

SMEs and Open Innovation: Global Cases and Initiatives

Hakikur Rahman
University of Minho, Portugal

Isabel Ramos
University of Minho, Portugal

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Chapter 11

Open Innovation Strategies in SMEs: Development of a Business Model

Hakikur Rahman

University of Minho, Portugal

Isabel Ramos

University of Minho, Portugal

ABSTRACT

Open innovation in entrepreneurships already finds its acceptance at all levels of the business industry for adding value to the business. The value could be in the form of economic gain or enhancement of knowledge leading to a sustained financial base. Open innovation adopts various strategies to accomplish the task for enhancing the value gain. Varying by size, nature, pattern, or characteristics of the firm various strategies are being adopted by enterprises. Though largely known to be familiar in corporate business houses, in recent years open innovation is also becoming increasingly familiar in small and medium enterprises (SMEs) and the trend is rapidly increasing. However, despite the potency of open innovation strategies, most of the enterprises are yet to find a sustained business model, especially for the SMEs working at the periphery of that value chain. This forms the basis of the current study. This chapter is trying to formulate a business model incorporating partnership approach from academia, research houses, intermediaries, and other stakeholders.

INTRODUCTION

Open innovation has emerged as a new paradigm where firms commercialize external and internal ideas, knowledge, expertise and or technologies and use both external and internal resources. In an

open innovation process, models can be launched by taking ideas from internal or external sources and new technology can enter at various stages of the development process. Models can also go to the market in many ways, such as out-licensing of intellectual property or a spin-off venture in addition to traditional sales channels. Usually, open innovation combines internal and external ideas

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into architectures and systems whose requirements are typically defined by a business model. Eventually, the business model utilizes both external and internal ideas to generate business value, while defining internal mechanisms to claim some portion of that value (Chesbrough, 2003a: xxiv; West, Vanhaverbeke & Chesbrough, 2006). This notion of open innovation, was initially proposed by Chesbrough (2003a; b) and has rapidly gained the interest of both researchers and practitioners, illustrated by a number of special issue publications, dedicated conferences and a fast growing body of literature (Fredberg, Elmquist & Ollila, 2008). This new paradigm inspires enterprises to find the most appropriate business model to commercialize novel products or services, regardless of the existence of any model within the enterprise or must be sought externally (De Jong, Vanhaverbeke, Kalvet & Chesbrough, 2008).

Depending on the demand and reality, open innovation is based on various principles. Among them, the prime ideology could be the necessity to tap external knowledge to enrich the knowledge of the internal experts; the second could be the essentiality of external R&D for an enterprise to generate significant value; the next could be the trend of research that may not be completely dependent on internal resources and profit would be the main aim of entrepreneurship, irrespective of the ideas; and the important one is the acquisition of strategies that are built on a sustained business model, before reaching to the market. (Chesbrough, 2003b; 2003c; De Jong, Vanhaverbeke, Kalvet & Chesbrough, 2008). Apart from other functions, the business model creates value within the value chain and captures a part of it for the focal firm (Chesbrough, 2006b).

However, as this study has found, open innovation business model for small and medium scale enterprises (SMEs) is scant. This could be due to the scarce resources of the SMEs community, despite their major contribution in economy and job market, especially in Europe and other developed economies of the world. Furthermore,

due to any acceptable and experimentally verified business model most of the developing and transitional economies are also not in a befitting situation in adopting open innovation strategies in their business model.

This chapter intends to establish an open innovation business model synthesizing various other business models that are being developed by contemporary researchers and being adopted and accepted by leading enterprises, though hardly they could be designated as SMEs. But, it is expected that with initial support from the parent entities, the spin-off firms can take significant leaps in strengthening their business engines. Along this perspective, the chapter has developed a business model incorporating crucial supports from all stakeholders in a two tier process. Later on the chapter has focused on a few research and practice challenges and hints on future research aspects before the conclusion.

BACKGROUND

Innovation can be termed as the outcome of a set of activities that utilizes knowledge to create new value to those benefiting from its use (De Sousa, 2006). It is clear that successful innovation under complexity, uncertainty and transformation can only be achieved through collaborative approaches that integrate knowledge inside and outside the enterprise. This model, in turn more popularly known as open innovation business model, is being increasingly used by enterprises throughout the world. It has been observed that this format of open innovation business model is a must for SMEs, which usually lack knowledge of competitiveness to fully comply with the innovation process. It has also been observed that larger organizations are increasingly moving away from their traditional R&D approach to a more collaborative approach, varying in nature and context (De Sousa, 2008).

Open innovation reflects the ability of firms to gain access to not only external resources but also

utilizing internal resources of innovations using a defined business model to acquire the business value from such innovations (West, 2006). However, for firms seeking to gain additional revenues through open innovation predominantly depends on two factors. Firstly, in strict sense, technology licensing depends on the firm's intellectual property (IP) strategy, which defines the role of the IP for the innovator and for the licensee(s). Secondly, in specific sense, the innovator must develop a business model consistent to the value of the IP and the innovator's positioning in the value network (Chesbrough & Rosenbloom, 2002; West, 2006). Therefore, a firm's business model depends not only on its IP and the value proposition (explicit factors) (Chesbrough & Rosenbloom, 2002; Chesbrough, 2003a), but also on the corresponding business models of the suppliers, customers, competitors and intermediaries (implicit factors) within the value network (West, 2006).

The open innovation business model entails that enterprises can and should use both internal and external ideas and knowledge to advance their innovation processes. It also demands that internal ideas can be taken to the market through external channels (for example, spin-offs, external licensing of intellectual property, or other forms of technology exploitation) to generate additional business value. This new paradigm also inspires enterprises to find the most appropriate business model to commercialize new products or services, regardless whether that model exists within the enterprise or must be taken from external sources (De Jong, Vanhaverbeke, Kalvet & Chesbrough, 2008).

However, this newly evolved business trend is driven by two major factors. Firstly, market democratization is increasing the micro-segmentation and demanding more customized solutions in unexpected, challenging and unpredictable circumstances, which require a higher level of interactions and participations of customers, suppliers and other stakeholders. Secondly, the increasing competitive pressure around the globe

and shortened product life-cycles is demanding quicker innovation processes at a reduced cost for the existence and survival of entities of small enterprises.

Examples of innovations developed through open business models proliferate in the livelihood of people at large, ranging from the new mobile phone application, gaming products to new lines of potato chips. This desegregation of the traditional innovation process, requiring internal and external knowledge, has opened space for the emergence of new business models and types of entrepreneurships. Some of these new companies act as 'knowledge brokers' or 'intermediaries', providing the links, knowledge sources and even technical knowledge and expertise, so that firms can accelerate and amplify the effectiveness of their innovation processes (De Sousa, 2008).

The next section, which is the main trust of the chapter, is focusing on the concept of open innovation business model, discussing about the basis for a business model and developing an open innovation business model using a flexible partnership approach.

BUSINESS MODEL

Basis for a Business Model

As a new way of conceptualizing innovation, open innovation business model relaxes many of the assumptions presumed in the Chandlerian model (Chandler, 1990), both in the external supply of innovation to be incorporated into a firm's offerings, as well as the potential demand from outside the firm for its internal innovations. However, this does not mean that any innovation model is feasible, any more than the rise of the Internet and WWW, which meant that any 'e-strategy' was profitable. Moreover, experimentation within the open innovation paradigm has the constraint of establishing a business model for creating or using an innovation strategy, a constraint that may have

been obscured by the cross-subsidies often seen with vertical integration (West, Vanhaverbeke & Chesbrough, 2006).

Open innovation as a business management model is currently gaining grounds in many industries. Among them pharmaceutical, consumer products, software, information technology, and a few service sectors are leading the global business. In this aspect, balancing the right size and structure of R&D has become one of main objectives in R&D management today (Chesbrough, 2003a; Gassmann & Reepmeyer, 2005; Gaule, 2006). Based on his own consulting model for open innovation, Gaule (2006) builds heavily on Chesbrough (2003a) to analyze the impact of open innovation on several parts of the organization. He further provides a series of short case studies, for example on Procter & Gamble. Motzek (2007) points to the motivation factors for companies to engage in open innovation. His empirical material is based on two organizations that are based on the ideas of open innovation. This sample is most likely different in character from already established companies that change to embrace open innovation. His motivation factors are rather similar to the general knowledge on motivation factors for entrepreneurs (Fredberg, Elmquist & Ollila, 2008).

Chesbrough (2007) argues that a business model has two functions, it creates value and it captures a portion of that value, and that open business models enable enterprises to be more competent in creating and capturing value. He also argues that companies need to adapt their business models to open innovation, as it is a way of generating value from their intellectual property (Chesbrough, 2003c). Chesbrough (2007) further argues that the rising costs of technology development and the shortening product life cycles make it harder for enterprises to justify innovation investments. Using open business models, a firm can beat the cost side through leveraging on external R&D resources to save time and money and at the same time, beat the revenue side by

licensing out internal technologies. He also argues that enterprises need to develop their capabilities to experiment with their business models, for instance through alternative brands or spinoffs (to reduce risks) and fundamental changes that require top commitment and support (Chesbrough, 2007; Fredberg, Elmquist & Ollila, 2008).

According to Chesbrough and Schwartz (2007), co-development partnerships are increasingly important in open innovation models. This is in line with Chiaromonte (2006), who argues that the difference of open innovation to traditional outsourcing of innovative capacity is that the outside partners are not seen as suppliers but as peers. Chesbrough and Schwartz (2007) also point out that the use of partners can create business models that reduce R&D expenses, expand innovation output and open up new markets (Fredberg, Elmquist & Ollila, 2008).

For a business model, using partnership approach as mentioned earlier, Fredberg, Elmquist and Ollila (2008) underline the following flow chart, illustrating the partnership approach in an enterprise (see Figure 1).

Based on the above arguments and arguments made by Chesbrough and Rosenbloom (2002), authors like to introduce another flow chart (see Figure 2) illustrating the formulation of innovation strategy in an open innovation business model:

Development of the Business Model

Till to date, most of the studies on open innovation business model have examined open innovation at the organizational level, basically for two reasons. Firstly, innovation is traditionally being conceived as the outcome of deliberate actions of a single entrepreneur, and thus R&D competition has also been styled as an innovation race between two or more entrepreneurs. Secondly, the value of a technological invention is realized only through a business model of the enterprise (Chesbrough & Rosenbloom, 2002). While it is very natural that the open innovation business model may easily

Figure 1. Illustrating the partnership approach in an entrepreneurship

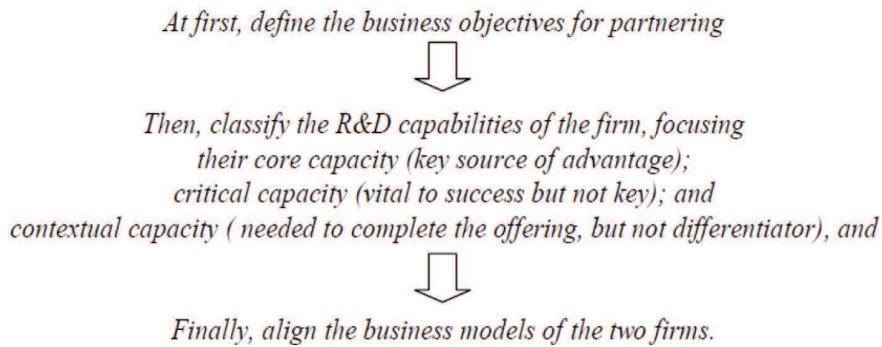
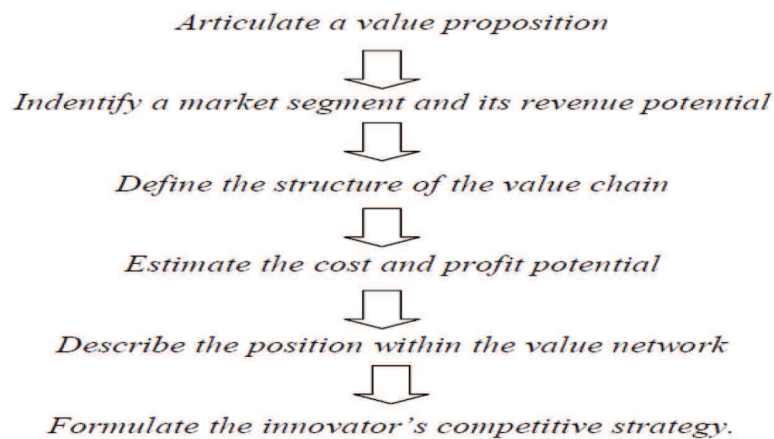


Figure 2. Shows the formulation of innovation strategies

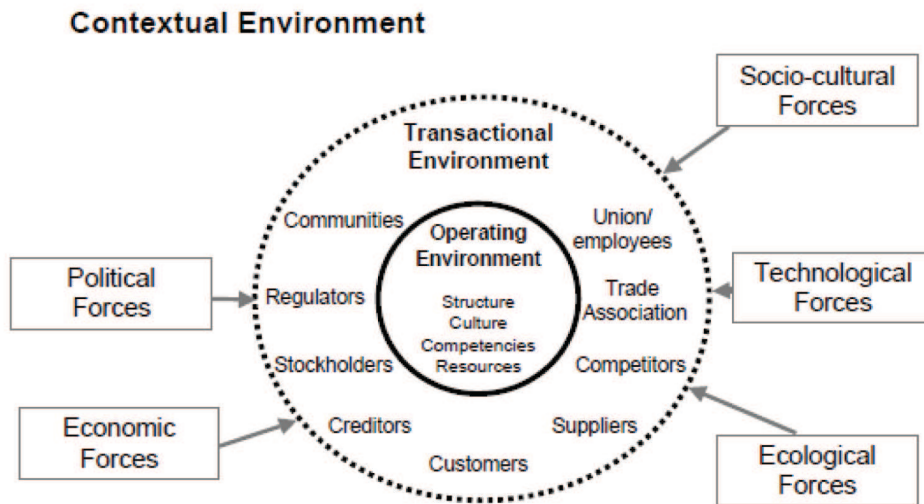


spill over the boundaries of an enterprise or even an industry (West, Vanhaverbeke, & Chesbrough, 2006).

As mentioned earlier, a successful open innovation strategy for SMEs should find creative ways to exploit internal innovation by incorporating external innovation into internal development, and able to motivate external actors to sustain an ongoing stream of external innovations. However, while approaching the global market, it can be observed that large industries, especially the high tech ones, are already involved in open innovation scheme, and competing each other leading

the global market. In terms of SMEs with high tech facilities, often generated from universities or research center, they would like to maintain good links to larger organizations, rather than reaching out to the grass roots. On the contrary, SMEs at the local level, equipped with low tech facilities are loosely motivated to promote research, and may not have sufficient resources to identify their needs for innovation through appropriate market analysis, and act accordingly to a defined innovation scheme. The situation becomes more challenging without an appropriate and adaptive

Figure 3. Relationship with the stakeholders in a business model



business model (West & Gallagher, 2006; Rahman & Ramos, 2010).

An appropriate and adaptive business model may be seen as the totality of how a company selects its clients, defines and differentiates its responses; classifies those tasks it will perform itself and those it will outsource; configures its resources, goes to market, creates utility for clients; and get hold of profits. It is the entire system for delivering utility to clients and gaining a profit from that activity (Pourdehnad, 2007). Figure 3 shows a relationship diagram with the various actors or stakeholders involved in a business model. This evidently envisages the clear bonding among visible groups of stakeholders among the business communities (a partnership approach).

Triple Helix Model (see Figure 4) is another highly discussing model in this arena. According to this model, a spiral of innovation involves government, university, and industry in multiple reciprocal relationships, to create a flexible overlapping innovation system (another partnership approach) (CSR Europe, 2008).

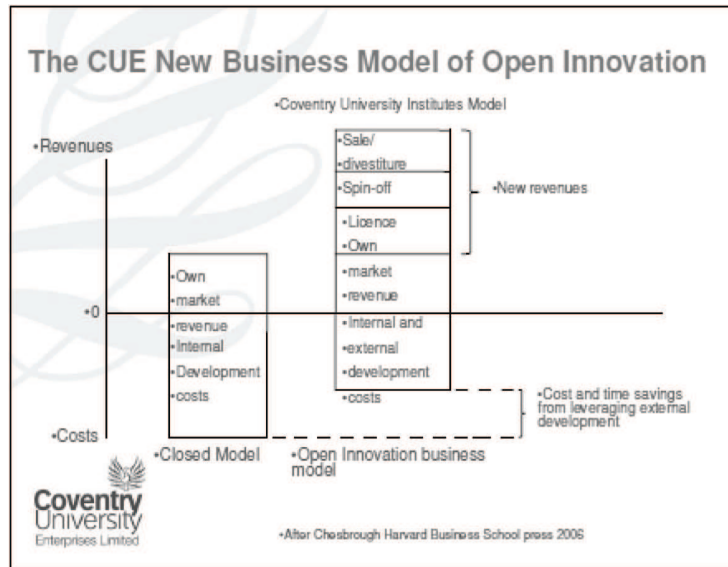
This research would like to point out another business model that may be utilized in SMEs OI process, which has been developed incorporating

mixed approach (see Shorthouse, 2008). Figure 5 shows a mixed approach (amalgamated closed and open innovation approaches) business model. Shorthouse (2008) has suggested this as a joint

Figure 4. The triple helix model (Adopted from CSR Europe, 2008b)



Figure 5. A mixed approach business model (Adopted from Shorthouse, 2008)



effort to reach the niche market through using both closed and open innovation business model.

However, this study envisages, attaining a sustainable business model in SMEs exposed to open innovation, one need to follow the next two flow charts (see Figure 6, to find out how to prepare SMEs, and Figure 7, to learn about better positioning them) indicated below.

Furthermore, a sustainable business model should also follow to the flow chart 4.

This study further suggests, the business model should incorporate SMEs being inclusive in the following dimension: (See Figure 8)

The proposed business model (to be adopted in a few selected SMEs after a multi-phase survey to be carried out in the next phase of this research) emphasizes on two tiers of relationship; among the core partners in the network (indicated as the core area of the business model) and among the peripheral partners in the network (indicated as the broader area of the business model). In the block, both the segments need not to be isolated from each other. Rather they may remain as active member of the entire community. Therefore, for sustained entrepreneurship the entire group must

interact to the grass roots for effective dissemination of open innovation strategies promoting economic and value gain (Rahman & Ramos, 2010). However, while implementing open innovation strategies, despite the introduction of the proposed model, due to the intensity of the competition especially SMEs face tremendous shifting of model architectures adapting the open business environments. Hence, it is recommended that core partners within the network interact faster to provide timely feedback to the peripheral partners for obtaining optimum placement of the business model.

Challenges

The market and thus the industry are always changing, depending on the demand and also the supply. Patents may expire in due period or trademarks get updated in due course, exposing huge investment in challenge. Furthermore, open innovation may not be driven by scale or process, but rather by breakthrough science, or a better understanding of human dynamics validating new targets, which may be totally new or unfamiliar to the market.

Open Innovation Strategies in SMEs

Figure 6. Preparing SMEs towards open innovation business model

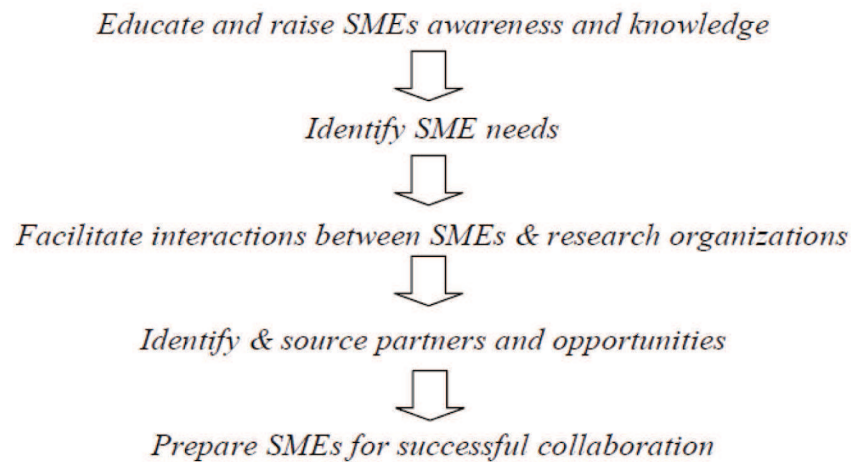
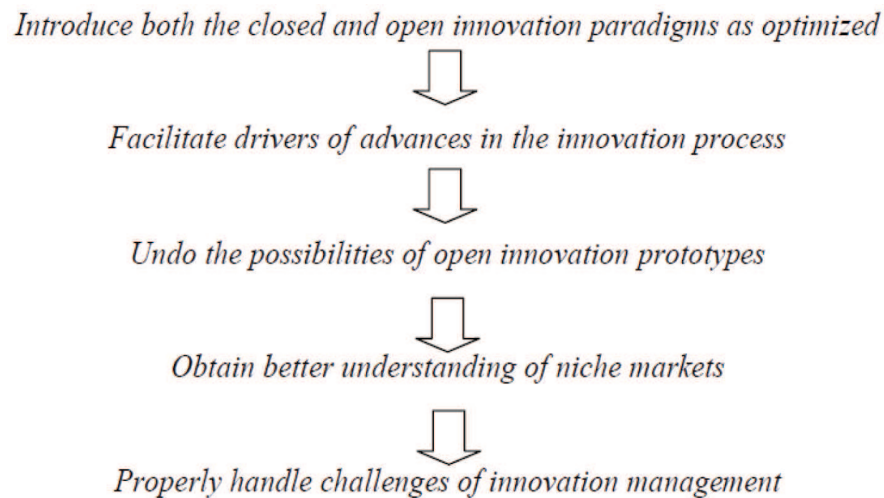


Figure 7. Positioning SMEs towards open innovation business model

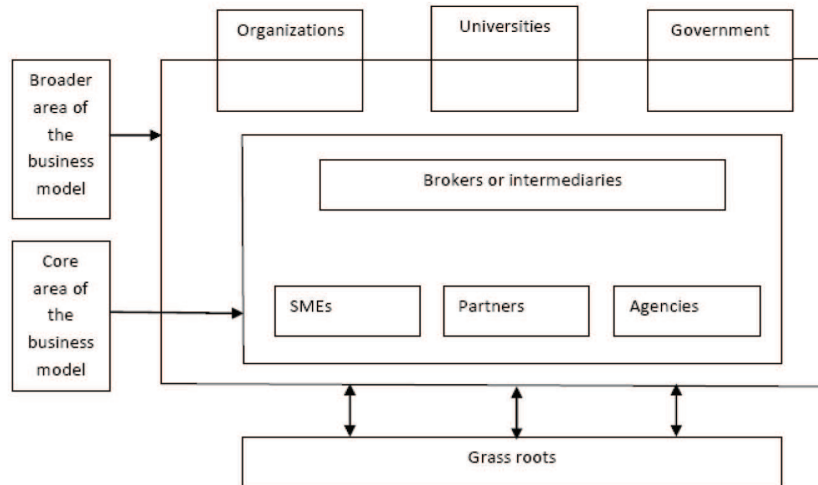


Therefore, the open innovation business model and its research practice must be updated dynamically to fit into the new realities (to suit the behavior of the end-user), which is extremely challenging for SMEs (Jaruzelski & Dehoff, 2008).

Open innovation systems (Chesbrough, 2003a) are characterized by the flexible way a firm coordinates a large number of innovation models and assess their value. The system is open, because

some models come from outside and some internal models go outside. This approach is consistent with former studies that argue that innovations are increasingly the result of a joint effort of a number of multi-parties (innovation networks, systemic innovations). However, Chesbrough (2003a) argues that in dynamic markets the value of a portfolio of innovation models is difficult to estimate and thereby, that the value of patents –

Figure 8. Building block of the proposed business model (Authors)



as a specific means to ‘secure’ an innovation’s value – is very indeterminate. Moreover, the value of patents (and or inventions) depends on the specific business model a firm uses to commercialize innovations. Hence, there are different modes of open innovation; they could be spin-offs from research, or out-licensees or technology exploiters. In addition to these, collaboration is not seen as a way out to all innovation problems, but as part of the portfolio in which some if not the majority of models is carried out by the single firm and other models are carried out in partnership with other firms (Dittrich, 2008). This situation exposes SMEs in challenging situations, as they are already exposed to scarce resources and the product life cycles are diminishing.

Therefore, as a newly emerged field of research, open innovation for SME development deserves a prolonged and strategically developed qualitative and quantitative synthesis on available resources, including business models and business practices. Furthermore, while developing an open innovation business model, one should look into the detail of the fundamentals of the innovation process, including the innovation channel, the turn over and also looking into the socio-economic,

organizational and cultural differences (Rahman, 2010). Inclusive of above challenges, open innovation for SMEs also deserves further emphasize in resolving issues, like sales, licenses, cash flow, and trust in business relationship; to fulfill the grass roots clientele base by understanding their demand; to develop a transparent business model that add value to it; and to combine appropriate knowledge and technology for building a pipeline of opportunities, enabling a broad-based B2B networking through a sustained organic growth (Rahman & Ramos, 2010).

FUTURE RESEARCH DIRECTIONS

Open innovation is still a moderately new area of research and many of the research questions underline the need to further explore the concept and how enterprises can transform and adapt to this new approach of including external knowledge, resources, and skills in their innovation strategies. The concept is reliant on the organizational and cultural context (Chesbrough, 2007; Fredberg, Elmquist & Ollila, 2008). Similarly, the business model based on the concept is dependent on the

strategies and technologies. New technologies will tend to entail new business model. When the technology transforms from one state to another, the value proposition to customers, the value capture by the innovator firm or the relationship of the firm within the value network also transforms (West, 2006; West, Vanhaverbeke & Chesbrough, 2006).

The open innovation model suggests that ideas for innovations can also emerge or go on market from outside the company as well as from inside. The new model assumes that knowledge is spread widely and even the successful innovators with huge R&D resources have to look for the external sources of innovation (Chesbrough, 2006a; Chesbrough, 2006b). The open innovation leverages the role of R&D. Hence, the researchers' job is now, not only to create knowledge, but also to capture it from outside the company. Once a new innovation has taken place, the company can use several business models to bring it to the market. Even if they find that the technology is not suitable for the current business model, it can be licensed or donated to other companies or a new spin-off can be established targeting a new market (Chesbrough 2003a; Chesbrough, 2010). However, the future may reveal that, even if openness in the innovation process is decidedly encouraged there will always be need for some closeness, too (the mixed approach) (Christensen, Olesen & Kjaer, 2005; Viskari, 2006).

CONCLUSION

As observed, open Innovation business models explores the capacity of partners to collaborate each other through technological exchanges, letting ideas flow out of the entrepreneurship in order to find better place for the innovation monetization, and flow into the entrepreneurship as new offerings and new business models (Chesbrough, 2003d; Chesbrough, 2006c). The study finds that, the application of open innovation business models implies high levels of competi-

tion due to the opportunity to enter into entirely new markets. At first sight it would not be clear to assume an open innovation business model in a multimarket competition environment, because these schemes rely on different objectives and different assumptions.

This study also finds and supported by another research (see Alcalde, 2009) that open innovation encourages industry competition through trust, confidence and transparent information interchanges. In this context, in order to avoid the competition, multimarket framework, on one hand, may develop threats and retribution mechanism. On the other hand, open innovation presents predominantly technological exchanges as the major driver of the model. Hence, it could be mentioned that traditional mutual self-control mechanisms would not work in open business models. Moreover, the development of technological exchanges among different market players would imply the penetration in entirely new markets. Thus, diversification would be the logical consequence of technological exchanges in open business models. In conclusion, the study suggests by put forwarding the two phase multifaceted business model, for further explorations and experimentations.

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KEY TERMS AND DEFINITIONS

Intellectual Property Management (IPM):

It is the way of managing intellectual property like; patent renewals, integration and market assessment either manually or using any automated system by the enterprise itself or by an intermediary. IPM involves IP development (planning and implementation of IP in a conducive environment through proper motivation); Market watch (seeking for opportunities by keeping track of other competitors and infringers); IP exchange (acquiring and selling of spin-offs and or joint R&D); and IPR protection (providing legal protection surviving trade secrets and other disciplinary measures).

Open Innovation Business Model: A form of business model involving inbound and outbound ideas defying boundaries of the companies to gain knowledge, expertise and value intended to be beneficial for the entrepreneurships.

Open Innovation Intermediaries: These are companies or agencies that help other companies implement various facets of open innovation, act-

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ing as an enabler or guide to explore the market for ideas without getting in over their heads. There are different kinds of open innovation intermediaries, with some acting as agents, thus representing one side of a transaction, while others take on the role of knowledge brokers or market makers.

Open Innovation Strategy: It could be treated as a mandate or a set of clear vision or a well defined process incorporating people (employees, clients, suppliers, other stakeholders) in terms of new ways of working, incentives, fading distinction between work and (social) networks; operations ((e-)processes and (e-)infrastructure) in terms of web access, communities, facilitation of knowledge and creativity sharing; policy (written and unwritten rules) regarding intellectual property, privacy, outside communication; and culture (openness, learning, networking) to create the right (and safe) atmosphere.

Spin-Offs: They may refer to Corporate spin-off, a type of corporate transaction forming a new company or entity; Government spin-off, civilian goods which are the result of military or governmental research; Research spin-off, a company founded on the findings of a member or by members of a research group at a university; Spin-off (media), the process of deriving new radio programs, television programs, video games, or novels from already existing ones; or Spin-off product, a new product which uses the brand name of another product which already has a well-developed image. In case of a spin-off, a parent company distributes shares of a subsidiary to the parent company's shareholders. The shares are usually distributed on a pro rata basis and the subsidiary becomes a separate company. State law and the rules of the stock exchanges determine whether a company must seek shareholder approval for a spin-off.