

# *A university spin-off launch failure: explanation by the legitimation process*

**Valérie François & Pascal Philippart**

**The Journal of Technology Transfer**

ISSN 0892-9912

J Technol Transf

DOI 10.1007/s10961-017-9648-y



**Your article is protected by copyright and all rights are held exclusively by Springer Science+Business Media, LLC, part of Springer Nature. This e-offprint is for personal use only and shall not be self-archived in electronic repositories. If you wish to self-archive your article, please use the accepted manuscript version for posting on your own website. You may further deposit the accepted manuscript version in any repository, provided it is only made publicly available 12 months after official publication or later and provided acknowledgement is given to the original source of publication and a link is inserted to the published article on Springer's website. The link must be accompanied by the following text: "The final publication is available at [link.springer.com](http://link.springer.com)".**

# A university spin-off launch failure: explanation by the legitimation process

Valérie François<sup>1</sup>  · Pascal Philippart<sup>2</sup>

© Springer Science+Business Media, LLC, part of Springer Nature 2017

**Abstract** The search for legitimacy is essential for all emerging companies in order to acquire resources. However, in the case of university spin-off, legitimacy must be sought from multiple stakeholders with different expectations. It also must be dealt with in all of its dimensions. The theoretical framework of legitimacy helped us to understand the reasons why the launch of a university spin-off might fail. A longitudinal and in-depth case study provide insights into previously unknown dynamics of the legitimation process and the impact of the search for legitimacy with different stakeholders on a nascent venture. It shows in particular that the socio-political dimension of legitimacy is central in the case of university spin-offs due to their original link with the university.

**Keywords** University spin-off · Failure · Legitimacy · Legitimation process · University

**JEL Classification** M13

## 1 Introduction

Several studies have investigated the role of universities in the emergence of spin-offs to explain why some academic institutions create more university spin-offs (USO) than others (Druilhe and Garnsey 2004; Heirman and Clarysse 2004; Lockett and Wright 2005; O'Shea et al. 2005; Powers and McDougall 2005; Vohora et al. 2004). The USO concept has several definitions (Djokovic and Souitaris 2008). In line with the definition by Smilor et al. (1990), notably used by Birley (2002), Nicolaou and Birley (2003), Vohora et al.

---

✉ Valérie François  
valerie.francois@univ-lille1.fr

Pascal Philippart  
pascal.philippart@univ-lille1.fr

<sup>1</sup> LEM (UMR-CNRS 9221), Université de Lille, BI Paul Langevin, 59650 Villeneuve d'Ascq, France

<sup>2</sup> LEM (UMR-CNRS 9221), Université de Lille, IAE-Avenue du Peuple Belge, 59000 Lille, France

(2004), Lynskey (2008), the present paper considers a university spin-off as the creation of a business by a person from a university, based on a technology developed within the said university. Its specificity is threefold: first, given the tacit nature of the intellectual capital to be transferred, the spin-off is launched by researchers who ultimately become entrepreneurs (Di Gregorio and Shane 2003) but whose experience in this domain is likely to be very limited (Vohora et al. 2004). Second, USOs need substantial resources to exploit the research output which generally demands considerable investment to become operational (Rasmussen and Borch 2010). Finally, technology transfer requires specific support from the parent organisation, in other words, the university, where it needs to obtain both credibility and access to the relevant technology (Rasmussen et al. 2011), notwithstanding any potential conflicts of interest that may arise during the process (Ambos et al. 2008; Shane 2004).

This triple specificity impacts on both the emergence and the development of the USO. However, although the acquisition of resources conditions the transition from idea to start-up, most research to date has focused on spin-offs that have survived the initial emergence stage (Rasmussen 2011; Soetanto and Jack 2015), even though the emergence stage is acknowledged as being critical (Vohora et al. 2004). Moreover, the resource-based approach used to analyse emergence (e.g. Brush et al. 2008; Heirman and Clarysse 2004; Vohora et al. 2004) does not discuss how vital resources are obtained (Rasmussen 2011), despite the importance of this factor. The literature on legitimacy tells us that resources can only be acquired if the organisation is considered as legitimate (Suchman 1995; Zimmerman and Zeitz 2002). Legitimacy is required to convince the different holders of resources to give the USO what they need (Brush et al. 2008; Honig and Karlsson 2004; Van de Ven et al. 1999). Thus, for Delmar and Shane (2004), entrepreneurial teams should focus less on how to obtain such resources and more on the search for legitimacy.

While some studies have discussed this challenge for new firms, none to date have used the lens of legitimacy to understand why a USO's launch might fail. Similarly, no recent studies have examined the search for legitimacy from the angle of each of the stakeholders (Überbacher 2014), even though the launch of a spin-off involves the intervention of several types of stakeholders, all with different goals (Mustar et al. 2006). Our paper therefore poses the following question: to what extent can the legitimation process explain the failure of a USO launch? Focusing on strategies used by nascent entrepreneurs during the emergence phase (Tornikoski and Newbert 2007), our research is based on a longitudinal case study of a USO in real time (Woolley 2011). Longitudinal analyses, used in studies on both USOs (Rasmussen and Borch 2010) and the search for legitimacy (Drori and Honig 2013), give us insights into the legitimation process in all its complexity. Data was collected over a three-year period using the real-time methodology (Brundin 2007) which recommends combining several sources of information. Our data collection ended with the failure of the venture, since the business was finally never launched.

Our findings illustrate the importance of the legitimation process, taking into account all the dimensions of legitimacy and all of the stakeholders in order to understand why a project may fail despite the apparent acquisition of a certain degree of legitimacy. They also provide insights into previously unknown dynamics of the legitimation process, and the positive and negative impacts on a nascent venture caused by the search for legitimacy with the various stakeholders.

The paper proceeds as follows. We outline our theoretical framework and present our methodology. The findings are then analysed and discussed.

## 2 Theoretical framework

### 2.1 Creation of a university spin-off and access to resources

Every new business venture requires a certain number of resources (Barney 1991; Brush et al. 2008; Villanueva et al. 2012), especially when there is a technological content (Zahra and Nielsen 2002). A USO needs resources from both its internal and external environment (Druilhe and Garnsey 2004), and from a large pool of stakeholders (Rasmussen et al. 2011). This is a complicating factor as it means that several types of protagonists with potentially different interests need to be convinced of the project's interest (Mustar et al. 2006). Among these resource providers, the university, by definition, has a preponderant role.

Studies from various countries show that the university is a key player in the development of a USO (Corsi and Prencipe 2015; Del Palacio Aguirre et al. 2006; Gómez Gras et al. 2008; Moray and Clarysse 2005; Rasmussen and Borch 2010; Rasmussen 2011; Rodeiro Pazos et al. 2012; Sijde and Tilburg 2000; Vinig and van Rijbergen 2010). Between the USO and its university, there are numerous interactions (Treibich et al. 2013). However, such interactions can occur in a climate of cultural tension that opposes academia and business (Samsom and Gurdon 1993; Gurdon and Samsom 2010), with more or less pronounced support from the parent organisation (Davenport et al. 2002; O'Shea et al. 2005). The quality of this type of relationship has been discussed on several occasions, as has the importance of strong ties with the university in the spin-off's development (Djokovic and Souitaris 2008). This link is vital from early on in the business creation process (Rasmussen et al. 2011): as the spin-off aims to develop value from aspects of university-owned research, the latter becomes one of its main sources of funding for the launch, and arbitrates with regard to royalties and a stake in the future firm's capital (Bray and Lee 2000).

Several international studies have shown that universities engaged in commercialising research through USOs ensure that a certain number of resources are at the latter's disposal (O'Shea et al. 2005; Rodeiro Pazos et al. 2012; Vinig and van Rijbergen 2010). These resources are not only institutional, but also human, financial and commercial (Rodeiro Pazos et al. 2012). University policies are seen as important contextual factors in the emergence of USOs (Mustar and Wright 2010; Rasmussen et al. 2015; Shane 2004). The knowledge transfer office plays an important role in their emergence and launch (Algieri et al. 2013), and the quality of academic staff and financial support are just some determinants of a successful USO (Gómez Gras et al. 2008). Thus, "each university has a different stock of resources available, and [...] the success of commercialization initiatives depends on the available resources" (Vinig and van Rijbergen 2010, p. 15).

Having emphasised the importance of resources, the next question is how to get them. For many scholars, resources can only be acquired once the new venture is considered as legitimate (Brush et al. 2008; Delmar and Shane 2004; Honig and Karlsson 2004; Van de Ven et al. 1999; Zimmerman and Zeitz 2002). Thus, in his meta-analysis of the legitimacy process of new ventures, Überbacher (2014) argues that whatever the perspective chosen to explore this question, all authors consider that the acquisition of resources is the outcome of a legitimization process.

## 2.2 Legitimacy

In the context of the theory of organisations, Suchman (1995) identified two groups of studies on legitimacy. The first is based on a neo-institutional approach and compels organisations to comply with the belief system shared by their environment (DiMaggio and Powel 1983). The other concerns potential strategies that can be adopted in order to break away from the influence of the environment. In this case, legitimacy is not considered as an external constraint that a firm must comply with, but as a strategic goal that will enable it to influence its environment (Zott and Huy 2007). Thus, organizational legitimacy can be a product of targeted action (Drori and Honig 2013).

The concept of legitimacy is complex and, as such, has given rise to the development of several typologies (Bitektine 2011). In organization studies, the definition given by Suchman (1995, p. 574) is the most widespread (Brown and Toyoki 2013). Suchman defined legitimacy as “a generalised perception or assumption that actions of an entity are desirable, correct or appropriate within some socially constructed system of norms, values, beliefs and definitions.” He identified three primary forms of legitimacy: i.e. pragmatic, moral and cognitive. Pragmatic legitimacy is based on the self-serving calculations of the public closest to the organisation. Cognitive legitimacy is based on an understanding of what the organisation is or does. It is underpinned by beliefs and what is considered as normal or “taken for granted” (Hannan and Freeman 1986). Moral legitimacy is based on the fact that the activity is “the right thing to do” with respect to a certain number of values or ideals. It reflects shared norms and values within a firm or a part of its social environment (Aldrich and Fiol 1994). Zimmerman and Zeitz (2002) redefined this moral dimension by substituting it with socio-political legitimacy, differentiating according to its ‘regulative’ (compliance with rules, including legal regulations) or ‘normative’ (compliance with values) nature. Their approach is interesting in that it deals with nascent businesses and adopts a process view of the acquisition of legitimacy.

This process model argues that for a young company to survive and develop, it must acquire legitimacy. Other studies have extended the work by Zimmerman and Zeitz (2002) on the legitimation process (Laïfi and Jossierand 2016). They propose a sequential approach (Greenwood et al. 2002; Johnson et al. 2006, Laïfi and Jossierand 2016) and set out the stages and types of legitimacy that need to be acquired. On the other hand, Drori and Honig (2013) suggest that the legitimation process is based on interactions between internal and external stakeholders, informed by relations of both mutual consolidation and reciprocal friction.

Nascent firms must be able to convince the different stakeholders of their legitimacy (Golant and Sillince 2007), developing differentiated legitimation strategies that correspond to each type of audience (Überbacher 2014). For a firm to emerge, it must undertake actions that give it a certain legitimacy (Tornikoski and Newbert 2007). Obtaining this legitimacy from its closest external publics can help it to overcome the handicap of its novelty (Singh et al. 1986). Given its close ties with the parent organisation, a USO must also gain legitimacy from internal stakeholders (Souitaris et al. 2012). For USOs, Bathelt et al. (2010) noted the lack of legitimacy often evident when they first launch their business. This specific aspect of the search for legitimacy by USOs has received very little attention from scholars, and the issue was only taken into account for existing USOs (Bjørnåli and Aspelund 2012). The challenge of legitimacy is even greater in that it also applies to early stage USOs (Karlsson and Wigren 2012). USOs need to obtain this legitimacy from a large pool of internal (the research centre, technology transfer office,

incubator, university governance system...) and external (customers, investors...) stakeholders involved in the emergence process, and the different interests of these stakeholders make the search for legitimacy all the more complex (Mustar et al. 2006).

Our study examines a failed USO project. The literature has long been interested in the causes of project failure (Pinto and Mantel 1990) and more recently, in the characteristics of publicly funded failed R&D projects (Andersen et al. 2017; Lin and Wright 2015). Business failure is also widely studied in the literature on entrepreneurship (Walsh and Cunningham 2016). The case studied here is a failure in the sense of Ucbasaran et al. (2013, p. 175) who define “business failure as the cessation of involvement in a venture because it has not met a minimum threshold of economic viability as stipulated by the entrepreneur”. Indeed, the project under study here did not meet the minimum threshold of resources to enable the business to be launched. It is not a case of entrepreneurial failure in the sense of the studies by Khelil (2016) or Jenkins and McKelvie (2016), for example, insofar as the company never got to the launch stage. But its failure (or non-creation) can be explained by the failed attempt to obtain some of the resources (Zahra and Nielsen 2002) that are indispensable in the French context (Philippart 2005). We explain the reasons for this particular case of failure by highlighting a certain lack of legitimacy, which prevented the nascent entrepreneurs from obtaining certain key resources. Why a nascent organisation fails to gain sufficient legitimacy, with which publics and for what reasons, together with its weaknesses, is a topic that has been little explored in the literature to date.

### 3 Methodology

#### 3.1 The case study: use of a qualitative longitudinal method

Case studies are particularly useful for understanding interactions between phenomena studied within a specific context (Dubois and Gadde 2002; Hlady-Rispal and Joison-lafitte 2015). Our case study approach was abductive. We adopted the *systematic combining approach* proposed by Dubois and Gadde (2002) since the phenomena observed forced us to change our theoretical framework. First, we needed to illustrate the dynamics at work in the creation of a USO in the specific context of France, which had passed a law to promote such development. The theoretical framework combined the notion of Lichtenstein et al. (2006)'s emergence event and that of confrontation between the entrepreneur's actions and the context of Aldrich and Martinez (2001). However, as case study endings cannot be predicted in advance and the firm was finally never launched, we decided to review the conceptual arguments in order to understand why the spin-off failed to emerge. Cross referencing between the data and theory helped us to identify and understand what, in the process of acquiring resources and legitimation, inevitably led to the failure.

#### 3.2 The context and choice of the unit of analysis

##### 3.2.1 The institutional landscape

In France, the creation of a university spin-off comes within the context of a specific legal framework introduced by the 1999 law on innovation (Philippart 2003, 2012). The legal factors are in line with changes introduced by many western countries with the aim of promoting innovation and technology transfer, particularly through the bias of USOs (Fini

et al. 2015). Apart from wanting to increase the number of USOs, the French legislation specifically targets university researchers and scholars, who are often paid from the public purse, to encourage them to become entrepreneurs. In this case, entrepreneurs must apply for authorization from an ethics committee which seeks to ensure that the creation of a business will not infringe on the rights of the university. The ethics committee is completely independent from the university. It is made up of magistrates and senior civil servants, with no link to the university in question. Applications submitted to the committee should show that the researchers have clearly defined the technology to be transferred and what the university that financed the research will get in return. The application is handled by the technology transfer office (TTO), and the university's agreement is required before any research can be exploited, since the university is the legal owner. The USO that we studied was created in a French university that, in 2010, had 18,000 students, 2000 researchers and lecturers, and ranks between 400th and 500th in the Shanghai ranking. It created a TTO in 1997 composed of 7 people. In 2010, it managed 400 research contracts and held 75 patents. In 2001, it opened an incubator with 2 employees, from where 25 USOs were created between 2001 and 2010. An investment fund (INNOVAM) was also created. The range of resources available was thus as complete as those found in other universities (Fini et al. 2015; Rodeiro Pazos et al. 2012).

### 3.2.2 *The unit of analysis: a USO project*

We chose an entrepreneurial team as our unit of analysis. The person behind the business idea was Kim,<sup>1</sup> a Chinese doctoral student in her second year of PhD studies in the Electronics research centre (electro-technology and electronic power) of a French university. The entrepreneurial team was made up of Kim, William and Khalil (two researchers from the same research centre). The USO project, called VEH, aimed to supply industry with electrical engineering solutions in the context of energy management for electric or hybrid vehicle motorisation.

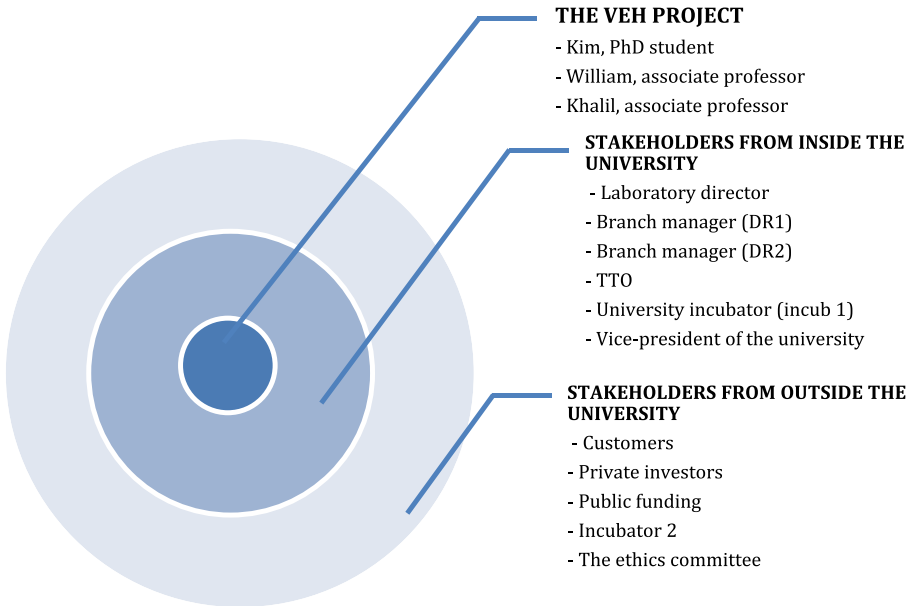
While our main focus was from the entrepreneurs' perspective (actor-centred), we also took into consideration the point of view of the stakeholders (audience-centred), as mentioned by Überbacher (2014). We put the stakeholders into two categories (Zimmerman and Zeitz 2002): the first category was made up of stakeholders from outside the university that are present in every business start-up, and the second category was made up of stakeholders internal to the university, something that is specific to university spin-offs (Fig. 1).

## 3.3 Data collection

As our research focused on how an event unfolds over time, we adopted a qualitative longitudinal analysis approach. This is the most widely accepted method to explore a process (Cooper 2003; Van De Ven and Poole 1995). Woolley (2011) reiterates the interest of adopting a longitudinal analysis in the design of organisational emergence studies, stressing the importance of collecting data well before the organisation emerges. Setting time limits to the case was not an issue since the case study began as soon as we had identified a researcher from the university with an idea to set up a business based on her research (the VEH project). It ended when the nascent entrepreneurs decided to abandon the process.

<sup>1</sup> The names of the entrepreneur and her associates and of the project have been changed.





**Fig. 1** The VEH project stakeholders

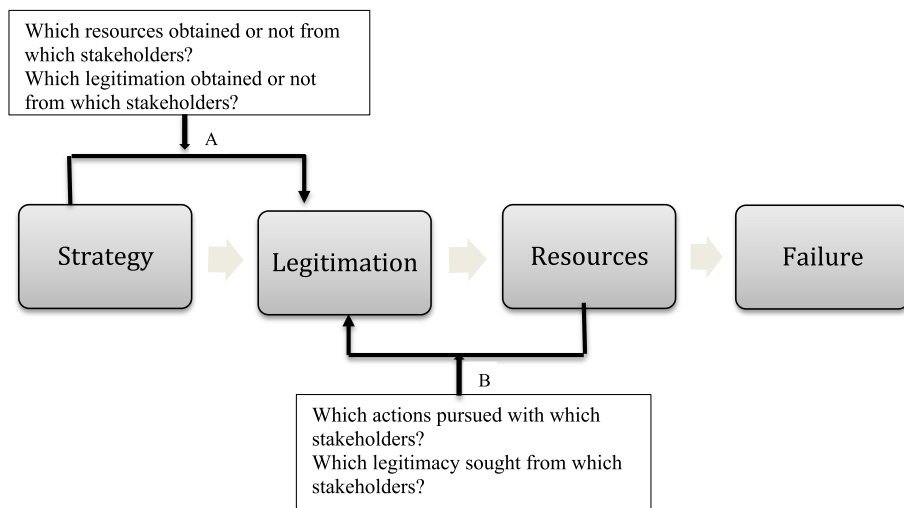
For the VEH case, we adopted a real-time data collection methodology (Brundin 2007). Real-time analysis is an activity-based approach, in other words, it defines the micro-process specific to such activities by describing how, when and where they appear. As recommended when using this method, we combined several sources of information. Previous longitudinal studies in the field of entrepreneurship have adopted a longitudinal data collection model based on twice-monthly (Lichtenstein et al. 2006), 6-monthly (Eisenhardt 1989; Gersick 1994) and annual interviews (Carter et al. 1996; Reynolds 2000). Our data collection was based on the same interview model, but using a different timeframe. The interviews with members of the entrepreneurial team focused on the main actions they undertook, the major events that affected their project and the project's progress since the preceding interview. Neither the entrepreneurial team nor the other stakeholders were directly questioned about the notion of legitimacy. This emerged from our subsequent interpretation. Table 1 shows the individuals contacted and the documents collected. The letter E refers to interviews with one or more members of the entrepreneurial team and the letter S to interviews or meetings involving one or several stakeholders. The number indicates the chronological order of the interviews and meetings.

### 3.4 Data processing

To analyse the data, we used Zimmerman and Zeitz (2002)'s model on the legitimacy process as our base, which we adapted to the specific features of our case (Fig. 2). This model seemed appropriate since it links the legitimacy process with the acquisition of resources. However, in spite of the initial enthusiasm and obtaining numerous resources, the project was finally abandoned. This outcome led us to examine the link between resources and legitimacy, and between legitimacy and stakeholders in more detail.

**Table 1** Table of individuals contacted and documents collected

Function of individuals interviewed	Type of information collected
The entrepreneurial team Kim, doctoral student William, associate professor Khalil, associate professor	18 interviews with the entrepreneurial team between March 2009 and February 2012 (E1, 2, 3, 4, 5, 6, 8, 9, 10, 12, 13, 15, 17, 19, 22, 24, 25, 26) Descriptive form to join incubator 1 (April 2009) Application to join the incubator (version 1 and 2, December 2009 and May 2010) Application for the BPI competition (February 2011) Documents for report requested by the Ethics Committee (3 versions: November 2010, March 2011, September 2011) Letter explaining why the project had been abandoned
The head of research 1	Interview conducted in July 2009 (numbered S7)
The business advisors (incubator 1 and 2)	Interviews conducted in May 2010 (S11), July 2010 (S14), May 2011 (S23)
The marketing agency	Feedback meeting on the market study (S20) Report on the market study from the marketing agency (March 2011)
The technology transfer office	Negotiation meetings in November 2010 (S16), February 2011 (S18), March 2011 (S21) Meeting with the department manager in March 2012 (S27)



**Fig. 2** The legitimacy process adapted from Zimmerman and Zeitz (2002)

Given that legitimacy is an abstraction, and thus a concept that is difficult to observe and measure (Zimmerman and Zeitz 2002), we linked the concept of pursuing actions (“Strategy” in Fig. 2) with that of desired legitimacy (“Legitimation” in Fig. 2), and the concept of obtaining resources (“Resources” in Fig. 2) with that of the legitimacy obtained (“Legitimation” in Fig. 2). We coded the data in two stages.

In the first stage (see link A in Fig. 2), we identified the desired legitimacy according to the different stakeholders by differentiating between the actions pursued with the university’s internal stakeholders and those pursued with external stakeholders. We then

associated these actions with the type of legitimacy sought (pragmatic, cognitive, socio-political).

In the second stage (see link B in Fig. 2), we separated the resources obtained from those that were not, and then linked them to the type of legitimacy obtained and the corresponding stakeholders. If certain resources were not procured, we considered that the required legitimacy had not been obtained from the stakeholders concerned.

We performed this longitudinal analysis of data right up until the moment the project was abandoned.

## 4 Findings

The data analysis enabled us to identify which actions were pursued with which stakeholders, and which legitimacy was sought from which stakeholders (Tables 2, 3), followed by which resources were obtained or not from which stakeholders, and which legitimization was obtained or not from which stakeholders (Table 4). Finally, our analysis also took the temporal dimension into account, presenting the legitimization process according to key moments in the project, as illustrated by verbatim extracts (Table 5).

### 4.1 The legitimacy sought

The external stakeholders (Table 2) were mainly called on to ensure the future firm's financial and operational resources. The stakeholders can be divided into four sub-groups: general players in the electric and hybrid vehicle sector, the financing holders, potential customers, and the support structures. The entire emergence process was punctuated by numerous actions designed to convince external stakeholders. They included networking activities with players from the hybrid and electric vehicles sector (E4, E8), participation in several conferences (E8, E9), and discussion days and meetings to present the idea to sector professionals. The aim of these actions was to present the project and its interest to potential partners. Indeed, a number of strategies focused on the search for partners and financial backers (bankers, business angels) in an attempt to get the project validated by potential investors (E2), thereby illustrating its economic viability. The entrepreneurs contacted promising Chinese (E4, E13) and French (E5, E9, E13) partners and customers (E10, E19), especially one American firm for a major contract (E17). To this end, two market surveys were conducted to gain knowledge of the market and potential clients (E8, E12). A comparative study was made of the services offered by competitors (E8, E10). The nascent firm developed several marketing actions, with a shift in the potential target customers towards SMEs (E24).

The entrepreneurial team reached a relatively advanced stage of negotiations for two small contracts (E25). The search for funding focused on both public and private sources (E15, E19). The team had put in several requests for grants, including with the OSEO BPI (E9), which awarded them substantial funding. After successively joining two incubators (E1, E2, E9), they were able to acquire terminology that was better suited to their project's business presentation (E4, E15), and the main founder also joined a management course. They received support to draw up their market analysis (E10), and they drafted a business plan in line with their results (E17).

Table 2 shows that the forms of legitimacy sought from external stakeholders were mainly cognitive (in other words, getting people to understand what their project involved)

**Table 2** Legitimacy sought from external stakeholders and actions undertaken

External stakeholders	Actions undertaken	Legitimacy sought
Individuals and organisations linked to the hybrid and electric vehicles sector	E4: Contact with a Chinese automobile manufacturer	PL
	E8: Explanation of the project at the annual hybrid vehicles conference	CL
Financing holders	E2: Invitation to a Swiss banker to take a stake in the firm's capital	PL
	E9: Enhanced professional presentation of the company's products and services	PL + CL
	E9: Organisation of an international conference on hybrid vehicles (Lille, September 2010)	PL
	E9: Submission of an application for public funding	PL
	E13: Meeting with two French automobile manufacturers during a conference (Paris, June 2010)	PL
	E13: Contact with new Chinese partners	PL
	E15: Researcher's adaptation to a business-oriented terminology	CL
	E15: Two applications drawn up for funding	PL
	E17: Negotiation of a 120,000-€ contract with an American firm	PL
	E17: Drawing up of a business plan with a support organisation	PL + CL
Customers/market	E19: Submission of two applications for funding	PL
	E4: Explanation of new electrical design systems for manufacturers in the hybrid vehicles sector	CL
	E5: Contact with potential customers in France and China	PL
	E8: First market survey	PL
	E8: Positioning in relation to the competitors/service offer	PL
	E9: Enhanced professional presentation of the company's products and services	
	E9: Contact with car manufacturers to offer their managers training in electrical engineering (aspects of the service offer)	PL + CL
	E10: Comparative presentation of the models proposed by the spin-off with those of competitors in incubator 2	PL
	E10: Follow-up of contacts with potential Chinese customers	PL
	E12: Second market survey	
	E13: Promotion of services offered by the nascent enterprise to potential customers	PL
	E15: Researcher's adaptation to a business-oriented terminology	PL
	E19: Acquisition of a list of firms and 10 sales meetings scheduled with potential customers	PL
E24: Marketing target switches to SMEs	CL	
E25: Negotiation of two small sales contracts that the research centre had not followed up (5000–10,000€)	PL	

**Table 2** continued

External stakeholders	Actions undertaken	Legitimacy sought
Support structures (incubators 1 and 2)	E1: Request for incubation with incubator 1	PL
	E2: Explanation of the research and the proposed offer to incubator 1	PL + CL
	E4: Adapting the researchers' vocabulary/making the project compatible with the incubator's expectations	CL
	E9: Attempt to have the application validated by advisors from incubator 1	PL

and pragmatic legitimacy (to explain the economic interest of their project to potentially interested players).

The internal stakeholders (Table 3) were called on for certain tangible resources, such as the possibility to use the laboratory's material, but mainly for intangible resources, such as, on the one hand, the laboratory's go-ahead and, on the other, the university's permission.

Thus, four players in particular were targeted, in other words, both of the entrepreneurs' research directors, the laboratory director and the TTO. The research directors and the laboratory director were crucial in that the laboratory's go-ahead was necessary as the business founders were members of the laboratory and two of them wished to consecrate part of their time to a business rather than exclusively to research projects. Thus, the latter first tried to obtain authorisation to take part in the project. This was crucial as all of them were under the supervision of their respective research directors (E2, E3). To this end, two of the business founders got in touch with their personal research director (DR1), and the third with his research director (DR2). While the latter gave his unequivocal blessing, DR1 was more hesitant and several attempts were made to win him over (E15). The entrepreneurs tried to show that the project would not weaken the team's research potential, in fact quite the contrary, as the spin-off would help strengthen the laboratory's reputation (E17). Unfortunately, DR1 proved inflexible and the entrepreneurial team, unable to get his agreement, then tried to get him personally involved in the project by suggesting that he join the future spin-off as an associate (E25). Without success. The legitimacy they were looking for through their different actions was firstly socio-political in regulative terms in that they sought to comply with the law, and secondly, normative in that they tried to show that the project matched the values shared by all. At the very end of the process, the team displayed the search for pragmatic legitimacy, since, given the continued deadlock with DR1, they suggested he join the project himself. At that point, faced with the blockage caused by DR1, which he justified by his view of public research, they attempted to get him to reconsider his principles by getting him personally involved and offering him a financial interest in it.

In parallel, the nascent entrepreneurs contacted the laboratory director of two of the research teams involved (E1). Their actions were designed to explain the idea and to show the benefits it would have for the laboratory (E5, E19). These included financial resources (E8, E25), which they pointed out would not affect the laboratory's funding since they would focus on small contracts that were quite separate from the laboratory's money-spinning activities (E4, E13). From the outset and throughout the whole process, the actions undertaken by the entrepreneurs aimed to legitimise their project through

**Table 3** Legitimacy sought from internal stakeholders and actions undertaken

Internal stakeholders	Actions undertaken	Legitimacy sought
DR 1 (head of research 1)	E2: Request made to the head of research 1 for two of its researchers to get involved in the project (in accordance with the legal procedure)	SP-regulative
	E15: Attempt to explain to the head of research 1 the position of the two researchers from the entrepreneurial team who worked in his field of research	SP-normative
	E17: Attempt to explain to the head of research 1 the interest for the research centre of creating a business venture that would not weaken the former's potential	SP-normative
	E25: Invitation to the head of research 1 to join the venture (beginning of September 2011)	PL
DR 2 (head of research 2)	E3: Request to the head of research 2 for one of the researchers to engage in the business start-up project (in accordance with the legal procedure)	SP-regulative
Head of research-HR	E1: Downstream study by the research centre on the university spin-off project	SP-normative + PL
	E4: Identification and limitations of potential conflicts of interest within the research centre	PL + CL + SP
	E5: Development of arguments to illustrate the advantages of the spin-off for the research centre	PL + SP
	E8: Election of the business initiator to her research centre's governing board	PL
	E8: Study conducted with the research centre on pricing the offer	PL
	E13: Development of arguments to prove that the business venture would not weaken the research centre (e.g. the enterprise was only interested in small contracts, excluding scientific content that could be handled by the research centre)	SP-Normative + PL
	E15: Presentation of a report to the research centre to explain the aims of the nascent firm	SP-normative + CL
	E19: Arguments developed to persuade the research centre of the interest of creating the spin-off	PL + SP-normative
	E25: Negotiation of the transfer price of the expertise of one of the researchers and the % of turnover that the start-up would pay to the university	PL
	E25: One of the researchers pulls out of the entrepreneurial team so as not to compromise the project and to get the research centre's agreement	SP-normative + regulatory

**Table 3** continued

Internal stakeholders	Actions undertaken	Legitimacy sought
Technology transfer office (TTO)	S14: Attempt to identify the knowledge content to be transferred	CL
	S16: Negotiations with the knowledge transfer office and the research centre regarding the content that could be transferred in order to protect the university's rights	PL
	S16: Attempt to identify the knowledge content to be transferred for the technology transfer office	CL
	E17: Meeting with a scientific advisor to explain more about the transferable part of the researcher's knowledge to the business venture	CL + PL
	S18: New explanations to the technology transfer office about the content to be transferred	CL
	S18: New negotiations with the technology transfer office on the university's rights	SP-regulatory
	E19: Study conducted with the research centre and the technology transfer office on the cost of using the facilities	PL + SP-regulatory
S21: Negotiation with the technology transfer office and the research centre regarding the researchers' working hours in the company and the extent of use of the research centre platforms (in accordance with the legal procedure)	PL + SP-regulatory	

explanations (legitimacy cognitive) that showed its interest (pragmatic legitimacy), its adherence to the laboratory's values and its compliance with the law (socio-political legitimacy). Indeed, the university's agreement was vital insofar as it owned the research being transferred, and therefore had to rule on the legal aspects of the transfer and the financial compensation. These aspects are central components of an application that is then presented to the ethics committee. The latter consider the eligibility of the researchers' request as potential owners of a spin-off. The Technology Transfer Office plays a key role in drawing up the document.

The content and nature of the potential technology transfer was hard for the staff in the university's TTO to understand. The latter were experts in filing for patents, but when it came to transferring specific know-how, they had no experience and found it difficult to identify the form of the research that would be transferred to the company. Many of the negotiations (S14, S16, S18) with the TTO dealt with defining and explaining the knowledge to be transferred from the research centre to the business venture. A scientific advisor was called in for support in clarifying certain aspects of the project (E17). The entrepreneurs invested a lot of time and energy in getting the TTO to finally understand the project (almost 3 years). Once the TTO finally grasped the idea, they were able to get a clearer idea of the financial aspects (cost of using the laboratory's facilities, the amount of time the researchers would need to devote to the future business) (E19, S21).

The entrepreneurial team's results show that their project was comprehensible and that they were able to obtain cognitive legitimacy. Once this step was achieved, formalisation of the rights to be transferred and the university's financial compensation illustrates the

**Table 4** Resources and legitimacy obtained or not

Resources	Description	Type of legitimacy obtained or not	Type of stakeholders
Obtained	Information collected	PL-CL	External
	Publicity about the future company	PL-CL	External
	€36,000 obtained from OSEO BPI	PL	External
	A 1-year grant of €1200/month from the regional council	PL	External
	Several investors interested if the firm is launched	PL	External
	Several potential customers identified	PL	External
	Sales meetings	PL	External
	Several contract proposals	PL	External
	Inclusion in incubator 1	PL	External
	Inclusion in incubator 2	PL	External
	Premises obtained	PL	External
	Counselling	PL	External
	Support	PL	External and internal
	Agreement from DR2 for Khalil to join the VEH venture	PL-CL-SP-normative	Internal
	Agreement regarding use of part of the laboratory platforms	PL-CL	Internal
	Legal and financial assistance to define the transfer details and compensation (% of turnover) for the university	SP-regulatory	Internal
	Legal assistance to help define the status of the academics within VEH	SP-regulatory	Internal
Not obtained	No agreement obtained regarding the participation of William in VEH	Socio-political: normative	Internal
	No agreement regarding the head of the laboratory	Socio-political: normative	Internal
	Application for the ethics committee drafted but not submitted	Socio-political: regulative	Internal

search for pragmatic legitimacy in accordance with the law (regulative socio-political legitimacy).

Contrary to our observations of external stakeholders, Table 3 shows that socio-political legitimacy is more often sought after by internal stakeholders. This either takes a 'regulative' form, when the entrepreneurial team seeks to comply with the law of 1999, or a 'normative' form, when the entrepreneurs seek to convince the stakeholders of the validity of their university spin-off.

Table 4 summarizes the types of legitimacy obtained according to whether or not the entrepreneurial team was granted the required resources by the internal and external stakeholders.

Many resources, both material and intangible were obtained from external stakeholders. The information gathered on the industrial sector and on the needs of the sector players,



**Table 5** Legitimation process of the VEH project

	Stage 1 January 2009–September 2010	Stage 2 September 2010–March 2011	Stage 3 March 2011–October 2011	Stage 4 October 2011–February 2012
External stakeholders	<p>Networking Kim (E4): <i>I met the head of the world HV association</i></p> <p>Contact with potential clients and private funders</p> <p>Kim (E4): <i>I've had quite a few proposals from potential customers in China. They're the ones who got in touch with me because VH and everything to do with sustainable energy, is very fashionable in China</i></p>	<p>Numerous drafts of the project Awarding of a regional grant Kim (E12): <i>We got a regional grant for new entrepreneurs (1200€ a month)</i></p> <p>Market surveys</p> <p>Cabinet Eydyn (S20): <i>The results of the market study have encouraged the entrepreneurial team to develop a more structured approach, based on a list of firms interested in the venture's business offers</i></p> <p>Application for funding from the OSEO BPI</p>	<p>List of 10 interested clients Kim (E24): <i>With respect to my goals, I got 30 potential customers, 10 meetings, and 3 confirmed customers. I've got face to face meetings and phone meetings. Next week, I have a meeting with a fisherman who has an idea for a boat with a hybrid engine</i></p> <p>36,000€ obtained from OSEO BPI</p> <p>Kim (E22): <i>We got 38,000€ from OSEO of the 45,000 that we asked for, it's us that got the most of all the projects presented by the incubator</i></p> <p>Change of sales target: from big international groups to SMEs</p>	<p>Kim (E22): <i>I got an appointment at Peugeot, Renault. I also have an appointment with an engineer from Siemens France. The problem is that the decision-making process at the big manufacturers is very long, and no one wants to risk signing a contract with an unknown firm. So, we're opting to work with small to medium companies at first and we have 3 potential projects</i></p>

Table 5 continued

	Stage 1 January 2009–September 2010	Stage 2 September 2010–March 2011	Stage 3 March 2011–October 2011	Stage 4 October 2011–February 2012
Internal stakeholders	<p>Joined incubator 1</p> <p>Kim (E1): <i>At first, when we went to see the first incubator, we had a very vague idea. Then with the product/service specifications that the guide gave us, we refocused on electric HV</i></p>	<p>Mixed feelings of DRI:</p> <p>William (E17): <i>The DRI poses a few problems because he knows he won't be able to control VEH and he likes to control everything. He still has doubts about our intentions</i></p>	<p>Identification of small sales contracts from the laboratory</p> <p>Kim (E17): <i>I see a lot of contracts with small to medium sized firms being passed up, like the 18 K one that Kader replied to. The laboratory isn't interested as it's not scientific enough. I think that these small contracts are interesting for us and that there are at least 3 or 4 a year</i></p> <p>Agreement to use the laboratory equipment</p> <p>Compensation agreed for the university</p>	<p>William abandons the project</p> <p>William (E25): <i>I preferred to leave the project to give it more chance of succeeding</i></p> <p>Issue raised with the Vice-President of the university</p> <p>Kim and William (E25): <i>We got in touch with the vice-president in charge of research to talk to him about the project, but he didn't get back to us</i></p> <p>Contact with another laboratory in France</p>
	<p>Kim (E6): <i>It's difficult to find support in our field, because in the automobile sector, skills are more about mechanics, they're rare in the field of HV</i></p>	<p>Start of negotiations with the TTO</p>	<p>Kim (E19): <i>The laboratory listed the materials and their prices. At present, it will cost 200€ a day to use a platform</i></p>	<p>Kim (E26): <i>We contacted another laboratory in France but it's complicated because the DRI knows them well</i></p> <p>No signature from the laboratory director and no agreement from DRI</p>

Table 5 continued

Stage 1 January 2009–September 2010	Stage 2 September 2010–March 2011	Stage 3 March 2011–October 2011	Stage 4 October 2011–February 2012
<p>Explanation of the spin-off project to members of the laboratory                      Kim (E5): <i>At present, we're still in discussions with the laboratory. I think they'll agree, but if they refuse, we'll still start the business but in a different way. At the moment we're looking for advantages for the laboratory so that they'll support us</i></p>	<p>Khalil (E15): <i>We explain all the research activities that will be central to a technology transfer. We show the links with industrials to avoid any hiccups, and if there are confidentiality clauses in a document where we agree not to transfer anything that could possibly be the property of a firm that we already work with. It's precise, well targeted, and well framed. From that point, the university gives its agreement and we transfer the technology. But then we recently found out that there's a development agreement to sign, plus another document, I can't remember what it's called anymore. Are they requirements that concern Kim, his business venture and the university, or is it a development agreement where me and William need to get involved, and how do we get involved?</i></p>	<p>Interest for DR1 of having a business emerge from the laboratory:</p>	<p>Kim and William (E25): <i>The university didn't back the project either. They supported their professor and researcher colleague [...] the university doesn't have the competencies. He (the director of research 1) is the main source of information for everyone. We felt he didn't have much interest in our start-up idea. When William interceded to say that they didn't take the company's difficulties into account enough, they replied that he defended private enterprise too much. They thought that we were against the university</i></p>

Table 5 continued

Stage 1 January 2009–September 2010	Stage 2 September 2010–March 2011	Stage 3 March 2011–October 2011	Stage 4 October 2011–February 2012
<p>Mixed feelings from DRI                      DRI (S7): <i>Perhaps I'm a bit old fashioned, a bit naive, but it's something I don't really understand. We're there to do research. If something must be done, then it should be done to help the group and not necessarily individual interests. I was surprised that they wanted to start a business and then I couldn't see the interest in it for the research centre. However, I can quite understand why Kim wants to launch a business. I respect her choice. What worries me a bit is the involvement of the researchers who will be wearing two hats simultaneously and it will be hard to take the right decisions at the same time. Our interests are not the same. Our interest is scientific, and the company's is to make money</i></p>		<p>Kim (E22): <i>The DRI wants us to draw up an application with him to get European funding. It's always good to have a start-up that emerged from the laboratory in this type of dossier and it's never easy to find a company.</i></p>	<p>Application not submitted to the ethics committee                      TTO (E27): <i>I don't understand why the team didn't carry on with the project and create the venture. Perhaps, at the end of the day, they weren't that keen to do it</i></p>
<p>Kim (E9): <i>At the beginning, it wasn't very clear with the DR. It still isn't. Today, his attitude is very positive. What happened is that he met someone from the incubator who told him that if he didn't agree, the venture wouldn't happen. This person persuaded him. Since the DRI gave us the go-ahead, it unblocked things</i></p>			

**Table 5** continued

	Stage 1 January 2009–September 2010	Stage 2 September 2010–March 2011	Stage 3 March 2011–October 2011	Stage 4 October 2011–February 2012
	Kim (E13): <i>The DRI presented the laboratory during our audition to join the incubator</i>			
Legitimacy	Internal and external legitimacy sought	A certain degree of internal and external legitimacy obtained	External legitimacy largely obtained Internal legitimacy still sought	Internal legitimacy sought but never fully obtained

and the recognition of the project by the same individuals show that it not only obtained a certain cognitive legitimacy, since the project was well understood, but also pragmatic legitimacy as the project was perceived as both industrially and economically interesting. Other resources obtained confirm the pragmatic legitimization of the project. Several investors showed their interest as well as potential customers. They received proposals for contracts (thirty potential customers were identified, and a dozen sales meetings were scheduled following its marketing campaign –February–April 2011–; two contracts were ready to be signed –September 2011–). Some concrete sales were envisaged (One interested customer offered to purchase its services for 92,000€).

The hopeful business owners also received a grant from OSEO BPI, conforming the project's viability and the organisation's willingness to help it to get up and running. At the same time, a local council grant was awarded to one of the team members, guaranteeing him a monthly income for 1 year. In addition, the nascent entrepreneurs were successively hosted by two business incubators which gave them premises as well as advice and assistance to finalise the firm's creation and get it off the ground.

Resources were also obtained from internal stakeholders. These resources were mainly intangible. They included explicit agreement from the DR2 for the member of his research team to get involved in the project and to use some of the laboratory's equipment. The research centre understood the interest of some of its researchers setting up a company to foster a positive appreciation of the university laboratories by the assessment authority (AERES). These resources illustrate the recognition of not only cognitive and pragmatic legitimacy, but also normative socio-political legitimacy in that the project appeared to be in line with the values of DR2. Moreover, once the TTO had understood the concept, the entrepreneurial team were able to obtain legal resources from him with, on the one hand, a definition of the terms for transferring the research concerned and the financial contribution to be made to the university and, on the other hand, clarification about the nature of the researchers' legal status within the newly launched business. These resources indicate that they had obtained regulative socio-political legitimacy (in terms of legal obligations).

However, other intangible resources were not obtained from two of the internal stakeholders: DR1 and the head of the laboratory. In effect, the two academics refused to give their consent: the first did not want the member of his research team to get involved in the USO, the second made it clear that his agreement depended on that of DR1... and the project did not square with DR1's values (cf. S7, E25). Consequently, the project suffered from a lack of socio-political normative legitimacy. Without the agreement of these stakeholders, the application could not be submitted to the ethics committee and the USO project would have no legal basis.

Thus, the types of actions undertaken to get their project understood and to highlight its interest resulted in it acquiring both pragmatic and cognitive legitimacy with the internal and external stakeholders.

The socio-political dimension of legitimacy did not appear to concern the external stakeholders: we identified no actions undertaken to acquire it, and no normative tension between the nascent entrepreneurs and these stakeholders. On the other hand, the socio-political dimension was apparently extremely important for some of the internal stakeholders. Resources that were not acquired from the internal stakeholders correlate with socio-political legitimacy. With regard to the 'regulative' dimension, the desire to make their spin-off project comply with the law of 1999 by obtaining the ethics committee's agreement was not fulfilled. In terms of the 'normative' dimension, the effort made to obtain the agreement of the laboratory director and the DR1 failed to change their value system.

## 4.2 Legitimacy acquisition stages

Our analysis lasted 3 years, during which time the entrepreneurial team tried to launch their USO in line with the actions that they believed were required to obtain the essential resources. The search for legitimacy depended not only on different dimensions, as we saw earlier (cf. Tables 2, 3, 4), but also formed part of a specific temporal legitimization process. Our study identified 4 stages, corresponding to key moments for the spin-off project (Table 5). These moments were selected because they delineated the emergence process, either by the arrival of new resources (temporal, financial, human...) or, on the contrary, by their withdrawal. For each stage, the main events were reported by differentiating between those linked to stakeholders from outside the university and those linked to internal stakeholders.

Stage 1 corresponds to the start of the project up to the awarding of the regional 'Company creation' grant, when the potential entrepreneurs began a cognitive and pragmatic legitimization process with the external stakeholders. This involved presenting their initiative in various events and looking for interested stakeholders. The search for legitimization internal stakeholders also involved cognitive and pragmatic dimensions insofar as the entrepreneurial team explained the idea to members of the laboratory and attempted to show, first, the absence of any conflicts of interest between their business idea and the research laboratory, with the understanding that it would not require any of their financial resources, and second, on the contrary, that the laboratory could potentially gain significant benefits from the project.

Stage 2 is from the awarding of the regional grant (1200€ a month for 1 year) to that of the OSEO BPI<sup>2</sup> grant. The entrepreneurial team continued to hone the presentation of their idea and to focus their actions on a certain number of external stakeholders to validate its economic interest. Obtaining these resources showed first that the initiative had been understood (cognitive legitimacy obtained) and second, that a certain pragmatic legitimacy was being acquired. With regard to internal stakeholders, the absence of any conflicts of interest between the future firm and the laboratory was well acknowledged. A certain degree of pragmatic legitimacy was thus obtained. On the other hand, the quest to get regulative socio-political legitimacy was extremely difficult. The attempt to conform to the rules came up against the technical incomprehension of the TTO and, in this respect, cognitive legitimacy was not wholly acquired.

Stage 3 begins when the project obtained the OSEO BPI grant and ends when one of the start-up initiators (William) left the team. The acquisition process for pragmatic legitimacy from external stakeholders was highly successful. The future spin-off began to obtain resources directly from the market. On the other hand, the legitimization process was far more complicated with regard to the internal stakeholders. Virtually all of the players in the laboratory, as well as the TTO, understood the benefits the laboratory could get from the creation of the business, hence, the acquisition of pragmatic legitimacy was acknowledged. In the same way, the search for regulative socio-political legitimacy appeared fruitful. The entrepreneurial team managed to get, after a great deal of bewildering procrastination and considerable investment, a complete technical and financial dossier. The only thing missing was formalisation of the oral agreement given by the DR1 ... 2 years earlier.

---

<sup>2</sup> BPI: Banque Publique d'Investissement (previously OSEO) was created in 2012 on the initiative of the French government to finance French firms at all stages of development (creation, investment, export, innovation...).

Stage 4 begins with the withdrawal of one member of the team and ends with the project being abandoned. At this stage of the legitimation process, the situation was paradoxical. With the external stakeholders, pragmatic legitimacy had truly been acquired. The future business offer had convinced several clients. Some contracts were being concluded, others were under negotiation. All of the actions designed from the outset by the entrepreneurial team for the industrial sector concerned had given them a pragmatic level of legitimacy which resulted in them obtaining resources. On the other hand, with regard to the internal stakeholders, the legitimation process was a failure. The initiators had demonstrated the interest of the project for both the university and the laboratory, and had thus acquired some pragmatic legitimacy. They also put a lot of energy into acquiring the regulative socio-political legitimacy required for the launch of their business. However, it was not enough. In the end, they failed to get one of the key stakeholders on board, the DR1. The other internal stakeholders approached did not try to persuade him (the Vice-President would not get involved and the laboratory director stood behind his research director), or to sidestep him. The initiators do not seem to have really understood the complexity of the legitimation process as such. The remarks of the DR1, gathered during the early stages of the process, and those of one of the initiators, collected at the end, appear to suggest that normative socio-political legitimacy, which encompasses values, and enables us to judge the initiative as “being the right thing to do”, is indispensable. Unfortunately, the entrepreneurial team did not adopt the actions needed to acquire it. And the actions adopted to acquire the other forms of legitimacy were insufficient.

## 5 Discussion

Our findings contribute to the literature on the search for legitimacy specific to university spin-offs. Adopting the conceptual framework of legitimacy, we put forward explanations as to why a USO may fail to get off the ground. Our longitudinal and in-depth case analysis enriches the literature on the points set out below.

First, our study focuses on the emergence stage to highlight the importance of all dimensions of legitimacy (Suchman 1995; Zimmerman and Zeitz 2002). Previous studies have attempted to show the interest of pragmatic legitimacy (Tornikoski and Newbert 2007) and cognitive legitimacy (Shepherd and Zacharakis 2003) for nascent firms. Our study also looks at the socio-political dimension of legitimacy, something that few empirical studies in the literature have investigated to date (cf. Barron 1998; Brown and Toyoki 2013; Golant and Sillince 2007). This aspect is particularly important in the case of USOs, especially in France. The measure introduced by the law of 1999 for public sector researchers (with public sector worker status) is mandatory, and obliges nascent entrepreneurs to obtain authorisation from the ethics committee. Only when this is done can they obtain the ‘regulative’ dimension of socio-political legitimacy. In our case, the entrepreneurial team was keen to comply with the legislation so that two of the researchers could legally take part in the creation and development of the business. However, to get this authorisation, they had to obtain the agreement of a certain number of internal players from the university and, in our case, that of the research directors. However, a project’s values do not always match the values of the latter. We observe that the ‘regulative’ dimension is closely linked to the ‘normative’ dimension of socio-political legitimacy. Since it reflects values, norms and what is acceptable (“the right thing to do,” according to Suchman), such legitimacy is not always easy to pinpoint. This is particularly true when we



study early USO development, as nascent entrepreneurs tend to focus on more pragmatic issues (convincing customers, funders, etc.) than on whether their start-up project is “the right thing to do.” For entrepreneurs, the actions required to obtain this legitimacy are complex and volatile. True, it is possible to peg it to actions which generate resources, but these are based on declarations and intentions that can be contradictory or even misleading for nascent entrepreneur. The instability of the normative dimension of legitimacy makes it a very difficult concept to grasp for them, making the strategies to obtain it perilous or even counterproductive.

Second, our study underscores the importance of taking all the stakeholders into consideration (Golant and Sillince 2007). Legitimacy must be acquired from many stakeholders well before the company’s launch. Nascent spin-off entrepreneurs have to establish their legitimacy not just with their commercial partners, they also need to acquire it from the internal stakeholders (Souitaris et al. 2012), especially socio-political legitimacy. However, the mechanisms operating within a university may lack consistency, with some people in favour of the emergence of spin-offs whilst others attempt to block such enterprises (Birley 2002). Notwithstanding the failed attempt described in the present study, the framework of legitimacy provides us with reflections that can be useful to nascent USO entrepreneurs. The latter are subject to additional difficulties due to their unique position, which involves having to convince specific stakeholders that traditional start-ups do not have to deal with (laboratory, technology transfer office, ethics committee).

Third, our study contributes to the question of the potentially negative consequences of legitimacy (downsides) that were identified in Überbacher (2014)’s research agenda. Drori and Honig (2013) argue that just because a project is legitimate for one type of stakeholder, it will not necessarily be so for others. We could also argue that strategies adopted with one stakeholder may generate an undesirable knock-on effect with others. Thus, legitimacy with one stakeholder may confer a form of illegitimacy with another. In the case of VEH, the legitimacy obtained from business support structures and the potential market gave the project a kind of entrepreneurial and economic reality, far removed from the scientific culture of academia (Gurdon and Samsom 2010). The head of research team 1 was not hostile to the idea initially, and tried hard to understand it with the help of the entrepreneurial team. However, the more he understood, the more he distanced himself from the agreement. Thus, acquiring legitimacy from one stakeholder does not necessarily guarantee the agreement of another, and may even have the opposite effect.

Fourth, our approach highlighted the venture formation process (Gately and Cunningham 2017) by emphasizing the diversity, complexity and contradictory nature of the dynamics at work during the transition from idea to business. It helps to clarify Zimmerman and Zeitz (2002)’s model by revealing several kinds of dynamic. First, we see that cognitive legitimacy can be a way to acquire pragmatic legitimacy, but does not appear to have a link with socio-political legitimacy. However, as we saw, the latter dimension, although difficult for entrepreneurs to understand, is crucial in the case of a USO but is clearly an extra burden for them. Second, we see a knock-on effect between the external and the internal stakeholders. Concerning the external stakeholders, after the nascent entrepreneurs joined the incubator, they drafted a business plan, which resulted in public funding being awarded. Regarding the internal stakeholders, failure to secure agreement with DR1 led to the other internal parties adopting a similar attitude with regard to the spin-off project. Third, the process shows an absence of knock-on effect from the project external stakeholders to the internal stakeholders, many of whom were against the project. Fourth, it highlights the lengthy timeframe required to develop legitimacy, which

is globally harmful to the project's finalisation due to the discouragement that such a long process induces in the entrepreneurial team.

Fifth, our study combines both actor-centred and audience-centred approaches to legitimacy (Überbacher 2014). While it is mainly actor-centred in that the focus is on the strategies deployed by the entrepreneurs, it also takes into consideration the views of the other stakeholders. This approach was especially useful to highlight the complexity of the university as a stakeholder. The latter cannot be considered as one single stakeholder. Potential entrepreneurs need to obtain not only marketing resources from the TTO but also technical resources from the laboratories concerned in order to use both the research it develops and its equipment (Steffensen et al. 2000). This type of resource may be obtained if the managers in charge of the laboratories give their permission, which is only possible if they consider the venture to be legitimate. This calls to mind the importance of *local group norms* identified by Louis et al. (1989). It is obvious that within the university studied, not all of the players viewed the venture in the same way. It may be that this disparity is a characteristic specific to the university we studied. However, it illustrates the complexity of the regulative dimension in that it is not unique, but differs depending on the players involved. By offering several different perspectives, our study helps to build a more holistic view of legitimacy (Überbacher 2014).

Finally, in exploring the nature of legitimacy as well as the process approach, our research illustrates the complexity of the dynamics at work in the creation of a USO and builds on the approach by Fini et al. (2015) on institutional determinants in the creation of a USO. Despite the progress achieved thanks to the numerous support measures and resources given to the project, the search for the multiple dimensions of legitimacy proved too tricky for the entrepreneurial team to manage. Thus, our example illustrates the symbolic aspect of existing measures identified by Fini et al. (2015). While they have boosted the number of USOs in many universities, they cannot ensure the deep-seated cultural changes needed to help the university environment to become truly entrepreneurial. Our study corroborates this view of their entrepreneurial role, which remains symbolic in some universities.

## 6 Conclusion

Our study aimed to explain the failure of a university's spin-off launch. Based on a case study underpinned by a real time longitudinal analysis, we followed a spin-off venture for 3 years, at the end of which time, the idea was abandoned. The theoretical framework of legitimacy helps us to understand this failure and to identify the conflicts and obstacles that prevented the business from emerging. Our study makes several contributions to the literature. First, it is crucial for all emerging companies to seek legitimacy, but this aspect must be covered in all of its many dimensions. The socio-political dimension is especially important in the case of USOs due to their inherent link with the university. Moreover, legitimacy must be sought from multiple stakeholders with different expectations, and the entrepreneurial team needs to adapt its strategies to each of these entities. We also noted that the legitimacy acquired with one stakeholder does not necessarily trigger the same response in another. Finally, the theoretical framework of legitimacy helped us to illustrate the complex nature of one key stakeholder in the spin-off process, in other words, the university.

Our findings have some concrete implications for entrepreneurs and public entities involved in the development of spin-offs. Not all universities have the same attitude with respect to USOs and attitudes may differ, even within an institution. However, for nascent entrepreneurs, the relationship with their university is central to obtaining socio-political legitimacy, at least initially, as they cannot start their business without it. Their business advisors, mainly from university incubators, should try to help them in this respect. Our case study illustrates the absence of intervention by the university's management team and/or the fact that they were not properly solicited to rescue a process that was failing. This is probably a reflection of the difficulty some universities have in appropriating their new entrepreneurial role (Etzkowitz 1998; Etzkowitz and Leydesdorff 2000) and the absence of legitimacy that is still a problem for the creation of spin-offs within some universities.

Our study nonetheless contains a certain number of limitations that provide avenues for future research. Despite all the precautions taken and the introduction of a data collection method that is as comprehensive as possible, grasping the normative dimension of socio-political legitimacy remains a complex process. This dimension therefore requires more research, especially with regard to the criteria needed to improve our understanding. The stakeholders' ideology and their moral values also require close attention. This is useful not only in research on USOs, but in all cases of business start-ups where it is important to appear legitimate in the eyes of stakeholders who do not share the same values as those implicitly or explicitly represented by the firm.

**Acknowledgements** We sincerely thank the editor for his expert advice and his valuable guidance during the review process. We are grateful to anonymous reviewers for their constructive and insightful comments.

## References

- Aldrich, H., & Fiol, M. (1994). Fools rush in? The institutional context of industry creation. *Academy of Management Review*, 19(4), 645–670.
- Aldrich, H., & Martinez, M. (2001). Many are called, but few are chosen: An evolutionary perspective for the study of entrepreneurship. *Entrepreneurship Theory and Practice*, 25(4), 41–56.
- Algieri, B., Aquino, A., & Succurro, M. (2013). Technology transfer offices and academic spin-off creation: The case of Italy. *Journal of Technology Transfer*, 38(4), 382–400.
- Ambos, T. C., Mäkelä, K., Birkinshaw, J., & D'Este, P. (2008). When does university research get commercialized? Creating ambidexterity in research institutions. *Journal of Management Studies*, 45(8), 1424–1447.
- Andersen, M. S., Bray, J. W., & Link, A. N. (2017). On the failure of scientific research: An analysis of SBIR projects funded by the U.S. National Institutes of Health. *Scientometrics*, 112(1), 431–442.
- Barney, J. (1991). Firm resources and sustained competitive advantage. *Journal of Management*, 17(1), 99–120.
- Barron, D. N. (1998). Pathways to legitimacy among consumer loan providers in New York City, 1914–1934. *Organization Studies*, 19(2), 207–233.
- Bathelt, H., Kogler, D. F., & Munro, A. K. (2010). A knowledge-based typology of university spin-offs in the context of regional economic development. *Technovation*, 30(9–10), 519–532.
- Birley, S. (2002). Universities, academics, and spinout companies: Lessons from Imperial. *International Journal of Entrepreneurship Education*, 1(1), 1–21.
- Bitektine, A. (2011). Toward a theory of social judgments of organizations: The case of legitimacy, reputation, and status. *Academy of Management Review*, 36(1), 151–179.
- Bjørnåli, E. S., & Aspelund, A. (2012). The role of the entrepreneurial team and the board of directors in the internationalization of academic spin-offs. *Journal of International Entrepreneurship*, 10(4), 350–397.
- Bray, M. J., & Lee, J. N. (2000). University revenues from technology transfer. *Journal of Business Venturing*, 15(5–6), 385–392.
- Brown, A. D., & Toyoki, S. (2013). Identity work and legitimacy. *Organization Studies*, 34(7), 875–896.

- Brundin, E. (2007). Catching it as it happens. In H. Neergaard & J. P. Ulhoi (Eds.), *Handbook of qualitative research methods in entrepreneurship* (pp. 279–307). Cheltenham: Edward Elgar.
- Brush, C. G., Manolova, T. S., & Edelman, L. F. (2008). Properties of emerging organizations: An empirical test. *Journal of Business Venturing*, 23(5), 547–566.
- Carter, N. M., Gartner, W. B., & Reynolds, P. D. (1996). Exploring start-up event sequences. *Journal of Business Venturing*, 11(3), 151–166.
- Cooper, A. C. (2003). The past, the present and the future. In Z. J. Acs & D. B. Audretsch (Eds.), *Handbook of entrepreneurship research*. Dordrecht, NL: Kluwer.
- Corsi, C., & Prencipe, A. (2015). Measuring the performance of academic spin-offs. Analysis of the optimal methods predicting ventures development. *International Journal of Humanities and Social Science*, 5(4), 174–192.
- Davenport, S., Carr, A., & Bibby, D. (2002). Leveraging talent: Spin-off strategy at industrial research. *R&D Management*, 32(3), 241–254.
- del Palacio Aguirre, I., Parellada, F. S., & Campos, H. M. (2006). University spin-off programmes: How can they support the NTBF creation? *International Entrepreneurship and Management Journal*, 2(2), 157–172.
- Delmar, F., & Shane, S. (2004). Legitimizing first: Organizing activities and the survival of new ventures. *Journal of Business Venturing*, 19(3), 385–410.
- Di Gregorio, D., & Shane, S. (2003). Why do some universities generate more start-ups than others? *Research Policy*, 32(2), 209–227.
- DiMaggio, P., & Powel, W. (1983). The iron gage revisited: Institutional isomorphism and collective rationality in organizational field. *American Sociological Review*, 48(2), 147–160.
- Djokovic, D., & Souitaris, V. (2008). Spinouts from academic institutions: A literature review with suggestions for further research. *Journal of Technology Transfer*, 33(3), 225–247.
- Drori, I., & Honig, B. (2013). A process model of internal and external legitimacy. *Organization Studies*, 34(3), 345–376.
- Druilhe, C., & Garnsey, E. (2004). Do academic spin-outs differ and does it matter? *Journal of Technology Transfer*, 29(3–4), 269–285.
- Dubois, A., & Gadde, L. E. (2002). Systematic combining: An abductive approach to case research. *Journal of Business Research*, 55(2), 553–560.
- Eisenhardt, K. M. (1989). Building theories from case study research. *Academy of Management Review*, 14(4), 532–550.
- Etzkowitz, H. (1998). The norms of entrepreneurial science: Cognitive effects of the new university–industry linkages. *Research Policy*, 27(8), 823–833.
- Etzkowitz, H., & Leydesdorff, L. (2000). The dynamics of innovation: From National Systems and «Mode 2» to a Triple Helix of university–industry–government relations. *Research Policy*, 29(2), 109–123.
- Fini, R., Fu, K., Mathisen, M. T., & Rasmussen, E. (2015). Institutional determinant of university spin-off quantity and quality: A cross-country study. *Academy of Management Proceedings*. <https://doi.org/10.5465/AMBPP.2015.12146>.
- Gately, C., & Cunningham, J. A. (2017). Nascent technology entrepreneurs new venture formation activities. In J. A. Cunningham & C. O’Kane (Eds.), *Technology-based nascent entrepreneurship: implications for economic policymaking* (pp. 223–256). New York, NY: Palgrave Macmillan.
- Gersick, C. J. G. (1994). Pacing strategic change: The case of new venture. *Academy of Management Journal*, 37(1), 9–45.
- Golant, B. D., & Sillince, J. A. (2007). The constitution of organizational legitimacy: A narrative perspective. *Organization Studies*, 28(8), 1149–1167.
- Gómez Gras, J. M., Galiana Lopera, D. R., Solves, I. M., Verdú Jover, A. J., & Azuar, J. S. (2008). An empirical approach to the organisational determinants of spin-off creation in European universities. *International Entrepreneurship and Management Journal*, 4, 187–198.
- Greenwood, R., Suddaby, R., & Hinings, C. R. (2002). Theorizing change: The role of professional associations in the transformation of institutionalized fields. *Academy of Management Journal*, 45(1), 58–80.
- Gurdon, M. A., & Samsom, K. J. (2010). A longitudinal study of success and failure among scientist-started ventures. *Technovation*, 30(3), 207–214.
- Hannan, M. T., & Freeman, J. (1986). Where do organizational forms come from? *Sociological Forum*, 1(1), 50–72.
- Heirman, A., & Clarysse, B. (2004). How and why do research-based start-ups differ at founding? a resource-based configurational perspective. *Journal of Technology Transfer*, 29(3/4), 247–268.

- Hlady-Rispal, M., & Joison-lafitte, E. (2015). Qualitative research methods and epistemological frameworks: A review of publications trends in entrepreneurship. *Journal of Small Business Management*, 54(4), 594–614.
- Honig, B., & Karlsson, T. (2004). Institutional forces and the written business plan. *Journal of Management*, 30(1), 29–48.
- Jenkins, A., & McKelvie, A. (2016). What is entrepreneurial failure? Implications for future research. *International Small Business Journal*, 34(2), 176–188.
- Johnson, C., Dowd, T. J., & Ridgeway, C. L. (2006). Legitimacy as a social process. *Annual Review of Sociology*, 32(1), 53–78.
- Karlsson, T., & Wigren, C. (2012). Start-ups among university employees, the influence of legitimacy, human capital and social capital. *Journal of Technology Transfer*, 37(3), 297–312.
- Khelil, N. (2016). The many faces of entrepreneurial failure: Insights from an empirical taxonomy. *Journal of Business Venturing*, 31(1), 72–94.
- Laïfi, A., & Jossierand, E. (2016). Legitimation in practice: A new digital publishing business model. *Journal of Business Research*, 69(7), 2343–2352.
- Lichtenstein, B. B., Dooley, K. J., & Lumpkin, G. T. (2006). Measuring emergence in the dynamics of new venture creation. *Journal of Business Venturing*, 21(2), 153–175.
- Lin, A. N., & Wright, M. (2015). On the failure of R&D projects. *IEEE Transactions on Engineering Management*, 62(4), 442–448.
- Lockett, A., & Wright, M. (2005). Resources, capabilities, risk capital and the creation of university spin-out companies. *Research Policy*, 34(7), 1043–1057.
- Louis, K. S., Blumenthal, D., Gluck, M. E., & Stoto, M. A. (1989). Entrepreneurs in academe: An exploration of behaviors among life scientists. *Administrative Science Quarterly*, 34, 110–131.
- Lynskey, M. J. (2008). The entrepreneurial university and spin-out firms in the UK. *Industry & Higher Education*, 22(2), 81–98.
- Moray, N., & Clarysse, B. (2005). Institutional change and resource endowments to science-based entrepreneurial firms. *Research Policy*, 34(7), 1010–1027.
- Mustar, P., Renault, M., Colombo, M. G., Piva, E., Fontes, M., Lockett, A., et al. (2006). Conceptualising the heterogeneity of research-based spin-offs: A multi-dimensional taxonomy. *Research Policy*, 35(2), 289–308.
- Mustar, P., & Wright, M. (2010). Convergence or path dependency in policies to foster the creation of university spin-off firms? A comparison of France and the United Kingdom. *Journal of Technology Transfer*, 35(1), 42–65.
- Nicolaou, N., & Birley, S. (2003). Academic networks in a trichotomous categorisation of university spinouts. *Journal of Business Venturing*, 18(3), 333–359.
- O'Shea, R. P., Allen, T. J., Chevalier, A., & Roche, F. (2005). Entrepreneurial orientation, technology transfer and spinoff performance of U.S. universities. *Research Policy*, 34(7), 994–1009.
- Philippart, P. (2003). Le transfert de la recherche publique par le chercheur fonctionnaire: le cas de la loi sur l'innovation. *Revue de l'Entrepreneuriat*, 2(1), 43–57.
- Philippart, P. (2005). Un exemple de valorisation: la création d'entreprise par un chercheur au statut de fonctionnaire. Approches des spécificités juridiques françaises. *Revue Internationale PME*, 18(3–4), 149–169.
- Philippart, P. (2012). Au confluent du droit et de la gestion: la légistique pour évaluer l'utilisation de la dimension entrepreneuriale de la loi sur l'Innovation. *Management & Avenir*, 50, 15–37.
- Pinto, J. K., & Mantel, S. J. (1990). The causes of project failure. *IEEE Transactions on Engineering Management*, 37(4), 269–276.
- Powers, J. B., & McDougall, P. P. (2005). University start-up formation and technology licensing with firms that go public: A resource-based view of academic entrepreneurship. *Journal of Business Venturing*, 20(3), 291–311.
- Rasmussen, E. (2011). Understanding academic entrepreneurship: Exploring the emergence of university spin-off ventures using process theories. *International Small Business Journal*, 29(5), 448–471.
- Rasmussen, E., & Borch, O. J. (2010). University capabilities in facilitating entrepreneurship: A longitudinal study of spin-off ventures at mid-range universities. *Research Policy*, 39(5), 602–612.
- Rasmussen, E., Mosey, S., & Wright, M. (2011). The evolution of entrepreneurial competencies: A longitudinal study of university spin-off venture emergence. *Journal of Management Studies*, 48(6), 1314–1345.
- Rasmussen, E., Mosey, S., & Wright, M. (2015). The transformation of network ties to develop entrepreneurial competencies for university spin-offs. *Entrepreneurship & Regional Development*, 27(7–8), 430–457.

- Reynolds, P. (2000). National Panel Study of US business start-ups: Background and methodology. In J. K. R. Blockhaus (Ed.), *Advance in entrepreneurship, firm emergence and growth* (Vol. 4, pp. 153–227). Stamford, CT: JAI Press.
- Rodeiro Pazos, D., Fernandez-Lopez, S., Otero-Gonzales, L., & Rodriguez-Sandias, A. (2012). A resource-based view of university spin-off activity: New evidence from the Spanish case. *Revista Europea de Dirección y Economía de la Empresa*, 21(3), 255–265.
- Sansom, K. J., & Gurdon, M. A. (1993). University scientists as entrepreneurs: A special case of technology transfer and high-tech venturing. *Technovation*, 13(2), 63–71.
- Shane, S. (2004). *Academic entrepreneurship, university spinoffs and wealth creation*. Cheltenham: Edward Elgar Publishing.
- Shepherd, D. A., & Zacharakis, A. (2003). A new venture's cognitive legitimacy: An assessment by customers. *Journal of Small Business Management*, 41(2), 148–167.
- Sijde, P. V. D., & Tilburg, J. V. (2000). Support of university spin-off companies. *The International Journal of Entrepreneurship and Innovation*, 1(1), 13–21.
- Singh, J. V., Tucker, D. J., & House, R. J. (1986). Organizational legitimacy and the liability of newness. *Administrative Science Quarterly*, 31, 171–193.
- Smilor, R. W., Gibson, D. V., & Dietrich, G. B. (1990). University spin-out companies: Technology start-ups from UT-Austin. *Journal of Business Venturing*, 5(1), 63–76.
- Soetanto, D., & Jack, S. (2015). The impact of university-based incubation support on the innovation strategy of academic spin-offs. *Technovation*, 50–51, 25–40.
- Souitaris, V., Zerbini, S., & Liu, G. (2012). Which iron cage? Endo- and exoisomorphism in corporate venture capital programs. *Academy of Management Journal*, 55, 477–505.
- Steffensen, M., Rogers, E., & Speakman, K. (2000). Spin-offs from research centers at a research university. *Journal of Business Venturing*, 15(1), 93–111.
- Suchman, M. C. (1995). Managing legitimacy: Strategic and institutional approaches. *Academy of Management Review*, 20(3), 571–610.
- Tornikoski, E., & Newbert, S. (2007). Exploring the determinants of organizational emergence: A legitimacy perspective. *Journal of Business Venturing*, 22(2), 311–335.
- Treibich, T., Konrad, K., & Truffer, B. (2013). A dynamic view on interactions between academic spin-offs and their parent organizations. *Technovation*, 33(12), 450–462.
- Überbacher, F. (2014). Legitimation of new ventures: A review and research programme: Legitimation of new ventures. *Journal of Management Studies*, 51(4), 667–698.
- Ucbasaran, D., Shepherd, D. A., Lockett, A., & Lyon, S. J. (2013). Life after business failure: The process and consequences of business failure for entrepreneurs. *Journal of Management*, 39(1), 163–202.
- Van de Ven, A. H., Polley, E. E., Garud, R., & Venkataraman, S. (1999). *The innovation journey*. New York, NY: Oxford University Press.
- Van De Ven, A. H., & Poole, M. S. (1995). Explaining development and change in organizations. *Academy of Management Review*, 20(3), 510–540.
- Villanueva, J., Van de Ven, A. H., & Sapienza, H. J. (2012). Resource mobilization in entrepreneurial firms. *Journal of Business Venturing*, 27(1), 19–30.
- Vinig, T., & Van Rijsbergen, P. (2010). Determinants of university technology transfer—A comparative study of US, European and Australian universities. In A. Malach-Pines & M. F. Özbilgin (Eds.), *Handbook of research on high technology entrepreneurship*. Cheltenham: Edward Elgar Publishing.
- Vohora, A., Wright, M., & Lockett, A. (2004). Critical junctures in the development of university high-tech spinout companies. *Research Policy*, 33(1), 147–175.
- Walsh, G. S., & Cunningham, J. A. (2016). Business failure and entrepreneurship: Emergence, evolution and future research. *Foundations and Trends in Entrepreneurship*, 12(3), 163–285.
- Woolley, J. L. (2011). Studying the emergence of new organizations: Entrepreneurship research design. *Entrepreneurship Research Journal*, 1(1), 54–68.
- Zahra, S. A., & Nielsen, A. P. (2002). Sources of capabilities, integration and technology commercialization. *Strategic Management Journal*, 23(5), 377–398.
- Zimmerman, M. A., & Zeitz, G. J. (2002). Beyond survival: Achieving new venture growth by building legitimacy. *Academy of Management Review*, 27(3), 414–431.
- Zott, C., & Huy, Q. N. (2007). How entrepreneurs use symbolic management to acquire resources. *Administrative Science Quarterly*, 52(1), 70–105.