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Are we really open for innovation?

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ISBN 978–88–255–1425–4

1st edition: March 2018

To Charlie, my forever best friend

So we beat on, boats against the current, borne back ceaselessly into the past.

F. Scott Fitzgerald, *The Great Gatsby*

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Introduction

Open innovation is deemed as a sort of magic occurring in time–lapse which allows firms to «to reach outside their own four walls for the ideas they need» (Rigby and Zook 2002, p. 1).

This conception perfectly portrays how open innovation is commonly envisioned, a "private–collective" model of innovation (von Hippel and Krogh 2003).

With open innovation the locus where ideas are generated is shifted from within the organization to the exterior. The goal of the firm is to harness creativity of those who once were strangers to the organization, by finding a specific end market for the novelty (Grand *et al.* 2004).

The opening of a firm's borders is also deemed to intensify and hasten innovativeness, by incentivizing cumulative and disruptive innovations (Rigby and Zook 2002). The marshalling of external knowledge is leveraged on using Information and Communication Technologies (ICT) (Hjalmarsson, Juell–Skielse and Johannesson 2017), which serve to reach, gather, record and review ideas from the external environment (Awazu *et al.* 2009).

Beyond effectiveness, open innovation encompasses the well–loved efficiency logic of doing more with less (Munsch 2009). Apparently, the majority of scholars keep on praising open innovation benefits to date (Von Krogh, Netland and Wörter 2018).

So, no wonder if someone might ask whether such fondness is just a fad or, on the contrary, it really has robust roots (Chesbrough and Brunswicker 2015).

Obviously, harnessing external knowledge and benefiting from it is not a process tending to infinite. For instance, cognitive constraints and dissonance may engender a poor collaboration (Ghisetti, Marzucchi and Montresor, 2015). To date, studies on open innovation were mostly concerned with the private benefits it carries. Despite this, this phenomenon is tied with societal dynamics and change (Chesbrough and Di Minin 2014).

Current study aims to provide an alternative view of open innovation, entangled and framed within social–collective rationales for its adoption.

Thereby, we propose a bandwagon model for open innovation.

Our findings confirm that today momentum could be explained by bandwagon behavior.

However, the superiority of innovative performance envisaged for the open model is a fact solidly confirmed by empirical evidence.

These results clarify that, for once, practice and academia are aligned.

Consistently with the social–collective logic, «the future of open innovation is more extensive, more collaborative, and more engaged with a wider variety of participants» (Chesbrough 2017, p. 35).

Capitolo I

Openness of firm's innovation strategy

1.1. Open innovation

The concept of open innovation was ideated about fifteen years ago by Chesbrough (2003) to portray those firms working together on innovation.

The success of his intuition was such that, in a few years, the number of scholars and practitioners interested in it has had a tremendous growth (West and Bogers 2017).

With the adjective open, we mean that «innovation is generated by accessing, harnessing, and absorbing flows of knowledge across the firm's boundaries» (Chesbrough 2017, p. 35).

The diffusion of open innovation practices has grown to such an extent that today we are witnessing the rise of open innovation ecosystems, communities and digital platforms (Esposito De Falco *et al.* 2017, Altman and Tushman 2017, Giordani, Rullani and Zirulia 2018).

Albeit many scholars offer a simplified description of open innovation as the dichotomy existing with the concept of exclusively internal R&D, this distinction is pure fictional, since openness is more a continuum than a cut–off switching from one state to the other (Huizingh 2011).

Usually, prior literature categorizes open innovation according to two dimensions: direction of the knowledge flow and typology of partners (Cheng and Shiu 2015, Tranekjer and Knud-

sen 2012). According to the first dimension, open innovation can be inbound, outbound or coupled (Gassmann and Enkel 2004). Inbound and coupled open innovation processes are the manifestation of the firm explorative capability and consist, respectively, in the purposively intake of ideas as well as in the recourse to external help for marketing them. Clearly, the effective absorption of knowledge flows depends on the firm's absorptive capacity (Lane and Lubatkin, 1998, Van Den Bosch, Volberda and De Boer 1999, Tsai 2001, Zahra and George 2002, Jansen, Van Den Bosch and Volberda 2005, Lane, Koka and Pathak 2006). Outbound flows are directed to exploit innovation.

Altogether, these modes express the way a firm could manifest its ambidexterity (Gibson and Birkinshaw 2004, Andriopoulos and Lewis 2009, Raisch and Birkinshaw 2008, Raisch *et al.* 2009, O'Reilly and Tushman 2013) through open innovation.

The decision to adopt open innovation depends, in its turn, on a series of factors. Those factors can be grouped at an individual–level (mindset, orientation, belief, risk behavior, or personal traits) and at an organizational–level.

The study of the second dimension — typology of partnership — is concerned with the trade–off between efficiency and effectiveness as well as characteristic of each form of collaboration. Collaborations can occur between firm and customers, suppliers, competitors, governments, consultants, universities or research organizations (Popa, Soto–Acosta and Martinez–Conesa 2017).

1.2. Openness of firm's innovation strategy

Years before the introduction of open innovation, seminal works on the effects of openness on innovation found that

communication openness among firms fosters technology diffusion (Gatignon and Robertson 1989)

Openness is the subjective attitude of being receptive to the external environment. Receptiveness can be observed horizontally — number of relationships within a given time–frame —, vertically — intensity of relationships within a given time–frame, or diachronically — variations of horizontal and vertical dimensions over–time.

As most phenomena, even receptiveness is influenced by a well–nourished set of factors.

Such receptiveness impacts the way someone benefits from external information, having them metabolized and transformed in a new, usable knowledge.

In innovation contest, the way a firm partakes the development of innovation with external allies is shaped by its degree of openness.

When studying openness, one can assume two different standpoints: considering openness as subjective, individual choice depending on cognitive mechanisms, or, differently, investigating the structural characteristics of an organization, which a priori define the firm's overture in a given time–frame.

According to a structural view, like Contingency Theory, openness of firm depends on both firm specific and environmental factors (Drechsler and Natter 2012).

The structural perspective has encountered the long–standing favor of most scholars (Laursen and Salter 2006, Almeida and Fernandes 2008, Lichtenthaler 2009, Dahlander and Gann 2010, Laursen and Salter 2014).

Some scholars identify firm's openness behavior with the act of information revealing at the R&D alliance–level (Henkel, Schöberl and Alexy 2014). Different strategies are tied with ad–hoc revealing behaviors: for instance, in the Linux software

case the revealing was free, as a means to hasten consumers' acceptance, diffusion and standardization. Other cases are marked by a more selective attitude toward revealing information at the external level. Therefore, no uniformity in revealing behavior is verified. Also, revealing is a continuum of choices, which can be re–tuned over–time according to the goal.

Other scholars describe openness as the degree to which external technologies are acquired (Wang *et al.* 2014).

At large, organizational culture shapes firm's openness (Hurley and Hult 1998). As shown in SME's and family business openness is directly influenced by owner's innovativeness (Verhees and Meulenberg 2004). Yet, Barge–Gil (2010) argues the smaller the firm size is, the greater the openness of innovation strategy.

By all means, openness is the main factor behind firm's collaboration pattern (Gallego, Rubalcaba, and Suárez 2013).

In substance, openness determines modes of external search for collaborations (Laursen and Salter 2004) and learning (Hansen 1992, Love, Roper and Vahter 2014).

One salient aspect of openness is how it influences value–appropriation and radicalness of innovation.

Recent studies clarify that formal appropriation leads to in–depth searches and to radical innovation, whilst in–breadth search is more suitable for informal appropriation and incremental innovation (Zobel, Lokshin and Hagedoorn 2017).

Openness may also be funneled through platforms (Parker and Van Alstyne 2017).

Apparently, the idea of openness is the antithesis to the Resource Based view assumptions. The latter states appropriation springs from stickiness and uniqueness of resources, which cannot be revealed at external. On the contrary, value–creation in open innovation occurs like sharing resources between partners.

Though, firms do not give up control integrally: firms voluntary forfeit control only over part of resources (Alexy *et al.* 2017).

1.3. The role of slack resources

As any collaborative alliance does, even open innovation's alliances require the use of a bargaining chip, a resource which ought to be valuable for the partners.

However, the firm has to assess carefully which resources to deploy. So, it has to consider resource allocation. Clearly, resources which are already in place or core to a firm's business are out of the question.

A peculiar category of resources is the slack resources, which serves as a reservoir discretionary available to alternative uses. Thereby, we argue that slack resources are the bargaining chip used in open innovation partnerships.

Traditionally, slack resources were deemed as the inducement–contribution tool (McDonald and Puxty 1979, Bourgeois 1981). Also, its positive impact on innovation was largely stated by prior scholars (Nohria and Gulati 1996, Nohria and Gulati 1997, Geiger and Cashen 2002, Herold, Jayaraman and Narayanaswamy 2006, Geiger and Makri 2006, Huang and Chen 2010).

Organizational slack is a powerful concept that never stopped showing its practical and managerial validity from the introduction so far. As in slang, we are used to saying "give me some slack" to beg for some freedom and truce, so in the managerial accounting organizational slack, also labeled slack resources, is a means for easing some investment decisions. For being understood, resources slack must be studied tracing back to Cyert and March (1963), who described it as a «dispar-

ity between the resources available to the organization and the payments required to maintain the coalition» (Cyert and March 1963, p. 36). Prior scholars have provided meticulous and variegated classifications of slack. Despite this, there are some recurrences and commonalities in the midst of works. Mostly, slack is categorized according to nature and recoverability of resources (Daniel et al 2004; George 2005, Bourgeois and Singh 1983, Sharfman 1988, Smith *et al.* 1991, Wiseman and Bromiley 1996, Mone *et al.* 1998). Knowing this, slack could be absorbed, unabsorbed, and potential (Mishina *et al.* 2004).

Behavioral theory of the firm is one of the main conceptual building blocks for slack studies: slack leaves managers some room for re–tuning the strategy and make it stay sounding over the context. Consistently, some authors qualify these resources' disposition as discretionary (Bourgeois 1981, Bourgeois and Singh 1983, Sharfman *et al.* 1988). This space for maneuver kicks in as a positive disparity between the resources the firm has in hands and its needs: so, by nature, slack is a form of excess (Moses 1992, Nohria and Gulati 1997). The same quality can be useful or useless. For this duality of meanings, there are no scant preaches on the counter–side of slack, which arises in terms of inefficiency and maladaptive behaviors (Child 1972). Precisely, this last school of thoughts dates back to Leibenstein (1969) and to the broad field of research investigating resources slack in light of agency theory (Cyert and March 1963, Jensen 1986, Cheng and Kesner 1997, Shahzad *et al.* 2016).

Another prominent stream of studies analyzes the relationship between slack and innovation (Nohria and Gulati 1997). Nohria and Gulati (1997) suggest that innovation and organizational slack have an inverted u–shaped relationship: only a small quantity of the slack is deployed to foster inno-

vation, the remaining part is used to forage other stakeholders' interests. Recent work also underscore the hidden facets and complexity of the constructs. Using a configurational approach, Marlin and Geiger (2015) find that combinations of unabsorbed and potential slack impact innovation positively. In a similar configurational fashion Renzi, Sancetta and Orlando (2017) argue that the endowment of slack influences the structural capability of a firm when it comes to face a change. More precisely, R&D expenses are leveraged by unabsorbed and potential slack directly; whereas, absorbed slack spreads its positive effect only indirectly and in the long–run, as a sort of positive idiosyncrasy (Orlando *et al.* 2017). Similar results are also proposed by Suzuki (2018). As a matter of fact, slack has a positive impact on performance in case of firm ambidexterity (Luo *et al.* 2017).

At large, researches in the stream typically wonder if slack is a god or bad (Nohria and Gulati 1996) for firm performance. Whether we consider slack in an undifferentiated manner or not, results are yet controversial (Vanacker *et al.* 2017). Tan (2003) proposes a curvilinear interpretation of the relationship between slack and performance. Some recent findings seem to support this idea: unabsorbed and potential slack are good for wealth creation, whilst absorbed slack has mostly a negative influence (Orlando *et al.* 2016). Thus far, the quest for unveiling hidden functions of slack was alive and sounding. One aspect of extreme interest concerns how the slack interplays with opportunity discovery, seeking and exploitation (Moses 1992, Nohria and Gulati 1996, Tan 2003, Ju and Zaho 2009, Peng *et al.* 2010). In general, slack is deemed as a means for catching opportunities, especially when they emerge all of a sudden. As far as the level of slack rises, managers are more free to experiment and search for novel external opportunities (Bourgeois and Singh 1983). Also, Cheng and Kesner

(1997) find that the presence of slack increases firm's effectiveness of seeking market opportunities. It has been said that past organizational experience, strategic type and availability of slack resources influence organizational action directly (Lant and Mezias 1992, Chattopadhyay *et al.* 2001). One line of argument in support of such insight is that slack eases the managerial negative feeling of both loss of control and risk over threats and opportunities (Staw *et al.* 1981, Jackson and Dutton 1988, Ocasio 1997). A far more dating back perspective undertakes a broader approach, suggesting that this asset provides an opportunity to experiment with the new and the newness (Thompson 1965, Rosner 1968), thus leading managers to more risk–taking behaviors (Moses 1992). Said differently, we can argue that slack reserves provide a sort of beyond–capability of overcoming poor outcomes with the flexibility of reinvesting in alternative strategies, for instance like in inorganic growth (Alessandri *et al.* 2014, Lungeanu *et al.* 2016, Kuusela *et al.* 2017). On the other hand, when a firm is plastered by absorbed slack, that definitely reduces its openness toward the external context. Out of the choir, some authors argue that there is no evidence of firm's philanthropy interlacing with resources slack. In any case, academia assertively argues slack impacts the pursuing of opportunities in one way or another. Opportunity is a core concern in entrepreneurial studies (Eckhardt and Shane 2003).