Int Entrep Manag J (2013) 9:361–377
DOI 10.1007/s11365-013-0259-2

# Corporate entrepreneurship in a dispersed setting: actors, behaviors, and process

**Olga Belousova · Benoît Gailly**

Published online: 5 May 2013


**Abstract** Although conceptual models of the corporate entrepreneurship process are numerous, our current empirical knowledge regarding it remains fragmented, especially concerning the contributions of individual employees to corporate entrepreneurship. Thus, two important questions remain unanswered: How do employees from different managerial ranks of an organization contribute to the corporate entrepreneurship process, and how do these contributions change as the project unfolds over time? In the current research, we aim to answer these questions and offer an integrative framework for the corporate entrepreneurship process that would account for dynamic contributions of multiple actors through their activities and behaviors. We approach these questions in a specific context by studying three cases within a large company in a dispersed corporate setting.

**Keywords** Corporate entrepreneurship · Entrepreneurial behaviors · Process of corporate entrepreneurship · Framework · Case study

## Introduction

In the corporate entrepreneurship (CE) literature, a continuous interest in a more in-depth understanding of the individual activities of corporate entrepreneurs can be identified. For example, Stopford and Baden-Fuller (1994) call attention to "how the attributes of behavior normally associated with individual entrepreneurs can infect the enterprise as a whole" (p. 521). Hornsby et al. (2002) highlight the need for more systematic efforts to document and understand the entrepreneurial activities of middle managers. Dess et al. (2003) and Kuratko et al. (2005) suggest that we should examine

O. Belousova (✉)
Innovation Management and Strategy Department, University of Groningen, Groningen, The Netherlands
e-mail: o.belousova@rug.nl

B. Gailly
Louvain School of Management, Université catholique de Louvain, Louvain-la-Neuve, Belgium

and document the specific types of entrepreneurial activities arising in established corporations. Recently, the contributions of multiple levels of management to the CE process have come into focus (Kuratko 2007; Hornsby et al. 2009; Phan et al. 2009).

Indeed, "behavior is the central and essential element in the entrepreneurial process" (Covin and Slevin 1991, p. 8). However, works at the micro level of research[1] tend to focus on individual contributions of different types of employees. Among them are bottom-up intrapreneurs (Pinchot 1985; Antoncic and Hisrich 2001; Carrier 1996; Lumpkin 2007; Sayeed and Gazdar 2003) and middle-level innovation champions (Howell et al. 2005; Markham 1998; Howell and Boies 2004; Day 1994). Meanwhile, the simultaneous contributions of other organizational members to the entrepreneurial process remain largely overlooked. This can be limiting to our understanding of the micro-level issues of CE because assuming that one function "is the most important is to ignore the realities that in different situations, other functions may be much more critical" (Day 1994, p.149).We argue that it can be especially limiting for our understanding of the dispersed CE process (DCE, Birkinshaw 1997). The DCE process assumes that entrepreneurial initiatives are developed as embedded in the corporate context by the employees who combine the entrepreneurial activity with their "job as usual." Here, exchanges within the management structure become of key importance (Birkinshaw 1997).

To overcome this gap and tackle simultaneous contributions of different participants to the development of entrepreneurial projects within the DCE setting, this paper brings together the individual and process perspectives on the DCE to understand who the contributors to the development of DCE initiatives are and what they are doing as the process unfolds over time. Ultimately, the paper aims to contribute to a better understanding of entrepreneurship within established organizations and outlining several implications for future research.

The rest of the paper is organized in four sections: first, in the theoretical development section, the research question and a literature review are presented; the second section is devoted to the methodology and analysis of the data; the paper concludes with the findings and discussion sections as the third and fourth sections, respectively.

## Theoretical development

This paper aims to study simultaneous contributions of actors from varying managerial levels to the process of CE in a dispersed setting. CE is defined here as activities aimed at creating new business ventures, products, services or technologies within established firms based on individual initiative to extend firm's activities in areas marginally related to the current domain of competence (Antoncic and Hisrich 2003; Burgelman 1983a; Zahra 1991). It therefore includes introducing a new offer for the market by an established organization based on significant learning by this organization. Before proceeding, we must highlight the difference between the dispersed and focused contexts for the CE activities and explain the current challenges for studying each of them.

[1] In Entrepreneurship research, micro level can be understood as both firm and individual. (Davidsson and Wiklund 2001). In this paper micro level is understood as individual.

## Dispersed and focused CE behaviors

Birkinshaw (1997) noted two ways to set CE within a company: dispersed and focused. The *focused* approach works on the premise that entrepreneurship and management are fundamentally different processes and that they need to be separated structurally. This approach is typified by a New Venture Division (NVD), typically characterized by a semi-autonomous entity with little formal structure, integration across traditional functional areas, availability of "patient money," and management support for risk-taking and creativity (Birkinshaw 1997). Studies of actors and processes within the focused setting have touched upon several topics, such as internal corporate venturing (ICV) at multiple managerial levels (ex. Burgelman 1983b), involvement of corporate sponsors in ICV (Garud and Van de Ven 1992), drivers of radical innovation in R&D departments (O'Connor and Veryzer 2001), and ICV from the process perspective (ex: Burgelman 1983b; Garud and Van de Ven 1992; Shrader and Simon 1997; Sykes 1986).

The *dispersed* approach, in contrast, rests on the premise that "every individual in the company has the capacity for both managerial and entrepreneurial behavior" (Birkinshaw 1997). It therefore assumes a latent dual role for every employee. Its advantage over the focused approach is that a greater diversity of opportunities will be sensed because the entrepreneurial capability is dispersed throughout the organization, rather than restricted to an NVD. Studies of actors and processes within a DCE setting focus on the individual "hero" who autonomously initiates a development "under the table" (a bottom-up intrapreneur) and develops it against all odds (Pinchot 1985; Vesper 1984; Prasad 1993). In a similar manner, these studies praise the importance of innovation champions – individuals, often from middle management level, "who informally emerge to actively and enthusiastically promote innovations […], exercise the required social and political effort to galvanize support […], create internal acceptance of the new idea, and represent the venture to resource allocators" (Howell et al. 2005; Markham 1998; Howell and Boies 2004). Much of the scholarly interest concentrates on the agency responsibilities and leadership roles of the champion(s) (Greene et al. 1999). However, Markham (1998), Markham and Griffin (1998) and Markham (2000) show that champions had no direct effect on the success of projects with which they were associated. Rather, they influenced CE projects through relationships with other people. Similarly, Dess et al. (2003) wrote that the quality of interactions within the management hierarchy lies at the heart of CE. Given the currently available knowledge, this suggests a need for a multi-level study (where multi-level refers to multiple levels of management) in this area.

The comparison between the two settings of CE shows that our current knowledge (particularly, empirical knowledge) regarding CE activities remains fragmented. While we seem to know quite a lot about the process of ICV, which is, in essence, a focused approach (Birkinshaw 1997), there appears to be a gap in the literature regarding the dispersed approach to the CE process, specifically regarding the contributions of multiple managerial levels to the CE process, and their exchanges between each other.

One may argue to apply the findings of the focused perspective to the dispersed perspective. However, initiatives originating and developing in the existing entities may face different challenges, such as increased internal resistance, for example

(George and MacMillan 1985). Additionally, due to the structural detachment, higher visibility and specified mandates from the management, the process of new venture development in a focused setting may appear to be overly prescribed and structured, with a higher level of corporate control (Miles and Covin 2002). Therefore, the dominance of "focused" ICV studies may lead to a more formal understanding of the CE process that overlooks the specific challenges of new initiatives embedded into corporate context. Next, we elaborate on the dispersed aspect.

## The DCE process

The primary manifestation of the DCE process is the "initiative". Birkinshaw (1997) defines initiative as "bounded by the identification of an opportunity at the front end and the commitment of resources to the undertaking at the back end". The process is defined as "the progression (i.e., the order and sequence) of events in an organizational entity's existence over time" (Van de Ven and Poole 1995). A wide diversity of conceptualizations of the process of developing CE initiatives can be identified in the literature. To be able to build on the existing knowledge, the identified approaches were brought under a common classification, by grouping activities with similar definitions under mutual categories. To avoid creating new labels, an existing classification was to be chosen. However, resorting to one of the established DCE approaches would mean using the same label while changing its definition. Therefore, this research adopted the generic entrepreneurial process conceptualization of Shane and Venkataraman (2000). Shane and Venkataraman (2000) describe the entrepreneurial process as consisting of discovery, evaluation and exploitation of entrepreneurial opportunities. Their approach is both accepted in the CE literature (e.g. Kuratko et al. 2005) and defined very clearly, which facilitates classification. Following this approach, such activities as, for example, "identify opportunity" and "generate ideas" were classified under the discovery label. Similarly, "project definition" and "define business concept" were classified as evaluation; while "implement and manage the concept" was classified under exploitation. However, some of the activities identified in the DCE literature did not fit this three-tier approach. After an additional review, all of the non-fitting activities were found to be linked to promoting and navigating CE initiatives through the organization (Hornsby et al. 1993; Kanter 2004; Kuratko et al. 2005; Hornsby et al. 1999). This new group of activities was labeled "legitimation". Table 1 provides the details.

The discussion above indicates that discovery, evaluation, legitimation, and exploitation comprise the process dimension of DCE. Similar to the classifications cited above, the current approach may not be regarded as the only correct one. Arguments can be drawn for more- and for less-detailed classifications. However, the current approach can provide a useful tool to follow heterogeneity and dynamic aspects of the process, which are both simple and detailed.

## Contributors to the DCE process

A common approach in the literature is to consider organizational actors through their hierarchical position. When doing so, most scholars emphasize three main levels: top, middle, and operating (Kuratko 2007; Hornsby et al. 2009; Phan et al. 2009; Dess et

**Table 1** Categories of CE action defined

| Category | Accumulated definition | Behaviors | Suggesting studies |
|---|---|---|---|
| Discovery | Why, when, and how opportunities for the creation of goods and services come into existence | Think about new work-related ideas | Hornsby et al. 1999 |
| | | Suggest ideas | Hornsby et al. 1999 |
| | | Generate ideas | Damanpour 1991; Mumford et al. 2002 |
| | | Decide to act entrepreneurially | Hornsby et al. 1993 |
| | | Initiate | Russell 1999 |
| | | Identify opportunity | Kuratko et al. 2011 |
| Evaluation | Normative assessment of an idea and its development into a valuable project | Project definition | Kanter 2004 |
| | | Development | Damanpour 1991; Mumford et al. 2002; Russell 1999 |
| | | Business feasibility planning | Hornsby et al. 1993 |
| | | Endorse and refine opportunities | Kuratko et al. 2005 |
| | | Define business concept | Kuratko et al. 2011 |
| | | Identify resource needs | Kuratko et al. 2011 |
| Legitimation | Getting attention, recognition and approval from the organizational members | Build coalitions | Kanter 2004 |
| | | Talk outside the department about new ideas | Hornsby et al. 1999 |
| | | Overcome barriers | Hornsby et al. 1993 |
| | | Navigate opportunities | Kuratko et al. 2005 |
| Exploitation | Different action modes directed towards gathering resources and bringing the project to the market | Action | Kanter 2004 |
| | | Idea implementation | Hornsby et al. 1993, 1999; Damanpour 1991; Mumford et al. 2002; Russell 1999 |
| | | Bypass normal channels to pursue idea | Hornsby et al. 1999 |
| | | Identify, acquire and deploy resources | Kuratko et al. 2005, 2011 |
| | | Implement & manage the concept | Kuratko et al. 2011 |
| | | Harvest | Kuratko et al. 2011 |

al. 2003; Floyd and Lane 2000). Although multiple levels are recognized as important, in practice, single- or dual-level studies still dominate the literature. Studies of multi-level interactions remain scarce. As a reference point for further discussion, this paper takes the work of Floyd and Lane (2000), who conducted an extensive literature review aimed at synthesizing the knowledge available in the literature regarding the roles of top, middle and operating management in reviving organizations. This model has been further adopted in the CE literature (Kuratko 2007; Hornsby et al. 2009; Dess et al. 2003). The following paragraphs give definitions of the three managerial levels and introduce their roles for CE.

The *top-level management* is defined as the inner-circle of executives who collectively formulate, articulate, and execute the strategic and tactical moves of the organization (Eisenhardt et al. 1997). A recent literature review has noted that a top-level management team may include from 3 to 20 executives (Carpenter et al. 2004); among them are such positions as chief executive officer, chief operating officer, business unit heads, and vice presidents (Kor 2003). Three main functions distinguish top management's role in CE projects, according to Floyd and Lane (2000): recognizing, ratifying and directing. Recognizing role involves articulating a strategic intent of the company. Ratifying role is about bringing upfront the initiatives that have the most potential, their empowerment and enabling. Directing role involves such activities as planning and commanding.

The *operating-level employees* are those managers responsible for specific functions, operations, and their direct reports, who themselves produce the basic products and services of the organization or directly support their production (Mintzberg 1983). Three main functions distinguish operating level employees' role in CE projects, according to Floyd and Lane (2000): experimenting, adjusting, and conforming. Here experimenting role involves initiating autonomous initiatives, learning and improving needed assets and skills. The adjusting role consists of responding to the challenges that arise when entrepreneurial projects cause established routines to break down. Eventually, confirming behavior assumes following the system and being a good soldier.

The *middle-level management* category describes a very broad layer of employees, who are in a direct line of formal authority between the top management and the operating level (Dutton and Ashford 1993; Wooldridge et al. 2008). An important defining feature of middle managers is that they supervise supervisors and are supervised by others. Functionally, this level may include general line managers, functional line managers and team- or project-based executives (Wooldridge et al. 2008). Four main functions distinguish middle management's role in CE projects, according to Floyd and Lane (2000): championing, synthesizing, facilitating, and implementing. Championing has already been discussed here. It is linked to nurturing the initiative and presenting the project to the top management. Synthesizing is linked to blending strategic and hands-on information and categorizing issues. The facilitating role of middle managers refers to nourishing adaptability, sharing information and facilitating learning. Finally, the implementing role includes implementation, revision and adjustment of the project, as well as the motivating, inspiring and coaching behaviors of middle managers.

The advantage of the Floyd and Lane (2000) approach is that it gives a broad overview of roles relevant to CE. However, there are two issues concerning this framework. Firstly, the framework stems from the strategic management literature and needs to be empirically anchored in the CE field. Secondly, the framework does not take into consideration that the roles of different management layers may change over time. As CE projects take significant time to develop (MacMillan et al. 1986), it seems logical that the contributions of organizational members may vary as the process unfolds. Not only should researchers pay attention to whether the roles change as the project unfolds over time but also to *how* these roles change. A relevant question, which is addressed below, concerns the nature of the DCE process.

Although presented, at a first glance, as a temporal sequence, discovery, evaluation, legitimation, and exploitation should rather be perceived as a logical sequence.

For example, Bhave (1994) describes a new venture as an iterative, non-linear, feedback-driven conceptual, and physical process. The sequencing of activities and events comprising this process have been studied by a number of authors working in the "focused" perspective (see, for example, Garud and Van de Ven (1992) and O'Connor and Veryzer (2001)). These studies could not identify a pattern in the gestation activities. However, to understand the contributions of actors at each step of the process, a thorough study of the sequencing of DCE activities is necessary.

Therefore, this paper develops an empirically grounded model of CE behaviors at different hierarchical levels, including a process dimension that allows these behaviors to change over time. Together with the four basic CE activity categories (discovery, evaluation, legitimation, and exploitation), this three-tier structure builds up to an integrative framework of CE behaviors at different hierarchical levels of the company.

## Methodology

### Research approach

To develop an empirically grounded model of CE behaviors at different hierarchical levels and trace how these behaviors change over time, we employ a multiple case study approach. Yin (1994) suggests that case studies are useful in situations where ongoing activities need to be studied within their context and are hardly separable from this context and that the parameters of this context cannot be manipulated by the researcher. Indeed, "entrepreneurial behavior does not occur in a vacuum" (Kuratko et al. 2005, p. 704), and thus, an in-depth, engaged investigation in a real-life context is an appropriate method.

### Research setting and sample selection

The research is conducted in collaboration with a large European-based industrial company (ChemCo) founded more than 140 years ago. Today ChemCo is operating in more than ten different areas, which are concentrated in two business sectors. It employs more than 25,000 employees in approximately 50 countries worldwide and generated between EUR 7 and 13 billion[2] in net sales in each year of the study. ChemCo holds world-leading positions on several products in each of its core business sectors and follows the strategy of excellence in each area of competence. In such a traditional industrial context, corporate entrepreneurs will likely be significantly different from the rest of the organization (and therefore facing the most rigidity from it). At the same time, because large established organizations employ thousands of potential corporate entrepreneurs, a dispersed approach can bring the most benefits. These two arguments explain our particular interest in studying this company.

This study combined convenience and theoretical sampling approaches. Convenience sampling assumes that the generalizability of the results may be offset against

[2] USD 9.3 to 17.3 billion

**Table 2** Description of cases

| | New product | New market | New technology | Type of inno-n |
|---|---|---|---|---|
| Case 1 | x | | x | Process |
| Case 2 | x | x | x | Product |
| Case 3 | x | x | x | Product |

a more in-depth insight regarding the object being studied. Theoretical sampling assumes that the researcher has a number of criteria derived from the literature and seeks to study cases that respond to these criteria.

Following the two-step sampling procedure, researchers initially approached nine teams, who were named by the management (convenience sampling). Three teams out of the nine that responded to the theoretical criteria were selected for this study (theoretical sampling). The following criteria were applied:

(1) originated and developed within an existing unit other than new business development or NVD department (dispersed setting);
(2) was new to the company on at least two of the three dimensions of products, markets, or technologies (new offer for the market);
(3) required creation of new capabilities to add new possibilities for positioning in markets (learning).

These criteria correspond to the definition of CE adopted in this paper. Similar criteria are used by Stopford and Baden-Fuller (1994), Day (1994), Biggadike (1979).

When the interviews were held, none of the projects had achieved commercial success, defined as generating enough revenues to cover costs and produce a profit. Additionally, none of the projects were observed from the beginning to its end. Such an observation would require a process of 7 to 12 years. To address this problem, for the majority of data, a retrospective analysis was combined with ongoing (approximately 2 years) observations of the projects' developments. Where possible, the data were triangulated by using different sources of information (see Data Collection). Table 2 and the following paragraphs introduce the cases.

Case1 describes development of a GreenVenture[3] initiative that took place between 2003 and 2012. The business unit (BU) in focus employed approximately 1,500 people and operated in ten countries. The main purpose of this BU is to produce "Alpha" and "Beta" families of products. Circa 2003, issues in the classical process of producing Alpha, such as environmental unfriendliness and progressive erosion of profitability, became critical. The GreenVenture initiative aimed at dealing with these issues by developing an innovative process based on renewable materials. The initiative was developed by a team of five people in two countries in Europe, and then passed to a team in the Asian countries (three more people).

Case2 describes development of a Dreams initiative, which took place between 2006 and 2012. The owning BU employed more than 2,000 people and functioned in

[3] The privacy agreement signed by the authors precludes disclosure of specific details concerning the projects and the company. Therefore, the names of the people, products and entities have been disguised.

20 countries, while being headquartered in the US. A starting idea was proposed by the business management in the US, who envisioned extending the BU's activities into a new area by introducing a novel technology allowing a new use for some of ChemCo's materials. The technology was then developed by a team of four people, each of whom was residing in either of two European countries, or in two of the different involved US states.

Case3 describes development of an Ivo initiative, which took place between 2005 and 2012. It was developed in the same BU as in the Case2. However, this initiative involved another group of products and technologies, and it was developed by a different group of people in a different setting. The development started bottom-up in Europe and was characterized by a step-wise change of leadership. Case3 had two consecutive leaders in two European countries and was finalized in the US under the leadership of a third person.

## Data collection

We collected data from several sources: (1) interviews with the teams and their management; (2) active participation in numerous meetings regarding CE together with a member of the Board of the Company, the Corporate Innovation Champion and Corporate HR learning officers; and (3) multiple secondary sources, such as press communications, internal presentations, personal observations and participation in other meetings.

Similar to O'Connor and Veryzer (2001) the interviews occurred in three phases:

- In Phase I, initial interviews were conducted with one or two lead members of the project team to understand the background of the project and verify whether the project met the criteria for selection.
- In Phase II, available project team members were interviewed. Interviews were semi-structured, partially guided by questions generated earlier in the process.
- Phase III involved sending to all the participants the summaries of their interviews for confirmation, most of which ended with follow-up conference calls of approximately one more hour to provide additional details. At this stage, secondary data were used to confirm/contest the initial interview data.
- Additionally, to increase the validity of the research for each case, a narrative was written.

## Analysis

We recorded and fully transcribed all of the interviews, which lasted between 1.5 and 3 hours each; the research notes and emails were systematized as well. All data sources were coded accordingly to the three types of analysis: contextualized critical incident analysis, thematic coding and double coding.

The critical incident analysis aimed at reconstructing the stories of the cases. It was based on one of the most acknowledged methodologies for applying the process perspective to studying the developments of innovation – the Minnesota Innovation Research Program (MIRP, Van de Ven and Poole 1990). Each case was described through a chronological list of critical incidents in major functions related to the

development (Garud and Rappa 1994). This list was initially based on the interviews and was later verified against archival data. An "incident" is defined as a simple ("raw") empirical observation of an activity and is used for analyzing temporal event sequences in the development of innovations (Van de Ven and Poole 1990). Unlike incidents, an event is a theoretical construct, which explains a pattern of incidents (Van de Ven and Poole 1990). The patterns of incidents were coded along six dimensions: ideas, people, transactions, context, outcomes, and processes (Van de Ven and Poole 1990).

The thematic coding aimed at describing the topics that representatives from each management level introduced during the interviews. The coding process started as completely open, and evolved by going back-and-forth between the data and the coding structure until the grid of codes stabilized. This grid was later compared (and rephrased accordingly) to one of the recently suggested frameworks of CE behaviors (Floyd and Lane 2000; Dess et al. 2003; Kuratko 2007).

The double coding included simultaneous coding of the stage, level and CE actions. It allowed answering the main question of the paper and highlighting simultaneous contributions of different managerial levels at each step of the development.

## Findings

### The DCE activities

The interactions between the different levels of management indeed play a large role in developing the project. At each step, at least two levels of management contributed to the creation of the final product (process). An important concept standing out through the data analysis was "consensus" between the members. Indeed, unless a common understanding and agreement at the current step was achieved, the project would not pass to the next step. Additionally, as new contributors would be stepping in the team, a new agreement would need to be achieved.

For example, the discovery process required several (at least five) iterations before a stable version of the product (process) was mentioned. Depending on the ability of the joint middle-operating level team to include and foresee opinions of other organizational members and the market, the nature of the discovery process varied significantly. It could vary from refining the project (providing additional details) to substituting some aspects of the project (changing the format of the project or a structure of partners), to providing additional features without changing the core of the project. The key factor of keeping the initial idea "unchanged," as content-analysis shows, was the ability of entrepreneurs to legitimize it in the eyes of the decision makers (inside and outside of the company).

A similar picture was observed for the process of evaluation. The information-gathering (IG) sub-process included at least four stages in each case, and the information gathered had different natures: technical information gathered or generated (through experimentation) by the operating level employees and market information dominantly gathered by the middle level management. After a series of exchanges between the operating and middle level employees, the IG process would

normally result in writing a proposal (Case1, Case3) or a business plan (Case2). Submitting either of them signifies a transition of the project to another stage, characterized by a higher direct involvement of the top management, who should approve (or reject) the further development of the project. This process of getting an approval from the top management is called here "legitimation."

In the literature, we can reference two legitimation approaches: the strategies approach of Suchman (1995) and legitimacy crises approach of van Dijk (2008). The first one suggests that the teams have a legitimacy strategy (LS), such as conformation (matching with existing norms, beliefs and interests), selection (freely choosing an appropriate institutional group that would welcome the development), and, finally, transformation (shaping and stimulating new norms, interests and beliefs). The other approach suggests that establishing legitimacy happens as a response to the "gaps" or legitimacy crises (LCs). The current study shows that the teams were following specific LSs from the beginning of their projects. However, at different points in time, external or internal conditions would cause a gap in the perception of the project, thus creating LCs. These LCs would normally require a short-term appropriation of "resolution" LSs (RLS). Type of RLSs would be determined by the nature of the crisis (see Table 3). The current study also shows that these legitimizing (and largely championing) activities were performed at all levels of management. For example, the operating level managers were explaining the "exceptional nature" of this initiative to their peers, while middle managers would champion it up to the higher level of management. Within the Top Management Team, the BU level managers would be responsible for championing the initiative to the corporate level. The projects presented in this study had just started entering the phase of exploitation and no in-depth analysis could have been done with the available data. Table 3 below summarizes the results of the analysis.

**Table 3** Results regarding the activities of corporate entrepreneurs

| Characteristic | Case 1 | Case 2 | Case 3 |
|---|---|---|---|
| Discovery (Iterations) | 5 | 6 | 6 |
| Type of search | Problem driven | Opportunity driven | Problem driven |
| | Impersonal | Personal | Personal/ Impersonal |
| Type of conception | Refinement | Substitution | Addition |
| Evaluation (Iterations) | 5 | 4 | 5 |
| Type of information | Technical / Regulatory / Market | Market / Technical | Technical / Partner / Market |
| Type of proposal | 2 notes to the Board | 2 business plans | - |
| Legitimacy (Iterations) | 3 | 2 | 3 |
| Main LS | Transformation | Non-conformation | Conformation Selection |
| Type of LC | Internal / General | Internal | External / General |
| RLS | Conformation / Transformation | Conformation | Transformation |
| Exploitation | Formal | n/a | Informal, formal |

## Sequencing of DCE activities

The analysis presented above suggests that each of the activities required a number of iterations, which were changing the result. To understand the exact sequencing of the activities, Fig. 1 was developed. The projects are presented there as starting at the same time: year 0. It contains two axes: one describing time (year 1,2 …) and another – describing the type of activity (discovery, evaluation, legitimation, and exploitation).

Figure 1 shows that in the starting two years, all three projects iterated between discovery and evaluation by shaping and refining their ideas. Further, two out of three cases failed at the first legitimation and had to return to the evaluation stage and gather additional data or re-shape their initiatives. The Case1 initiative passed the first legitimation thanks to the preliminary informal screenings of top management's attitude to the project. The team had started going towards exploitation when a LC put them back to re-evaluation and re-legitimation. The Case2 initiative, where the leader aimed at positioning the project as a "company within a company," has formally passed only the third legitimation attempt. Having been in development for five years, all projects went to the market-adjustment period.

Thus, three distinct stages can be highlighted on Fig. 1: (1) the "adjustment by the team" period, when the project goes back and forth between the discovery and evaluation activities; (2) the "adjustment by the management" period, which involves legitimation, and where a failure to achieve legitimation can push the project back to evaluation or even discovery; and (3) the "adjustment by the market" period, which is the most vulnerable period, as a project may go back to any of the three activities mentioned before: discovery, evaluation, and legitimation. The three stages are described below in more detail below.

### *Discovery to evaluation*

The first period, "discovery-evaluation," is characterized in our study by a joint work of middle and operating management who discover, experiment, learn, synthesize,

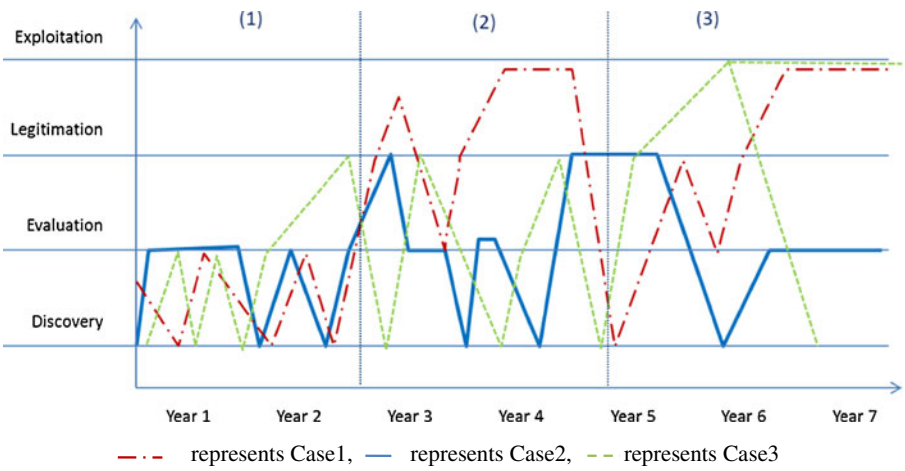


**Fig. 1** Development timelines

and strategize about the project. The business and even corporate management may be involved indirectly by recognizing future areas of development, facilitating and ratifying the decisions of the middle and operating level teams.

*Evaluation to legitimation*

During the second period, "evaluation-legitimation," the idea of the future product or process is formulated in a proposal and presented to the management. The top-business management starts being actively involved in shaping the initiative. This research demonstrates that the middle-level managers champion the idea up, and the top management either ratifies it or directs it to conform to their expectations. In the case of ratification, the top management sponsors the further development. Otherwise, the team is given directions on how to re-design the initiative. If the modifications that are required by the top management are significant, a change in the design of the CE project may occur and lead to re-discovery. In cases when the top management decides to sponsor the initiative, the development loop is similar, with the only difference being that the project gets into the third period, "legitimation to exploitation", sooner. This is possible because the team, having the funds of the top management, may perform more tests and accelerate the development to more quickly approach the production stage and bring the project to the customers.

The role of the middle management is to link the demands of management and the potential of the project. They further coach the operating level employees by formulating a challenge for them and encouraging them to work on the changes. Coaching is necessary at this stage. First, because the non-linearity of the development may decrease the motivation of the team members as they have to design and redesign the innovation. Second, because of the increasing complexity of the project, new members join the team and need to be enrolled on the project. Thanks to the learning and coaching, the operating level employees become more independent and starts engaging in external gatekeeping – retrieving information from the outside world. They also obtain a better picture of the development, the management requirements and the technological readiness of the project in their area.

*Legitimation to exploitation*

During the third period, the teams continue on the finalization of the technology, but they normally collaborate with the future customers to fine-tune the innovation to the market. Here, the operating-level management takes the lead on the implementation (production) side, while the middle-level management, together with the top-level management, champions the project and presents it to the corporate management.

## The final model

The analysis presented above answers the question of how contributions of different managerial levels to the DCE process change over time. The following Fig. 2 illustrates the contributions' dynamics.

As just described regarding Fig. 1, the development goes back and forth between two different categories of activities, until a consensus is reached, and the decision to

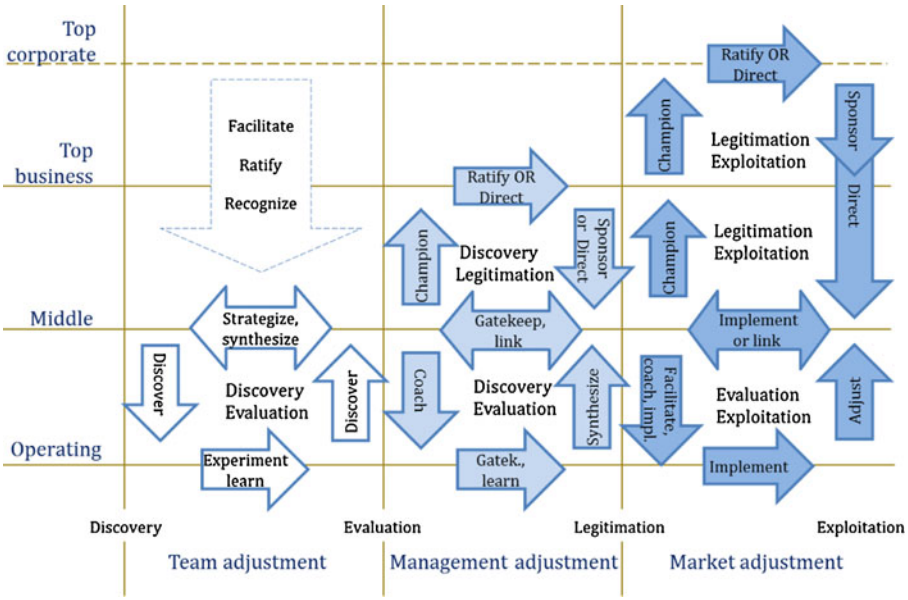


**Fig. 2** Model of exchanges between participants of the DCE process

move on is made. Thus, for example, the development moves between discovery and evaluation until the team decides to make a proposal and actively involve top management. Then, the development passes into legitimation. The development may need to be repeated in this manner several times before a decision to fund this project is made at the top level of management and the project progresses into exploitation. These decisions are depicted as arrows going forward (to the right). A reverse movement is possible as well. For example, if a project is not funded by management, it comes back to evaluation. Such changes are depicted on Fig. 2 as arrows going back (left). Exchanges of information between different participants at each milestone of project development are depicted as upward and downward pointing arrows. Double-edged arrows symbolize that through this action, the innovation may go to another stage. For example, if a development starts at the middle level and the middle level employees spot an idea, they can bring that idea to the operating management employees, who start learning new information and experiment with it. As soon as the experimentation brings results, the operating management employees formulate their findings (re-discover this idea in new terms and a better detailed design) and return to the middle management employees, who link this technical development with the market by synthesizing both their own and operating level information and defining the strategy of the venture and its fit within the organization's strategy. This depiction of the information exchange serves to our better understanding of the process.

## Conclusions

This research brings together the individual and the process perspectives on DCE to understand who the contributors to the development of CE initiatives are and what

they are doing as the process unfolds over time. The analysis allowed us to identify the DCE process as having a multi-level multi-stage nonlinear character. The implications are numerous.

The DCE process is multi-level because all three core managerial levels (top, middle, and operating) jointly contribute to the development. This finding suggests that the scholarly focus in future studies of the DCE process may need to shift from "creation" towards "co-creation."

The DCE process is multistage and develops through achievement of consensus or socially constructed goals. These goals naturally change as different people join the development. There are three broad stages of this process: adjustment within the team; opportunity adjustment by the team and the top management; and opportunity adjustment though interactions between the team, the top management and the external environment. This research identified at least five steps needed to shape the final opportunity, at least four stages of diverse information gathering activities, several ways of formulating the project along the way to the exploitation, and multiple legitimation attempts. This finding suggests the need to study the activities of corporate entrepreneurs through the prism of the goals set.

This previous finding suggests the non-linear nature of DCE and suggests that future studies should expand this work in identifying the conditions of the DCE non-linearity and the ways to avoid it, which could help fastening the development time.

This paper contributes to the existing research in a number of ways. Firstly, it opposes the dispersed and focused types of CE. Although existing in the literature already for a decade (since 1997), this distinction has not attracted due attention in the scholarly community. However, our research allows revealing a gap in our understanding of entrepreneurship in the corporate context: too often do scholars emphasize the strategic dimension of CE, forgetting about the individual contribution to the process; at the same time, the scholars who write about the individuals in the CE process (such as champions or intrapreneurs), often deemphasize the role of other contributors who may step in and out of the process as it unfolds over time.

This study has a number of limitations. First, the case describes entrepreneurial developments within only one (though large) company. The close contact with the company allowed the researchers understand the context of the innovations in a better way than it would be possible through a multiple-company study. However, this limitation may endanger the generalizability of the study. Therefore, more multiple-context research is needed for a better understanding of the DCE process. A second limitation concerns the nature of the data collected, which might suffer from retrospective bias when only successful interaction strategies are remembered and reported by the participants. This limitation was partially compensated for by interviewing the entire team at all levels and selecting the cases that did not yet achieve a full commercial success. However, with these possible limitations taken into account, a useful insight into DCE behaviors can be obtained.

## References

Antoncic, B., & Hisrich, R. D. (2001). Intrapreneurship: construct refinement and cross-cultural validation. *Journal of Business Venturing, 16*, 495–527.

Antoncic, B., & Hisrich, R. D. (2003). Clarifying the intrapreneurship concept. *Journal of Small Business and Enterprise Development, 10*, 7–24.

Bhave, M. P. (1994). A process model of entrepreneurial venture creation. *Journal of Business Venturing, 8*, 228–224.

Biggadike, E. R. (1979). The risky business of diversification. *Harvard Business Review, 57*(3), 103–111.

Birkinshaw, J. (1997). Entrepreneurship in multinational corporations: the characteristics of subsidiary initiatives. *Strategic Management Journal, 18*(3), 207–229.

Burgelman, R. A. (1983a). Corporate entrepreneurship and strategic management: insights from a process study. *Management Science, 29*(12), 1349–1364.

Burgelman, R. A. (1983b). A process model of internal corporate venturing in the diversified major firm. *Administrative Science Quarterly, 28*(2), 223–244.

Carpenter, M. A., Geletkanycz, M. A., & Sanders, W. G. (2004). Upper echelons research revisited: antecedents, elements, and consequences of top management team composition. *Journal of Management, 30*(6), 749–778.

Carrier, C. (1996). Intrapreneurship in small businesses: an exploratory study. *Entrepreneurship Theory and Practice, 21*(1), 5–20.

Covin, J. G., & Slevin, D. P. (1991). A conceptual model of entrepreneurship as firm behavior. *Entrepreneurship Theory and Practice, 16*(1), 7–25.

Damanpour, F. (1991). Organizational innovation: a meta-analysis of effects of determinants and moderators. *Academy of Management Journal, 34*(3), 555–590.

Davidsson, P., & Wiklund, J. (2001). Levels of analysis in entrepreneurship research: current research practice and suggestions for the future. *Entrepreneurship Theory and Practice, 25*(4), 81–99.

Day, D. L. (1994). Raising radicals: different processes for championing innovative corporate ventures. *Organization Science, 5*(2), 148–172.

Dess, G. G., Ireland, R. D., Zahra, S. A., Floyd, S. W., Janney, J. J., & Lane, P. J. (2003). Emerging issues in corporate entrepreneurship. *Journal of Management, 29*(3), 351–378.

Dutton, J. E., & Ashford, S. J. (1993). Selling issues to top management. *Academy of Management Review, 18*(3), 397–428.

Eisenhardt, K. M., Kahwajy, J. L., & Bourgeois, L. J., III. (1997). How management teams can have a good fight. *Harvard Business Review, 75*(4), 77–85.

Floyd, S. W., & Lane, P. J. (2000). Strategizing throughout the organization: managing role conflict in strategic renewal. *Academy of Management Review, 25*(1), 154–177.

Garud, R., & Rappa, M. (1994). A socio-cognitive model of technology evolution. *Organization Science, 5*(3), 344–362.

Garud, R., & Van de Ven, A. (1992). An empirical evaluation of the internal corporate venturing process. *Strategic Management Journal, 13*(1), 93–109.

George, R., & MacMillan, I. C. (1985). Corporate venturing: venture management challenges. *Journal of Business Strategy, 6*(2), 85–91.

Greene, P. O., Brush, C. G., & Hart, M. M. (1999). The corporate venture champion: a resource-based approach to role and process. *Entrepreneurship: Theory & Practice, 23*(3), 103–122.

Hornsby, J. S., Naffziger, D. W., Kuratko, D. F., & Montagno, R. V. (1993). An interactive model of the corporate entrepreneurship process. *Entrepreneurship Theory and Practice, 17*(2), 29–37.

Hornsby, J. S., Kuratko, D. F., & Montagno, R. V. (1999). Perception of internal factors for corporate entrepreneurship: a comparison of Canadian and US managers. *Entrepreneurship Theory and Practice, 24*(2), 11–26.

Hornsby, J. S., Kuratko, D. F., & Zahra, S. A. (2002). Middle managers' perception of the internal environment for corporate entrepreneurship: assessing a measurement scale. *Journal of Business Venturing, 17*(3), 253–273.

Hornsby, J. S., Kuratko, D. F., Shepherd, D. A., & Bott, J. P. (2009). Managers' corporate entrepreneurial actions: examining perception and position. *Journal of Business Venturing, 24*(3), 236–247.

Howell, J. M., & Boies, K. (2004). Champions of technological innovation: The influence of contextual knowledge, role orientation, idea generation, and idea promotion on champion emergence. *The Leadership Quarterly, 15*(1), 123–143.

Howell, J. M., Shea, C. M., & Higgins, C. A. (2005). Champions of product innovations: defining, developing, and validating a measure of champion behavior. *Journal of Business Venturing, 20*(5), 641–661.

Kanter, R. M. (2004). The middle manager as innovator. *Harvard Business Review, 82*(7/8), 150–161.

Kor, Y. Y. (2003). Experience-based top management team competence and sustained growth. *Organization Science, 14*(6), 707–719.

Kuratko, D. F. (2007). Corporate entrepreneurship. *Foundations and trends in entrepreneurship, 3*(2), 151–203.

Kuratko, D. F., Ireland, R. D., Covin, J. G., & Hornsby, J. S. (2005). A model of middle-level managers' entrepreneurial behavior. *Entrepreneurship Theory and Practice, 29*(6), 699–716.

Kuratko, D. F., Morris, M. H., & Covin, J. G. (2011). *Corporate Entrepreneurship & Innovation*. South-Western: Cengage Learning.

Lumpkin, G. T. (2007). Intrapreneurship and innovation. In J. R. Baum, M. Frese, & R. Baron (Eds.), *The psychology of entrepreneurship* (pp. 237–264). Mahwa: Lawrence Erlbaum Associates.

MacMillan, I. C., Block, Z., & Narasimha, P. N. S. (1986). Corporate venturing: alternatives, obstacles encountered, and experience effects. *Journal of Business Venturing, 1*, 177–191.

Markham, S. K. (1998). A longitudinal examination of how champions influence others to support their projects. *Journal of Product Innovation Management, 15*(6), 490–504.

Markham, S. K. (2000). Corporate championing and antagonism as forms of political behavior: an R&D perspective. *Organization Science, 11*(4), 429–447.

Markham, S. K., & Griffin, A. (1998). The breakfast of champions: associations between champions and product development environments, practices, and performance. *Journal of Product Innovation Management, 15*(5).

Miles, M. P., & Covin, J. G. (2002). Exploring the practice of corporate venturing: some common forms and their organizational implications. *Entrepreneurship Theory and Practice, 26*(3), 21–40.

Mintzberg, H. (1983). *Structure in fives: Designing effective organizations*. Englewood Cliffs: Prentice-Hall.

Mumford, M. D., Scott, G. M., Gaddis, B., & Strange, J. M. (2002). Leading creative people: orchestrating expertise and relationships. *The Leadership Quarterly, 13*(6), 705–750.

O'Connor, G. C., & Veryzer, R. W. (2001). The nature of market visioning for technology-based radical innovation. *Journal of Product Innovation Management, 18*(4), 231–246.

Phan, P. H., Wright, M., Ucbasaran, D., & Tan, W.-L. (2009). Corporate entrepreneurship: current research and future directions. *Journal of Business Venturing, 24*(3), 197–205.

Pinchot, G. H. (1985). *Intrapreneuring: Why you don't have to leave the corporation to become an entrepreneur*. New York: Harper & Row.

Prasad, L. (1993). The etiology of organizational politics: implications for the intrapreneur. *SAM Advanced Management Journal, 58*(3), 35–41.

Russell, R. D. (1999). Developing a process model of intrapreneurial systems: a cognitive mapping approach. *Entrepreneurship Theory and Practice, 23*(3), 65–84.

Sayeed, O. B., & Gazdar, M. K. (2003). Intrapreneurship: assessing and defining attributes of intrapreneurs. *Journal of Entrepreneurship, 12*(1), 75–89.

Shane, S., & Venkataraman, S. (2000). The promise of entrepreneurship as a field of research. *Academy of Management Review, 25*(1), 217–228.

Shrader, R. C., & Simon, M. (1997). Corporate versus independent new ventures: resource, strategy and performance differences. *Journal of Business Venturing, 12*(1), 47–66.

Stopford, J. M., & Baden-Fuller, C. W. F. (1994). Creating corporate entrepreneurship. *Strategic Management Journal, 15*(1), 521–536.

Suchman, M. C. (1995). Managing Legitimacy: strategic and institutional approaches. *Academy of Management Review, 20*(3), 571–610.

Sykes, H. B. (1986). The anatomy of a corporate venturing program. *Journal of Business Venturing, 1*(3), 275–293.

Van de Ven, A. H., & Poole, M. S. (1990). Methods for studying innovation development in the Minnesota innovation research program. *Organization Science, 1*(3), 313–335.

Van de Ven, A. H., & Poole, M. S. (1995). Explaining development and change in organizations. *The Academy of Management Review, 20*(3), 510–540.

van Dijk, S.J. (2008). Realizing radical innovation in established high-tech companies: a micro-institutional perspective Technische Universiteit Eindhoven, Eindhoven.

Vesper, K. H. (1984). Three faces of corporate entrepreneurship: A Pilot Study. In J. A. Hornaday, F. J. Tarpley, J. A. Timmons, & K. H. Vesper (Eds.), *Frontiers of Entrepreneurship Research*. Wellesley: Babson College.

Wooldridge, B., Schmid, T., & Floyd, S. W. (2008). The middle management perspective on strategy process: contributions, synthesis, and future research. *Journal of Management, 34*(6), 1190–1221.

Yin, R. K. (1994). *Case study research: Design and methods*. Beverly Hills: Sage.

Zahra, S. A. (1991). Predictors and financial outcomes of corporate entrepreneurship: an exploratory study. *Journal of Business Venturing, 6*(4), 259–285.