

Developing relationships early: How new ventures fill their capability gap

Eleonora Di Maria^{*}, Marco Bettiol^{**}, Valentina De Marchi^{***},
Roberto Grandinetti^{****}

Abstract

In light of the resource-base view of the firm, liability of newness appears as a capability gap. Several studies claim that collaborating with others is an effective strategy for bridging this gap. However, none of them demonstrates that, against a capability gap declared by the new venture at its birth and filled at the end of the start-up phase, this result was achieved by resorting to relations with external actors. The paper aims at answering this research question analyzing both the case of a marketing and technological capability gaps. The empirical section presents the results based on an original dataset on about 400 Italian new ventures. Results show that collaboration with external partners is the only determinant in reducing both capability gaps, whereas the profile of the new venture as well as its size, its location and the founders' education are not relevant. New ventures use external relationships to develop both technological and marketing capabilities.

Keyword: New ventures, technological capabilities, marketing capabilities, capability gap, business relationships, collaboration.

First submission: 22/11/2018, *accepted:* 28/02/2019

^{*} Associate Professor of Business Management, Department of Economics and Management, University of Padova, Via del Santo, 33 – 35123 Padova. E-mail: eleonora.dimaria@unipd.it.

^{**} Associate Professor of Business Management, Department of Economics and Management, University of Padova, Via del Santo, 33 – 35123 Padova. E-mail: marco.bettiol@unipd.it.

^{***} Assistant Professor of Business Management, Department of Economics and Management, University of Padova, Via del Santo, 33 – 35123 Padova. E-mail: valentina.demarchi@unipd.it.

^{****} Full Professor of Business Management, Department of Economics and Management, University of Padova, Via del Santo, 33 – 35123 Padova. E-mail: roberto.grandinetti@unipd.it.

Mercati & Competitività (ISSN 1826-7386, eISSN 1972-4861), 2019, 2

Introduction

As several streams of literature pointed out, capabilities play a crucial role for sustaining firm's competitive advantage. Those capabilities refer to knowledge acquired by the firm in different ways (learning by doing, formal training, entrepreneurs background, external partners etc.). This learning is critical in the start-up phase of a new venture where the new firm suffers from its newness (Stinchcombe, 1965) as it is still in the process of developing and refining its capabilities (Tatikonda *et al.*, 2013).

Literature on new ventures explored the process of their formation and described how the new venture can start with a certain stock of endowments (e.g., Helfat and Lieberman, 2002; Helfat and Peteraf, 2003). In particular, studies on spin-offs (Agarwal *et al.*, 2004; Chatterji, 2009; Dahl and Sorensson, 2014; Klepper and Sleeper, 2005) suggest that they benefit from the industry-specific knowledge that their founders gained in their previous employment. Based on this assumption, Klepper and Sleeper (2005) proposed that spin-offs inherit knowledge from their parents that shape their capabilities at birth. But the inherited knowledge is not enough: some studies in the entrepreneurship literature, reviewed by Furlan and Grandinetti (2016), show how relationships help new founders in the initial development of firm capabilities. This role of social capital is even more important in the case of *de novo* start-ups whose founders cannot count on a useful inherited knowledge (Helfat and Lieberman, 2002). Moreover, an emergent body of studies adopting the industrial network perspective (Håkansson *et al.*, 2009) focus on the first business relationships of a new venture even with regard to their impact on the development of its capabilities (Aaboen *et al.*, 2017; La Rocca *et al.*, 2017).

In this debate, despite the emphasis on new ventures' capabilities, a non-trivial research question has not received adequate answer yet: if the firm suffers at its foundation – or better at the time when it starts to operate in the market – of an important capability gap, how can it fill it in a short time, i.e., within the start-up phase? Such a question can be further specified considering for functional capabilities, and more specifically adopting the traditional dichotomy between technological and marketing capabilities (Vorhies and Morgan, 2005). As suggested by some contributions (e.g., Bettiol *et al.*, 2016), this dichotomy is relevant even for new ventures. In view of the above, our paper aims at understanding if new ventures use relationships with external partners as an effective strategy to bridge their initial gap in technological capabilities or in marketing capabilities.

The paper is structured as follows: the theoretical section focuses on the liability of newness and the role of relationships in relation to the capability

gaps, and develop the hypotheses; the empirical section presents the results based on an original dataset on about 400 new ventures based in North Italy; the final section proposes theoretical advancements and managerial implications.

1. Theoretical background and research hypotheses

1.1. Liability of newness and capability gaps

During the tricky start-up phase, new ventures suffer from the well-known phenomenon of liability of newness. Stinchcombe (1965) discusses about this phenomenon for the first time and hence it has been recognized in many following studies (Cafferata *et al.*, 2009; Tatikonda *et al.*, 2013; Yang and Aldrich, 2017). In fact, in absence of liability of newness it would be hard to explain the high average mortality of new ventures compared to older companies (Nagy and Lohrke, 2010). In his analysis, Stinchcombe identified four factors that cause this phenomenon. New organizations operate inefficiently as long as: (a) they do not rely “on social relations among strangers” (Stinchcombe, 1965, p. 149); (b) their workers do not learn their roles, and (c) organizational routines are not developed. Moreover, (d) building a set of stable customer relationships takes time, during which the likelihood of relational breakdown is high. After the seminal contribution of Stinchcombe, several studies (e.g., Freeman *et al.*, 1983; Kale and Ardit, 1998) have shown that the very small size of the vast majority of new ventures adds further difficulties (liability of smallness) to the factors causing the liability of newness.

The liability of newness (and smallness) is strengthened due to the lack of legitimacy that new ventures suffer from. Customers, suppliers of goods and services as well as capital suppliers and labor suppliers that get in touch with the new entrepreneur perceive the initial difficulties mentioned above. Hence, those actors are not so disposed to develop dicey transactions with the new venture (Elfring and Hulsink, 2003). This factor began to operate even before the new venture is created, in the resource assembly phase (Ciauschy *et al.*, 2012; Stuart and Sorenson, 2007), and continues in the immediately following phase (Furlan and Grandinetti, 2014).

Reading the liability of newness in light of the resource-base view of the firm, it appears as a capability gap. At the time of setting up a new business (t_0), there are only the endowments brought by the founder or the founding team, being her intellectual capital (knowledge, skills, experience) and the relationships included in her social capital (Helfat and Peteraf, 2003; Furlan

and Grandinetti, 2016). In the immediately following period, the new venture must develop a configuration that allows it to operate in the market (time t_1), and therefore in this period (t_0 - t_1) it increases its resources, builds routines, and develops capabilities (Garnsey, 1998). The interpersonal relationships that founders have at the firm birth or that they are able to establish afterwards support this delicate process (Kreiser *et al.*, 2013). At the same time, these relationships and the emerging capabilities of the new venture are the required means to build such initial business relationships, a real “trial by fire” for each new venture: in particular, acquiring the first customer is always a critical task for a new venture (La Rocca *et al.*, 2013). The liability of newness is obviously present in the t_0 - t_1 period, but it can also go beyond that. Indeed, by observing the enterprise at the time t_1 , that is still at the beginning of its life, a capability gap can be detected.

On the other hand, confirming what the resource-based view claimed for established firms, i.e., that the distribution of resources and capabilities among them is clearly uneven (Rumelt, 1984; Amit and Schoemaker, 1993), new ventures differ from each other in terms of their initial endowments (Abatecola and Uli, 2016). In other words, none of them is a blank slate (Helfat and Peteraf, 2003), but some distance themselves a lot and others a little. As far as intellectual capital is concerned, heterogeneity among new ventures depends very much on the knowledge antecedents of the firm birth. Helfat and Lieberman (2002) compared different types of new ventures in this respect. The most disadvantaged case is that of *de novo* start-ups, whose founders have not prior employment ties to established firms in the industry, being contrasted with that of corporate spin-offs, whose initial endowments depend on the extent to which the parent firms transfer personnel, knowledge or other assets to the new entities at the time of founding. Entrepreneurial spin-offs, founded by individuals who develop their endowments as employees of an incumbent firm, are in an intermediate position. The more the parent firm is rich in terms of knowledge, the larger the potential initial stock of inherited knowledge in the spin-offs that generated from it (Klepper, 2002).

Heterogeneity across firms is quite high also with regard to their social capital – that is “the sum of the actual and potential resources embedded within, available through, and derived from the network of relationships possessed” by a firm (Nahapiet and Ghoshal, 1998, p. 243) – and this applies to every phase of their lives. Again, the situation at birth depends on what precedes it (Lechner and Dowling, 2003). For example, as we saw before, acquiring the first clients and keeping them is not an easy task for a new venture. However, the founder or founding team may be able to bring into the new venture clients with whom they had built trust relationships in the course

of their previous professional experience (Fichman and Levinthal, 1991; Grandinetti, 2017). In this case, the social capital of the new entrepreneur is a direct source for business relationships. At the same time, the actors representing such social capital may also be exploited as facilitators of new business relationships. The role of such “third actors” has emerged as particularly relevant in few recent studies focused on how new ventures initiate new relationships (Aaboen *et al.*, 2017; Oukes and von Raesfeld, 2017).

1.2. Using relationships to fill a gap in technological or marketing capabilities

A classic way of assessing the competitive position of a company is to analyse its strengths and weaknesses in relation to its competitors with reference to different functional areas. In particular, there is evidence that, in certain industries, companies that are relatively strong in terms of technological resources and capabilities but relatively weak in terms of marketing ones, coexist with companies that have the opposite combination (Vorhies and Morgan, 2005). A well-known situation has been highlighted for the first time by Teece (1986) who studied innovations with reference to which firms obtain the greatest share of economic returns from their introduction into the market. It will not be the first comer – who excels in innovation and technological capabilities and for this reason is the first to commercialize a new product in the market – unless it does have the necessary complementary assets, in particular the marketing capabilities that allow it, for example, to support the launch of the new product through an effective communication campaign. In such a case, a follower who presents the opposite capability asymmetry will outperform the first comer if it is able to imitate profiting from the first comer’s innovation and technological efforts, and to exploit its own marketing capabilities.

It is quite reasonable to believe that this type of heterogeneity – among firms with different capability gaps – does not concern only the incumbent firms of a sector but also the new entrants in the same sector in a given period (Bettiol *et al.*, 2016). Even though in the second case there is not sufficient empirical evidence of the presence of one of the two gaps in the absence of the other, there is no lack of clues that allow us to hypothesize it. For instance, the kind of training background of the academic spin-off founders justifies the fact that many of them are strong in technological capabilities and weak in marketing ones (Chiesa and Piccaluga, 2000; Colombo and Piva,

2012; Hayter, 2016; Lockett *et al.*, 2005). The opposite gap is instead reflected in the new ventures founded by people who have good knowledge of a given market, matured inside or outside an incumbent firm. On this basis, they recognize a business opportunity and create a venture to exploit it, underestimating the production and technological difficulties that exploitation will bring to light (Agarwal *et al.*, 2004).

Considering our new venture at time t_1 , when it started selling its products or services, it may suffer from a capability gap that might concern technological and/or marketing capabilities. The research question our contribution is focusing on can be formulated as follows: if at the beginning of its life the firm suffers from a perceivable gap in technological and/or marketing capabilities, can it fill it in a short time, i.e., within the start-up phase, by using the leverage of relationships (its social capital in the time period t_1-t_2) to this goal?

Research on relationship development and its interplay with capability development in the initial stages of new ventures has been limited (Aaboen *et al.*, 2017; Anderson *et al.*, 2010; La Rocca *et al.*, 2013). However, studies that have explicitly or implicitly taken into account the link between new ventures and capabilities direct towards a positive response to our research demand. From the studies on (entrepreneurial) spin-offs (Chatterji, 2009; Furlan and Grandinetti, 2016), academic spin-offs (Aaboen *et al.*, 2011; Hayter, 2016; Mustar *et al.*, 2006) and student entrepreneurship (Jansen *et al.*, 2015), it emerges the use in a learning key of relationships established by the founder(s) in the period preceding the birth of the new venture. Moreover, studying four academic start-ups, Aaboen *et al.* (2011) find that the relationship with a “good” first customer creates a “structural imprinting” that can “then be used as a platform for the continued development of the firm and its relationships” (p. 56). From the studies on business incubators, and in particular on networked incubators, it emerges the role that the organizations managing incubators play as third actors (Aaboen *et al.*, 2017), that is in putting start-ups in contact with subjects that help them to overcome their limits, when it is not these organizations themselves that carry out such a task (Apa *et al.*, 2017; Cantù, 2015; Scillitoe and Chakrabarti, 2010). Studies on start-ups in the high-technology or medium-high technology sectors have highlighted the possibility for them to increase their technological or marketing knowledge and skills by interacting with external actors such as consultants and knowledge-intensive business services, universities, potential and actual customers, venture capitalists, or also players in the same sector as the new venture (Cantù *et al.*, 2018; La Rocca and Snehota, 2014; Lechner and Dowling, 2003; Lee *et al.*, 2001; McGrath *et al.*, 2017; Terjesen *et al.*, 2011).

Finally, a pioneering study on the role of supplier relationships in the development of new ventures shows that the key initial supplier relationships of a new venture extend its resource and capability base (La Rocca *et al.*, 2017).

All these contributions suggest that relationships are an effective strategy for bridging the capability gaps that new ventures face at the beginning of their lives. However, none of them demonstrates that, against a capability gap declared by the new venture at time t_1 and resolved at time t_2 , this result was achieved by resorting to relations with external parties. Moreover, from the above-mentioned contributions, there are no elements that lead to hypothesize a differentiated relevance of relationships for the two types of gaps we considered – namely technology and marketing ones – which are the focus of our analysis. Indeed, if Day (2011) shows that in the case of a marketing capability gap the firm (whatever its age) has not developed an adequate network (what the author calls an “outside-in” approach), it is equally true that the literature on open innovation leads to the same explanation in the presence of a technological capability gap (Laursen and Salter, 2006; West and Bogers, 2014).

From all this it follows the usefulness of subjecting the two following research hypotheses to verification.

Hypothesis 1 For a new venture, collaborating with external partners is an effective strategy to bridge its initial gap in technological capabilities.

Hypothesis 2 For a new venture, collaborating with external partners is an effective strategy to bridge its initial gap in marketing capabilities.

Both the hypotheses refer to business relationships, which constitute a subset of those potentially relevant. Indeed, a firm’s network includes both interpersonal and inter-organizational relationships (Hoang and Antoncic, 2003), and literature suggests that both are important in a new venture’s formation and its early development.

2. Empirical analysis: medium-high-technology ventures in North Italy

2.1. The data and empirical context

In our study we analyzed data gathered from an original survey of more than 400 new ventures based in North Italy. This area is the most developed

in Italy in terms of GDP per capita and innovation performance. It hosts more than 50% of the total number of firms active in Italy and 58% of total employment (ISTAT, 2017), despite hosting the 46% of the total population. In regions such as Veneto, it has been calculated that there are, on average, one active firm every 10.7 inhabitants (Di Maria *et al.*, 2012).

The survey was conducted between February and June 2013 by a specialized survey company, which targeted firm's entrepreneurs. The total population considered for the purpose of the analysis consists of all the companies i) with share capital located in North Italy; ii) born between 2005 and 2007; iii) registered within the business register of the Italian Chambers of Commerce and being still active in 2013; iv) specialized in the sectors knowledge-intensive business services (KIBS, identified via the ATECO 2002 industry codes 72, 73, 74.20.1, 74.20.2) or mechanics (ATECO 2002 industry codes 29, 31, 34, 35 (excluding 35.1), both entailing a mid-high technological content, according to the European classification of industries. Starting from such a population (6,089 companies), we created a stratified sample based on industry specialization and geographical locations (region) collecting 430 valid responses, being 221 KIBS and 209 mechanics firms.

The questionnaire, available upon request, inquired about the firms' structural characteristics, the founders' characteristics and motivations, and firms' capabilities, innovation, and business relationships both at founding and in the following three years.

2.2. Measuring how start-ups fill the initial capability gap

To structure our dependent variable, we used a question asking firms to rate, on a scale from 1 (no capabilities) to 5 (high capabilities), their perceived level of technological and marketing capabilities, both at the time in which they started to operate (t_1) and after three years (t_2). Differently from the scales usually adopted by empirical contributions addressing this issue (e.g., Ritter and Gemünden, 2004), which are focused just on manufacturing firms, this subjective approach to the measurement of capabilities' development allow considering for the different meanings that technology and marketing can have for service industries (KIBS) and manufacturing ones (mechanics). Additionally, the fact that we asked firms at the moment of the interview (t_3) to report about two preceding times t_1 (that we consider the real birth of the firm, after its foundation) and t_2 allows comparing the information reported across the period t_1 - t_2 , since they have been assessed using the same mindset. Of course this approach is not without shortcomings as

interviewees may not necessarily fully remember the situation. Nonetheless, asking those questions after the new ventures have received feedbacks from the market about its offering can provide the interviewees with additional elements of judgment.

As emerges from Table 1, for the firms that have participated to our survey, marketing capabilities are the lowest one, both at the birth and after a 3 years period. On a scale from 1 to 5, firms have declared to hold a 2.58 level of marketing capabilities versus a 3.75 of technological ones. Companies still having a low or medium level of such capabilities even after 3 years from the birth of the firm are still a relevant fraction of the total sample (49.8% versus the 8.9% of firms perceiving to still have a technological gap). As expected, the perception of capabilities endowments increased between t_1 and t_2 in both cases, even though such growth was the largest for marketing capabilities, who increased by almost one point in a 5-point scale (0.83 vs. 0.64 for the technological).

Table 1 – Technological and marketing capabilities hold by companies at their birth and after 3 years

	<i>Technological capabilities</i>	<i>Marketing capabilities</i>
Average level of capabilities (1-5) at time t_1	3.75	2.58
% of firms with low or medium (3 or less) level at time t_1	37.2	77.3
Average level of capabilities (1-5) at time t_2	4.39	3.42
% of firms with low or medium (3 or less) level at time t_2	8.9	49.8
Average level of improvement during the period t_1 - t_2 (1-5)	0.64	0.83
% of firms that filled the gap (from 3 or less to 4-5)	29.0	28.5

The dependent variable used in the analysis is the share of companies that passed from a low-level (3 or less on a 5-point scale) to a high-level (4 or 5 on a 5-point scale) during the three-years period. TECH-GROWN and MKTG-GROWN are dummies taking on the values 1 if the firm reported to have filled the initial gap on technological and marketing capabilities respectively, i.e. with a reported value higher than 3 in a scale from 1 to 5 after three years from its birth. We focused our analysis just on companies that have declared to have an initial capability gap, disregarding companies that have already high capabilities (rated as 4 or 5) at time t_1 .

2.3. The independent and control variables used

In order to test our research hypotheses, we included in the analysis the dummies COLLABORATION, which are built on a question asking firms to report how each capability type has been developed during the three-year period, distinguishing between three options: just internally, just externally (both by acquiring external services from specialized suppliers or through collaboration with external partners) or both. For each capability type we built a dummy taking on value 1 in the cases firms declared to have increased that capability in the second or third mode, therefore at least partially through the interaction with external partners.

We included also a set of variables to control for the potential role of endowments and intellectual capital of the founders in the filling in of the initial gap. The dummy DE-NOVO takes value 1 if the company has been founded by entrepreneurs with no previous experience, assuming, based on the literature (Helfat and Lieberman, 2002), that they will entail lower endowments than corporate spin-offs or entrepreneurial spin-offs. Additionally, EDUCATION allows considering for characteristics of the founders (it equals 1 if at least one of the founders achieved a tertiary education). Finally, we control for: i) other characteristics and resources of the firm – SIZE is a dummy capturing if firms have 3 employees or more at the birth; ii) characteristics of the activities it is specialized in – the dummy SECTOR is equal 1 if KIBS, 0 if mechanics; and iii) characteristics of the context in which the firm is embedded – LOCATION is equal 1 if the firms is located in the North-East of Italy. Table 2 reports the descriptive statistics for the independent variables used in the analysis.

Table 2 – Description and descriptive statistics of the regressors used in the analysis

Variable	Description	Obs	Mean	S.D.	Min	Max
COLLABORATION (TECH)	Technological capabilities developed at least partly engaging with external partners	429	0.57	0.50	0	1
COLLABORATION (MKTG)	Marketing capabilities developed at least partly engaging with external partners	427	0.37	0.48	0	1
DE-NOVO	De-novo firms	420	0.22	0.42	0	1
EDUCATION	At least one founder with tertiary education	430	0.57	0.50	0	1
SIZE	Initial size (more than 3 employees)	414	0.65	0.48	0	1
SECTOR	Sector (KIBS vs. Mechanics)	430	0.51	0.50	0	1
LOCATION	Firm is located in the North-East of Italy	430	0.51	0.50	0	1

2.4. Results and findings

Considering that the dependent variables of the analysis (TECH-GROWN and MKTG-GROWN) are dummies, to test the hypotheses under scrutiny we employed a logit analysis for each step. All analyses passed tests for multicollinearity (variance inflation factor test for independent variables), goodness of fit (Pearson or Hosmer-Lemeshow test), and model misspecification (specification link test for single-equation models). The results of these tests are available upon request.

Table 3 reports the results of the analysis, evaluating what factors impact on the probability that the firms fill an initial gap in terms of technological and marketing capabilities.

Table 3 – Logit regression, explaining the propensity to increase technological and marketing capabilities if started from a low level (3 or less in a scale from 1 to 5)

Variable	TECH-GROWN		MKTG-GROWN	
	Coef.	S.E.	Coef.	S.E.
COLLABORATION	1.208***	(0.439)	0.917***	(0.247)
DE-NOVO	0.237	(0.837)	-0.230	(0.542)
EDUCATION	0.186	(0.408)	0.151	(0.266)
SIZE	0.577	(0.422)	0.077	(0.259)
SECTOR	-0.144	(0.415)	-0.502*	(0.267)
LOCATION	-0.500	(0.412)	-0.178	(0.245)
Constant	0.630	(0.546)	-0.716**	(0.334)
Observations	155		316	
Pseudo R-Squared	0.0707		0.0458	
Chi2	8.959		17.72	

Robust standard error: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Whenever an initial gap is identified, filling it by engaging with external partners – both by acquiring specific services or by cooperation – is a most effective practice than trying to do it internally. COLLABORATION plays a major role, in terms of significance and magnitude, in the case of both technological and marketing capabilities, being the only significant variable explaining the increase in capabilities in the first case. Collaborating with external partners, being clients, suppliers or other firms or organizations might therefore support, for instance, to improve the understanding of the market needs, communicate the new products developed in an effective way so as to

solve technical problems on understanding how to industrialize effectively an initial prototype.

Interestingly, firms having a lower endowment of resources at the beginning, given the fact that they cannot count on a parent company or on previous experiences (DE-NOVO) is not playing a significant role in explaining the ability of the firms to fill an initial capability gap, neither in technological nor in marketing terms. Also the fact that the founders hold a tertiary education (EDUCATION) does not play a role for both the capability gaps considered.

Finally, control variables are not relevant, neither in terms of industry specialization (SECTOR) nor of the initial size (SIZE) or the location in different regions (LOCATION).

On the basis of the empirical evidence, our two hypotheses are confirmed. External relationships play a significant role in diminishing both capability gaps experienced by new ventures at their birth. The effect is similar both for marketing and technological capabilities. This is not a trivial outcome. Although the percentage of firms experiencing marketing and technological capabilities at the foundation is quite different, respectively 77.3% and 37.2%, the percentage of the companies that were able to fill the gap is almost identical, respectively 28.5% and 29.0% as is shown in Table 1.

Our research leads us to interpret the search for external relationships as an effective strategy to improve the competitiveness of the firm in a relative short amount of time (three years) both in terms of marketing and technological capabilities. Establishing relationships with external entities give new ventures the possibility to handle the liability of newness in the short-medium term. On the one hand, we could interpret this result as confirmation of the theory of open innovation because external relationships help new ventures to become more knowledgeable and competent, especially in relation to technological capabilities (West and Bogers, 2014). On the other hand, we could confirm the literature on marketing (Day, 2011) about the role of external relationships in covering the marketing capability gap, even in the case of new ventures.

Specific attention should be given to the fact that, if partnerships emerge as a valid means for capability development (Table 3), not all the new ventures of our sample that at the beginning suffered from a capability gap knew or wanted to use such a means (Table 1). This evidence emerging from our quantitative research can be explained through few qualitative studies mentioned in the literature section. We can consider in particular a firm aware of an initial capability gap and that is oriented to overcome such limitation through the support of collaborative relationships. The new venture could find support in

a third actor to identify effective partners. However, identifying the partners with the requisites to perform the role of a third actor is not an easy task, as demonstrated by the case of a medical device start-up deeply explored by Oukes and von Raesfeld (2017). In presence of established business relationships potentially useful for the goal of filling the functional capability gap – i.e. a client, a supplier, a knowledge-intensive provider, or another actor – the relational (or network) capability of the new venture becomes relevant. This capability is not an initial endowment, rather it has to be developed over time. Its development “calls for sensing and *acting with* other firms, and so is more than an internal proficiency of a firm at orientating towards other firms”, as demonstrated by McGrath *et al.* (2017, p. 1) studying a firm founded to provide customized wireless antennae solutions. Being able to work with a first customer as the ones described by Aaboen *et al.* (2011) could be relevant for different reasons: a) because such relationship allows developing relational capability; b) because the interaction with one “structural imprinting” partner brings also the development of other internal capabilities; c) finally, because the customer itself can be considered as a good third actor and help the new venture to build its own network. Nevertheless, even the identification of an actor with such characteristics is far from being taken for granted. Ultimately, the connection in new ventures between business relationships and capability development must be placed in a decidedly “selective” framework, which explains the results of our research.

We can also add that prior interpersonal relations of the new entrepreneur, even if they are crucial for the emergence of the new venture (Furlan and Grandinetti, 2016), they are not necessarily useful in the phase t_1 - t_2 to reduce a possible capability gap. This conclusion is reached by the pioneering work of Lechner and Dowling (2003) on the Munich IT cluster, the case study just mentioned by McGrath *et al.* (2017), and also by our research if we observe that we have not found any significant difference between *de novo* start-ups and spin-offs in order to improve their technological or marketing capability gap.

A different consideration could be made for the evidence that our new ventures suffer more from the marketing capability gap than from the technological one. As we see from Table 1, the firms that experience a marketing capability gap double the firms that have a technological capability gap. Even in terms of the level of capabilities, there is a clear difference both at the beginning of the start-up phase (3.75 on average for technological capabilities, 2.58 for marketing capabilities) and after three years from this time (4.39 on average for technological capabilities, 3.42 for marketing capabilities). If the effect is similar in terms of the relative decrease of the capability gap, the absolute level is still different. Marketing capabilities, at least in our

sample, are not well spread among new ventures: one out of two firms have this gap even after three years. This difference could be explained by the fact that founders have mainly a technological background by training or by experience in the field. Marketing capabilities are rare in the founding team at least at the beginning. This asymmetry also involves the social capital that new entrepreneurs have when they set up their businesses. Moreover, it tends to reproduce later because it is difficult for many of them to overcome the boundaries of the cognitive and relational domain that they control well, related to production and technology, to get the domain of sales, distribution, communication and other marketing issues. In other words, we can clearly see a path dependency effect in the production and reproduction of firms' capability gaps in the early stages of their life.

Conclusions

Our study contributes to the literature on new ventures and on how those firms can overcome their initial capability gaps through collaboration. Specifically, it sheds new light on the process of development of new ventures going beyond the starting phase of a company to include subsequent dynamics, with special attention on the dimension of collaborations. Moreover, the possibility to compare *de novo* and spin-off in our research further contribute to understand the foundation of growth of new firms, taking into account on the one hand initial endowment – also in terms of new entrepreneur' social capital – and on the other hand how new ventures strengthen or counterbalance (if limited) such endowment through business relationships.

From the results of our research, we may speculate that external relationships ignite internal learning processes in new ventures. The opportunity to interact with a knowledgeable partner (on a specific domain whether technology or marketing) helps new ventures to learn new skills and knowledge. In so doing, what could be considered a market transaction or collaboration with an external counterpart is also a way of transferring knowledge from one side to the other.

In short, a number of studies have suggested that collaborating with others is an effective strategy for bridging the capability gaps that new ventures face in their start-up phase. Our study reinforces such evidence and also provides additional elements in the theoretical debate by distinguishing between *de novo* and spin-off as well as by proposing new results on the role of collaboration to fill both technology and marketing capability gap. The evidence

provided allows answering to a research question not developed in the literature. At the same time our results are consistent and in line with what emerge from other studies.

From a managerial point of view, our study suggests the relevance of promoting collaboration with external partners as a means to overcome initial capability gaps. While new ventures suffer from liability of newness, our contribution provides evidence of the low relevance of prior experience as well as of the education of the founder. On the contrary, managers and founders should put their attention in the identification of right partners with whom to collaborate in order to acquire and develop further knowledge.

We acknowledge that our paper has some limitations. In particular, we conducted our research on a sample of Italian firms and we should compare our results with samples of firms at least of other European countries. Future research should expand our analysis by focusing on the networking characteristics and dynamics of new ventures. Moreover, additional research could further detail how collaboration within business relationships can take places in terms of forms and means of interaction.

References

- Aaboen L., Dubois A. and Lind F. (2011). Start-ups starting up: firms looking for a network. *IMP Journal*, 5(1): 42-58.
- Aaboen L., Holmen E. and Pedersen A. C. (2017). Initiation of business relationships in start ups. In: Aaboen L., La Rocca A., Lind F., Perna A. and Shih T., editors, *Starting Up in Business Networks: Why Relationships Matter in Entrepreneurship*, London: Palgrave Macmillan. DOI: 10.1057/978-1-137-52719-6_2.
- Abatecola G. and Uli V. (2016). Entrepreneurial competences, liability of newness and infant survival: evidence from the service industry. *Journal of Management Development*, 35(9): 1082-1097. DOI: 10.1108/JMD-09-2014-0094.
- Agarwal R., Echambadi R., Franco A. M. and Sarkar M. (2004). Knowledge transfer through inheritance: spin-out generation, development, and survival. *Academy of Management Journal*, 47(4): 501-522. DOI: 10.2307/20159599.
- Amit R. and Schoemaker P. J. H. (1993). Strategic assets and organizational rent. *Strategic Management Journal*, 14(1): 33-46. DOI: 10.1002/smj.4250140105.
- Anderson A. R., Dodd S. D. and Jack S. (2010). Network practices and entrepreneurial growth. *Scandinavian Journal of Management*, 26(2): 121-133. DOI: 10.1016/j.scaman.2010.01.005.
- Apa R., Grandinetti R. and Sedita S. R. (2017). The social and business dimensions of a networked business incubator: the case of H-Farm. *Journal of Small Business and Enterprise Development*, 24(2): 198-221. DOI: 10.1108/jsbed-07-2016-0103.

- Bettiol M., De Marchi V. and Di Maria E. (2016). Developing capabilities in new ventures: a knowledge management approach. *Knowledge Management Research & Practice*, 14(2): 186-194. DOI: 10.1057/kmrp.2015.16.
- Cafferata R., Abatecola G. and Poggesi S. (2009). Revisiting Stinchcombe's "liability of newness": a systematic literature review. *International Journal of Globalisation and Small Business*, 3(4): 375-392. DOI: 10.1504/ijgsb.2009.032258.
- Cantù C. (2015). A service ator business model: external networking orientation. *IMP Journal*, 9(3): 267-285. DOI: 1 0.1108/IMP-08-2015-0041.
- Cantù C., Giorgia S. and Tzannis A. (2018). Exploring the role of business relationships in start-ups' life cycles: evidences from the Italian context. *IMP Journal*, 12(3): 519-543. DOI: 10.1108/IMP-07-2017-0037.
- Chatterji A. K. (2009). Spawned with a silver spoon? Entrepreneurial performance and innovation in the medical device industry. *Strategic Management Journal*, 30(2): 185-206. DOI: 10.1002/smj.729.
- Chiesa V. and Piccaluga A. (2000). Exploitation and diffusion of public research: the case of academic spin-off companies in Italy. *R&D Management*, 30(4): 329-339. DOI: 10.1111/1467-9310.00187.
- Ciabuschi F., Perna A. and Snehota I. (2012). Assembling resources when forming a new business. *Journal of Business Research*, 65(2): 220-229. DOI: 10.1016/j.jbusres.2010.11.029.
- Colombo M. G. and Piva E. (2012). Firms' genetic characteristics and competence-enlarging strategies: a comparison between academic and non-academic high-tech start-ups. *Research Policy*, 41(1): 79-92. DOI: 10.1016/j.respol.2011.08.010.
- Dahl M. S and Sorenson O. (2014). The who, why, and how of spinoffs. *Industrial and Corporate Change*, 23(3): 661-688. DOI: 10.1093/icc/dtt032.
- Day G. S. (2011). Closing the marketing capabilities gap. *Journal of Marketing*, 75(4): 183-195. DOI: 10.1509/jmkg.75.4.183.
- Di Maria E., Bettiol M., De Marchi V. and Grandinetti R. (2012). Developing and managing distant markets: the case of KIBS. *Economia Politica*, 29(3): 361-380. DOI: 10.1428/38931.
- Elfring T. and Hulsink W. (2003). Networks in entrepreneurship: the case of high-technology firms. *Small Business Economics*, 21(4): 409-422. DOI: 10.1023/A:102618041.
- Fichman M. and Levinthal D. A. (1991). Honeymoons and the liability of adolescence: a new perspective on duration dependence in social and organizational relationships. *Academy of Management Review*, 16(2): 442-468. DOI: 10.2307/258870.
- Freeman J., Carroll G. R. and Hannan M. T. (1983). The liability of newness: age dependence in organizational death rates. *American Sociological Review*, 48(5): 692-710. DOI: 10.2307/2094928.
- Furlan A. and Grandinetti R. (2014). Spin-off performance in the start-up phase: a conceptual framework. *Journal of Small Business and Enterprise Development*, 21(3): 528-544. DOI: 10.1108/jsbed-04-2014-0055.

- Furlan A. and Grandinetti R. (2016). Spinoffs and their endowments: beyond knowledge inheritance theory. *Journal of Intellectual Capital*, 17(3): 570-589. DOI: 10.1108/jic-02-2016-0023.
- Garnsey E. (1998). A theory of the early growth of the firm. *Industrial and Corporate Change*, 7(3): 523-556. DOI: 10.1093/icc/7.3.523.
- Grandinetti R. (2017). Exploring the dark side of cooperative buyer-seller relationships. *Journal of Business & Industrial Marketing*, 32(2): 326-336. DOI: 10.1108/JBIM-04-2016-0066.
- Håkansson H., Ford D., Gadde L. E., Snehota I. and Waluszewski A. (2009). *Business in Networks*. Chichester: Wiley.
- Hayter C. S. (2016). Constraining entrepreneurial development: a knowledge-based view of social networks among academic entrepreneurs. *Research Policy*, 45(2): 475-490. DOI: 10.2139/ssrn.3253170.
- Helfat C. E. and Lieberman M. B. (2002). The birth of capabilities: market entry and the importance of pre-history. *Industrial and Corporate Change*, 11(4): 725-760. DOI: 10.1093/icc/11.4.725.
- Helfat C. E. and Peteraf M. A. (2003). The dynamic resource-based view: capability lifecycles. *Strategic Management Journal*, 24(10): 997-1004. DOI: 10.1002/smj.332.
- Hoang H. and Antoncic B. (2003). Network-based research in entrepreneurship: a critical review. *Journal of Business Venturing*, 18(2): 165-187. DOI: 10.1016/S0883-9026(02)00081-2.
- ISTAT (2017). *Imprenditorialità nelle regioni italiane: Caratteri strutturali e socio-economici*. Rome: ISTAT.
- Jansen S., van de Zande T., Brinkkemper S., Stam E. and Varma V. (2015). How education, stimulation, and incubation encourage student entrepreneurship: observations from MIT, IIIT, and Utrecht University. *International Journal of Management Education*, 13(2): 170-181. DOI: 10.1016/j.ijme.2015.03.001.
- Kale S. and Arditi D. (1998). Business failures: liabilities of newness, adolescence, and smallness. *Journal of Construction Engineering and Management*, 124(6): 458-464. DOI: 10.1061/(asce)0733-9364(1998)124:6(458).
- Klepper S. (2002). The capabilities of new firms and the evolution of the US automobile industry. *Industrial and Corporate Change*, 11(4): 645-666. DOI: 10.1093/icc/11.4.645.
- Klepper S. and Sleeper S. (2005). Entry by spinoffs. *Management Science*, 51(8): 1291-1306. DOI: 10.1287/mnsc.1050.0411.
- Kreiser P. M., Patel P. C. and Fiet J. O. (2013). The influence of changes in social capital on firm founding activities. *Entrepreneurship Theory and Practice*, 37(3): 539-567. DOI: 10.1111/etap.12039.
- La Rocca A., Ford D. and Snehota I. (2013). Initial relationship development in new business ventures. *Industrial Marketing Management*, 42(7): 1025-1032. DOI: 10.1016/j.indmarman.2013.07.001.
- La Rocca A., Perna A., Snehota I. and Ciabuschi F. (2017). The role of supplier relationships in the development of new business ventures. *Industrial Marketing Management*. DOI: 10.1016/j.indmarman.2017.12.008.

- La Rocca A. and Snehota I. (2014). Relating in business networks: innovation in practice. *Industrial Marketing Management*, 43(3): 441-447. DOI: 10.1016/j.indmarman.2013.12.012.
- Laursen K. and Salter A. (2006). Open for innovation: the role of openness in explaining innovation performance among U.K. manufacturing firms. *Strategic Management Journal*, 27(2): 131-150. DOI: 10.1002/smj.507.
- Lechner C. and Dowling M. (2003). Firm networks: external relationships as sources for the growth and competitiveness of entrepreneurial firms. *Entrepreneurship & Regional Development*, 15(1): 1-26. DOI: 10.1080/08985620210159220.
- Lee C., Lee K. and Pennings J. M. (2001). Internal capabilities, external networks, and performance: a study of technology-based ventures. *Strategic Management Journal*, 22(6-7): 615-640. DOI: 10.1002/smj.181.
- Lockett A., Siegel D., Wright M. and Ensley M. D. (2005). The creation of spin-off firms at public research institutions: managerial and policy implications. *Research Policy*, 34(7): 981-993. DOI: 10.1016/j.respol.2005.05.010.
- McGrath H., Medlin C. J. and O'Toole T. (2017). A process-based model of network capability development by a start-up firm. *Industrial Marketing Management*. DOI: 10.1016/j.indmarman.2017.11.011.
- Mustar P., Renault M., Colombo M. G., Piva E., Fontes M., Lockett A., Wright M., Clarysse B. and Moray N. (2006). Conceptualising the heterogeneity of research-based spin-offs: a multi-dimensional taxonomy. *Research Policy*, 35(2): 289-308. DOI: 10.1016/j.respol.2005.11.001.
- Nagy B. and Lohrke F. (2010). Only the good die young? A review of liability of newness and related new venture mortality research. In: Landström H. and Lohrke F., editors, *Historical Foundations of Entrepreneurship Research*. Cheltenham: Edward Elgar.
- Nahapiet J. and Ghoshal S. (1998). Social capital, intellectual capital, and the organizational advantage. *Academy of Management Review*, 23(2): 242-266. DOI: 10.5465/amr.1998.533225.
- Oukes T. and von Raesfeld A. (2017). Third actors initiating business relationships for a medical device start up: effect on network embedding and venture creation processes. In: Aaboen L., La Rocca A., Lind F., Perna A. and Shih T., editors, *Starting Up in Business Networks: Why Relationships Matter in Entrepreneurship*. London: Palgrave Macmillan. DOI: 10.1057/978-1-137-52719-6_3.
- Ritter T. and Gemünden H. G. (2004). The impact of a company's business strategy on its technological competence, network competence and innovation success. *Journal of Business Research*, 57(5): 548-556. DOI: 10.1016/s0148-2963(02)00320-x.
- Rumelt R. P. (1984). Towards a strategic theory of the firm. In: Lamb R.B., editor, *Competitive Strategic Management*. Englewood Cliffs: Prentice Hall.
- Scillitoe J. L. and Chakrabarti A. K. (2010). The role of incubator interactions in assisting new ventures. *Technovation*, 30(3): 155-167. DOI: 10.1016/j.technovation.2009.12.002.
- Stinchcombe A. L. (1965). Social structure and organizations. In: March J.C., editor, *Handbook of Organizations*. Chicago: Rand McNally.

- Stuart T. E. and Sorenson O. (2007). Strategic networks and entrepreneurial ventures. *Strategic Entrepreneurship Journal*, 1(3-4): 211-227. DOI: 10.1002/sej.18.
- Tatikonda M. V., Terjesen S., Patel P. C. and Parida V. (2013). The role of operational capabilities in enhancing new venture survival: a longitudinal study. *Production and Operations Management*, 22(6): 1401-1415. DOI: 10.1111/poms.12038.
- Teece D. J. (1986). Profiting from technological innovation: implications for integration, collaboration, licensing and public policy. *Research Policy*, 15(6): 285-305. DOI: 10.1016/0048-7333(86)90027-2.
- Terjesen S., Patel P. C. and Covin J. G. (2011). Alliance diversity, environmental context and the value of manufacturing capabilities among new high technology ventures. *Journal of Operations Management*, 29(1-2): 105-115. DOI: 10.1016/j.jom.2010.07.004.
- Vorhies D. W. and Morgan N. A. (2005). Benchmarking marketing capabilities for sustainable competitive advantage. *Journal of Marketing*, 69(1): 80-94. DOI: 10.1509/jmkg.69.1.80.55505.
- West J. and Bogers M. (2014). Leveraging external sources of innovation: a review of research on open innovation. *Journal of Product Innovation Management*, 31: 814-831. DOI: 10.1111/jpim.12125.
- Yang T. and Aldrich H. E. (2017). “The liability of newness” revisited: theoretical restatement and empirical testing in emergent organizations. *Social Science Research*, 63: 36-53. DOI: 10.1016/j.ssresearch.2016.09.006.