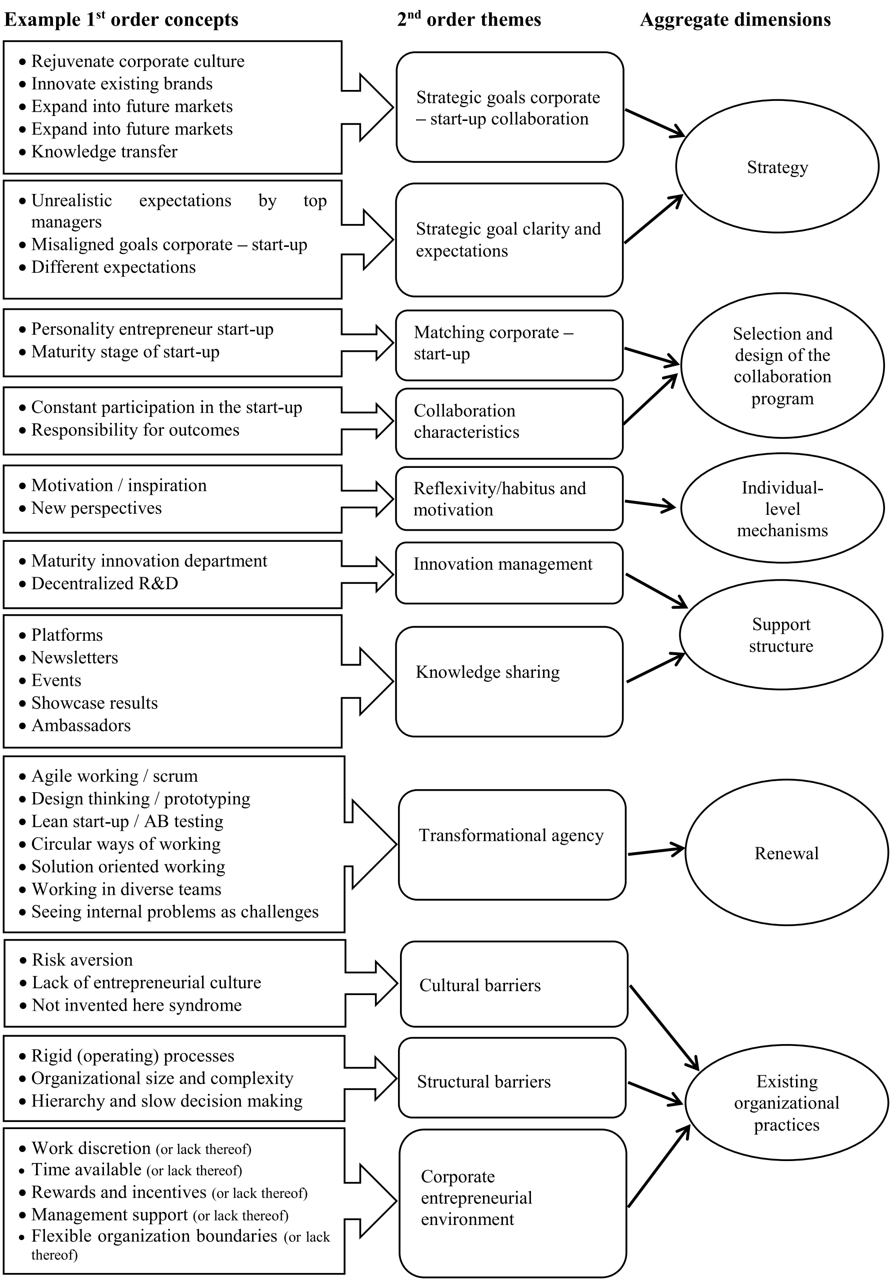

Fig. 1 Overview final coding and aggregate dimensions

and reliability. The final outcome of the coding process (a priori coding combined with open coding) can be found in Fig. 1.[4] All data was coded using the NVivo 12 software.

Our data analysis consists of two stages. In the first stage, we focus on identifying the mechanisms through which corporate—start-up collaborations promote agentic actions in the form of organizational renewal. In this part of the analysis, we are mainly interested in cases where renewal took place and try to understand how participating in the corporate—start-up collaboration affected individuals. In the second stage, we use the variance between cases to identify the different contingencies that influence the process.

4 Empirical findings

4.1 How corporate: start-up collaborations affect renewal

From our interviews, it became clear that individuals mainly implemented process-related innovations after participating in a corporate—start-up collaboration. Entrepreneurial ways of working such as lean start-up, agile, AB testing, prototyping, and design thinking are most frequently mentioned. These outcomes are in line with observations by Weiblen and Chesbrough (2015), Bannerjee et al. (2016), and Kohler (2016) that becoming more agile, promoting learning, and experimentation throughout the organization are strategic reasons for corporates to engage in start-up collaborations. However, from the interview data, it also became clear that learning has little to do with acquiring new knowledge. As one would expect, none of these practices were completely new to the corporate actors and they oftentimes already acquired (in-depth) knowledge about these topics through workshops, popular management books, etc. Yet, interviewees stressed the importance of *experiencing* first-hand how these practices are applied in small (entrepreneurial) organizations and talk about gaining new perspectives and/or inspiration through working with start-ups. It is this shift in mindset and reflexive orientation that allows participants of corporate—start-up collaborations to see opportunities for improvement in their organization and that inspires them to take action. For example, an Experimental Leader at the Innovation Lab of a large pension fund told us: '…*I experienced the level of flexibility first-hand through working with the start-up, I had the feeling of almost being a small entrepreneur myself*' (COL3-I2). He then continues to explain the importance of these first-hand experiences: '*I saw what they were going after within two weeks and how much they learned as a whole team. I never saw that before within my organization… this urges and inspires you to look at your work from a different angle and to think differently*'. Similarly, a manager from a large

[4] Consistent with the aim of our study we only coded organizational-level outcomes that relate to CE practices and entrepreneurial ways of working. For example, if an organization collaborated with a start-up to insource or learn about a specific technology we did not code if the organization was successful in doing so. Instead, we only code if the organization has adopted some of the ways of working of their collaboration partner.

insurance cooperative indicated: '*Working with the start-up gave me a new perspective. They are achieving so much with so few resources… This made me realize that we (the insurance cooperative) need to approach problems from a totally different direction*' (COL4-I1). An Innovation Manager from a large energy and communications service firm summarized his experience as follows: '*Looking at their way of working, how they structure their work, really inspires me. It triggers me to think about my own organization, to become more entrepreneurial myself, and to put what I have learned into practice*' (COL5-I1).

Gaining new perspectives may be a necessary but not sufficient condition to promote organizational renewal. It is well-established in CE literature that renewal is difficult to achieve, especially in large organizations (see, e.g., Burgelman 1983a; Kanter 1988). An individual may have gained new perspectives during the corporate—start-up collaboration and may be eager to implement new processes/practices within the corporate as a result. However, to rejuvenate established organizational practices corporate actors need to find support amongst top-level executives, need to obtain access to (financial) resources, and need to convince others of the added value of these new processes/practices (also see Belousova and Gailly 2013). This process takes time and effort. Accordingly, our data suggest that if the experience of working together with the start-up is not simultaneously generating sustained (intrinsic) motivation, it is unlikely that renewal takes place. For example, an Innovation Manager of an insurance cooperative told us: '*You have to be very strong if you have new ideas to implement in the organization…. While working with the start-up you gain perspective and inspiration. Then you go back to your normal team which thinks differently and has different goals. You have to be very persistent to create organizational change.*' (COL4-I3). An Innovation Manager of an international leader in (health care) technology explained it like this: '… *there are examples where people really make an impact on the organization and implement new practices. But there are also many examples where that doesn't happen…. It depends on many factors. Sometimes you see people go back to their department and really push the change and then it's going to happen. But in other cases, they just give up and resort to their old routine after some time… If something is going to happen it is slow like oil and you need to go through many layers… So yes, we clearly see that the entrepreneurial approach is taken up but there are many hurdles that people need to overcome.*'(COL6-I1).

4.2 Exploring key contingencies

We identified several factors that (positive or negative) influence the corporate—start-up collaboration as well as renewal. A detailed overview of the different contingencies is provided in Table 3. We distinguish between factors that affect how corporate actors experience the collaboration (i.e., the chance that an individual gains new perspectives and is motivated) and factors that affect strategic renewal (i.e., the chance that transformational agency takes place). When there is a mismatch between the organization and the start-up (e.g., the start-up is still too immature or technological expertise is non-complementary) the collaboration

Table 3 Main factors enabling and/or constraining collaboration success and renewal

Code	Collaboration success				Strategic renewal		
	New perspective	Motivation	Factors that promote the development of new perspectives and motivation	Factors that prevent the development of new perspectives and motivation	Renewal	Main factors enabling renewal	Main factors constraining renewal
COL1	Yes	Temporarily	Matching corporate—start-up; Strategic goal alignment; collaboration characteristics	CE environment (resources available); cultural barriers (risk aversion)	No	CE environment (management support); strategic goals)	Structural barriers (rigid processes, organizational complexity); cultural barriers (risk aversion); CE environment (lack of incentives)
COL2	Yes	Yes	Strategic goals alignment; Matching corporate—start-up	–	Limited (lean start-up; agile; solution oriented approaches; seeing problems as challenges)	CE environment (management support; time available, work discretion)	Cultural barriers (risk aversion, lack of entrepreneurial culture)
COL3	Yes	Yes	Matching corporate—start-up; CE environment (autonomy)	–	Yes (agile, lean start-up, AB testing, agile, organizational culture)	CE environment (management support, flexible organizational boundaries, work discretion); Knowledge sharing (events, showcases); Strategic goals collaboration	Cultural barriers (lack of entrepreneurial culture); Structural barriers (rigid operating processes, hierarchy)

Table 3 (continued)

Code	Collaboration success				Strategic renewal		
	New perspective	Motivation	Factors that promote the development of new perspectives and motivation	Factors that prevent the development of new perspectives and motivation	Renewal	Main factors enabling renewal	Main factors constraining renewal
COL4	Temporarily	Temporarily	Strategic goal alignment	Cultural barriers (no entrepreneurial culture, risk aversion); Structure (ridged operating procedures)	Limited to the innovation department itself (agile, lean start-up)	CE environment (management support)	Innovation management (small innovation department, centralized innovation department); Cultural barriers (no entrepreneurial culture, risk aversion); Structure (ridged operating procedures, organizational complexity)
COL5	No	No	–	Matching corporate—start-up; Structural barriers (hierarchy; rigid operating procedures); Top-management mis-understands start-ups	No	Knowledge sharing (platforms); CE environment (time availability)	Structural barriers (organizational size; rigid operating procedures); Innovation management (centralized and non-mature innovation department)

Table 3 (continued)

Code	Collaboration success				Strategic renewal		
	New perspective	Motivation	Factors that promote the development of new perspectives and motivation	Factors that prevent the development of new perspectives and motivation	Renewal	Main factors enabling renewal	Main factors constraining renewal
COL6	Yes	Yes	Matching corporate—start-up, Flexible organizational boundaries	–	Yes (lean start-up, design thinking, prototyping, faster decision making, entrepreneurial culture)	Culture (entrepreneurial culture); Innovation management (decentralized R&D, mature innovation department); CE environment (management support, rewards and incentives, flexible organizational boundaries)	Structure (organizational size and complexity, hierarchy and slow decision making)
COL7	Yes	Yes	Top-management's understanding of the role of start-ups in large corporates; Matching corporate—start-up; Flexible organizational boundaries	–	Yes (solution oriented ways of working, AB testing, agile, risk taking)	Culture (entrepreneurial culture); CE environment (management support, flexible organizational boundaries); Knowledge sharing (platforms)	Structure (organizational size and complexity)

Table 3 (continued)

Code	Collaboration success				Strategic renewal		
	New perspective	Motivation	Factors that promote the development of new perspectives and motivation	Factors that prevent the development of new perspectives and motivation	Renewal	Main factors enabling renewal	Main factors constraining renewal
COL8	Yes	Yes	Matching corporate—start-up	–	Yes (agile, entrepreneurial culture)	CE environment (management support, flexible organizational boundaries), Innovation management (maturity innovation department); Knowledge sharing (platforms, events)	Structure (organizational size and complexity)

is, obviously, less inspirational and it becomes unlikely that corporate actors gain new perspectives. Unclear strategic goals and unrealistic expectations in terms of (technological) innovation by top managers are other important reasons why a misfit occurs. A senior consultant of a Dutch pension fund commented on the selection of the start-ups within their program '*These guys are not entrepreneurs, they are inventors and they have been selected purely based upon the technology that they are working on… Everything is progressing very slowly and even though we will probably integrate the technology that they are working on in our organization, the collaboration itself is of little value to us'* (COL3-I3).

Next to being conditional on a positive (i.e., inspiring) collaboration experience, gaining motivation and new perspectives is also affected by the existing organizational practices. When organizational practices strongly favor stability, reliability, and reproducibility, they seem to prevent individuals from gaining sufficient motivation and embracing new perspectives. Those actors that engage in corporate—start-up collaborations often continuously switch between the corporate and start-up context. If corporate actors continue to analyze situations through their 'corporate lens' this may create skepticism about the value of entrepreneurial practices (e.g., '*it is questionable if we can apply their way of working in our organization*' COL1-I1). Spending a prolonged period in the start-up may be needed to develop new perspectives and to establish a shift towards a more entrepreneurial way of thinking. An Innovation Manager of a Dutch insurance cooperative (characterized by a rigid structure, ridged operating procedures, and a non-entrepreneurial culture), explained it as follows: '*It is easy to get inspired by working with the start-ups, especially for younger employees, but the excitement is often short-lived. Once they go back to the main business they quickly focus on their main activities and resort back to their old ways of working'* (COL5-I1).

Interestingly, in all cases, there is a mix of factors that simultaneously enable and constrain an individual's ability to exhort transformational agency and, thereby, to initiate strategic renewal (see Table 3). The hierarchy, complexity, and rigidity that is associated with large and established organizations are frequently mentioned as an important constraint. In addition, cultural barriers (lack of risk-taking and entrepreneurial culture) also constrains an individual's ability to transform existing practices. Whether renewal then still occurs is contingent on three factors: (i) the strategic goals of the collaboration, (ii) whether the organizational culture and/or CE environment counterbalance other structural and/or cultural barriers (iii) the innovation support structure. When learning is a key strategic goal of the collaboration as formulated by the top-management, support for the implementation of entrepreneurial practices is more likely and perceived as urgent. Under such conditions, individuals are also more likely to persevere. When the CE environment and organizational culture are already more (less) oriented towards CE, this makes it easier (more difficult) to find support and to build coalitions. Finally, and in line with findings by, for example, Lee and Choi (2003) a decentralized R&D and a support structure that provides platforms for knowledge exchange enable strategic renewal through knowledge sharing.

5 Discussion

Our abductive study of eight corporate—start-up collaborations expands extant research on CE, strategic renewal, and entrepreneurial behavior in various ways. At the broadest level, we offer a contribution by combining institutional theory with CE and by conceptualizing individuals and the practices that corporate use to promote entrepreneurial behavior (Hornsby et al. 2002, 2009; Kuratko et al. 2014) as mutually dependent. More specifically, our findings emphasize how new experiences are a key driver of transformational agency and renewal. We discuss these findings in more detail below together with our main contributions.

5.1 The individual-level mechanisms through which corporate: start-up collaborations affect strategic renewal

The new perspectives that corporate actors gain as a result of exposure to entrepreneurial practice is in institutional theory associated with reflexivity. In line with Archer (2003) and Tuominen and Lehtonen (2018), we use the term reflexivity to refer to the situations where participating in corporate—start-up collaborations urges managers to reflect on the situation within the corporate in relation to their experiences at the start-up. As such, it captures the 'new perspectives' and 'different ways of thinking' as described by the interviewees. When corporate actors are placed in a start-up that uses different procedures and ways of working, they are exposed to institutional contradictions (i.e., the social structures of the start-up and the corporate aim to achieve similar things in different ways see Seo and Creed 2002). In addition, they see how entrepreneurs form agentic projects (Tuominen and Lehtonen 2018) and deal with change, unexpected setbacks, and external pressures (Archer 2003) in a different way than that their corporate colleagues do. Being actively embedded in such a social structure may *enable* action and may trigger a reflective orientation because it provides the actor with different viewpoints, ideas, and perspectives that they would otherwise not have been exposed to. The finding that exposure to entrepreneurship is important to develop a more reflexive mindset is in line with the literature on entrepreneurial learning (e.g., Cope 2005) which puts forth that significant opportunities and problems experienced during the entrepreneurial process can create 'higher level' learning outcomes and lead to new perspectives (also see AppelBaum and Goransson 1997).

The form of motivation that is associated with sustained motivation and the higher energy levels that are needed to overcome organizational barriers is commonly labeled as intrinsic motivation (Ryan and Deci 2000, 2017). Intrinsic motivation is generally understood as autonomously formulated or self-initiated (Ryan and Deci 2000, 2017). When corporate actors are inspired and reflect on the situation within the corporate in relation to their experience at the start-up they form agentic projects (Archer 2003). Because these agentic projects originate from one's reflexivity (as opposed to being developed by somebody else) they are likely to be (perceived as) autonomously formulated (see Ryan and Deci 2017; Rigtering et al.

2019). Actors are then expected to pursue these agentic projects with higher levels of motivation and to persevere when confronted with setbacks (Ryan and Deci 2000, 2017; Rigtering et al. 2019). In addition, by observing a start-up's ability to experiment and adapt, corporate individuals may become more confident in their own reflexivity and ability to initiate change (Archer 2003; Tuominen and Lehtonen 2018) which increases their motivation to make a difference (see Ryan and Deci 2017).

5.2 Key contingencies

Our results suggest that social structures play a key role at two distinct points in the process. Where previous research (e.g., Hornsby et al. 2002, 2009; Kuratko et al. 2014) has mainly considered how social structures in the form of the CE environment may constrain or enable action, we find that it *also* affects the likelihood that corporate actors adopt a reflexive orientation. While evaluating existing corporate practices, individuals either draw upon their reflexivity or habitus (see Archer 1995); with habitus favoring the status-quo within the corporate and reflexivity favoring transformational agency. Which mode is activated, depends on the actor's positions (see Battilana 2006). Those actors that actively participate in corporate—start-up collaborations draw on their position in the start-up (collaboration) as well as their position in the corporate (see Cardinale 2018). In order for an actors' position within the start-up to activate one's reflexivity, there must be institutional contradictions (see Seo and Creed 2002) and the collaboration should be inspiring. This makes the selection of the individual start-ups an important success element of any corporate—start-up collaboration program because without exposure to institutional contradictions the process of reflecting on the social structures within the corporate in relation to the start-up is unlikely to take place.

At the same time, the actor's position within the corporate plays an important role. Highly institutionalized corporate structures promote stable and routinized enactment (Scott 2013) and analyzing situations through one's habitus (DiMaggio and Powell 1983). This draws attention to the relative importance of both positions, if the actor spends more time at the start-up this position grows in importance (Cardinale 2018). Especially when corporates are highly institutionalized, the relative importance of the position within the start-up and the extent to which there are institutional contradictions, maybe a primary driver of transformational agency.

5.3 Contributions and emerging conceptual model

Our empirical findings align with previous research in CE (e.g., Hornsby et al. 2002; Rigtering and Weitzel 2013; Kuratko et al. 2014; De Jong et al. 2015) and confirms that the CE environment and innovation support structures play a key role in enabling renewal. We extend this line of research by adopting an institutional perspective and placing the individual at the center of the analysis. This allows us to explain in greater detail how and when a corporate agent is likely to initiate transformational agency and to explain the role of the broader social structures in which

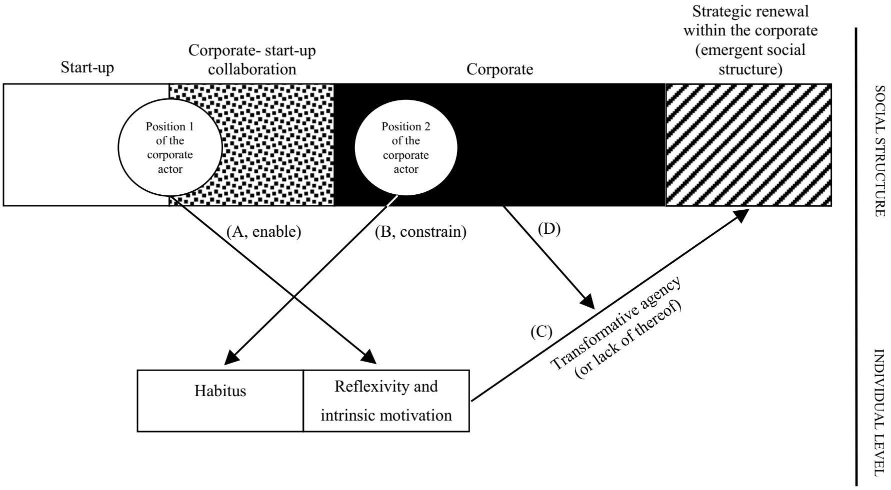

Fig. 2 A conceptual model of corporate—start-up collaboration and strategic renewal

he or she is embedded herein. In addition, we extent research on individual-level entrepreneurial behavior and entrepreneurial mindset (Rigtering and Weitzel 2013; Gawke et al. 2019; Belousova et al. 2020; Covin et al. 2020) by showing how new experiences and temporal exposure to different working practices can trigger transformational agency. Previously, this line of research has mainly conceived individual-level corporate entrepreneurship as (a combination of) behavior, attitudes, dispositional traits, skillset, or ability. Our findings point towards the temporality of such cognitive structures and highlight that they may be elicited in response to specific situations.

Combining these insights leads to the conceptual model displayed in Fig. 2. In this model, the agentic position of an actor that engages in a corporate—start-up collaboration depends upon the social structure within the start-up, the corporate—start-up collaboration, and the corporate. The actors' position within the start-up and the corporate—start-up collaboration is expected to enable transformational agency and feeds into his or her reflexive orientation and type of motivation (effect A). The actor's position within the corporate is expected to constrain transformational agency and feeds into his or her habitus (effect B). Which effect dominates and thus guides their agentic position (favoring transformational agency or not), depends upon the matching, the amount of time spent with the start-up, and the social structures at the side of the corporate as explained in the previous section.

If a corporate actor succeeds in their transformational efforts (effect C) and, thus, whether strategic renewal takes place, is contingent upon the existing social structures of a corporate as well (effect D). Here our results and empirical analysis of those results highlight the importance of social structures that support entrepreneurial behavior (e.g., managerial support, innovation support systems) and that counterbalance highly institutionalized structures (e.g., bureaucracy, standard operating procedures) that may resist change. Indeed, the CE (e.g., Burgelman 1983a; Kanter

1988; Belousova and Gailly 2013) and institutional literature (e.g., Battilana et al. 2009; Tuominen and Lehtonen 2018) characterize organizational change as a social process were multiple actors need to agree and work together to realize renewal. Social structures that enable CE (see Hornsby et al. 2002) and innovation support structures (see Lee and Choi 2003), provide resources, make it easier to obtain support, to build coalitions, and to implement (process) innovations. In other words, the likelihood that any acts of transformational agency result in strategic renewal is contingent on the social structures within the corporate and the innovation support structures in particular.

5.4 Insights for practitioners

Our study provides several important implications for practitioners. First, our study shows that corporate—start-up collaborations can be a powerful tool to stimulate CE and strategic renewal in particular. However, because transformational agency is contingent on the experiences of the actors that participate in the corporate—start-up collaborations, matching between the corporate and the start-up is essential. Next to the technology that a start-up might introduce or the markets in which they operate, the entrepreneurial intensity of the start-up should be an important selection criterion for those corporations that seek to rejuvenate their organization. Without sufficient differences between the start-up and the corporate, actively participating in the collaboration is unlikely to lead to the reflexivity and motivation needed to initiate transformational agency. In addition, it is important to allow actors to spend a considerable amount of time in the start-up. Without doing so, they likely continue to draw upon their habitus (as opposed to their reflexivity) when evaluating opportunities for renewal within the corporate.

Second, our research shows that corporate—start-up collaborations cannot be used as a ‘standalone tool ‘ to spur CE. Without a sufficient innovation and CE support structure, it is unlikely that a transition towards CE will occur. Decentralizing R&D, providing (managerial) support for new initiatives, and knowledge exchange platforms are important parts of the infrastructure that needs to be in place to maximize the benefits of corporate—start-up collaboration programs. Finally, this study highlights the broader importance of collaborations and exposing managers and other key-employees to new working practices. Corporate—start-up collaborations are one way of achieving this, but firms can also use other options (e.g., allowing employees to work part-time at start-ups, allowing them to develop their own start-up, or allowing them to do an internship in a different industry).

5.5 Future research

Our conceptual model of how corporate—start-up collaborations affect strategic renewal has to be refined and validated in future research. In particular, we invite scholars to investigate the impact of corporate—start-up collaborations on the overall level of CE, as we only focused on the strategic renewal dimension. Qualitative follow-up studies are invited to make use of longitudinal research designs. Such designs can be used to track how reflexivity and intrinsic motivation change over time as managers engage in the corporate—start-up collaboration or in relation to specific practices or experiences. In addition, corporate—start-up collaborations are just one tool that managers can use to insource new ideas and innovations and follow-up research might want to investigate how different ways of engaging with start-ups (e.g., corporate hackathons, co-working spaces, etc.), as well as inter-firm collaborations in general, affect organizational renewal.

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