

**Managing Universities for the Entrepreneurial Society:
Entrepreneurial Loops and Innovative Teaching Initiatives**
**Manager des universités au XXI^{ème} siècle : spirales
entrepreneuriales et initiatives pédagogiques innovantes**
**La gestión de las universidades y sociedad del emprendedora:
espirales empresariales e iniciativas educativas innovadoras**

Aurelie Ewango-Chatelet

Volume 23, Number 5, 2019

Entre logiques individuelles et collectives, aux fondements de la société entrepreneuriale
Between Individual and Collective Logics, Toward the Foundations of the Entrepreneurial Society
Entre las lógicas individuales y colectivas, hacia los fundamentos de la sociedad emprendedora

URI: <https://id.erudit.org/iderudit/1066712ar>

DOI: <https://doi.org/10.7202/1066712ar>

[See table of contents](#)

Publisher(s)

HEC Montréal
Université Paris Dauphine

ISSN

1206-1697 (print)
1918-9222 (digital)

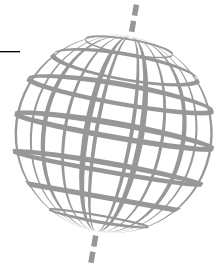
[Explore this journal](#)

Cite this article

Ewango-Chatelet, A. (2019). Managing Universities for the Entrepreneurial Society: Entrepreneurial Loops and Innovative Teaching Initiatives. *Management international / International Management / Gestió Internacional*, 23(5), 66–77. <https://doi.org/10.7202/1066712ar>

Article abstract

Drawing upon the entrepreneurial spirals concept, this article examines how managerial practices influence entrepreneurial intent in traditional academic activities. The international inquiry analyses innovative teaching into six business schools in France, Canada and Morocco. At the complex interplay between individual goals and organizational objectives, three entrepreneurial loops are identified: converging, diverging and absence of loop. Findings suggest that university management remains a challenge as an appropriate balanced management is required for the changing university's mission towards social and economic well-being. The conditions of successful academic entrepreneurial activities are outlined across three propositions.



Managing Universities for the Entrepreneurial Society: Entrepreneurial Loops and Innovative Teaching Initiatives*

Manager des universités au XXI^{ème} siècle : spirales entrepreneuriales et initiatives pédagogiques innovantes

La gestión de las universidades y sociedad del emprendedora: espirales empresariales e iniciativas educativas innovadoras

AURELIE EWANGO-CHATELET

ISM- Larequoi, laboratoire de recherche en management
Université de Versailles Saint-Quentin

ABSTRACT

Drawing upon the entrepreneurial spirals concept, this article examines how managerial practices influence entrepreneurial intent in traditional academic activities. The international inquiry analyses innovative teaching into six business schools in France, Canada and Morocco. At the complex interplay between individual goals and organizational objectives, three entrepreneurial loops are identified: converging, diverging and absence of loop. Findings suggest that university management remains a challenge as an appropriate balanced management is required for the changing university's mission towards social and economic well-being. The conditions of successful academic entrepreneurial activities are outlined across three propositions.

Keywords: Academic entrepreneurship, educational innovations, entrepreneurial management, entrepreneurial loop, intrapreneurship

RÉSUMÉ

A travers le concept de spirales entrepreneuriales, cet article examine comment les pratiques managériales influencent la dynamique entrepreneuriale des activités académiques traditionnelles. L'analyse d'innovations pédagogiques dans six établissements de l'enseignement supérieur de la gestion en France, Canada et Maroc, montre que le management des établissements universitaires reste un défi pour leur participation accrue au développement économique et social. L'interaction complexe, entre les objectifs individuels et organisationnels, aboutit à trois types de trajectoires: convergente, divergente et absence de dynamique. Trois propositions viennent éclairer les conditions de succès d'un processus entrepreneurial en contexte académique.

Mots-Clés : Entrepreneuriat académique, innovation en éducation, management entrepreneurial, spirale entrepreneuriale, intrapreneuriat

RESUMEN

Con el concepto de espirales empresariales, este artículo examina cómo las prácticas de gestión influyen en el proceso empresarial en las actividades académicas tradicionales. El análisis de las innovaciones educativas en seis instituciones de educación superior en administración en Francia, Canadá y Marruecos, muestra que la administración de las instituciones académicas sigue siendo un desafío por su mayor participación en el desarrollo económico y social. La interacción compleja entre los objetivos individuales y organizacionales conduce a tres tipos de trayectorias: convergente, divergente y falta de dinámica. Las condiciones de las actividades empresariales académicas exitosas se describen en tres proposiciones.

Palabras Clave: Emprendimiento académico, innovación en educación, gestión empresarial, espiral empresarial, intraemprendimiento

Entrepreneurial activities of academic personnel receive considerable research attention from different approaches, with very different opinions on the purpose of universities as educational organizations (Cantaragiu, 2012; Rothaermel, Agung, & Jiang, 2007). An emerging approach claims that academic entrepreneurial activities are multifaceted (Perkmann *et al.*, 2013; Philpott *et al.*, 2011), balancing economic health, social equality and environmental resilience (Cantaragiu, 2012; Ratten, 2017) in both teaching-led universities. The priority remains the research-intensive universities (Abreu *et al.*, 2016). Nowadays, the scope of academic entrepreneurial activities is broadening to include various types, from 'hard' large-scale science projects to the more traditional 'soft' academic activ-

ities of teaching (Klofsten & Jones-Evans, 2000). There is an increasing interest in considering how traditional academic practices are changing to contribute directly or indirectly to the society (Rasmussen & Sørheim, 2006).

Viewed as a part of modern innovation and entrepreneurship systems, an entrepreneurial university is broadly defined as any university undertaking entrepreneurial activities (Etzkowicz & Leydesdorff, 2000). However, producing highly qualified graduates is an overlooked form of academic entrepreneurship (Abreu *et al.*, 2016; Klofsten & Jones-Evans, 2000) often denied by the wider decision-makers in the scientific and political communities (Louis *et al.*, 1989; Philpott *et al.*, 2010). The entrepreneurial

* Acknowledgements:

Many thanks to the editors of this special issue and the anonymous reviewers for the precious time and effort they devoted to improving this article.

university is usually represented as having a diversified funding base, high research intensity and an international scope of academic activities (Perkmann *et al.*, 2013). There may therefore be a tension between the collective academic priority focuses on research and the individual goals of professionals who are engaged in educational innovations (Perkmann *et al.*, 2013; Philpott *et al.*, 2011).

Cantaragiu (2012) argues that academic entrepreneurship should be considered separately and distinctly from other forms of entrepreneurial activity. Refocusing attention on the academics involved in the entrepreneurial process may lead to a better understanding of the nature of entrepreneurship and its relationship with organizational performance (Bercovitz & Feldman, 2008; Cantaragiu, 2012; Louis *et al.*, 1989). Although the academic entrepreneurial process is individually-driven (Perkmann *et al.*, 2013), empirical investigations have shown that entrepreneurial academics' individual characteristics are strongly moderated by local peer effects and norms (Bercovitz & Feldman, 2008; Louis *et al.*, 1989), or by organizational factors such as support from the board of directors, freedom in the workplace, rewards, available time and uncertainty regarding works (Lizote *et al.*, 2013; Perkmann *et al.*, 2013). However, the overwhelming approach is that academic entrepreneurship is a scientific process completely unfettered by managerial influences (Abreu *et al.*, 2016; Louis *et al.*, 1989).

From a managerial point of view, the entrepreneurial process succeeds when new ideas or practices are disseminated beyond their origins and are transformed into organizational benefits (Ireland, Covin, & Kuratko, 2009). Entrepreneurial capability may be equated to creativity and innovation in established corporations (Baruah & Ward, 2015). Although fragmented, corporate entrepreneurship literature explains how and why some organizations are more entrepreneurial than others through the internal 'entrepreneurial environment' notion. Few empirical works in academic entrepreneurship literature draw upon corporate entrepreneurship theory. The concept of entrepreneurial management is a key construct (Stevenson & Jarillo, 1990) which implies that managerial activities and entrepreneurial activities are not mutually exclusive, but interact through entrepreneurial spirals (Shepherd *et al.*, 2010). According to Baruah and Ward (2015), employee contributions to entrepreneurial activities, which are also called intrapreneurship, may be conceptualized as a dual process within mature organizations. It is a way to improve organizational performance, but the benefits that firms can derive from it are challenged by organizational and environmental influences. As managerial practices may impede or promote the success of the entrepreneurial process (Shepherd *et al.*, 2010), this paper stresses the relationship between collective academic priorities and individual professional goals throughout the entrepreneurial process.

Management literature provides important measures assessing the management of entrepreneurial behaviour through six critical dimensions: strategic orientation, commitment to opportunity, commitment of resources, control of resources, management structure and reward philosophy (Hitt *et al.*, 2011). Indeed, measuring whether managerial practices conform to a model conducive to entrepreneurial activities is quite different from understanding how the entrepreneurial process diffuses

through an organization and is successful (or not) in changing workplace practices. Following the second line, this study started as a problem of diffusion of educational innovations in a higher education context, changing towards broad social interests (Bathmaker, 2003). The paper aims to provide deeper insights into the entrepreneurial environment generated by the management of academic entrepreneurial activities and to examining how extant corporate entrepreneurship theories may be applied to the academic context of teaching and learning.

This specific form of academic entrepreneurial activity is investigated through a qualitative study among academic winners of pedagogical innovation awards in six business schools located in three different countries: France, Canada and Morocco. Most previous studies have been conducted within a single university setting. Although it may be intuitive that goal conflicts and tensions exist between managerial practices at organization level and professional practices at academic individual level (Abreu *et al.*, 2016; Bercovitz & Feldman, 2008; Klofsten & Jones-Evans, 2000; Philpott *et al.*, 2011), the case study reveals that entrepreneurial activities seems to be highly context-dependent. This contrasts with the commonly held view that individual academics are impervious to managerial actions. Findings highlight the variety of university management and provide clear evidence that internal management practices may affect the implementation of the entrepreneurial mission in the academic context. Three entrepreneurial loops between managerial and operational level are distinguished.

Two major contributions are made. First, a conceptual model was developed through three propositions, revealing the managerial conditions of successful academic entrepreneurship. This dynamic view emphasizes the distinctiveness of higher education strategizing as the interplay between managerial actions and academic practices. Second, by expanding the academic entrepreneurial impact to strategic issues and educational outputs, the paper shows that academic entrepreneurship spreads beyond financial benefits, supporting that the current focus on trade is too narrow.

The first part addresses issues the theoretical framework and the relevance of the strategic lens of entrepreneurial management. The second part outlines the research methodology and the empirical material. Findings are presented in the third section. Three propositions of managerial conditions for successful academic entrepreneurship are derived. The implications for managerial practices and further research are discussed in the fourth section.

The Entrepreneurial Dimensions of Management in Academic Institutions

Following Corbett, Katz, and Siegel (2014), a broad theoretical perspective on academic entrepreneurship is proposed, drawing upon management theories. A review of the literature reveals no consensus on a definition for academic entrepreneurship (Rothaermel *et al.*, 2007). Conforming with Cantaragiu (2012), academic entrepreneurship is defined here as a practice performed primarily by a member of academia towards external actors.

ACADEMIC ENTREPRENEURSHIP AS AN EFFECTIVE STRATEGY

The consequences and impacts of academic entrepreneurship have been debated in several studies which applied entrepreneurship theory to universities. Studying incentive structures related to faculties' academic entrepreneurs in the university, prior work has focused on technology commercialization, the transfer of research results to industry and its financial rewards in the West, mainly the United States and selected European countries (Cantaragiu, 2012).

Another emerging line of research contests economic benefits as the unique academic impact (Ratten, 2017). Whilst commercialization clearly represents an important way for academic research to contribute to economy and society, there are multiple other ways in which university research may be transferred without contention with the traditional university missions of teaching and research. External engagement by academic researchers can have an impact on various activities differentiated in scientific, educational and commercial outputs (Perkmann *et al.*, 2013). Educational outputs concern, for example, time devoted to teaching, curriculum and course development, and teaching quality. Although the concept of engagement has been opposed to commercialization activity (Perkmann *et al.*, 2013), scholars have admitted that engagement is also about resource mobilization (Hitt *et al.*, 2011). Thus, a broader view on the academic entrepreneurial process, including engagement, seems more complex than the commercialization literature (Cantaragiu, 2012).

Narrowing academic entrepreneurial activities to those outside the two traditional university duties (basic personal research and teaching), prior study has claimed that universities are no longer seen as institutions of higher learning (Klofsten & Jones-Evans, 2000). Referring to the Swedish environment, the authors also profess that the societal view is constantly changing: they note that, since 1996, the Swedish government has been considering collaborative research with industry as equivalent to teaching and basic research.

There is a need to expand the scope of academic entrepreneurial activities (Cantaragiu, 2012; Perkmann *et al.*, 2013). Using a broad definition, some scholars observe that the changing mission of universities today requires a balance of both traditional and entrepreneurial roles, which may actually complement and reinforce one another (Etzkowitz & Leydesdorff, 2000). In such a broad perspective, academic entrepreneurship is supposed to transform the ways in which knowledge is created, used and diffused between the university and the society (Cantaragiu, 2012). Abreu *et al.* (2016) explicitly extend the analysis of entrepreneurial activities to both research-intensive and teaching-led universities in a large-scale quantitative survey of academics in the UK. They provide evidence that entrepreneurial practices conducted by research-intensive and teaching-led universities differ significantly, as teaching-led universities are more engaged in less formal types of entrepreneurial activity, including teaching, consulting, training and testing facilities in response to the demands of local industries and firms.

Under the broader lens of an entrepreneurial university defined as any university undertaking entrepreneurial activities (Etzkowitz & Leydesdorff, 2000), entrepreneurial activities are performed by academic actors who are actively promoting and

championing new ideas (Bercovitz & Feldman, 2008; Cantaragiu, 2012). The dominant view is that 'hard' academic entrepreneurial activities can beneficially contribute to the economy and university (Philpott *et al.*, 2011), but academics have raised concerns about the universal appropriateness of 'hard' entrepreneurial activities (Cohen *et al.*, 2002; Shane, 2004). For others, 'soft' activities also play a significant role in the university's efforts to contribute to economic and social development (Rasmussen & Sørheim, 2006). In such a view, academic entrepreneurship is an umbrella covering the various innovative practices.

CHALLENGES FOR UNIVERSITY MANAGEMENT OF ENTREPRENEURIAL ACTIVITIES

Universities, as higher education institutions, are not usually viewed as entrepreneurial organizations which can help their internal members, students or academics, develop entrepreneurial minds and entrepreneurial actions (Fayolle & Redford, 2014). Traditionally higher education institutions are described as professional bureaucracies with a decentralized structure (Mintzberg, 1979), an unclear and ambiguous technology, and core operating activities dominated by professionals (Cyert & March, 1963). Characterized by multiple objectives, diffuse power and knowledge-based work processes (Denis & al., 2007) the pluralistic context is generally contrasted with an entrepreneurial model of organization supposed to be based on a stronger leadership. Within a comprehensive European university setting where diverse disciplines co-exist as equals, Philpott and colleagues (2011) highlight the rise of academic tensions and struggles when entrepreneurial activities are undertaken. Their case study reveals institutional structures and procedural barriers including lack of entrepreneurial role models within the university, the absence of a unified entrepreneurial culture across the institution, and academic progression processes adversely affecting academics' entrepreneurial efforts. Moreover, their case study's findings reveal that a strong top-down push towards the ideal of the entrepreneurial university would actually reduce overall entrepreneurial activity across the university.

Some scholars dispute the view that professional control always leads to conflicts between an individual's personal benefit and their control environment's goals (Hardy, 1991). Conflict which emerges, when salaried professionals engage in behaviour towards increasing their own autonomy (or, in some cases, maintaining it) alongside management systems designed to control that behaviour, may be reduced if formal and informal controls co-exist (Abernethy & Stoelwinder, 1995). Indeed, entrepreneurial academics actually act as intrapreneurs involved in an entrepreneurial innovation process (Cantaragiu, 2012; Heinonen & Poikkijoki, 2006; Lizote *et al.*, 2013).

INTRAPRENEURSHIP AND ENTREPRENEURIAL SPIRALS IN MANAGEMENT OF THE ENTREPRENEURIAL PROCESS

Intrapreneurship can be defined as a strategy designed to encourage all employees to engage in innovative practices (Baruah & Ward, 2015; Zahra, Randerson, & Fayolle, 2013). From a managerial point of view, intrapreneurial initiatives succeed when new ideas or practices are diffused beyond their origins and are transformed into organizational benefits (Ireland *et al.*, 2009). This issue is about organizational individuals

interacting with their internal and external environment while they undertake entrepreneurial activities (Amo, 2006; Burgelman, 1983; Heinonen & Poikkijoki, 2006).

Considering that appropriate rewards and top management's high-level vision are enough to manage entrepreneurial behaviours, a few authors explicitly address the relationship between management control and entrepreneurial activities (Goodale *et al.*, 2011). Traditionally, operations' control mechanisms are regarded as, at best, irrelevant to the exhibition of corporate entrepreneurship or, at worst, as antithetical to its interests. When managerial practices and entrepreneurial activities are not seen as mutually exclusive, entrepreneurial management means to exercise management control in an environment where innovative practices are required (Stevenson & Jarillo, 1990). Entrepreneurial management has to balance the conflict between managerial control and individual creativity (Morris *et al.*, 2006).

The concept of entrepreneurial spirals explains how and why an organization becomes more or less entrepreneurial over time through the interaction of the entrepreneurial intent at the strategic management level and the intrapreneurial individuals pursuing personal benefits at the operation level (Burgelman, 1991; Ropo, 1975; Shepherd *et al.*, 2010). An entrepreneurial spiral may take two forms: induced or autonomous. A top-down process is initiated by top managers who can give a signal to other organizational members that an initiative is feasible and desirable. Induced entrepreneurial initiatives respond to this call. In contrast, a bottom-up mechanism implies that the entrepreneurial spiral is started by middle or lower-level organizational members. Autonomous initiatives of employees are their own personal choice. It is up to management whether or not to support these autonomous initiatives. Once started, an entrepreneurial spiral can endure and grow (Ropo & Hunt, 1995) or it can stop (Shepherd *et al.*, 2010).

In sum, corporate entrepreneurship theory tends to neglect less innovative contexts. Applying this literature to the academic context, research is largely focused on 'hard' entrepreneurial activities in the research-led university (Cantaragiu, 2012; Perkmann *et al.*, 2013). Although it is inferred that managing the tension between individual propensity to pursue personal advantage and organizational strategic intent seems to be the very nature of entrepreneurial management (Zahra *et al.*, 2013), there is a need to better understand how subordinates' intrapreneurial initiatives are managed to be congruent with strategic goals (Foss & Lyngsie, 2014). This leads to the following question: how do managerial actions influence academic entrepreneurial performance when professoriates engage in innovative activities? Academic entrepreneurship is examined by drawing on the experiences of individuals or groups of individuals who have introduced innovative approaches into their teaching practices. In the following, the terms 'workplace initiative', 'intrapreneurial initiative' and 'entrepreneurial initiative' are used interchangeably in referring to the interviewees' experience.

Methodology: The Intrapreneur's Voice

EDUCATIONAL INNOVATIONS IN THE CHANGING CONTEXT OF MANAGEMENT EDUCATION

Although there is a great diversity among colleges and universities, between countries and within any country, innovative approaches to teaching and learning in management educa-

tion are particularly suitable when studying 'soft' academic entrepreneurship. Indeed, defining innovation within a higher educational setting is a controversial topic, as the large spectrum includes designing curricula, organizing courses, conducting research into pedagogy of higher education, using learning technologies and new instructional materials, leading a course team, challenging strategies, and so on (Hazen *et al.*, 2011). From a pedagogical research perspective, an educational innovation is defined as any practice that differs from the previous ones (Hazen *et al.*, 2011). As public or private educational institutions, business schools specialize in teaching courses and programmes related to business and/or management. Studies of business schools' innovative projects have shown them to be characterized by a social creation value related to learning, education and teaching about new ideas and business practices (Nonet, Castle, & Rhodaim, 2015; Ratten, 2017). The further and vocational education landscape is facing several challenges, including the rising importance of ranking and accreditation, increased issues related to ethical decision-making, the ongoing debate about the impacts of research, the digital revolution, and a significant decrease in public funding in areas of America (Pfeffer & Fong, 2002) and European countries (Kaplan, 2014). As with other university faculties, internal and external pressures are leading modern business schools to change their teaching materials or methods (Kaplan, 2014; Pfeffer & Fong, 2002; Thompson & Purdy, 2009).

These changes are occurring through three types of model: (1) a teaching-focused school, (2) a research intensive-focused school and (3) a balancing model, where news ideas generated from research are translated into teaching (Kaplan, 2014; Twaalfhoven *et al.*, 2001). Despite several barriers, such as financial pressures and lack of incentive due to the global orientation of universities towards research and publications, some professoriates work to introduce new approaches to teaching and learning in their universities (Tushman *et al.*, 2007).

SAMPLING THE CASES

This paper was designed to investigate innovative teaching practices in academic initiatives, a neglected area in prior research. For such a purpose, a qualitative study is shown to be helpful (Rasmussen & Sørheim, 2006). Particularly, a multiple case study is likely to result in interesting descriptions and explanations when it gives participants a voice (Bluhm *et al.*, 2011). The population of this study consists of projects who applied for the CIDEGEF award in 2002 and 2004. CIDEGEF means "Conférence Internationale des Dirigeants des Institutions d'Enseignement et de Recherche de Gestion d'Expression Française". It is an international professional network of French-speaking deans located in France which funds a biennial innovative teaching award. Applicants for the CIDEGEF prize are individuals or small groups of academic professionals. Rigorous detection of innovative initiatives and entrepreneurial behaviour is not easy, as many scholars only investigate successful projects. This study attempts to overcome this problem by sampling among both successful and unsuccessful candidates to the CIDEGEF award. The cases were not selected *a priori*. Some projects were launched upon hierarchical request and others emerged spontaneously. They occurred in six universi-

ties located in different countries and national settings. Even if what is considered desirable championing behaviour may vary across national and organizational cultures, championing as deviant behaviour is universal (Shane, 2004). The final number of interviews depended on the saturation principle (Strauss & Corbin, 1990). Ultimately, of the nine key informants relative to the six cases, eight won the CIDEGEF award. Individual semi-structured interviews were realized for each principal informant who introduced new innovative teaching practices.

ANALYTICAL PROCESS

A phenomenological perspective was applied when analysing the data. Phenomenology is a radical reflection method with an emphasis on suspending one's theoretical presuppositions. That leads to the production of meaningful textual portrayals, revealing the subjective nature of the 'lived experience' from the perspective of those who experience it (Van Maanen, 1979). The aims of the research make this choice particularly relevant. In methodological terms, this means that findings are created through a personal and interactive relationship between the researcher and the subject/object of investigation (Lincoln & Guba, 1985). In accordance with commonly accepted methods (Bluhm *et al.*, 2011), data were collected and analysed in an iterative way through nineteen semi-structured in-depth interviews using a topic list. Contextual insights were provided by additional secondary sources, including program brochures, curriculum vitae, checklists, internal memos and universities' website.

The principal informants talked, in French, about their experience during interviews lasting 60-90 minutes, either face to face or via Skype. Interviews were fully transcribed into scripts with participants' consent, summarized and sent to the participants for approval. All the quotes used below are translations from French by us. The transcripts were read through several times to obtain an overview before proceeding to coding. Universities' management in terms of professional bureaucracy theories drove first-order coding activities. Later, second-order codes emerged from a contingency lens on corporate entrepreneurship: for

example, the topic of individual creativity emerged when issues arose about motivations and risk-taking, while the topic of organizational performance emerged when issues were consolidated about peers' perception and students' satisfaction. Comparing the results with the extended literature, interesting contradictions in the informants' statements revealed an entrepreneurial tension.

The six cases studies are located in six universities and represent a heterogeneous sample of initiatives which differ in their major characteristics such as country, origin, content and outcomes (see Table 1). Case A and E are induced processes launched upon hierarchical request; Case B, C, D and F are autonomous initiatives proposed by an informal involvement. The relatively large number of autonomous processes reflects the substantial autonomy and expertise of academics.

After completing the analytic phase, the original qualitative corpus was re-examined to ensure that the developing framework remained consistent with the data.

Findings

The purpose of this study was to develop an understanding of entrepreneurial management in the academic context by clarifying the way faculty members and managers interact when innovative practices are introduced into academic work. Findings are derived from the six cases and some evidence in the literature.

IMPROVING REPUTATION AS AN ACADEMIC ENTREPRENEURIAL OUTPUT

Despite the heterogeneity of the six cases, the concept of reputation emerged as crucial for assessing an academic entrepreneurial initiative. No significant difference in impacts and outcomes was found in relation to whether the innovative process was initiated by management or faculty professors. Without exception, the actors involved in autonomous projects acknowledged that external visibility was needed to gain the support of management. From an organizational point of view, successful implementation equals beneficial outcomes.

TABLE 1
The research cases of curricular and pedagogical initiatives

CASE	Location	Level of teaching	Content and scope of new practices	Intrapreneur profile	Origin	Perceived management support	Internal diffusion	External diffusion
A	France	Executive programme	Project-based learning in existing programme	One man	Induced	Yes	Widely used	No
B	France	Undergraduate and graduate	Apprenticeships as a new programme	One man and one woman	Autonomous	No	Not used	Yes
C	France	Undergraduate	Active learning in existing programme	Two women	Autonomous	Yes	Widely used	No
D	Morocco	Graduate	Experiential learning in new entrepreneurship programme	One man	Autonomous	Yes	Widely used	Yes
E	Canada	Graduate	Course on line added into existing programme	One man	Induced	Yes	Local used	Yes
F	France	Undergraduate	Learner-centred approach in existing programme	One man	Autonomous	No	Local used	No

Notes: In the internal context, an initiative may have been stopped, or is still used locally by those who introduced it, or may spread to other academics and become more or less widely used.

Findings show that a successful academic intrapreneurship process may have potentially favourable consequences for the reputational performance of the university. For instance, the intrapreneur involved in Case D explained that: “My university becomes convinced by the positive feedback from outside echoes” (MA, Case D).

Reputation is broadly defined as the outcome of a competitive process in which firms signal their key characteristics (Fombrun & Shanley, 1990). Reputation studies have described the beneficial effects of a good reputation. The academic professors championing their innovative practices indicated that their major contribution at the organization level is to the academic reputation. For instance, the intrapreneur of Case E said: “Sometimes universities which are looking for network partners contact us for international exchanges. In social sciences, my course is always presented to them” (VM, Case E). The entrepreneurial initiatives seem to succeed when they gain external visibility. Our informants told us that being visible to external stakeholders, including students, represents a motivation to persist in changing their practices: “Future students evoke our educational innovations during enrolment” (LC, Case C).

Regarding the organizational impact, the six cases clustered in three groups: success, failure and hybrid. Successful initiatives (Cases A, C and D) gain visibility and are widely used by other academics within and beyond their original source. Unsuccessful initiatives (Case F) remain in isolated local use or die out before they take off. A surprising hybrid form of initiative, (Cases B and E), neither success nor failure, emerges

in the course of the research. Hybrid initiatives revealed situations where internal failure or very limited use exists alongside external and widely spread success. These various organizational impacts are shown in Table 2, which reports case stories, outcomes and illustrative data.

This empirical evidence supports a link between internal change in academic practices and external reputation.

DISENTANGLING THE ACADEMIC ENTREPRENEURIAL PROCESS IN THREE LOOPS

The various performances of entrepreneurial initiatives emerged as the result of a complex interplay between the two key components of the intrapreneurship process at the individual level and the organizational level. While some informants reveal strong arguments about individual motivations and self-set goals like job satisfaction (Cases B and F), others emphasize collective factors and common goals like visibility and legitimacy (Cases A, C and D). A third group (Case E) balances between the two dimensions. In personal-driven academic entrepreneurship, self-set goals and the improvement practices seem crucial. As the intrapreneur of an autonomous initiative puts it, “Change is difficult. [It] requires major investments. It is my pleasure, a great joy, to do my work like this” (GN, Case B). For the respondents, innovating in relation to teaching approaches procures personal satisfaction but has no real impact on their academic career.

In contrast, in a more collective-driven point of view, the external focus is central. An informant said: “Things started to change when external echoes of my experience changed our internal practices” (MA, Case D).

Case	Outcome observed	Narrative stories of the process	Illustrative translated quotes
A	success	This deliberate initiative has relatively spread inside. Managerial support provides resources for a conforming project. The project was a competitive tool for the business school	“In that circumstance I had the freedom and the pressure to develop educational innovations”
B	hybrid	At the beginning managerial attitude was fairly neutral and changed after several events like the retirement of the last Dean. Climate became unfriendly. The process has been fought. The entrepreneurial team left the university and the project was stopped but initiatives didn't stop diffusing outside in the institutional field.	“The director let us do as long as it worked well, we get good contact with students and companies. The award get us legitimacy ...But thereafter, we had less freedom”.
C	success	At the beginning managerial attitude was fairly neutral and changed over time to become friendly after the first evidence of success. Managerial support exists. Innovative culture is sustained by various mechanisms as staffing teaching-oriented academics	“People are encouraged, there is no obstacle. Involvement in innovative pedagogical practices is valued but not obligated”
D	success	This emergent initiative has gradually diffused highly deviate practices which co-exist with ancient practices. At the beginning managerial attitude was fairly neutral and changed over time to become friendly after the external success. External resources were important.	“This business incubator project is closely monitored by the Morocco Ministry of Higher Education “
E	hybrid	This deliberate project profited from managerial support and significant resources. However, it did not diffuse internally. Conflicts lead to the dean's dismissal. But the project is always sustained and is used for international partnership with foreign universities.	“Within my faculty department, there are no other similar project”
F	failure	This autonomous initiative remains hidden and ignored. Managerial attitude is perceived as fairly hostile. Bootlegging is a sustaining mechanism.	“I am sure that management staff never read my annual report, it always ends ups in the trash bin. I never received any feedback.”

In looking at how the informants perceive academic managerial support, different forms of interaction between individual goals and common goals were distinguished. This complex interplay has been called the entrepreneurial loop. Some of these complex interplays were typical of a converging spiral, which tends towards the alignment of individual and organizational goals over time. While autonomous initiatives may persist and overcome organizational barriers before gaining managerial support, induced initiatives include both managerial support and discretion work. The teaching award winner in Case A said he simultaneously has “freedom” and “pressure” to engage in his initiative. In a converging loop, managerial actions initiate or increase the academic willingness to engage in new teaching practices.

Another perceived interaction allowed insights into a diverging spiral, which tends more and more to oppose individual and organizational goals over time. The following quote is an interesting illustration of increasing divergences and evolving tensions between professional practice-based goals and common goals over time: “Some colleagues thought that this could penalize us.” (VM, Case E). Initially conforming to a hierarchical request, this academic intrapreneur finally found the managerial vision to be very different from his personal and professional interests.

In the third form of entrepreneurial loop, there is no interaction. The entrepreneurial spiral is stopped by the organizational level while entrepreneurial behaviour is going on at the individual level. One of our informants make the strong statement that “I am just faking” to dramatize his perception that the academic top management is not actually interested in his effective teaching practices. From this professor’s perspective, operational innovative practices are denied at the managerial level. In such a situation, universities’ ambitions and operational practices are so divided that no entrepreneurial spiral may occur between them.

MANAGERIAL IMPACT ON ACADEMIC ENTREPRENEURIAL SPIRAL

Three types of managerial impact on the academic entrepreneurial spiral were observed (see Figure 2).

The first form of managerial impact tends to enhance the entrepreneurial loop and entrepreneurship becomes a legitimated process over time. In academic settings, although the personal expertise of the scholarship is overwhelming, actual management support is necessary for the success of entrepreneurial initiatives. In Case A, the managerial hierarchy initiates the entrepreneurial spiral by taking up innovative projects and has to commit academic teachers through several incentives. In Cases C and D, autonomous initiatives must persist and overcome organizational barriers before gaining the managerial support which serves to sustain them. By initiating or sustaining, managerial actions help innovative practices to gain legitimacy and to diffuse internally.

The second form of managerial impact tends to diminish the entrepreneurial loop and entrepreneurship becomes a contested process. This was seen within Case E, launched by a managerial request. Surprisingly, this initiative produced internal conflicts and limited internal use while at the same time contributing to the university’s external reputation. The following quote is an interesting example of increasing divergence in the entrepreneurial loop over time: “The original idea was to go along with the traditional course and online course. It was diverted by the director and the rector. I felt in a trap” (VM, Case E). Initially conforming to a hierarchical request, the academic intrapreneur finally found that the managerial vision was very different from his personal and professional interests. After several conflicting events, the team who introduced innovative practices in Case B left the university when the strategic locus changed. In both cases, conflicts occurred because there were differences between academic managers’ and faculty members’ perceptions of goals.

The third form of managerial impact on academic entrepreneurship in this study prevents the entrepreneurial loop from starting and entrepreneurship remains a hidden process. In such cases, actions at the operational level and discourses at the managerial level evolve independently. The potential consequence of such a process is internal discrepancies. Negative consequences of the autonomous initiative have been observed.

FIGURE 1
Informants overall perceptions of entrepreneurial opportunities

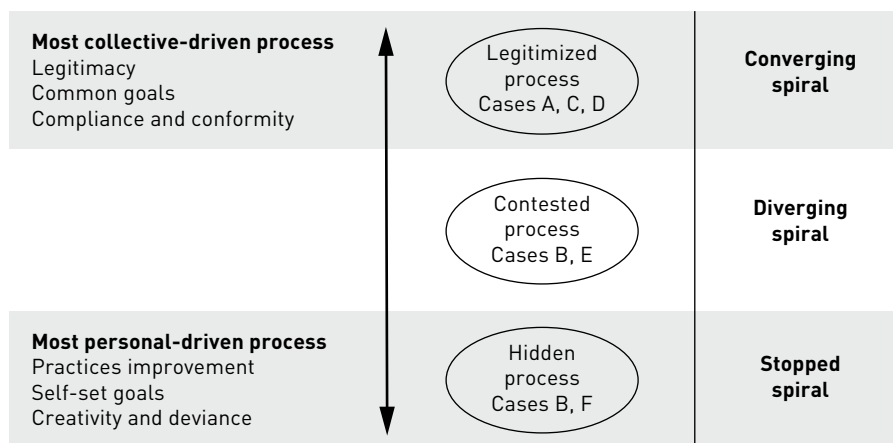
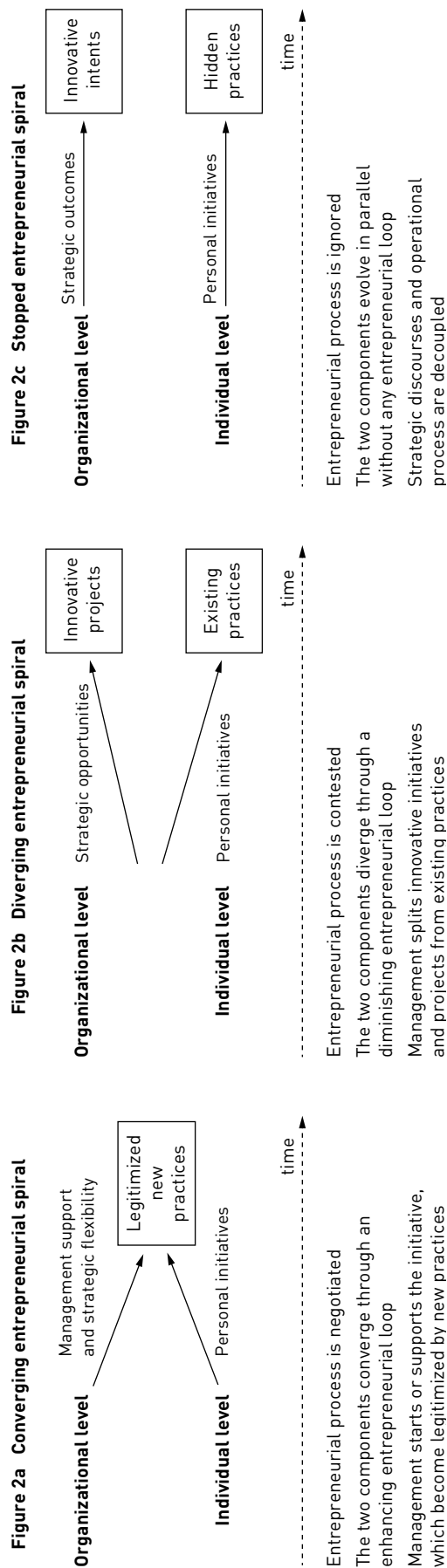


FIGURE 2
Three archetypes of academic entrepreneurial process



In the words of Case F: “All these events that cost a little money and require some new organizations are fragile ... this is an absolute hell. I have to fight like a dog for its bone to find room” (PA, Case F). In Case F, organizational discrepancies represent hidden clashes like diversion of resources, lack of trust, frozen conflicts or frustrated creativity. They are clearly visible and violent in Case B because the intrapreneur team gave up and left the university. It appears that the entrepreneurial spiral does not start when managerial and operational processes evolve separately in a decoupling way.

Discussion and Implications

By focusing on how educational innovations may be a way to increase organizational reputation, this paper offer novel theoretical insights into the management of entrepreneurial activities in the academic context. Going beyond previous researches, the application of the entrepreneurial spiral to the academic context shows that promoting entrepreneurial behaviour is not sufficient, because multiple initiatives compete for limited resources. No significant difference was revealed in relation to who initiates the entrepreneurial process—either managerial decisions or workplace initiatives. Three propositions are developed.

CONDITIONS OF A SUCCESSFUL ACADEMIC ENTREPRENEURIAL PROCESS

From a dynamic point of view, a successful process occurs when creative entrepreneurial initiatives spread to bring a new way of working, generating beneficial outcomes. There are conflicting views on whether the entrepreneurial university, which supports an entrepreneurial orientation and academics’ entrepreneurial activities, is good or bad. Advocates wonder how to make a university more entrepreneurial (Louis *et al.*, 1989), while antagonists stress the potentially threatening effects on the university system’s mission (Philpott *et al.*, 2011). How academic entrepreneurial activities are managed to be aligned with the strategic goals is largely a non-covered issue (Foss & Lyngsie, 2014). Some scholars claim greater creative freedom and a ‘laissez faire’ approach, arguing that bootlegging can serve the organizational interest (Augsdorfer, 2008), while others advocate a ‘make it happen’ approach, arguing that individual level entrepreneurial behaviour affects and is affected by organizational conditions and strong leadership (Sathe, 1989). Still others prefer a combination of strategies, claiming that a mixture of formality and discretion is key to providing both effectiveness and efficiency (Kanter, 1985; Naveh, 2007).

Academic processes are characterized by strong informal control exercised by peers (Abernethy & Stoelwinder, 1995). When it comes to academic motivations, many of these, such as academic status, are not determined by the organizational hierarchy and formal control (Morris *et al.*, 2006) but depend on a wider peer group in the academic community beyond organizational boundaries (Bercovitz & Feldman, 2008). According to Foss and Lyngsie (2011) the strategic entrepreneurship is linked with how firms’ strategic intent can facilitate continuous leveraging of entrepreneurial opportunities and innovative initiatives. The bargaining power of innovative professors should play an active role in the academic entrepreneurial process.

Proposition 1: Academic entrepreneurial intentions are more likely to serve university objectives if innovative initiatives are developed collaboratively between managerial and academic staff.

Implementing an entrepreneurial strategy relative to teaching and learning represents a challenge. Managing two inconsistent alignments within an organization simultaneously is related to organizational ambidexterity and the separation of activities (Gibson & Birkinshaw, 2004). Structural separation through designing a dual structure and temporal separation through achieving sequential attention are two forms of ambidextrous managerial practice.

Higher education institutions are places shaped by conflicting professional and managerial work ideologies and organizing locus. As a result, even if an entrepreneurial spiral starts, academic initiatives may diverge from strategic initiatives over time. Conflicts are not always dysfunctional for organizational work (Denis & al., 2011). However, when academics' and managers' values and cultures do not overlap in relation to the primary purpose, schisms may lead to academic disengagement (Philpott *et al.*, 2011). In the unsuccessful cases, organizational integration of new practices was weak. In the successful initiatives, specific managerial tools help to initiate or to increase the academic willingness to engage in new teaching practices.

Proposition 2: Faculty members are likely to disengage from undertaking entrepreneurial activities if innovative initiatives are deterred by splitting managerial practices.

Splitting strategic discourses and professional practices may be a way to gain external audiences when firms are competing in an uncertain context. Decoupling is the creation and maintenance of gaps between formal policies and actual operational practices (Weick, 1976). This managerial mechanism may build a desirable degree of flexibility and organizational slack when pursuing contradictory demands (Brunsson, 1983). However, findings suggest that managerial splitting of actions tends to diminish the entrepreneurial capacity.

Proposition 3: Academic entrepreneurial capacity is more likely to develop if there is consistency between discourses at the managerial level and practices at the operational level.

EXPANDING ACADEMIC ENTREPRENEURSHIP TO EDUCATIONAL OUTPUTS AND STRATEGIC ISSUES

This research has embraced a broader conceptualization of academic entrepreneurship following a recent stream (Abreu *et al.* 2016; Siegel & Wright, 2015). Expanding the scope of academic entrepreneurial activities to educational outputs provides an alternative understanding of educational innovation as a strategic process. In teaching-led universities, internal and external changing contexts are transforming traditional training in the mass higher education market (Kaplan, 2014). Although teaching-led universities may invest less in the creation of new knowledge, they still represent an important source of talent, expertise and support for entrepreneurial thinking and action through formal and informal channels (Klofsten & Jones-Evans, 2000; Perkmann *et al.*, 2013). Findings conform to works which conceptualized academic entrepreneurship as an innovative practice that happens inside an organizational setting (Abreu *et al.*, 2016; Cantaragiu, 2012) ranging from 'soft' to 'hard' activities (Klofsten & Jones-Evans, 2000; Philpott *et al.*, 2011).

Rather than portraying the changing academic context as a static question, the focus was on the dynamics of new ideas in the academic context. The relevance and specificity of the organizational strategy for higher education institutions has long been recognized (Hardy, 1991). Universities, like other organizations, are composed of coalitions or groups of individuals pursuing certain interests; thus academic managers have to deal with a multiplicity of targets and objectives (Cyert & March, 1963). However, academic workers can develop championing behaviours and defend their initiatives despite organizational barriers, as they have autonomy and work expertise (Lizote, 2014). Findings provide support for an understanding of the academic entrepreneurial strategy as opposed to the strong leadership of visionary managers dominating a subservient organization. The formal power of academic management over faculty members seems relatively limited. Modern universities therefore risk failure if individual academics pursue unrelated opportunities, but they also risk an ultimate demise if the creative proposals of their faculty members are not sustained and governed. Put another way, to succeed in their highly changing environment, an entrepreneurial university has to achieve entrepreneurial management by clarifying strategic choices.

The six cases offer a useful insight into academic entrepreneurship and its managerial challenges. This attempt to define the success and failure of academic entrepreneurship highlights a major issue not well addressed in the literature. This view is consistent with early studies in corporate entrepreneurship literature (Dess *et al.*, 1999), which suggest that the relationship between corporate entrepreneurship and organizational performance is complex. Most research on entrepreneurial spirals (Shepherd *et al.*, 2010) has focused on facilitating conditions. Following Ropo and Hunt (1995), we considered that a top-down process and a bottom-up process can converge or diverge. Managerial influence can also transform an entrepreneurial initiative into a stopped spiral. Results are consistent with Shepherd *et al.* (2010), who distinguish three managerial effects on the entrepreneurial spiral; starting, perpetuating or stopping it. Results suggest that appropriate management of what really goes inside academic organizations matters (Rhoades & Sporn, 2002).

The variety of entrepreneurial processes is not new (Burgelman, 1983; Philpott *et al.*, 2011). Like in prior studies, corporate entrepreneurship has been disentangled into opposing constituents. Unlike prior applications, however, the two components are not viewed as independent. Focusing on their relationship has important implications if one considers that academic strategy contains "sobering messages for the strategic management of business" (Mintzberg and Rose, 2003) in a growing open-strategy perspective (Hautz, Seidl, & Whittington, 2017).

MANAGERIAL IMPLICATIONS

Managers have some discretion over the development of entrepreneurial spirals, regardless of where the new idea comes from. They can help to start, perpetuate or stop an entrepreneurial spiral by providing, or not providing, appropriate rewards, communication and resources. A second implication is that the methods of effective leadership in organizations undergoing entrepreneurial activities are not necessarily similar to the mechanical view of traditional strategic planning in the industrial sector. The observed hybrid form implies that a successful entrepreneurial process requires

managerial attention to unintended consequences. The third suggestion concerns the link between strategic and operational processes. As diverse interests within organizations may be incompatible with the objectives of the top management (Cyert & March, 1963), managing an intrapreneurial dilemma implies drawing attention to the reciprocal relationship between the strategic and the operational levels.

LIMITATIONS

Another question emerging from this study is related to the scope of the university's entrepreneurial model and the evolution of the traditional universities (Rothaermal *et al.*, 2007). Because academic entrepreneurship is also a policy instrument (Ratten, 2017; Rhoades & Sporn, 2002), it seems unlikely that financial wellbeing will be the unique purpose of innovative strategic initiatives undertaken in research universities. In modern knowledge societies, although the need for new educational technologies is increasing (Audretsch, 2014; Bathmaker, 2003), the process for disseminating these innovations remains a challenge (Heinonen & Poikkijoki, 2006).

The second limiting factor is methodological choice. Although the intrapreneur's interpretations are crucial to inform the deep internal dynamic, such an approach does not fully take into account other academic actors. That leads to interesting topics for future research, including students, or senior or middle managers, for example. Another interesting further research would be integrating the external environment into the analysis.

Conclusion

This paper aims a double contribution: it seeks to explain how managerial mechanisms impact the entrepreneurial and innovative process in educational organizations on one hand and examine how extant theories of corporate entrepreneurship can help understand the management of academic activities in a changing globalized context on the other hand. As Philpott *et al.* (2011) point out, our understanding of the entrepreneurial university model is currently changing. There is a need to find new ways of thinking that move beyond narrow theoretical frameworks about research commercialization, particularly through the role of the university in community development (Ratten, 2017; Cohendet & Simon, 2008).

If universities are profoundly engaged in knowledge diffusion or knowledge production, the very nature of this production will, as ever, change over time and across countries (Kaplan, 2014). An emerging perspective attempts to characterize the specific university entrepreneurial orientation and calls for greater variety in the extent and nature of academic entrepreneurship (Cantaragiu, 2012).

It has been argued that a strategic perspective which draws upon management theory and academic settings is one promising approach: it helps to explain some of the tensions and ambiguities challenging academic entrepreneurship. Most research on academic entrepreneurship has disproportionately emphasized external or individual determinants, but internal entrepreneurship studies have shifted from the original heroic view to a more collective perspective (Baruah & Ward, 2015). Progress in understanding the internal dynamics of the entrepreneurial

process may help the design of new organizational forms and managerial approaches.

References

- ABERNETHY, M. A. & STOELWINDER, J. U. (1995). "The role of professional control in the management of complex organizations", *Accounting, Organizations and Society*, Vol. 20, N° 1, p. 1-17.
- ABREU, M.; DEMIREL, P.; GRINEVICH, V. & KARATAŞ-ÖZKAN, M. (2016). "Entrepreneurial practices in research intensive and teaching-led universities", *Small Business Economics*, Vol. 47, N° 3, p. 695-717.
- AMO, B. W. (2010). "Corporate entrepreneurship and intrapreneurship related to innovation behaviour among employees", *International Journal of Entrepreneurial Venturing*, Vol. 2, N° 2, p. 144-158.
- AUDRETSCH, D. B. (2014). "From the entrepreneurial university to the university for the entrepreneurial society", *Journal of Technology Transfer*, Vol. 39, N° 3, p. 313-321.
- AUGSDORFER, P. (2008). "Managing the Unmanageable", *Research Technology Management*, Vol. 51, N° 4, p. 41-47.
- BARUAH, B. & WARD, A. (2015). "Metamorphosis of intrapreneurship as an effective organizational strategy", *International Entrepreneurship and Management Journal*, Vol. 11, N° 4, p. 811-822.
- BATHMAKER, A. M. (2003). "The Expansion of Higher Education: A Consideration of Control, Funding and Quality." IN Bartlett, S. and Burton, D. (eds) *Education Studies. Essential Issues*, London: Sage, p. 169-189.
- BERCOVITZ, J. & FELDMAN, M. (2008). "Academic entrepreneurs: Organizational change at the individual level", *Organization Science*, Vol. 19, N° 1, p. 69-89.
- BLUHM, D. J.; HARMAN, W.; LEE, T. W. & MITCHELL, T. R. (2011). "Qualitative research in management: A decade of progress", *Journal of Management Studies*, Vol. 48, N° 8, p. 1866-1891.
- BRUNSSON, N. (1993). "Ideas and actions: Justification and hypocrisy as alternatives to control", *Accounting, Organizations and Society*, Vol. 18, N° 6, p. 489-506.
- BURGELMAN, R. A. (1983). "Corporate entrepreneurship and strategic management: insights from a process study", *Management Science*, Vol. 19, N° 2, p. 1349-1364.
- BURGELMAN, R. A. (1991). "Intraorganizational ecology of strategy making and organizational adaptation: Theory and field research", *Organization Science*, Vol. 2, N° 3, p. 239-262.
- CANTARAGIU, R. (2012). "Towards a conceptual delimitation of academic entrepreneurship", *Management & Marketing*, Vol. 7, N° 4, p. 683-700.
- COHEN, W.M.; NELSON, R.R. & WALSH, J.P., (2002). "Links and impacts: the influence of public research on industrial R&D", *Management Science*, Vol. 48, N° 1, p. 1-23.
- COHENDET, P. & L.SIMON. (2008). "Knowledge Intensive Firms, Communities and Creative Cities", in Amin, A. et J. Roberts (eds), *Community, Economic Creativity, and Organization*, Oxford University Press.
- CORBETT, A. C.; KATZ, J. A. & SIEGEL, D. S. (Eds.). (2014). *Academic Entrepreneurship: Creating an Entrepreneurial Ecosystem*. Emerald Group Publishing.

- COVIN, J. G. & MILES, M. P. (1999). "Corporate entrepreneurship and the pursuit of competitive advantage", *Entrepreneurship Theory & Practice*, Vol. 23, N° 3, p. 47-63.
- CYERT, R. M. & MARCH, J. (1963). *A Behavioral Theory of the Firm*, 1 ed., Prentice-Hall, 268 p.
- DENIS, J.L.; LANGLEY, A. & ROULEAU, L. (2007). "Strategizing in pluralistic contexts: Rethinking theoretical frames", *Human relations*, Vol. 60, N° 1, p. 179-215.
- DESS, G.D.; LUMPKIN, G. T. & MCGEE, J. E. (1999). "Linking Corporate Entrepreneurship to Strategy, Structure, and Process: Suggested Research Directions", *Entrepreneurship Theory and Practice*, Vol. 23, N° 3, p. 85-102.
- ETZKOWITZ, H. & LEYDESDORFF, L. (2000). "The dynamics of innovation: From national systems and 'mode 2' to a triple helix of university-industry-government relations", *Research Policy*, Vol. 29, N° 2, p. 109-123.
- FAYOLLE, A. & REDFORD, S.T. (Eds.) (2014). *Handbook on the Entrepreneurial University*, Edward Elgar, London.
- FOMBRUN, C. & SHANLEY, M. (1990). "What's in a name? Reputation building and corporate strategy", *Academy of Management Journal*, Vol. 33, N° 2, p. 233-258.
- FOSS, N. J. & LYNGSIE, J. (2014). "The Strategic Organization of the Entrepreneurial Established Firm", *Strategic Organization*, Vol. 12, N° 3, p. 208-215.
- GIBSON, C.B. & BIRKINSHAW, J. (2004). "The antecedents, consequences, and mediating role of organizational ambidexterity", *Academy of management Journal*, Vol. 47, N° 2, p. 209-226.
- GOODALE, J. C.; KURATKO, D. F.; HORNSBY, J. S. & COVIN, J. G. (2011). "Operations management and corporate entrepreneurship: The moderating effect of operations control on the antecedents of corporate entrepreneurial activity in relation to innovation performance", *Journal of Operations Management*, Vol. 29, N° 1-2, p. 116-127.
- HARDY, C. (1991). "Configuration and strategy making in universities: broadening the scope", *Journal of Higher Education*, Vol. 62, N° 4, p. 363-393.
- HAUTZ, J.; SEIDL, D. & WHITTINGTON, R. (2017). "Open Strategy: Transparency and Inclusion in Strategy Processes", *Long Range Planning*, Vol. 50, N° 3, p. 298-309.
- HAZEN, B. T.; WU, Y.; SANKAR, C. S. & JONES-FARMER, L. A. (2012). "A proposed framework for educational innovation dissemination", *Journal of Educational Technology Systems*, Vol. 40, N° 3, p. 301-321.
- HEINONEN, J. & POIKKIJOKI, S. A. (2006). "An entrepreneurial-directed approach to entrepreneurship education: mission impossible?", *Journal of management development*, Vol. 25, N° 1, p. 80-94.
- HITT, M. A.; IRELAND, R.D.; SIRMON, D.G. & TRAHMS, C.A. (2011). "Strategic entrepreneurship: Creating value for individuals, organizations, and society", *Academy of Management Perspectives*, Vol. 25, p. 57-75.
- IRELAND, R.D.; COVIN, J.G. & KURATKO, D.F. (2009). "Conceptualizing Corporate Entrepreneurship strategy", *Entrepreneurship Theory and Practice*, Vol. 33, N° 1, p. 19-46.
- KAPLAN, A.M. (2014). "European management and European business schools: Insights from the history of business schools", *European Management Journal*, Vol. 32, N° 4, p. 529-534.
- KANTER, R. (1985). "Supporting innovation and venture development in established companies", *Journal of Business Venturing*, Vol. 1, N° 1, p. 47- 60.
- KLOFSTEN, M. & JONES-EVANS, D. (2000). "Academic Entrepreneurship in the European Context: A Comparative Study", *Small Business Economics*, Vol. 14, p. 299-309.
- LIZOTE, S. A.; LANA, J. & VERDINELLI, M. A. (2014). "Intrapreneurial behavior: a study of higher education institutions", *Revista Alcance*, Vol. 21, N° 3.
- LOUIS, K.; BLUMENTHAL, D.; GLUCK, M. & STOTO, M.A. (1989). "Entrepreneurs in academe: an exploration of behaviours among life scientists", *Administrative Science Quarterly*, Vol. 34, p. 110-131.
- LINCOLN, Y. S. & GUBA, E. G. (1985). *Naturalistic inquiry*, Beverly Hills, Sage publications, 416 p.
- MINTZBERG, H. (1979). *The structuring of organizations: a synthesis of the research*, Prentice-Hall International, Englewood Cliffs: London.
- MINTZBERG, H. & ROSE, J. (2003). "Strategic Management Upside Down: Tracking Strategies at McGill University from 1829 to 1980", *Revue Canadienne des Sciences de l'Administration*, Vol. 20, N° 4, p. 270-290.
- MORRIS, M. H.; ALLEN, J.; SCHINDEHUTTE, M. & AVILA, R. (2006). "Balanced management control systems as a mechanism for achieving corporate entrepreneurship", *Journal of Managerial Issues*, p. 468.
- NAVEH, E. (2007). "Formality and discretion in successful R&D projects", *Journal of Operations Management*, Vol. 25, N° 1, p. 110-125.
- NONET, G.; KASSEL, K. & RODHAIN, F. (2015). "How do business schools support internal innovation and work on their strategy and their reputation? The case of responsible management", *Journal of Innovation Economics & Management*, N° 2, p. 69-98.
- PERKMANN, M.; TARTARI, V.; MCKELVEY, M.; AUTIO, E., BROSTRÖM A.; D'ESTE, P. & KRABEL, S. (2013). "Academic engagement and commercialisation: A review of the literature on university-industry relations", *Research policy*, Vol. 42, N° 2, p. 423-442.
- PFEFFER, J.; FONG, C. T. (2002). "The end of business schools? Less success than meets the eye", *Academy of Management Learning and Education*, Vol. 1, N° 1, p. 78-95.
- PHILPOTT, K.; DOOLEY, L.; O'REILLY C. & LUPTON, G. (2011). "The entrepreneurial university: Examining the underlying academic tensions", *Technovation*, Vol. 31, N° 4, p. 161-170.
- RASMUSSEN, E.A. & SØRHEIM, R. (2006). "Action-based entrepreneurship education", *Technovation*, Vol. 26, N° 2, p. 185-194.
- RATTEN, V. (2017). "Entrepreneurial universities: the role of communities, people and places", *Journal of Enterprising Communities: People and Places in the Global Economy*, Vol. 11, N° 3, p. 310-315.
- RHOADES, G. & SPORN, B. (2002). "New models of management and shifting modes and costs of production: Europe and the United States", *Tertiary Education and Management*, Vol. 8, N° 1, p. 3-28.
- ROPO, A. & HUNT, J.G. (1995). "Entrepreneurial processes as virtuous and vicious in a changing opportunity structure: a paradoxical perspective", *Entrepreneurship Theory and Practice*, Vol. 19, N° 3, p. 91-111.

- ROTHAERMEL, F.; AGUNG, S. & JIANG, L. (2007). "University entrepreneurship: a taxonomy of the literature", *Industrial and Corporate Change*, Vol. 16, N° 4, p. 691-791.
- SANDBERG, J. & ALVESSON, M. (2011). "Ways of constructing research questions: gap-spotting or problematization?", *Organization*, Vol. 18, N° 1, p. 23-44.
- SATHE, V. (1989). "Fostering Entrepreneurship in the Large, Diversified Firm", *Organizational Dynamics*, Vol. 18, N° 2, p. 20-32.
- SHANE, S. (2004). *Academic Entrepreneurship - University Spinoffs and Wealth Creation*, Cheltenham: Edward Elgar Publishing.
- SHEPHERD, D.A.; PATZELT, H. & HAYNIE, J. M. (2010). "Entrepreneurial spirals: Deviation-amplifying loops of an entrepreneurial mindset and organizational culture", *Entrepreneurship Theory and Practice*, Vol. 33, N° 1, p. 1-24.
- SIEGEL, D.S. & WRIGHT, M. (2015). "Academic Entrepreneurship: Time for a Rethink?", *British Journal of Management*, Vol. 26, N° 4, p. 1-14.
- STEVENSON, H.H. & JARILLO, J.C. (1990). "A paradigm of entrepreneurship: entrepreneurial management", *Strategic Management Journal*, Summer Special Issue, Vol. 11, p. 17-27.
- STRAUSS, A. & CORBIN, J. (1990). *Basics of qualitative research: grounded theory procedures and techniques*, Newbury Park, California: Sage Publications, 272 p.
- THOMPSON, T.A. & PURDY, J.M. (2009). "When a good idea isn't enough: curricular innovation as a political process", *Academy of Management Learning & Education*, Vol. 8, N° 2, p. 188-207.
- TUSHMAN, M. L.; O'REILLY, C. A.; FENNOLOSSA, A.; KLEINBAUM, A. M. & McGrath, D. (2007). "Relevance and rigor: Executive education as a lever in shaping practice and research", *Academy of Management Learning and Education*, Vol. 6, N° 3, p. 345-362.
- TWAALFHOVEN, B.; SUEN, W.W. & PRATS, J. (2001). *Developing Entrepreneurship Programmes in MBA Schools: A Contrast in Approaches. Survey of 7 Business Schools*, European Foundation for Entrepreneurship Research.
- VAN MAANEN, J. (1979). "Reclaiming qualitative methods for organizational research: A preface", *Administrative science quarterly*, Vol. 24, N° 4, p. 520-526.
- WEICK, K. E. (1976). "Educational organizations as loosely coupled systems", *Administrative Science Quarterly*, Vol. 21, N° 1, p. 1-19.
- ZAHRA, S.A.; RANDERSON, K. & FAYOLLE, A. (2013). "Corporate Entrepreneurship: where are we? Where can we go from here?", *M@n@gement*, Vol. 16, N° 4, p. 357-361.