

Incubation of New Ideas: Extending Incubation Models to Less-Favored Regions

António C. Moreira¹ and Marta F. S. Carvalho²

¹DEGEI/GOVCOPP/University of Aveiro

²ISMAI/Instituto Superior da Maia
Portugal

1. Introduction

The search for models regarding the business incubation process is on a multifaceted road. Existing literature is crowded with a wide range of proposals emphasizing different foci: some of them focus on results, some address the importance of internal processes, some present a holistic perspective of incubation by dealing with both environmental forces and internal aspects, some use virtual approaches and some follow a more contingent approach in order to address specific issues such as those presented in rural, less endowed regions.

Considering that incubation models will definitively influence the life of both incubators and incubatees, it is important to envision the incubation environment. With progressively complex structures, these environments require an effective and efficient management that is ready to answer to vivid entrepreneurs, which demand qualified and committed teams tuned to the objectives defined by the incubator.

Departing from the premise that the "success" (successful management) of a business incubator is the consequence of the "success" of its incubated companies, the management business model of the incubator directly contributes to this "success". In this sense, the incubator macro business process (selection - incubation - graduation) must be organized and modeled to select good business plans, assess and evaluate the new business undertakings and graduate successful firms (Bergek & Norrman, 2008; Hannon, 2003).

The main objective of this chapter is to present a review of the literature regarding incubation services and models. Furthermore, it will extend incubation models in order to include the incubation of business ideas, specifically targeting less-favored regions.

This chapter is divided in six sections. The introduction covers the first section whereas the second section presents a revision of the literature regarding incubation and incubators. Section three covers the incubation process. Section four addresses business incubation models, in which the most important models are presented and analyzed. Section five introduces a new concept on virtual incubators. Section six introduces the concept of incubation of business ideas, which is developed from the specific needs of rural, less-favored regions. Final conclusions are drawn in section seven.

2. Incubation and incubators

2.1 Concepts

The globalization process, experienced by most economies in the last years, has unleashed the importance of the innovative capacity of firms, regions and countries in their search for competitive advantage and efficiency. In this way, the new technological dynamics imposed on business environments have generated new forms of organization and interaction among firms, and between companies and other institutions, thus, assisting in the search for stronger competitiveness and long term survival.

The role performed by business incubators, by underpinning the generation of new competitive firms, or by training future entrepreneurs, is of crucial importance. Business incubators are mechanisms that stimulate the creation and development of new micro and small companies (technology-based firms, manufacturing firms, service firms or agricultural firms). By providing the complementary training to young entrepreneurs, both in the technical and management aspects of the new firm, business incubators have facilitated and accelerated the process of innovation as well as economic and regional transformation.

Hannon (2003) considers that the business incubation process supports the identification and exploitation of a successful opportunity for the creation of a new business undertaking. According to Hannon (2003), the business incubation process should be faced, firstly, as the environment where new business ideas and undertakings can be developed according to a set of business support resources.

The business incubator's public image appears as a network of individuals and organizations. Included in this network are the incubator's manager and personnel, the pool of advisors, the incubatees and their staff members, the local universities, the local development associations, the industrial contacts and all the services provided by the incubator, such as lawyers, marketing consultants, accountants, investors and volunteers (Hackett & Dilts, 2004a).

Although reinforcing this idea, Bergek & Norrman (2008) also claim that the business incubator should have a network mediating role amongst the incubatees as well as between them and the environment that surrounds them. Considering that business incubators should be positioned for actively cooperating in the initial phase of new entrepreneurial undertakings, this mediating role may bring benefits for the incubatees by increasing their probability of succeeding in the business arena. According to Bergek & Norrman's (2008) position, it is possible to infer that it is the responsibility of the business incubator to make feasible cooperative relationships that provide incubatees with greater access to the information generated in the environment in which incubated firms are inserted, thus, nurturing the development of competences by means of learning processes. As a consequence, the final objective of the incubation process is to deploy among incubatees the capability to survive in the business arena and to transform a business idea in a successful business venture.

Finally, Bergek & Norrman (2008) claim that illustrating a nurturing awareness policy that contributes to the establishment of cooperative relations is the first step for a business incubator to establish and promote viable businesses.

Despite the prominent role of business incubators in the process of nurturing and underpinning the promotion of new firms, Hackett & Dilts (2004b) consider that they can be regarded as a resourceful technology that, by itself, is not presented as a tool that guarantees the new firms' success. The absence of entrepreneurial capabilities and the lack of marketing knowledge can lead to the failure of new ventures. Accordingly, they defend that the incubator must, in this sense, be understood as a means to an end.

If it is correct that the absence of potential/capacity of the incubatee can doom the new entrepreneurial undertaking to failure, it is not less true that the networking role of the incubator as a mediator between the incubatee and the external environment is also important. Nevertheless, we stress that during the initial phase the incubator's role is multifaceted. Consequently, we defend Hackett & Dilts' (2004b) conclusion that though the network based view of the incubator is important, the structural contingent theory is even more important to guarantee that there is a "proper fit" between the business incubator and the external environment faced by new firms.

This mixed concept of network support and structural contingency are confirmed by Hackett & Dilts (2004b) and Bergek & Norrman (2008) when they try to come up with the different forms to define an incubator. They define an incubator as a place where resources can be rationally and dynamically invested. The business incubator is seen as a dynamic community where selected incubatees can locate their emergent firms in an incubating environment. This includes routines, procedures, culture, working environment, learning experience and working costs, which incubatees can hardly obtain by themselves.

2.2 Typology

Many changes have occurred since the establishment of the first business incubators due to (a) the role they have had in the creation of new firms and (b) the mechanisms for achieving the technological development they have been using.

Initially, the majority of incubators was positioned, on the one hand, as a public tool for the creation of jobs, urban rehabilitation, commercialization of university innovations and, on the other hand, as private organizations for the incubation of new high-growth firms (Hackett & Dilts, 2004a).

Grandi & Grimaldi (2005) segment incubators in two different types: those with lucrative objectives, such as private incubators, and those with non-profit purposes, including university incubators and business innovation centers, such as those that appeared in Europe during the 1980s. According to Grandi & Grimaldi (2005) the initial objective of public incubators was to reduce the costs of doing business by offering a set of services, space, infrastructure, technical experience and assistance in the elaboration of the business plan. With the changes and evolution of markets, this type of positioning began to change due to the boom of private incubators. These have as main purposes the creation of new firms and the obtainment of profit from incubatees as a result of fees charged for new undertakings.

Through time incubators have been assuming the role of supporting the development of start-ups with a broad range of services. This has led to the detriment of the initial passive behavior of offering physical space, basic infrastructures and communication channels to tenant companies. For Bergek & Norrman, (2008) the services provided by an incubator

within a typology centered in the provision of physical space and administrative services resemble the concept of hotel and not of incubation. According to the demands of current markets and the growing need and sophistication of innovation, incubators should be prepared to assume themselves as the engines of that innovation, thus, supporting and nurturing potential entrepreneurs in order to strengthen their potential growth and to endow them with the business tools that they normally lack to achieve current or potential opportunities.

Our comprehension of the positioning of an incubator resembles that put forward by Bergek & Norrman (2008) as a large percentage of potential entrepreneurs are neither able to prepare their business plans nor start their own businesses as they lack managerial competences, business contacts and financial resources. They reveal need of a "mentor" able to support and guide the new firm towards the "right" position, in the "right" moment. Peters, Rice & Sundararajan (2004) reiterate this pattern as they defend that incubators must assume the role of organizational developers by contributing to the training, networking and assistance of incubatees in the initial phase.

It is imperative to fully comprehend the incubation process. However, we must have in mind that incubators can accelerate the learning process by training entrepreneurs, counseling them, and supporting their managerial know-how.

3. The incubation process

Following the inherent concepts of the incubators and the incubation process we will now focus our attention on the process itself. According to the analysis of the different concepts of the incubator, we can infer that the incubation process can include the support of business development including: the formulation of the business plan, the recognition of business potential, the planning of business activities, the preparation of the market study, the entrance in the market and the sustainable development of the business.

Carter & Jones-Evans (2000) propose a generic five-step incubation process, as shown in figure 1. One feature of the Carter & Jones-Evans' (2000) model is that the steps put forward are focused on the needs of the incubatee, which will be supported by the service provided by the incubators during the incubation process. Carayannis & Zedtwitz (2005) identify five services provided by incubators that are crucial for the incubatees:

1. access to physical resources;
2. administrative support;
3. access to financial resources;
4. business/organizational support in the start-up phase;
5. access the networking activities.

Despite the validity of the services provided and of the model proposed by Carter & Jones-Evans (2000) and Carayannis & Zedtwitz (2005), it is possible to question not only if all incubators perform the whole range of steps and services, but also if they are effectively carried out and properly assessed in the incubation process. One of the criticisms put forward regarding the model is that it does not answer *how* an in *what way* incubators provide their support. As most of the incubators were developed as a response to the challenge posed by technological pressures, namely university business incubators, business

innovation centers, science parks, etc. it is also questionable if the model is suitable in rural areas where pace technologies are rare and there is a scarcity of human capital.

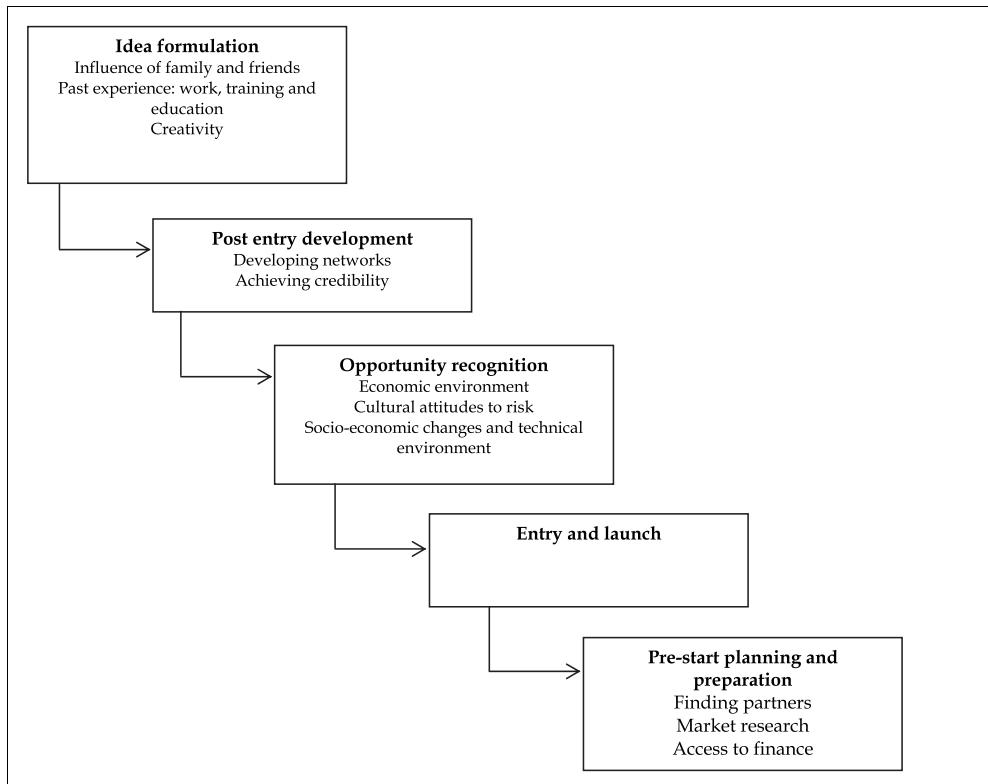


Fig. 1. Key steps in the incubation process

Given the importance of the incubation process, Hannon (2003) affirms that managerial capacities as well as the level of experience associated to the incubator are vital for the success of the assessment of the incubation process. The incubator will have to be capable of correctly managing the incubation environment, supporting the incubatee's new business creation during the incubation process, and, of reducing the probability of failure of the new undertaking and speeding up the process of business creation. In order to deal with these issues the incubator should have an adequate management profile that includes financial, analytic, interpersonal, entrepreneurial and bargaining capabilities.

Considering the importance and the relative complexity associated to the incubation process, we shall address the models and components related to this procedure.

4. Incubation models

Due to the incremental role of incubators in society and in the economy, the comprehension of the whole incubation process is of key importance. However, the studies and proposals

carried out throughout time do not present a holistic vision of the process. Bergek & Norrman (2008) consider that the majority of models are centered on results and do not intertwine the processes of selection and management of the incubator and its results.

Campbell, Kendrick, & Samuelson (1985) are amongst the first to propose a model that attempts to conceptualize the incubation process. They tried to explain, as shown in figure 2, how the different components and activities of an incubator can facilitate the transformation of a business proposal in a viable new firm.

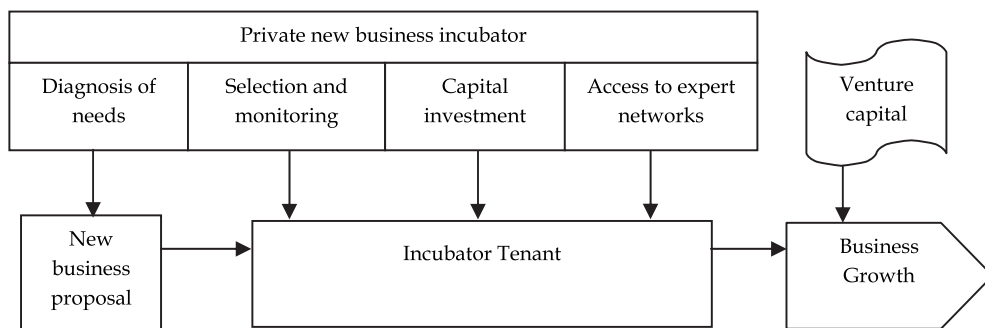


Fig. 2. Campbell, Kendrick & Samuelson's (1985) incubation model

The model proposed by Campbell et al. (1985) suggests four areas where the incubators create value: 1) the diagnosis of business needs, 2) the selection and monitoring of the services provided to the firms, 3) the investment of capital, and 4) the access to the working network of the incubator.

According to the process described and the components presented by the model, it would be possible to make a potential business into a viable firm. However, the model fails when considering that all businesses are potentially viable and does not take into account the lack of capabilities of potential entrepreneurs and, the environmental barriers that can arise during the process that might doom the new venture to failure. In addition, the model is not explicit in what criteria to adopt when selecting a business to support.

Would not a bad or incorrect selection process influence (negatively) the feasibility and future growth of a potential new business? Moreover, it is still visible that the model is basically centered on private incubators with little support in rural areas or social programs.

Having in mind the question raised about the selection criteria, Kuratko & LaFollette (1987) confirm that inconsistent selection of the incubatee can increase the probability of failure of both the incubator and incubatee. This arises from the probability that selection is not focused on the value proposition of the business proposal and on the competences of the potential entrepreneur.

Following this line of thinking, Merrifield (1987) created a selection proposal for potential incubatees. That approach consisted of three main questions being the first two based on the potential incubatee: 1) is this a good business in which anyone could be involved? 2) is this a business in which the (incubated) firm has resources and competences to successfully compete? With these two questions Merrifield (1987) intended to verify the attractiveness

and suitability of the new venture. In the case the answers were favorable the last question would be raised: 3) Which is the best approach for the firm to enter the business arena and grow?

Although Merrifield’s (1987) approach looks solid, it can be considered as a very simplistic way of analyzing the potential of a new business undertaking. It is also possible to assert that the proposal is applicable in technology-based new ventures. However, it falls short of expectations in less endowed regions. This is the case in rural areas in which young entrepreneurs do not have the same qualifications and the incubators capabilities and resources are far from those found in universities or business and innovation centers.

As was previously referred, Campbell et al.’s (1985) model is open to refinement, and was addressed by Smilor (1987) who perceives incubators as a transformation mechanism in which industry, government and university are interrelated. Smilor (1987) categorizes the benefits that incubators provide to their incubatees through four dimensions: 1) credibility development, 2) the shortening of the learning curve, 3) faster troubleshooting, and 4) access to the network of entrepreneurs.

According to Smilor’s (1987) model, there is a strong emphasis on the external perspective, neglecting the internal one, in which the entrepreneur plays an important role. However, as the model was developed and proposed having in mind typical innovation-based entrepreneurs, it seeks to identify the different components of the new business incubation process. It conceptualizes the incubator as a system that gives incubatees the structure and credibility for the creation of new firms while ensuring a set of immediate, key resources for the setting up of the new undertaking. For example, if we take into account the lack of entrepreneurial capabilities as well as the lack of economic resources in most rural areas, it is possible to conclude that this systemic approach, encompassing the internal and external environment, seems to be lacking in Smilor’s (1987) model.

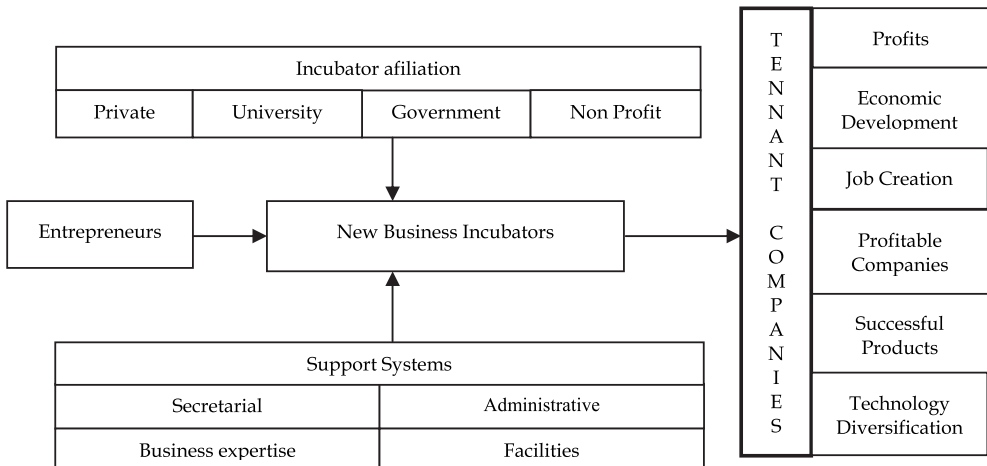


Fig. 3. Smilor’s (1987) incubation model

In the search of a model that presents the different components of the incubation of a new firm (either internal or external), we find Bergek & Norrman's (2008) proposal. They reject the principle of a black box incubation model centered merely on results. They consider that it is only possible to evaluate the performance of a business incubator when taking into account the particular objectives of the incubator, i.e. confronting objectives and results. They identify a set of components that try to translate the incubation process according to the internal and external variables:

1. The selection of firms that should be accepted and the ones that must be rejected;
2. Infrastructures, regarding the physical facilities and administrative services to be provided;
3. Mediation, i.e. the way in which the incubator mediates the relationship between the incubatees and the external world;
4. Graduation, which concerns the policy defined by the incubator about the moment and circumstances of exit of the incubated firms.

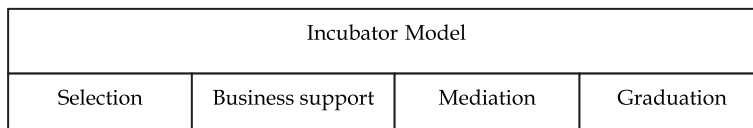


Fig. 4. Bergek & Norrman's (2008) incubation model

In regards the selection component, Bergek & Norrman's (2008) mention that it is one of the most important tasks. Consequently, the selection criteria must be adjusted to the characteristics and objectives of the incubator. However, they identify two different approaches: selection based on the business idea and selection based on the entrepreneur.

When the criterion is based on the idea, it requires that the incubator has the technological and business knowledge as well as the background necessary in order to evaluate the feasibility of the business idea. On the other hand, if the criterion is based on the entrepreneur, the incubator must have competencies to assess the entrepreneur's personality traits, personal skills, and capabilities related to the new venture.

The adoption of one or the other is a matter of option and flexibility. Nevertheless, it is arguable that the "picking the winners" policy is a successful approach. Accordingly, as Bergek & Norrman's (2008) suggest, in order to avoid possible evaluation errors it would be advisable to deploy a selection process that involves both approaches in order to assess pairs of ideas/entrepreneurs, and winners/survivors. The application of this selection strategy seems to be more complete, as it involves the two variables that are important for the new venture to succeed: the business idea and the entrepreneur.

In what concerns the business infrastructure, it is important to remark that beyond the need of a broad support, it is vital to intertwine that support with the way it is provided.

Concerning the incubator mediation capacity, Bergek & Norrman (2008) defend the importance of the role of the mediator among incubatees and between them and other actors. In this manner, mediation capacity is a way of projecting the incubatees in the market, creating opportunities for them as well as reducing uncertainties.

A closer look at the components presented by Bergek & Norrman (2008) leads us to consider the model as properly adjusted as it takes into account the demands of the incubator's internal dynamics as well as the external environment. Therefore, it leaves each incubator with the responsibility of applying the different components of the model and adapting the incubator to the intricacies of each particular reality. Nevertheless, Hackett & Dilts' model (2004b), shown in figure 5, based on Campbell et al.'s (1985) model, also proposed a holistic vision of the incubation model. Although focused on the results/performance (black box) approach, they developed a theory, based on the real options theory, as a way to maintain and complement the model.

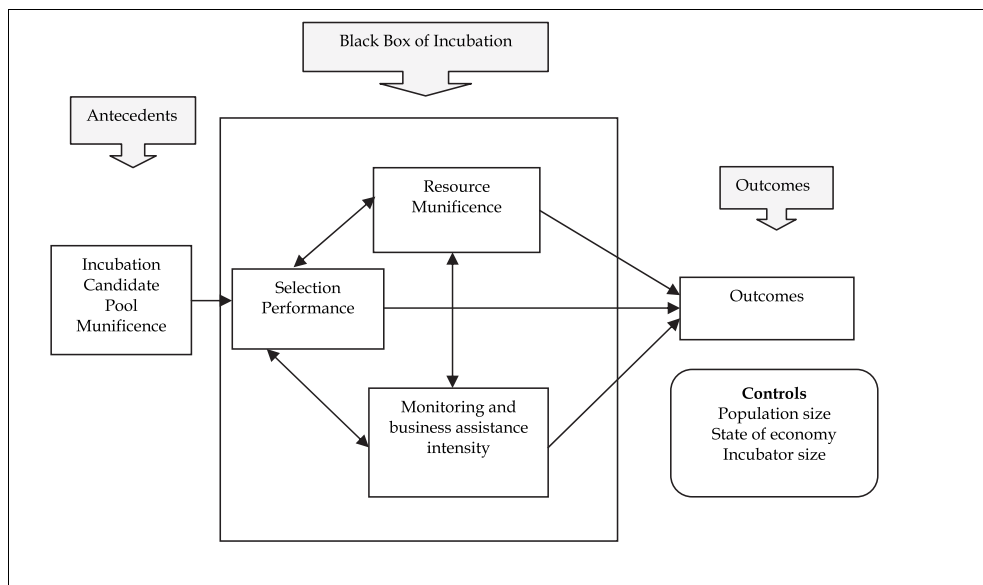


Fig. 5. Hackett & Dilts' (2004b) incubation process model

The incubation process proposed by Hackett & Dilts (2004b) suggests that incubatees are selected from a pool of candidates, being monitored and supported with resources while they go through their initial developmental phase. The results are referred to the survival or failure of the incubates at the moment he/she leaves the incubator.

By analyzing the model it would be possible to pose the following two questions: what criteria should be considered at the time of the selection of possible incubatees? Would the existence of predefined criteria contribute to the economic results of incubation?

The answers to these questions are found in the real options theory proposed by Hackett & Dilts (2004b). These authors seek to resolve *how* and *why* the variability in the measures of the components of the model can explain and forecast the probability of survival of new undertakings during the development phase. The theory presented by Hackett & Dilts (2004b) defends that: the performance of incubation depends on the incubator's ability to create options through which the selection of weak-but-promising intermediate potential

firms is interesting. However, it must be implemented with monitoring and counseling, and the infusion of resources.

The performance of incubation can be measured in terms of growth and financial performance at the time of incubator exit. As indicator of success Hackett & Dilts (2004b) identify the following mutually exclusive outcomes:

1. The incubatee is surviving and growing profitably;
2. The incubatee is surviving and growing and is on the road of profitably;
3. The incubatee is surviving but not growing and is not profitable or is marginally profitable.
4. The incubate operations were terminated while still on the incubator, but the losses are minimized;
5. The incubate operations were terminated while still on the incubator, and losses are very large.

In relation to the outcomes, Hackett & Dilts (2004b) consider the outcome number four as a success factor, according to the real options theory. However, it is possible to pose the following question: will it effectively be a success indicator or an indicator of a bad option upon selection of the incubatee? Well, it is indeed possible that the selection of the incubatee was right and the absence of “luck” played a crucial role. If Hackett & Dilts (2004b) affirm that according to the real option-driven theory the third indicator should be a failure outcome, then it looks that a mismatch exists when defending that the fourth outcome is a success outcome. The issue is simple: would not a “marginally profitable” business be better than a “dead” business? More importantly, if both are in the incubator, one should pose the following question: How would their performance be outside in the real world?

Hackett & Dilts (2004b) argue that selection performance is the capacity of the incubator to behave as a venture capitalist of the undertaking at the moment of selection and admission of the incubatee. Accordingly, it will be expected that incubators behaving as venture capitalists adopt selection criteria such as: managerial capacities of the enterprising team, market and product characteristics and potential, and the expected financial results. According to Hackett & Dilts (2004b), the existence of a selection mechanism makes potential candidates more demanding with themselves, leading them to self-corrective measures.

Regarding the selection performance, it is possible to argue that the model might not be pervasively used in all type of incubators, especially for those that are targeted for social minorities or rural areas in which social responsibility plays a crucial role. Accordingly, although the incubator might behave as a venture capitalist, it must consider what target groups it is serving. In addition, the incubator must ponder how those target groups can be served in developing managerial competences. However, this selection criterion is important as it also allows potential entrepreneurs to understand that they have to cope with the risks of the new venture. This factor was not considered by Bergek & Norrman (2008), as they regarded the selection criterion as being centered on the entrepreneur.

In what concerns the intensity of monitoring and business assistance, Hackett & Dilts (2004b) claim that the more intense the monitoring and the business assistance to the incubatees, the larger the probability of success of incubation process performance. Hackett

& Dilts (2004b) consider that the probability of obtaining positive results increases with the capacity for supporting the incubatees with a variety of resources.

According to the analysis of Hackett & Dilts' (2004b) model and the description of the real option-driven theory of business incubation, it is possible to defend that the model tries to explain business incubation performance. However, it is centered on the incubator perspective, without strong elements of reference or importance to the incubatee, who the incubator is supposed to serve.

Confronting the models, we recognize that Bergek & Norrman's (2008) model effectively translates a more holistic vision, not being centered on results or performance, and considering the incubation process as a whole including both the incubator and the incubatee.

Moreover, it is possible to notice that all the models referred above identify internal aspects of the incubator. Nevertheless, there is no agreement on what criteria can be assumed as relevant for the process of business incubation. On the other hand, the internal resources of incubators and the way they are used are extensively used and analyzed according to the business plan of the incubator. Of equal importance is the fact that incubators closely scrutinize the costs of all training, consultancy provided, partnerships/interactions the incubator holds with different agents and all infrastructural costs. In this manner, incubators are closely monitoring their own business.

Another important issue is that not all the models properly highlight external issues, such as location and partnerships maintained. The external environment can strongly influence the incubator, as it will depend on the partnerships gained and maintained with higher education institutions, technology centers and other research institutions. These partnerships support the incubator in the development of new firms, thus, fulfilling the incubator's own mission. If the location the incubator inhabits does not possess those institutions, the incubated companies can face some difficulties in reaching stability (graduating). The same is true if the location does not possess companies that can be clients of the new firms, which may hinder local development. This is certainly what happens in many rural areas in which the main markets are far away and technology oriented institutions are scarce, giving particular attention to rural incubators.

Components seem to be one of the main challenges incubators face in the incubation process. However, to better articulate the incubation process one must consider a wide array of criteria that can encompass the type of incubator, its area of influence, the services provided, and its geographical location, among others. Accordingly, although all incubation models are suitable, it seems that Bergek & Norrman's (2008) proposal is an open road that deserves further development.

Considering the growing tendency and accessibility of internet resources and information technologies, we have decided to approach new incubation models - virtual incubation - in order to face and readjust towards a changing reality.

5. Cyber incubation

The growth and pervasiveness of the Internet is amplifying creative processes and leading to new scientific and technological developments.

Firms both in developing and developed economies are increasingly hiring professionals using the Internet to expand research and development projects and to create new businesses in a networked sustainable development.

Nowadays, we are witnessing a stimulating and proactive participation in cyber work and cyber business creation. High levels of market competitiveness lead firms to be more active and competitive in Internet-based business (Ohmae, 2000; Turban et al., 2000). Accordingly, business incubation is being influenced by the development of new, emerging incubation models in which talented, skillful people can work at home or in innovative environments providing e-services or knowledge-based services.

This new concept of incubation will eradicate some of the items related to the components previously presented, such as physical space, equipment and relationship management between incubatees. Virtual incubators need to provide valuable resources and e-services to assist potential entrepreneurs in the creation of their new ventures.

Aernoudt (2004) states that incubation should be considered as an interactive and dynamic new firm creation process with the purpose of stimulating people to start their own business and supporting start up enterprises in the development of innovative products. A real incubator it is not an office space with a desk. It should offer management services, financial assistance, juridical support, operational know-how and access to new markets, which can be done both in a physical or virtual space.

Nowak and Grantham (2000) argue that in traditional business development entrepreneurs face a common challenge: the absence of capital, human resources, and management capabilities. This leads to the development of new models that facilitate the creation of new businesses. They propose the creation of a virtual incubation model, based on networked innovation. They consider that the combination of specialists and information technologies would assist in establishing strategic alliances between managers, marketing strategists and specialized engineers, thus, achieving better business opportunities. The components of this virtual model are shown in table 1.

Human resources focus + capital focus = source of integrated resources
Focus on strategic alliance formation helps to underpin all key success ingredients as early as possible
Intellectual capital valuation and management expertise
Internet-based, distributed resources
Profitable solutions (specially for private incubators)
Private sector plays a leading role, while university and public sector play supporting roles
Formalized management control systems (accounting, etc.) for generating stability
National and international business and market focus
Work in conjunction with physical incubators when needed

Table 1.

Nowak and Grantham's (2000) model shows a combination of successful elements applied to traditional incubation with a new focus on virtual channels and strategic alliances. Nevertheless, their contribution seems to be in a very embryonic state as it does not explain the whole cycle of virtual incubation.

It seems that new technologies will strengthen the proliferation of this new kind of incubation. However, we think that there are some important challenges to be overcome, in particular, an extensive application in the primary sector or in rural areas. Hackett and Dilts (2004a) state that virtual incubators should be regarded as business incubation programs, as these are much more a provision of services than incubation services. They also defend that the absence of interaction between incubatees might result in the absence of desired effects present in the traditional incubation environment.

Virtual incubation may go through a dramatic change in the near future, especially with the provision of e-services for the development of business plans, virtual classrooms, virtual training and virtual mentoring. Portals may play a crucial role in the creation of a virtual facility for e-learning purposes. Nevertheless, the traditional roles are not yet set aside.

6. Incubation of business ideas

Rural entrepreneurship plays a crucial role in the economic development of rural and less-favored areas. These suffer from very particular characteristics that most technology-based firms do not go through: weak infrastructural facilities, relative remoteness to main markets, disadvantaged populations, relatively low income and a fragile economic fabric. Accordingly, new ventures are even more important in less-endowed areas in order to diversify the local economy and to increase welfare. Rural entrepreneurship can play an important role in creating new jobs, income and wealth and thus, fighting the main economic and environmental weaknesses of rural communities. Consequently, the creation of new ventures seems mandatory for an integrated development to happen.

Entrepreneurial activity is not the same in all countries, regions and cities. Entrepreneurship is conditioned by various factors settled in the behavior, motivations and knowledge of the individual. However, it is dependent on opportunities and available resources and on the conditions of the surrounding environment (Stathopoulos, Psaltopoulos, Skuras, 2004).

Although rurality may be defined using terms such as population density, rate of population outflows and inflows, settlement size, local economic structure and landscape (Skuras, 1998), it can also be addressed as a set of rules and resources existing in a certain space and drawn upon discursive and non-discursive actions (Halfacree, 1995).

Two realities are related to rurality: on the one hand, more developed rural areas, characterized by their relative proximity to main economic markets and, on the other hand, remoter areas, characterized by depopulation, infrastructural inadequacies, high dependence on farming and a weak industrial fabric. As a consequence, rurality has obstacles and opportunities for entrepreneurship to occur and alters both the entrepreneurial process and outcomes (Stathopoulos, Psaltopoulos, Skuras, 2004).

If launching new firms is a difficult issue in the entrepreneurial process, the problems are more specific to rural entrepreneurs due to three types of problems. Such problems are related to social and economic structures and to the physical environment (Lichtenstein and Lyons, 1996; Knack and Keefer, 1997). Low population size/density and remoteness make it difficult for rural entrepreneurs to achieve economies of scale or critical mass. Furthermore, the difficulties brought upon by the remoteness of rural areas impose a high transaction cost to rural businesses as it limits accessibility to suppliers, customers, new markets and social

capital of urban and sub-urban communities. Lastly, the lack of a social capital fabric, the qualitative characteristics of the civil society, and the activities of other more developed areas jeopardize the operation of businesses and their networking activities.

As seen above countless business incubation models were developed and used extensively in business incubation centers, university business incubators, independent private incubators, corporate private incubators, high-technology business incubators and technology parks. The particularity of those models is that they depart from technological backgrounds and specific characteristics that are not valid in most rural, less-endowed areas. Clearly, the ideal environment for entrepreneurship is where firms can take advantage of the agglomeration and proximity of sources of information, qualified labor, technology and capital. Classical incubation models thrive in those environments.

In rural areas, however, where the networks have yet to be developed, where innovation and technology do not belong to the local culture and economy, and where enterprises struggle to become more competitive (Keeble and Tyler, 1995), business incubation models must have the following key attributes:

- They are first centered on entrepreneurs and only then on the business activity;
- They build entrepreneurial support systems to help entrepreneurs develop business ideas, create viable enterprises and grow sustainable businesses within the rural community;
- They help build entrepreneurial environments with the support of public and private sectors;
- They are strategically focused in meeting the needs of rural entrepreneurs.

Moreira and Martins (2009) developed a methodology to support rural entrepreneurs in an integrative way throughout the following three phases:

- *Information and Nurturing* entrepreneurship and business creation
- *Maturation and Finalization* of a business plan
- *Test and Experimentation* of business ideas

Each phase involves different actions with several tasks. Each action has instruments and procedures in order to help potential entrepreneurs throughout the process.

In the *Information and Nurturing* phase, the potential entrepreneur is interviewed and her/his business ideas are assessed. A file is prepared with the personal entrepreneur motivations, his/her business ideas and an analysis of the entrepreneur's needs in terms of support and/or resources.

The objective of the interview is to analyze the entrepreneur's profile, his/her technical and personal competencies, the business idea, the business feasibility and the possibility of supporting the entrepreneur in the next phases. This action is the most important in the follow up process as it ends with a business check-up about the entrepreneur/idea/project concerning the type of support the prospective entrepreneur will be given (or not) during the following phases of the process.

Clearly, all entrepreneurs must go through this stage as the diagnosis will reveal the potential of the entrepreneur/idea/project.

In the *maturation and finalization phase* the elaboration of the business plan takes place. This phase begins with the establishment of a contract between the entrepreneur and the institution, therefore, defining the duration and terms of support and training. In this manner, the potential entrepreneur develops the skill to prepare the Business Plan.

There are training sessions so that the entrepreneur can prepare the business plan, undergo market research and collect the necessary information. A tutor provided by the institution helps the entrepreneur with the search and collection of information, and the training received by the entrepreneur is expected to help him/her with the preparation of the business plan.

By the end of this phase, the entrepreneur must have a business plan, an investment plan and a financial plan and must understand, explain and defend their contents to third parties.

The *experimentation and test phase* is the most innovative phase of the process. It allows the entrepreneur to test the business idea before the formal creation of the firm. This phase can be considered a radical innovation as it gives potential entrepreneurs the opportunity to incubate business ideas before formally beginning the business.

The entrepreneur has the support of the business incubation structure and his/her tutor in all main business areas: accounting, finance, marketing, communication, image, infrastructures, etc. Clearly, during the test and experimentation process, the entrepreneur has the opportunity to test his/her business without the formal creation of the firm, thus forming a business idea bed-test. In order for this to be possible, the entrepreneur will have administrative support from the business idea incubator, which will be responsible for the invoices and receipts during this phase. In this situation the business incubator is providing a brand new service in upstream activities of the value chain: the testing of the business ideas.

According to Moreira and Martins (2009), this type of business idea incubator is very innovative as it provides a hands-on approach to training prospective entrepreneurs. This action oriented methodology supports prospective entrepreneurs before the actual creation of the new business.

The combination of different actions overcomes the obstacles identified by potential rural entrepreneurs in the preparation of the project: poor access to capital; lack of institutional support; heavy administrative and bureaucratic burdens; lack of information about support and programs for business creation.

7. Conclusion

While incubators have been proliferating throughout the world as way of supporting the creation new start-ups, the way of understanding them is becoming more diverse due to the need of targeting them to specific situations.

There are several literature-based definitions for business incubators. Some conceptualize incubators as a place that hosts and shelters new business undertakings, some as the supporting base of the planning, creation and launching a new business in the market, and others include the concept of virtual incubation where e-business services are provided. The concept recently has been stretched to include business idea incubation, extending the

incubator value chain to upstream activities in order to support less-endowed firms in rural areas. However, in a general way, all of them aim to stimulate and support the creation of new firms. Nevertheless, the way they provide the service varies considerably according to the typology used: private or public incubators, technology or rural incubators, physical or virtual incubators.

In an attempt to understand all the inherent processes of incubation, it is clearly understandable that there is no unanimous opinion on how the process should be or how the model should provide this service to the potential entrepreneurs. The majority of business incubation models tend to describe the process by attempting to assess the incubator results, thus, leaving unaddressed several characteristics of the models and incubatees who they supposedly serve. However the applicability of a global model for all types of incubators might be very limiting considering that each type of incubator is targeted to very specific needs.

Bergek & Norrman's (2008) offer a general structured model in which each incubator can adjust its services to the three components (selection, support and mediation) it follows in the process of supporting new businesses. In such a way this model can also be applied to virtual incubators as well as to business ideas incubators as proposed by Moreira and Martins (2009).

One important aspect of the incubation models analyzed in this chapter is that classical models provide services based on the provision of physical facilities. On the other hand, virtual incubators are targeted to potential entrepreneurs who seek services as virtual classrooms, virtual set-by-step idea evaluation process, virtual business plan mentoring and an array of e-services that are very interesting for high-tech entrepreneurs.

Although business incubators, as shown by Bergek and Norrman (2008), tend to provide three basic functions, Moreira and Martins (2009) have extended incubators to business idea incubators, where a business idea is pre-tested before the formal creation of the new firm. This methodology has been of added value as it has underpinned the creation of brand new firms providing plentiful business skills to potential entrepreneurs during the testing phase.

Other important issues that deserve closer scrutiny are, on the one hand, how virtual incubators can be used (and of added value) for supporting the creation of new firms in rural areas and, on the other hand, how the incubation of business ideas can be used to support new business creation in more technology-driven environments.

In fact, there are several contributions found in the literature concerning incubation models. However, we have not performed an in depth analysis, which is the biggest limitation of the article.

8. References

- Aernoudt, R. (2004). Incubators: Tool for Entrepreneurship? *Small Business Economics*, Vol. 23, pp. 127-135.
- Bergek, A. & Norrman, C. (2008). Incubator Best practice: A framework. *Technovation*, Vol. 28, No. 1/2, pp. 20-28.

- Campbell, C.; Kendrick, R. & Samuelson, D. (1985). Stalking the Latent Entrepreneur. *Economic Development Review*, Vol. 3, No. 2, pp. 43-48.
- Carayannis, E. & Zedtwitz, M. (2005). Architecting gloCal (global?local), Real-virtual Incubator Networks (G-RVINS) as Catalysts and Accelerators of Entrepreneurship in Transitioning and Developing Economies: Lessons Learned and Best Practices from Current Development and Business Incubation. *Technovation*, Vol. 25, No. 2, pp. 95-110.
- Carter, S. & Jones-Evans, D. (2000). *Enterprise and Small Business: Principles, Practice and Policy*, Pearson Education Ltd, Harlow, England.
- Grandi, A. & Grimaldi, R. (2005). Business Incubators and New Venture Creation: An Assessment of Incubating Models. *Technovation*, Vol. 25, No. 2, pp. 111-121.
- Hackett, S. M. & Dilts, D. M. (2004a). A Systematic Review of Business Incubation Research. *The Journal of Technology Transfer*, Vol. 29, No. 1, pp. 55-82.
- Hackett, S. M. & Dilts, D. M. (2004b). A Real Options-Driven Theory of Business Incubation. *The Journal of Technology Transfer*, Vol. 29, No. 1, pp. 41-54.
- Halfacree, K. (1995). Talking About Rurality: Social Representations of the Rural as Expressed by Residents of six English Parishes. *Journal of Rural Studies*, Vol. 1, No. 1, pp. 1-20.
- Hannon, P. D. (2003). A Conceptual Development Framework for Management and Leadership Learning in the UK Incubator Sector. *Education Training*, Vol. 45, No. 8/9, pp. 449-460.
- Keeble, D. & Tyler, P. (1995). Enterprising Behaviour at the Urban-rural Shift. *Urban Studies*, Vol. 32, No. 2, pp. 975-997.
- Kuratko, D. F. & LaFollette W.R. (1987). Small Business Incubators for Local Economic Development. *Economic Development Review*, Vol. 5, No. 2, pp. 49-55.
- Merrifield, D. B. (1987). New Business Incubators. *Journal of Business Venturing*, Vol. 2, pp. 277-284.
- Moreira, A. C. & Martins, S. L. (2009). CRER: An Integrated Methodology for the Incubation of Business Ideas in Portugal, *Journal of Enterprising Communities: People and Places in the Global Economy*, Vol. 3, No. 2, pp. 176-192.
- Nowak, M. J. & Grantham, C. E. (2000). Virtual Incubator: Managing Human Capital in the Software Industry. *Research Policy*, Vol. 29, No. 2, pp. 125-134.
- Ohame, K. (2000). *The Invisible Continent*, Nicholas Brealey Publishing, London, England.
- Peters, L.; Rice, M. & Sundararajan, M. (2004). The Role of Incubators in the Entrepreneurial Process. *The Journal of Technology Transfer*, Vol. 29, No. 1, pp. 83-91.
- Smilor, R. W. (1987). Managing the Incubator System: Critical Success Factors to Accelerate New Company Development. *IEEE Transactions on Engineering Management*, Vol. 34, No. 4, pp. 146-156.
- Stathopoulou, S.; Psaltopoulos, D. & Skuras, D. (2004). Rural Entrepreneurship in Europe. A Research Framework and Agenda, *International Journal of Entrepreneurial Behaviour & Research*, Vol. 10, No. 6, pp. 404-425.
- Skuras, D. (1998). Rural Development in the European Union, *Cahiers Options Méditerranéennes*, Vol. 29, pp. 143-151.

Turban, E.; Lee, J.; King, D. & Chung, H. (2000). *Electronic Commerce. A Managerial Perspective*, Prentice Hall, New Jersey, USA.