KEY ACTIVITIES FOR SUCCESSFUL VENTURES' SCALING UP

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ABSTRACT

The generation of new business models and the renewal of competencies are crucial for mature companies' survival in the long term. Corporate venturing is a recognized mechanism to ensure balancing exploration and exploitation activities in established corporations. Due to fundamental differences in business organizations and culture, and in risk taking behaviors, the integration of these new ventures in existing business units is difficult. A key factor, as well as one of the less studied, is to determine the venture readiness for the scaling up and the right moment to be incorporated in the existing business. Premature venture scaling up could provoke growth failure and reduced post-transition performance because of a number of unresolved market and technology uncertainties. On the contrary, when the corporate organization integrates the venture too late, the established business might miss its window of advantage position.

Based on the results of an empirical study carried out in fifteen corporate venture innovation processes, we identified certain specific activities that will help determine the venture readiness and proper timing to scale up, and integrated the results of the empirical study with knowledge from extant literature, to develop a set of propositions for improving the success of the scaling up. These principles provide practical guidelines to improve corporate venture growth processes.

Keywords: Entrepreneurship, Corporate Venturing, Scale up, Acceleration, Validation Transition Timing.

INTRODUCTION

In a business environment characterized by high uncertainty and rapid technological changes, firms should search for ways to pursuit radical innovations, to acquire new capabilities and to explore new business opportunities to survive in the long term. However, integrating these new capabilities in a corporate organization designed to exploit existing products and technologies is difficult (Van Burg et al., 2012).

Organizational cultures specialized in exploitation and characterized by optimized established processes tend to be hostile towards innovative initiatives, which may be perceived as a threat to the established business of the corporate organization, because they challenge current technologies, cannibalize products, and compete for scarce corporate resources.

In order to manage uncertainties and associated risks, corporations should look for entrepreneurship models or mechanisms to balance exploration and exploitation activities that allow the development and implementation of new businesses.

One of these mechanisms is corporate venturing, which could be defined as the exploration and commercialization of new technologies or products structurally separated from the corporate

organization in a corporate venturing structure that avoids organizational rigidities (Thornberry, 2001). However, without an effectively designed process for aligning and integrating a corporate venture in the established business, the firm increases the risk of venture failure.

Each phase of the innovation life cycle requires different approaches, resources, partnerships and competences. Venture units usually lack resources and specific capabilities for the commercialization of innovations. Determining readiness and proceeding with the integration in a business unit is a crucial task to successfully pursue explorative and exploitative activities simultaneously.

Ideally, the venture should be transferred to the parent firm generating new business opportunities within the company. A forced integration into a business unit could be counterproductive in terms of the potential of the innovation and can also find organizational resistance in the receiving business unit (McGrath, 2001; Rice et al., 2002). If the venture appears not to fit the established business strategy, the venture can become a stand-alone spin-off and attract external funding, or be sold to another firm.

Notwithstanding the important insights of existing studies on corporate venturing, we know little about the 'process of successful venturing' (Miles & Covin, 2002).

As recognized by Van Burg et al. 2012, one crucial challenging aspect of the venture integration in the existing business process is to determine the timing of transition. Some studies have also recognized the importance of timing, but they did not examine the precise moment of venture transition (Ford et al., 2010; Leifer et al., 2001). Also, despite the difficulty of venture transition, the current literature is relatively poor about the key activities to perform to ensure the maturity of a venture before scaling up (O'Connor & de Martino, 2006).

This paper aims to get a better understanding of the critical activities that indicate the readiness of the venture, showing consequently the best timing for transition.

THEORETICAL BACKGROUND

There exists a substantial gap between R&D teams and receiving business units, (Rice et al., 2002). Despite the members of the venture or the business unit receiving the project thinking the innovation is mature enough for scale up and full commercialization, projects usually mature or fail at the business unit. The projects are generally underdeveloped based on a receiving unit's criteria. Resolving the remaining uncertainties becomes crucial to determine the moment to scale up.

It is crucial to proceed with an innovation readiness validation and assessment to diagnose what remaining work should to be done in order to get the project to a mature enough status so that it can be successfully moved into operations (O'Connor et al., 2002). In this section we will focus on different research approaches that have addressed which type of activities are necessary to determine if a venture is mature enough for its growth and scaling up.

DIAC Innovation Life cycle

From a competences-based approach, the works from O'Connor and de Martino, (2006); Story et al. (2009) identify four phases for high uncertainty innovations: discovery, incubation, acceleration and full commercialization, each of which requires distinctive types of competences, expertise and processes. The acceleration phase focuses on building a business to a level of some predictability in terms of sales and operations and trying to make the innovation ready for the

market. Acceleration competency ramps up the new business to a point where it can stand on its own before transferring to the corresponding receiving unit.

Different methodologies globally adopted by practitioners have proposed validation tools to determine the readiness of the innovation to face the growth, scale up or full commercialization stage.

Osterwalder, (2010) proposed a model to iteratively refine the business model taking into consideration how other elements such as the infrastructure, customers, resources, channels… evolve. It helps firms in aligning their business model by evidencing potential trade-offs.

Ash Maurya, (2010) introduces the concept of "traction", expanding the scope of the validation on the project, with respect to the Lean Startup model on the product-market fit (Ries, 2011). Traction could be defined as "*the speed at which the business model captures monetizable value through its users*". This is a key indicator when assessing whether consumers are willing to pay for our innovation and whether it is capable of jumping from the initial niches of visionary users to the more general market.

In their research, Conway and Hemphill, (2019), proposed an evaluation of the growth hacking approach, based on building through traction measurement. Their main contribution is to indicate what resources at the organizational level and what tools are necessary to optimize market introduction, once the product-market fit has been achieved.

Leveland, (2019) proposes a validation method, developed with the venture capital firm Wildcat Venture, Traction Gap Framework, based on the concept of "*Minimum Viable Repeatability*" (MVR), which establishes four main premises: demonstrate that the product or service is manufacturable, that it has a traction proven, a validated business model and a scalable and repeatable go-to-market strategy.

Even if these methodologies are widely recognized, they lack empirical demonstration.

Uncertainties Approach

High uncertainties are involved in the development of corporate venturing innovation projects. In the existing literature, four uncertainties are characterized (Lynn & Akgün, 1998; Rice et al., 2002).

Technical uncertainties apply to the underlying scientific knowledge base, including technical feasibility, manufacturing process, and maintainability. Market uncertainties comprise to what extent customer needs are understood and superior customer value is generated compared to competition (Rice et al., 2002). Organizational uncertainties address the organizational and managerial conflicts at fostering disruptive innovation while pursuing operational activities, mainly caused by a lack of support of senior management (Burgelman and Sayles, 1986) or by the misfit between the mainstream organization and the R&D project team (Dougherty, 1990). Finally, resource uncertainties involve all difficulties of internally and externally acquiring needed resources for disruptive innovation (Chandy & Tellis, 2000; O'Connor et al., 2002).

The research from Rice et al. (2002) based on the uncertainty framework, proposed a set of activities the author required to be tested for improving the effectiveness of transition management and for helping to determine the right moment for scaling up the venture (assessment of transition readiness, detailed transition plan, transition funding, transition team, generation of the groundwork for a big market, senior management championship).

Other studies also corroborate the importance of forming a pre-transition preparation (Kanter et al., 1991), establishing a transition team (Van Burg et al., 2012), who will perform a

transition readiness assessment (O'Connor et al., 2002) from both the ventures and the established corporation's perspective. The work from O'Connor et al. (2002) proposed a tool to assess the innovation readiness based on ten uncertainties. The instrument helps to realize how much work remains to be accomplished to achieve the innovation readiness for scaling up, but this approach does not give an account of the key activities to be performed to learn about the readiness of the venture.

Apart from the necessity of defining a transition plan, the study from Van Burg et al. (2012) stressed that the readiness and capability gap assessment aims at determining the differences between the venture and the established business with regard to technology, business model and culture. This assessment helps to identify critical business functions that require extra attention from the venture or the established business in order to close the gap and facilitate the scale up. Specifically, on the timing to scale up, these authors point out that three elements influence the moment to do it: the criteria for adoption by the established business, the criteria for venture transition by the venture and the pressure of the corporate venturing unit to exit the incubator. But the only specific activity this work cites to determine the moment for scaling up is to achieve first sales.

Under the perspective of uncertainty, the work from Nieto and Consolación, 2019, also identifies the achievement of first sales and running of pilot projects as crucial activities to be undertaken before scaling up. This work also approaches the concept of knowledge management in transition.

Technology and Innovation Readiness Levels

From the perspective of technology readiness, Clausing and Holmes (2010) provides an assessment tool to transform a technology stream into a reliable stream of profit. Additionally, the research of Mankins, (2009) also offers a retrospective about the Technology Readiness Levels (TRLs) along the period between 1980 and 2009. Nevertheless, these approaches only focus on technology uncertainty management.

Based on the Technology Readiness Level, the System Readiness Level and the Market Adoption concept (Moore, 2002); Lee et al. (2011) propose an approach for developing an Innovation Readiness Level framework. This work introduces activities to be performed during the different phases of the Innovation Life Cycle (IRL1: concept, IRL2: components, IRL3: completion, IRL4: chasm, IRL5: competition and IRL6: changeover/closedown) under five categories: Technology, Market, Organization, Partnership, and Risk Management.

During the chasm stage, defined as the challenges and difficulties that an innovation may encounter when first introduced to the market, the authors highlighted some crucial factors to be considered to determine if the innovation is ready to grow, such as the product/service availability in the whole market, the existence of after sales support, the importance of positioning in the market, cooperation with the ecosystem partners and carrying out interorganizational relations to manage the possible organizational conflicts.

Ambidexterity Approach Ventures Integration

Structural separation between disruptive exploration and exploitation is a necessary, yet insufficient, condition for ventures' success (Kaauppila, 2010).

Even if the venture innovation project fits with the global strategy of the parent company, the project is usually transferred into an existing business, therefore inducing strategic tensions

(Rice et al., 2002) caused by a misfit between the goals of the project and the sales team, and also related to capabilities, roadmap or resources from the receiving business unit. The greater the misfit, the greater the difficulty to scale up the project by the business unit. This "force fitting" could have fatal consequences in the success of the venture project.

Scholars have demonstrated the crucial role absorptive capacity plays in mitigating this kind of barriers to then enable the combination of existing capabilities with the corporate venture's competences (Van Burg et al., 2012) by first providing training and establishing personnel transfer between the venture and the business unit in the pre-transition phase, and also by "liaison channeling" (Gassman et al., 2012), further explained as interorganizational relations by Raisch and Tushman, 2016. These authors identify three key conditions to facilitate integration within the business unit: clarify their territories and added value (distinct skills) to be more attractive for resource sharing, identify complementarities and the support from corporate managers.

According to Ford, 2010, managing the scale up phase in the product division may also require the removal of some of the venture team leaders when they no longer have the competences required for operating the venture within the product division. Lacking capabilities in the business unit could also be an important barrier to proceed with the scale up (Raisch and Tushman, 2016).

Existing literature stresses the importance of having the figure of a champion not only in the venture team but also at senior management level (Rice et al., 2002; Van Burg et al., 2012; Gilbert, 2010). Besides this, the probability of venture success is also fostered if a champion is found in the receiving business unit (Rice et al., 2002; Van Burg et al., 2012), as well as if the project counts with the support of an informal network (Gassman et al., 2012).

This support should be mobilized by activities focused on network building, establishing social ties and networks between the members of the venture unit and the operational business. Other studies stress the effect cross functional interfaces and connectedness has at creating linkages between ventures and receiving business units (Hill & Birkinshaw, 2008). They also enunciate the importance of interaction between corporations not only between ventures managers and corporate executives, but also between business units and other stakeholders of the corporation.

Clear and transparent communication is critical to recognize the right supporters and their specific motivations within the corporate parent (Jansen et al., 2009; O'Reilly & Tushman, 2004) (Table 1).

Table 1
ACTIVITIES TO PERFORM BEFORE SCALINGUP.PRIOR LITERATURE SUMMARY

Category	Activities	Authors
Rcadiness assessment & Transition preparation	Transition readiness assessment Transition team Transition plan	Kanter et al. 1991, Rice et al, 2002. O'Connor et al., 2002, Van Burg et al, 2012 Rice et al, 2002, Van Burg et al., 2012 Rice et al., 2002, Van Burg et al. 2012
Market uncertainties	Clear value proposition & Validated Business model Achievement of first sales Running of pilot projects Traction Laying the ground work for a big market Go-to-Market strategy	Osterwalder & Pigneur, 2010, Maurya, 2012, Leveland 2019 Nieto & Consolation. 2019, Van Burg et al, 2012. Nieto & Consolation, 2019 Maurya. 20 12, Leveland. 2019, Conway and Hemphill. 2019

		Rice et al. 2002 Leveland. 2019
Organizational uncertainties	Platform for an scalable and repeatable sales and operations Inter organizational relations Clear & transparent communication Training to business units Specification of balanced KPl's for the venture in the BU	O'Connor & de Martino, 2006, Leveland 2019 Van Burg et al., 2002. Lee et al. 2011. Jansen et al. 2009, Gassman et al., 20 12. Raisch and Tushman, 2016, Hill & Birkinshaw, 2008 O' Reilly & Tushman. 2004. Van Burg et al., 2002, Van Burg et al., 2012
Resources uncertainties	Knowledge management BU's competences and skills assessment R&D leader's lacking competences for Scaling assessment.	Nieto & Consolation, 2019 Raisch and Tushman, 2016 Ford, 2010

In sum, the existing literature identifies certain activities to evaluate the readiness of the venture, but knowledge is fragmented under different approaches. Additionally, none of the studies presents a complete set of key activities to determine if the venture is ready to be transferred in the existing business and, consequently, what is the right moment for scaling up (O'Connor and DeMartino, 2006). Based on these premises, the research question that will lead our study is:

"Which are the key activities determining venture readiness for the right moment to scale up?"

RESEARCH DESIGN

Methodology Approach

To answer the research question a multiple case study approach has been chosen. Case study research involves the examination of a phenomenon in its natural setting. The case study method is especially appropriate for research in new topic areas, with a focus on "how" or "why" questions concerning a contemporary set of events. Multiple cases are generally regarded as more robust, providing the observation and analysis of a phenomenon in several settings. The cross case or multi-case method enables an understanding of the phenomena beyond each individual project context and increases generalizability (Yin, 1994).

Field Study Sample Selection

The research reported in this paper is part of a 24 months prospective study of management practices employed in eight ambidextrous firms (from telco, media, education, financial, home appliances, engineering and FMCG fields,) in the scaling up of "new to the company" innovations (Daneels, 2004). The selected projects fulfill these characteristics:

1. Developed in companies from different sectors.
2. Developed through a corporate venture (formally established, with personnel assigned to the project and with a budget) to be transferred later into a business unit (in-company, new one or out-company),
3. The cases have been approached through semi-structured interviews. The guideline for the interviews is based on the work from Rice et al., 2002 and O'Connor et al., 2002.

The definition of success for the innovations is the scaling up of the project, implemented and commercialized in a business unit.

The empirical data in this research has been gathered in fifteen corporate venture transition processes. Twelve of the projects were transferred into an internal business unit of the company, one of them found an external company and two projects had a dual destination to both an internal business unit and to an external company. Nine of the cases were successful projects in the transference process. Five other resulted in failure cases, and the last is still in the growth phase. All cases will be displayed in Table 2. The cases were selected according to theoretical sampling as a means to achieve a high gain of insight (Eisenhardt, 1989).

Table 2
STUDY PAR TICIPANTS

Corporate-Organization	Corporate venture case	Industry	Interviewed Profiles	Scaling up Process
MEDIA CO	e-Project	Media	Open Innovation Manager	In progress
EDUCATION CO	Data Project	Editorial	Digital Innovation manager	Failure
TELCOCO		Telecommunications	Product Innovation director Design Research Lead	
	Alpha project		Head of product/project Head of innovation Portfolio Innovation Business Development Management	Success
	Beta project		Corporate Venture Leader Head of Innovation Portfolio	Success
	Gamma Project		Senior Technical Expert Head of Innovation Portfolio	Success
	Delta project		Service Innovation Lead Head of Innovation Portfolio	
	Epsilon project		Head of Commercial Innovation Head of Innovation Portfolio Innovation Business Development Management	
	Omega Project		Corporate Venture Leader Head of Innovation Portfolio	Success
FMCG CO	Digital project	Laundry & Home Care	Innovation Manager- IoT Corporate Venture Leader	Success
FMCG C0 2	Code Project	Consumer goods	Digital Innovation Manager	Success
APPLIANCES CO	Material Project 1	Home appliances	Innovation Transference Director	Success
			Corporate Venture Leader	
	Material Project 2		Innovation Transference Director	Failure
			Corporate Venture Leader	
FINANCIAL CO	Kelvin project	Financial	Service Design Lead	Success
			Product Innovation Director	
ENGINEERING CO	Medical project Train security project	Engineering	Division Manager Division Manager	Success Failure

Data Collection

Data was collected by interviews with venture managers and corporate R&D managers in order to get different angles on the success, frictions, key themes and progress of the project scale up, obtaining a variety of insights. The research has performed 27 double interviews of 1 to 1,30h. The interviews were conducted in two rounds. The first round with the aim of understanding the general context and the second round in order to get a deeper understanding of each project details. Nevertheless, the interview guideline was constantly enriched along the conduction of the interviews to adapt to the insights obtained after each selected case. The documentation was complemented by official corporate secondary data about each project.

Data Analysis

Qualitative analysis requires a different approach in comparison with the quantitative analysis because the data is mainly textual and descriptive. The question is the key activities for innovation readiness and the timing of scaling up. The interviews transcripts were analyzed by using open coding (Strauss & Corbin, 1994) and common statements in answer to the research questions were codified identifying the activities and timing for scaling up. The analysis from the cases in combination with the current knowledge has allowed us to integrate the findings of the empirical study with insights from extant literature resulting in a set of propositions.

EMPIRICAL FINDINGS

Based on the results of an empirical study carried out in fifteen corporate venture innovation processes, we present a set of key activities that were identified across the different cases to resolve if the venture is ready to be integrated into a business unit and scaled up. These activities are useful indicators to determine the right moment for transition. The following section describes each of the recognized activities, sorted by the different categories of uncertainty, and illustrates them with examples from the case studies.

Venture Readiness Assessment

Existence of a transition plan

None of the interviewed cases specifically mentioned the existence of a formal and organized transition plan for the projects prior to moving from the exploration phase to the exploitation one.

Existence of a transition team

As recognized by the respondent from *e-project*, when a project is scaled, it is not common to be provided with a team specialized in scaling, but rather the innovation moves directly to the exploitation team unit.

On the other hand, the role of the innovation members in defining the future team (or part of it) that will participate in the scale up could be beneficial to success. The team will be composed not only of functional positions for the new needs of the project but rather the selected profiles should also be its ambassadors within and outside the corporation. In the *Digitalproject*

as well as in the *Betaproject*, the persons interviewed acknowledged the positive effect it had to prepare the innovation to scale by means of defining the suitable team. In the specific case of the *Digitalproject*, the process they followed was to incorporate certain profiles (marketing, supply chain…) from the business unit so they could offer the needed support for the venture project to grow. The selection of these profiles is a crucial challenge because they will also be "champions" of the venture.

Market Uncertainties

All the case studies had carried out qualitative tests with positive results regarding the value proposition of the innovation project. The responses in the different cases also reflected the evolution of the business model in parallel with the learning and iteration of the project. It was demonstrated that a key condition was to be able to replicate and scale the business model in the different potential markets of the innovation. Both factors become necessary but not sufficient conditions for the scale up. Other key activities have been observed across the studied cases:

First sales and traction demonstration

Finding leading customers willing to pay for the product is crucial in the maturity of the project as well as a real user traction demonstration that arouses the interest of the business units. It is very important not to transfer until you have more sales and a broader and more stable customer base, in order to build greater confidence from the business team in relation to the new product.

Deltaproject (Service Innovation Lead): We had a market study in various countries regarding price level and other issues. There was market validation concerning the value proposition, but we did not have clients. It was only research, but positive. There were good indicators but there were no paying customers.

Alphaproject (Innovation Business Manager): The project leader establishes four checks linked to the realization of first sales and customer acquisition: First check: the customer buys. Second check: the client renew. Third check: Find a customer(s) similar to the first. Fourth check: Go to an adjacent niche to replicate it.

Realization of pilots

The possibility of conducting pilots enables the testing of all the hypotheses linked to the project, according to the specificities of the target market. The pilot is an essential tool that can be used to learn, improve the product, implement it in real circumstances and gain credibility within the business unit that will market the innovation.

Digitalproject (Innovation manager): The latest phase in our R&D process is the "LabLaunch": testing the product in a real market in a specific region (on the selected channels) under a limited production, but forcing the scale of the project. This activity allows [us] to gain more knowledge about the product, the market and the users, establishing suitable performance indicators to the kind of product/service that is being launched, focused on the behaviour of the users towards the innovation.

Codeproject (Digital Innovation Manager): As well as in prior projects, this one showed us the importance of implementing a pilot in one of the divisions of the corporation to demonstrate the value of the innovation and the capacity for being implemented technically.

Scalable and repeatable go-to-market plan

The experience acquired in facing a first market niche and obtaining the first clients, also in adjacent markets, should help to establish an easily repeatable and scalable go-to-market plan with regard to the transference of innovation from an exploration phase to an exploitation one.

Alphaproject (Innovation Business Manager): Scale the market strategy is crucial. Client n + 1 should be instantaneous.

Organizational Uncertainties

Operations capacity

Another factor acknowledged as central is to have a clear operating model that identifies the required team, the functioning base technology platform as well as the associated services required to make the implementation of the innovation. These factors can help to operate in the target business unit.

Alphaproject (Innovation Business Manager): *Regardless of the destination of the innovation, it should be prepared to keep working and provide its services, with guaranteed operations.*

Gammaproject (Senior Technical expert): *We must build a model, a platform, a base of operations, a procedure to be able to replicate in different clients and systematize the process.*

Alignment

Even if the project shares the strategic orientation of the company, it could be non-aligned with the receiving business unit. Usually, as the cases showed, the business unit is not designed for the innovative project that it receives. When this happens, frictions are generated, and the organization gets stressed. The business unit usually has other priorities, roadmaps, motivations or different resources to those which are required. Also, the innovation project can be perceived as a threat to the established businesses of the corporate organization. These factors hinder the process of transferring innovation and its exploitation.

Deltaproject (Service Innovation Lead): Despite having a clear channel and a manufacturer willing to invest in the product, there was no business unit interested in the project. They saw the project not mature enough (due to lack of sales and potential customers) and they all had other priorities.

Omegaproject (Corporate Venture Leader): We are a global corporation. We face a "big problem" because we have different territorial divisions, local business units with specific roadmaps and managing their own assets. We should take into consideration their identity and clarify benefits for each of their businesses.

Interorganizational relations

Approaching and interacting with the business unit becomes extremely relevant. This interaction enables the coordination of the alignment and embeddedness of the teams.

From the early stages in the innovation process it is important to be in contact with potential marketers, so that the innovation takes root in the team. These contacts should not only be with the director of the unit, but also among the team base. It is important that the entire team

feels convinced that the new product provides values and new capabilities which are not possible to be implemented during their daily life at work. The contact with the potential stakeholders also enables the identification of possible future frictions. When articulating the projects, the possible problems or gaps to be covered should have already been detected and solutions sought beforehand.

The interaction with stakeholders encourages the generation of greater credibility for the project and for successive innovations and also the garnering of champions from both the base of the receiving unit (acting as a social network supporting the innovation) and from its management, influencing decisions and facilitating integration or other platforms within the corporation.

e-Project (Open Innovation Manager): It is necessary to demonstrate how innovation can help the corporation, through quick wins. Little demonstrations of how you can help to further develop each BU instead of being seen as a potential cannibalizer. By generating this kind of credibility, it is then easier to sell the project.

Codeproject (Digital Innovation Manager): When communicating the project you should put yourself in the shoes of each stakeholder and empathically understand what it can mean in their division or BU to explain it from the perspective that matters to them (e.g. it is not only savings, but also the consequences to workers in a factory). It is about knowing how each possible business unit or profile from the company could perceive the so-called "benefits" from our innovation.

Performance management systems

Different cases showed that when the innovation projects were transferred to the business unit, they adopted immediately the performance measurement systems of the corporate organization, such as profitability and optimization. Consequently, the exploration activities of the corporate venture stopped. This could be counterproductive for the innovation project if it needs more iterations to obtain a final market fit or pivot for refining the business model. The performance measurement system to be adopted in the scaling up should be agreed between the corporate venture, the business unit and the corporate organization.

e-Project (Open Innovation Manager): The project is already scaling, and the metrics that are being imposed are from a great company. Efficiency, profitability… We have not yet found the total market fit. It can lead to failure. Finding metrics during the first steps of scaling is crucial.

Betaproject (Corporate venture leader): Their team will share time in other (exploitation) projects, so it is also a key factor to define specific KPI's to apply these new venture members that should balance exploration and exploitation activities.

Resource Uncertainties

Competences, knowledge and skills in the business unit

An important barrier to the proper growth of an innovation in the business unit is related to the competences, skills and knowledge necessary for its exploitation, especially in projects using emerging or disruptive technologies. If the business unit team does not have them, it will entail a perception of extra risk on the project to be integrated.

e-Project (Open Innovation Manager): In this case, something that helped was the fact that the company estimated that the business unit had the capabilities and the type of users, channels or platforms similar to those required by the innovation project. Therefore lowering the risk perception.

Gammaproject (Senior technical expert): The business unit did have the required competences and skills for the project what helped a lot in the transition. When the recipient business unit does not need new skills to operate the project, the transfer is greatly easier.

Epsilonproject (Head of commercial innovation): The receiving business unit was not aware of the skills its team needed. They were not a product team and they had no idea of all the steps that the deployment required. They did not have the expertise needed.

Knowledge Transfer

In the projects where members from R&D team with the whole knowledge of the project have been transferred, the effects on the transfer process have been positive. It is a key activity for the push of the project, for the leadership, for the knowledge transferred and for the technical training necessary to complete the maturity of the project.

Gammaproject (Senior technical expert): The transfer of the team makes it much easier to take everything to a better port, through all the knowledge acquired during the process, even when it comes to commercial contacts.

DISCUSSION AND CONCLUSIONS

Based on the results of the research carried out we identified certain specific activities that will help determine the venture readiness and proper timing to scale up, and we have integrated the results of that empirical study with knowledge from extant literature, to develop a set of propositions for improving the success of the scaling up.

Despite different authors (Kanter et al., 1991; O'Connor et al., 2002; van Burg et al., 2012) mentioning the importance of drawing up a transition plan prior to the scaling up, none of the interviewees from the success cases indicated developing it.

However, in several of the success cases, defining a team responsible for the scaling up is pointed out as a significant activity to undertake in order to achieve an optimal growth during the scale up phase, corroborating the work of Van Burg et al. 2012. In the only case where the scale up is still ongoing, the interviewee stated his concern for having a "pure" exploitation team and requested a team with previous experience in scaling up, as a key factor in the evolution of the venture newly integrated in the business unit.

P1: To define and to build a team with scaling experience is acknowledged as extremely relevant in order to facilitate the transition of the project.

The work of Van Burg et al. (2012) considers the first sales as a milestone in order to proceed with the scale up. The cases we studied echoed this argument as necessary, yet insufficient. On the contrary, not having any sales is presented as a barrier for attracting the attention and interest of possible business units, as it was the case with failure cases such as the *Deltaproject*.

Different profiles within the success cases emphasized the need to attest the traction of the project in separate market niches, underlining the importance of counting with clients who would

pay for the innovation beyond the early adopters (whose acquisition and usage criteria of the project may be different), a factor also highlighted by authors such as Maurya, (2010); or (Leveland, 2019). This element further demonstrates the necessity to build a steady base of clients in order to muster the attention and interest of business units with regards to the project and the scaling up process itself, as stressed by Rice et al. (2002).

As set out by Nieto and Consolación, (2019); several of the cases studied confirm the positive effect that carrying out pilots prior to the scale up process have, permitting to test hypothesis related to the innovation in real markets. It also contributes to identifying possible barriers previously gone unnoticed and enables the exploration of collaboration opportunities with the different actors in the ecosystem where the product/service will be implemented.

P2: A product-market fit and a validated business model are necessary but no sufficient conditions for scaling up. Obtaining first sales, demonstrating traction from a broader customer base and conducting pilots are beneficial activities to facilitate the scaling up.

A number of success cases signal as crucial the ability of the project to manage its operations, corroborating studies by O'Connor and de Martino, 2006, or Leveland 2019. Simply put, the solid foundations of the new business are being laid so that it can operate almost by itself at a later stage.

P3: In order to kick-start the scale up process it is beneficial to have a clear operating model, with the corresponding associated platforms and services, which enables the scalability and replicability of the market strategy.

It is quite likely that a mismatch between the culture, the interests and motivations or the management systems of the corporate business unit and the innovation project emerges. Therefore it is vital to generate, before the scaling up, different kinds of communication dynamics between the corporation and the innovation team, to search for synergies and possible gaps among the teams a constant process of looking for the "ideal" business unit, and to demonstrate through quick wins the value the innovation has for each of the involved stakeholders. This is further sustained by a number of authors, such as Van Burg et al. (2012) Jansen et al. (2009); Gassman et al. (2012) or Raisch and Tushman, (2016). The gradual reconciliation among the explorative and exploitative organizations will help conform a better realignment of both elements and facilitate a smoother and easier transition, regardless of the context, into the business team.

According to the cases studied in this investigation, the interorganizational relations prior to the scale up are very beneficial in order to gather support from different champions, not only among senior management, but also in the different departments of the business unit and the other areas of the corporation, as indicated by previous works (Van Burg et al., 2012; Gilbert, 2010, Rice et al., 2002; Van Burg et al., 2012; Gassman et al., 2012; Jansen et al., 2009, or Hill and Birkinshaw, 2008). Being able to identify the key stakeholders to correctly implement the innovation, as well as gaining their support ahead of the scale up, are activities that this study reveals as particularly important towards its success.

P4: To establish inter organizational relations before scaling up is beneficial for a smooth integration into the business unit as well as for obtaining the required support within the corporate parent.

A key element in the reconciliation between the business unit, the corporation and the innovation project is to define the type of performance measurements that would be used to evaluate the venture during the initial scale up period. This will help adjusting the expectations among all the teams involved and also carrying out possible explorative activities that may still be needed during the scale up phase. The work of van Burg et al., 2012, considers this activity as crucial, although after the transition into the business unit has taken place, while the different cases within the present study signal that it should be done before the scale up.

P5. Performance metrics should be agreed between the venture, the corporate and the business unit prior to the scale up to facilitate that the innovation is implemented properly after the transition into the existing business team.

With regard to the activities aimed at reducing the uncertainty that is associated with the resources, it is of particular relevance that the business units have the necessary competences and resources to implement the innovation project. Otherwise, the perception of risks associated with the venture integration grows substantially. For this reason, it is very important to detect, in advance of the scale up, if there are any such deficiencies in the exploitation unit and design a strategy to remedy them (Ford, 2010; Raisch & Tushman, 2016).

The transfer of all the knowledge acquired during the initial stages of the innovation project is a key factor in order to guarantee the success of the scale up (technical-scientific know-how, market findings, relations with stakeholders, customer knowledge, specific areas of responsibility…). If a preliminary transference of all this information through targeted trainings is not possible before the scaling up, in many of the cases studied it was necessary to transfer part of the R&D team into the business unit in order to ensure the necessary transfer and distribution of knowledge and also the necessary competences so that the innovation could be implemented and grow.

P6: To perform an assessment on the existence in the business unit of the competences and resources required to implement the innovation would facilitate the scaling up. Training and a proper knowledge transference are key activities for it.

CONTRIBUTIONS AND LIMITATIOS

This study improves the understanding of the time when corporate ventures should initiate the process of scaling an innovation.

Defining the best time to scale is highly relevant because it reduces failure rate, growth time, and cost of implementation. Premature venture scaling up could provoke growth failure and reduced post-transition performance because of a number of unresolved market and technology uncertainties. On the contrary, when the corporate organization integrates the venture too late, the established business might miss its window of advantage position.

The assessment of the venture readiness and the kind of activities that should be done before scaling up could help improving the success and growth of the venture once it is integrated into the business unit.

Even if different studies recommend certain activities to be undertaken before the scaling up of an innovation, none of them propose a complete set of propositions approaching the issue such as it is done in this research.

The contribution of the research lies on the identification of a set of key specific activities that should be performed before the transition into a business unit of the corporate parent takes place, informing also about the best moment to scale up.

The study also corroborates propositions from prior disperse literature which required to be empirically tested and generates new insights about crucial activities to be undertaken before scaling up. The findings shed light on managerial propositions for successful ventures' scaling up and growth through an effective management of the innovation's pre-transition process.

There are some limitations to this paper, which define at the same time fields for future research. Firstly, the case study method applied in this study inherited the problem of generalization, as it is normally the case. This makes the findings of this article to be limited with regards to generalization. Although the findings are generic, which means they can be generalized, yet it is recommended that the findings' generalization is determined by the nature of the concerned technology, its industry and its target market.

Additionally, the current research lacks the perspective from the managers of the adopting business units. Interviews with those profiles could be conducted to get a wider variety of insights on the research questions.

Lastly, these empirical findings need to be confirmed through further research, something that creates room for future studies.

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