# IMPACT OF THE ASSOCIATION CAPABILITY ON INNOVATION IN SMES FROM DEVELOPING COUNTRIES

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**Abstract**

A stream of research on strategic management has focused on a firm's competitive advantage as a result of participation in networks or alliances with other firms. The effect of a given interrelation is subject to diverse exogenous and endogenous factors pertaining to each implicated entity. As a means of estimating a firm's potential for achieving a positive result from an inter-firm endeavor, this study presents a conceptual research rooted on the analysis of the association capability. Managerial implications rely on the ability of obtaining an alternative source of innovation, a critical factor for the achievement of business sustainability.

Key words: innovation capability, association capability, small and medium firms

## Introduction

Traditionally, the main line of research on strategic management has been linked to firm's performance. A more specific approach has been driven from the Resourced Based View (RBV) of the firm by focusing on innovation and the way that if affects the performance (Kogut & Zander, 1992; Grant, 1996). Consequently, the study of a firm's innovation becomes relevant because it has a direct effect on the performance of the firm.

According to Hobday (2005) the evidence from literature indicates that in developing countries, if a firm intends to innovate then the enterprise must develop its own distinctive strategies based on its own particular resources, capabilities and stage of backwardness. However, one of the main critics to this argument is that small firms have a low survival rate (Tan, López-Acevedo, 2007) because they are unable to innovate due to the fact that they usually lack the needed resources.

Specifically, the relation between firm size and innovation has been continuously explored in literature (Cohen, 1995; Tsai & Wang, 2005). Although inconclusive results have been found regarding the mentioned relation, empirical research suggests that small and large firms have different determinants of innovation (Rogers, 2004; Van Dijk , Den Hertog, Menkveld & Thurik , 1997).

The particular importance of the association for the small firms is that these type of firms need to cooperate to overcome the lack of internal resources that could aid in the improvement of innovativeness and competitiveness (Nieto & Santa Marina, 2010). Across different industries, firms are increasingly blending their competitive strategies with cooperative strategies, using a variety of network links to coordinate inter-organizational activities (Nielsen, 1988). Moreover, the increase of inter-organizational links are thought to enhance the innovation of organizations

by providing opportunities for shared learning, transfer of technical knowledge, and resource exchange (Goes & Park, 1997).

Miltenburg (2009) highlighted the existence of a network capability, that revolves around the ability of the firm to occupy key positions in a network and the level of this capability depends on each network participant. However, one of the main disadvantages of a network capability could be summarized upon incommensurability issues derived from the fact that every single firm develops a different position inside the network and it becomes extremely difficult to make comparisons among the benefits extracted.

Researchers such as Kale, Dyer and Sing (2002) have proposed that an alliance capability could be unraveled by studying how effectively a firm is able to capture, share, and disseminate the alliance management know-how associated with prior experience. This capability is composed of organizational knowledge embedded in large firms that are continuously participating in alliance partnerships.

In order to explore an alternative to prior experience conditioning a firm's alliance capability within a network, this study proposes the association capability. It is centered upon the ability of a firm to collaborate with other organizations in terms of strengthening social ties, trust and sharing of common values.

Considering that strategy is interdisciplinary, there is no evidence to consider that the association capability and innovation are mutually exclusive. Therefore, it is possible to combine these literature streams in a model that suggests that such capability could enhance innovation in order to provide benefits for small and medium-sized firms (SMEs) in developing countries. The purpose of this study is the analysis of firms' association capacity and its effect on innovation. Additionally, the limitation stated by Hobday (2005) consisting of firm size as a key

characteristic defining its availability of resources and capabilities will be considered in this research.

This research is intended to provide the following theoretical contributions. The first one is that the association capability could be included in the Resource-based View (RBV) as a complement to Newbert (2007) list of capabilities studied within such perspective. Secondly, most models assume that innovation is subdued to large firms with a leadership status (Hobday 2005). Thus, this study proposes a specific model for SMEs in developing countries.

This work is divided into seven sections. The first section presents the theoretical framework of the RBV perspective; it provides the definition of the innovation and association capabilities. The second section contains the model´s explanation. The third section covers SMEs' characteristics. The fourth section describes the association construct. The fifth section contains the methodology. The sixth section contains the discussion, limitations and future directions. Finally, the seventh section presents the conclusions that include both the theoretical and practical implications.

## Theoretical framework

The Resource-based View of the firm (RBV) is one of the most widely accepted theoretical perspectives in the field of strategic management (Powel, 2001; Priem & Butler, 2001). Considering the most influential article of the field (Barney, 1991), the following contribution was settled. It states that firms' resources could lead to the achievement of sustainable competitive advantages if those are valuable, rare, inimitable and non-substitutable.

In a meta-analysis realized by Newbert (2007), he highlighted that innovation is a capability of the firm currently studied by RBV researchers. This capability is a critical driver of sustainable competitive advantage in today´s rapidly changing markets, where the continuous

development of new products and processes is the key to survival growth and profitability (Wolff & Pett, 2006).

In the process of defining the innovation capability, a literature review done by Garcia and Calantone (2002) revealed that innovativeness is "an iterative process initiated by the perception of a new market or service opportunity for a technology based invention which leads to development, production and marketing tasks striving for the commercial success of the invention". From a micro perspective, which is the RBV focus, the innovation capability can be defined as the capacity for a new innovation to influence the firm´s marketing resources, technological resources, skills, knowledge and strategy (Garcia & Calantone, 2002).

When considering external entities influencing a firm, networks and alliances of customers, suppliers, competitors and other non-market participants are a key source of innovations (von Hippel, 1988). They are also an effective means of reducing cost, risk, achieving economics of scale and reducing new product development time. Moreover, cooperation widens the opportunity to access key resources from the firm's environment, such as information, capital, goods and services which then have the potential to maintain or enhance competitive advantage (Gulati, Nohria & Zaheer, 2000). Therefore, it could be stated that innovation is tied with cooperation, since inter-firm relationships assure the acquisition of resources that improve the innovation capability of the firm.

According to Newbert (2007), firms possess capabilities related to cooperation. Particularly, the customer and supplier relationship building capabilities were highlighted in such study. In a different research, Miltenburg (2009) established the emergence of the network capability, the ability to gradually improve the position of the firm in the network until it

becomes central for all partners involved. However, such capability presented comparability issues concerning two firms on a network with equivalent centrality and differing benefits.

Kale, Dyer and Sing (2002) proposed the alliance capability that rests upon studying how effectively the firm is able to capture, share, and disseminate the alliance management know-how associated with prior experience. However, this study highlights three main issues related to the alliance capability. The first one deals with research presented by Kale et al. (2002), Draulans, deMan and Volberda (2003), characterized by a narrow scope rooted on the analysis of prior experience of alliances provided by organizational learning departments. The second one deals with the association of an alliance capability and firm size, implying the constitution of organizational departments dedicated to the preservation of knowledge from learning experiences. Finally, the third issue deals with the lack of research upon the identification of a link between alliance success and innovation.

In order to avoid comparability issues found in the network capability and the fact that the alliance capability only applies to large firms; this study proposes a new capability called the association capability. Such capability is centered not only in analyzing the acknowledgment of past alliance experience by an specific department but in the ability that each firm has to collaborate with another firm by studying the association at the most basic level and with this being able to also apply to small firms.

Traditionally, the terms of collaborative arrangement, cooperative arrangement, strategic alliances, or coalitions have been used interchangeably (Forrest, 1990). Thus, when studying the association construct, it is preferable to start with the analysis of relationships between actors. In particular, these relationships can be characterized in terms of the strength of their social ties,

their level of trust, and the extent to which they share common processes and values (Kale, Singh & Perlmutter, 2000; Cohen & Prusak, 2001).

The previous elements involved in an association can be applied to the relationship between firms that commonly provide technological and financial resources (Dhanaraj, Steensma & Tihany, 2004). Specifically, their provision of emotional support, managerial expertise, and time is indicative of the strength of social ties between the firms (Kale et al., 2000; Uzzi & Lancaster, 2003). Therefore, this study defines the association capability as the ability of the firm to collaborate with another firm through strengthening their social ties, their trust and the share of common values.

The study of the association capability is relevant in terms of understanding the creation process of effective bridges between the firm and its environment. Additionally, it could aid in the understanding of a positive relation between alliance success and firm's performance that until now has been inconclusive in the literature (Draulans et al., 2003).

## Model

The model presented in this study aims to support the proposal of leveraging firms' innovation in developing countries. In that sense, Hobday (2005) highlighted the need of generating models that are tailored made for the distinctive resources and capabilities of the firms found in developing countries. In addition, Hobday stated that innovation is feasible when firms detract from existing models used by leading firms. It is important to mention that for this article the definition of innovation would be described as "the use of new knowledge to offer a new product or service that customers want" (Afuah, 2003).

The model proposed in this study considers SMEs given the significance of the relation between firm size and innovation (Cohen, 1995). Moreover, studying such firms in developing countries is critical due to the fact that they have a low survival rate (Tan, López-Acevedo, 2007). In addition, empirical research suggests that small and medium-sized firms have particular determinants of innovation (Rogers, 2004; Van Dijk et al., 1997) and they are considered in the model.

In order for a leveraging process to take place, literature on innovation stresses that the role of cooperation is vital in overcoming the lack of internal resources (Nieto & Santa Marina, 2010). However, collaborations are not homogenous and their impact is inconclusive. Furthermore, their effect on innovation varies among sectors according to the type of innovation pursued (Freel, 2003). Thus, in order to aim for a better understanding of the effect of collaboration, it is necessary to analyze the association capability that a firm posses when engaging in a collaborative scheme.

The model proposed in this study is included in figure 1:

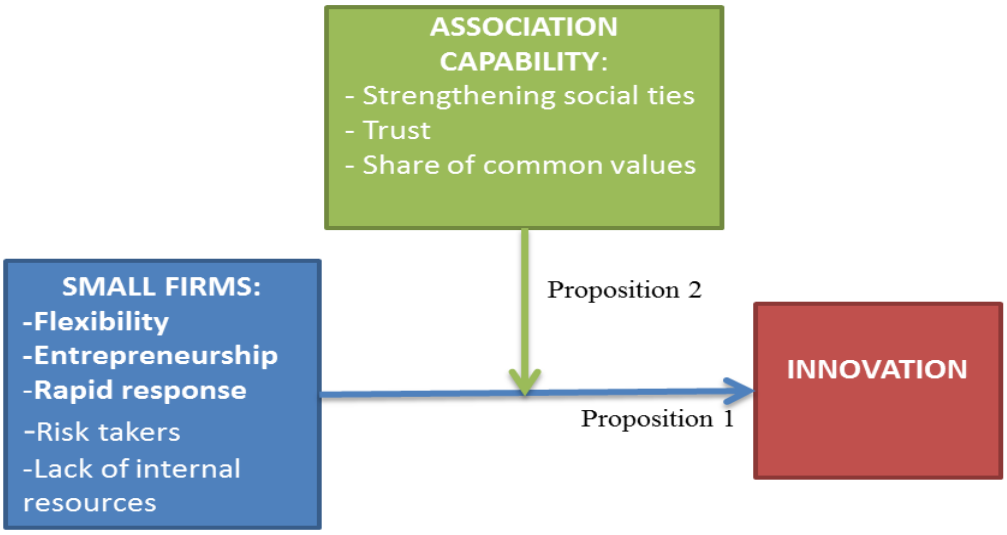


Figure 1. Association Capability and Innovation Model

The principal strengths of SMEs from developing countries lay in behavioral advantages. Specifically, such firms are characterized by flexibility and rapid response to changes in the environment; thus, enhancing innovativeness (Lewin & Massini, 2003). Moreover, SMEs have shown increasing flexibility in production (Fiegenbaum & Karnani, 1991) and price adjustments (MacMillan, Hambrick, & Day, 1982), with enhancing speed (Katz, 1970) and risk-seeking behavior (Hitt, Hoskisson, & Harrison, 1991).

For an SME, organizational flexibility is more attainable than in the case of the Large Enterprise, due to a closer relationship with customers. Similarly, a Small and Medium-Sized Firm could combine production flexibility with product specialization, leaving aside the traditional "push" approach (Brown & Blackmon, 2005). However, a strategy focused on innovation requires a certain level of flexibility regarding organizational structure (Blumentritt & Danis, 2006). Therefore, open communication channels, decentralization with informal decision processes, as well as flexible processes and procedures related to job descriptions, are associated to innovative activities (Mintzberg, 1979).

SMEs are obliged to be entrepreneurial by constantly facing threats and opportunities in order to survive and prosper (Aldrich & Auster, 1986). Uncertain environments force firms to adapt and survive to technological, market or institutional changes (Dobrev & Carroll, 2003). Additionally, such firms often suffer from legitimacy issues (Aldrich & Auster, 1986); and thus, they must develop rapid responses to adapt to highly changing environments (Eisenhardt & Martin, 2000).

By considering the strengths of SMEs and their motivations, the first proposition of the model is established:

Proposition 1: An SME that engages in an innovation process needs to be flexible, entrepreneurial and highly adaptive to the environment.

The first proposition is based on SMEs' aim to achieve sustainable business operations. However, their weaknesses are centered upon the attainability of critical resources often possessed by large firms (Pfeffer & Salancik, 1978) or business groups (Hoskisson, Eden, Lau & Wright, 2000). Thus, SMEs struggle in the allocation of critical resources and capabilities for innovation (Hewitt-Dundas, 2006). In particular, an inter-firm association plays a key role in overcoming the lack of internal resources and in improving innovativeness (Nieto & Santa Marina, 2010).

Association can be defined as a relationship between two actors, where this relationship can be characterized in terms of the strength of their social ties, their level of trust, and the extent to which they share of common processes and values (Kale et al., 2000; Cohen & Prusak, 2001). These characteristics of the association can be applied to the relationship between partner firms. Moreover, several studies have indicated that collaboration is positively and significantly related to the level of product innovation among Small and Medium-sized firms (Hewitt-Dundas, 2006; Nieto & Santamaría, 2010). Therefore, Figure 1 shows that the model considers these three characteristics as critical for this construct.

Large firms commonly provide SMEs with technological and financial resources. However, their provision of emotional support, managerial expertise, and time is indicative of the strength of social ties between partners (Kale et al., 2000; Uzzi & Lancaster, 2003). High levels of interaction, whether face-to-face or mediated through telecommunications, lead to a level of comfort between the parties (Dhanaraj et al., 2004). The strength of such ties between firms can vary because some partners maintain a relatively loose connection and provide scarce

involvement, and communication occurs mainly through formal channels (Dhanaraj et al., 2004). Therefore, associations between SMEs and large firms have a strong social tie when there are high levels of interaction.

Similarly, the level of trust varies between partners. Trust, defined as "the belief that an exchange partner would not act in self-interest at another's expense" (Uzzi, 1997), is crucial in alliances and joint ventures because no contract can cover all the variations and conditions that can occur. Trust allows access to resources and a willingness to work things out through mutual problem-solving (Uzzi, 1997). It signifies a commitment by both entities to avoid taking advantage of the other party's weaknesses (Steensma & Lyles, 2000). Lane et al. (2001) suggest that trust functions as an ongoing social control mechanism and risk reduction device, influencing both the extent of knowledge exchanged and the efficiency with which it is exchanged. Moreover, trust leads to a shared understanding between the managers of the partners firms (Dyer & Nobeoka, 2000).

The implementation of exogenous systems and procedures within the firm not only enhances control, but also ensures that the partner's broad business philosophy is communicated and understood (Uzzi, 1997; Kale et al., 2000). Shared values and systems are created through a process of socialization, whereby a common identity and collective interpretations of reality are formed (Dyer & Nobeoka, 2000).

Shared values and systems help to embed the relationships among the executives of the partner firms with a strong social bond (Dhanaraj et al., 2004). Therefore, it can be stated that the association between an SME and a large firm derives into a strong connection when the former implements some of its partner's systems in order to spark the identification of shared values.

Therefore, the association between SMEs and key partners is critical in order to attain the needed resources for developing innovation. Moreover, an association has three main characteristics, which are strong social ties, trust and share of common values. Considering all of the previously mentioned, it becomes possible to state the second proposition of the model as follows:

Proposition 2: An association with key players in the aim for allocating needed resources moderates the relationship between SMEs and innovation. Moreover, in order to develop the association between the two partners; it is vital to have strong social ties, trust and share of common values.

## Methodology

Edmondson and McManus (2007) state that quantitative methods are appropriate for mature theories, while qualitative methods are fit for theories that are emerging. Such differentiation could be useful when addressing the RBV literature as scarce wit respect to the association capability (Newbert, 2007). Few researchers provide any evidence beyond a limited number of case studies. For example, Miltenburg (2009) used three cases in order to establish a network capability. Moreover, Newbert (2007) stated that when a new capability emerged, studies usually involved qualitative methodologies.

The method selected for this research is a qualitative case study, an approach that facilitates the exploration of phenomena within its context using a variety of data sources (Baxter & Jack, 2008). Furthermore, Yin (2003) stated that a case study design should be considered if two characteristics are present. First of all, the behavior of those involved in the study could not be manipulated and this is present in the study because the participation in the fulfillment of the innovation guidelines revolves around the owner of the SME and the conduct of the support team

could not be manipulated. Secondly, contextual conditions must be considered due to their relevance in the study of the phenomena, even though boundaries remain unclear. This last feature is also present in this study because the innovative firms in developing countries have certain specific characteristics derived from the context.

*Sample*

The first step in the construction of a case study is the selection of an SME. A firm can be considered small or medium in terms of sheer organizational size (Chen & Hambrick, 1995). Moreover, the literature establishes the organizational size in terms on the number of employees as a measure for the dimension of the firm; specifically an SME consists of 10 to 49 employees (Wang, Watkins, Harris & Spicer, 2004).

A judgment sampling strategy is present when the researcher actively selects the most productive sample to answer the research question by considering the variables that might influence contribution, the practical knowledge of the research area and the available literature (Marshall, 1996). In particular, for this study the judgement sample is used because it is vital to analyze a firm that develops new products due to the fact that small innovative firms often focus on developing products for certain market niches (Carroll, 1984) and hence tend to make competitive moves by generating partnerships with other firms in order to obtain key resources and enhance swiftness.

This study analyzed a firm called *Ensite*, an innovative IT firm from Monterrey, Mexico. Such firm is considered an SME given its payroll of 40 employees. Moreover, in its early years, the firm was really intensive in product development, launching new different products at a fair price every eight months. Even though the firm had a clear vision of the market opportunity, it struggled due to a lack of operational capacity.

Data was obtained through depth interviews. In addition to the owner, 8 employees belonging to different departments were interviewed in order to have a view of the whole organization. The guide of the interview was based on innovation dimensions, the weight given to the environment, the workforce, costs, and context.

## Analysis

The firm's ability to develop products in eight months indicated that the three main innovation characteristics established by Lewin & Massini (2003) were present. The first one was entrepreneurship, since the CEO was the owner and the firm developed a good amount of different new products. The second was flexibility, given that the firm had knowledge of the market and built products with competitive prices. The third one was the rapid response to the environment, proven by the launch of new products every eight months. Additionally, the firm had a specific market niche and it specialized in product innovation, as stated by Pavitt (1991) about innovative SMEs.

After realizing that the firm was innovative, it was imperious to study the role of collaboration in overcoming the lack of resources to innovate. In that sense, Jesus Martinez, the leader responsible of innovation within the firm, expressed the following: "We established strategic alliances with other two firms in order co-invest in a new product development."

Then, the identification of the firm's associative characteristics related to a successful innovative collaboration was performed. In particular, the owner expressed: "it is vital to be open for communication….to be willing to trust….to be eager to have compatibility because for instance we gave courses to the other firm in order that they could have a domain in the use of our software platform with the intention that they could be able to develop from it, …. ,to be flexible in the agreements so we can make changes whenever it's necessary".

From the statements above, it is possible to observe that the three main characteristics that were defined as the association capability were present. The first one was the willingness to trust in other firm. The second one was the strength of the social ties because it was important to be open to exchange ideas and to have partnership systems that have been tailored to using the systems brought from the other partner. The third one was the share of common values in the part of having flexibility because in here it was important to analyze if the informal agreements have the same significance as formal contracts.

In addition to the successful collaboration, Jesus Martinez established that there was one unsuccessful alliance due to government regulatory changes related to electronic accounting. The owner and five other employees stated that "now they are renewing the bond because they use the same software and they have a working compatibility". From these statements it is possible to observe that the association capability is present because compatibility can be related to the share of common values and the strength of social ties due to the use of the same software. Opposite to previous beliefs, this study proposes that firms that experience past abandonment would be more likely to introduce an improved product innovation at a later time if they have an association capability.

## Discussion, limitations and future directions

From the case study, it is possible to establish that the characteristics of the association capability were present in a successful partnering. Specifically, if the SME is characterized as entrepreneurial, flexible, and adaptive to the environment, the association capability can leverage the innovation related to the new product development.

In a deeper overview it is possible to realize that even though innovation abandonment is often considered as a negative experience, it is feasible to detect form the example that the

association capability can motivate small firms to introduce a new product innovation in the future. Therefore, the association capability has a direct affect in innovation that can transcend into past negative experience such as innovation abandonment and future innovation as well.

Although this research is limited as portraying a singular case study applying to an SME, the novelty of the association capability suggests the need for qualitative approaches. Moreover, this study proposes two future research lines. The first one could be based on the impact that the association capability could have in the re-installment of innovation endeavors that were abandoned by former partners. The second one could be focused on the impact of the moderating role that the association capability could have in the development of innovation by large firms. Such firms have advantages of scale, scope provided by the possession of better equipment for the innovations, experience, brand name, recognition, market power, inertia and risk aversion (Cohen & Klepper, 1992; Woo & Cooper, 1981).

## Conclusions

This study provided a conceptual qualitative research that focuses in the association capability, being the ability of a firm to collaborate with another firm. Implications for practitioners in developing countries rely in the distinctive strategies for success that rely on the way that a firm exploits its association capability in order to enhance innovation. Additionally, the model has taken into account the determinants of innovation for SMEs. This is transcendental in developing countries like Mexico where SMEs represent 99.7% of the business units in the country (INEGI, 2010). Moreover, theoretical implications consist on the addition of such capability to the RBV perspective.

Finally, limitations are based on a single case study. Thus, an in depth analysis is needed in order to understand the boundaries of the association capability. Furthermore, this study

proposes that future lines of research are related to developing the association capability scope in qualitative studies and the possibility of strengthening the model by analyzing the role of the association capability in large firms with differing characteristics.

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