Business incubators
– Knowledge transfer and networks creation as key success factors

Author(s): Mayra Veronica Villarroel Rojas
Tutor: Joachim Timlon
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Mayra Veronica Villarroel Rojas
Abstract

The purpose of this research is to analyze business incubators and the relevant factors that take place inside these organizations.

The methodology used was a case study approach, which investigates a real environment, in this case: NeoEmpresa, a business incubator located in La Paz, Bolivia. The explanatory approach is also considered in this research since the purpose is to explain the business incubation characteristics as well as understand the importance of knowledge transfer and network creation inside business incubators.

The findings propose that the most adequate incubation model strongly depends on the incubator’s main purpose and that the learning practices that take place inside an incubator involve knowledge transfer, more considered experience transfer, and networking as relevant factors.

Key words

Incubation, business incubators, knowledge transfer, learning practices inside incubators, network creation, networking, success factors in incubation, Bolivia.
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1. Introduction

The first chapter of this thesis represents the introduction to the subject of business incubators. The problems concerning business incubators and the key success factors for supporting entrepreneurs are described as well as the purpose and the structure to follow during the thesis.

1.1 Background

According to Lalkaka (2002), there are three interrelated forces that are changing the global economic landscape: technological progress, entrepreneurship and competitive markets. Besides other aspects, these forces are also related to the focus on knowledge-based business creation to stimulate growth. Cooper and Park (2008), consider that SMEs play an important role in both regional and national economic development, which has impacted in the development of economic policies in different countries, in order to support new, high-growth, high-technology ventures with the aim to promote economic growth and job creation.

Business incubators facilitate the development of entrepreneurship in the regions; reducing the probability of failure and speeding up the process of business creation by offering infrastructures and facilities to the tenants (Grimaldi and Grandi, 2005). At the same time, the concept of business incubators is not only related to infrastructure or services facilities, but also to the access to business networks and knowledge transfer. Inter-organizational learning mechanisms are influenced by the utilization of the social capital inside the incubator, which benefits the tenant’s performance (Fang, Tsai and Lin, 2010). It is considered that intangible benefits offered by incubators are more valuable than the tangible infrastructure and services (Fang, Tsai and Lin, 2010; and Karataz-Ozkan, Murphy and Rae, 2005).
Cooper and Park (2005) mention tacit knowledge as one of the most important way of knowledge transfer between organizations. At the same time, Hansson (2007) mentions Nonaka’s concept of “ba”\(^1\) and other theories considering knowledge transfer that relate the internal knowledge creation in organizations with business incubators.

The relations between tenants lead to the transfer of knowledge and to the build of organizational networks. The new dynamics in the market brought new concepts of business incubators as “networked incubator”, which provides a great value to start up connections for entrepreneurs (Mc Adam and Mc Adam, 2006 and Mc Adam and Marlow, 2008) providing value through preferential network access while offering economies of scale (Hansen, Chesbrough, Nohria and Sull, 2000). Business incubators’ new concept involves business networking and the importance of “social capital” in the development of new firms (Totterman and Sten, 2005), as well as the opportunity of supporting entrepreneurs in the pursuit of sustainability and growth (Mc Adam and Marlow, 2008).

Researching about business incubator involves understanding the insights of how incubator managers create and develop an incubator, the evaluation of the different programs or models and the understanding of the incubation community and public policies (Karataz-Ozkan, Murphy and Rae, 2005). At the same time, McAdam and Marlow (2008) suggest that there is a need for research in order to consider how proximity and tacit knowledge are established after network creation, and if whether or not it is utilized (Studdard, 2006). Peters, Rice and Sundararajan (2004) also consider that further research could involve “whether learning practices should be different for different types of incubators in order to reach their objectives”.

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\(^1\) “Ba” is considered a shared space that serves as foundation for knowledge creation (Nonaka and Konno, 1998).
1.2 Problematization

The concept of business incubation, according to Grimaldi and Grandi (2005), seeks an effective way to link technology, capital and know-how in order to power entrepreneurial talent, accelerate the development of new companies and therefore speed the exploitation of technology. Business incubators provide the infrastructure and consulting services for entrepreneurs, expecting that after the incubation process the “graduates” become independent and self-sustaining businesses.

Even though incubators share the same general objective of encouraging entrepreneurship, Mc Adam and Mc Adam (2006) difference the types of incubators regarding the incubators’ priorities inferring that it is dependent on the source of funding: private investors, government or university. At the same time, Hansson (2007) mentions the importance of geographical locations, political and social contexts, and economic systems for the development of a model for business incubations. The differences between incubators bear different incubation models that apply according the needs of the region and the objective of entrepreneurs (Grimaldi and Grandi, 2005). These differences lead to the first general concern involving business incubators models: Which model is the most appropriate to each situation?

Incubation is associated with business support and advice activities in order to create and develop new ventures; but besides that the emphasis on physical facilities has evolved to business development processes, which is linked to knowledge-based economy, where knowledge is co-created and shared by people in organizations, known as driver of economic growth. Incubators are also considered a source of access to relevant people and information, understood as well as a source of network creation (Karatas-Ozkan, Murphy and Rae, 2005). Hansson (2007) also mentions knowledge as a complex intangible objective and the importance or new organizational frameworks of knowledge creation, production and application as part of knowledge based economy. By this context, how do business incubators influence the knowledge creation? Is it possible to integrate business incubators to the new knowledge economy?
The lack of evidence related to networking activities between tenants in the incubators is a problem mentioned by Mc Adam and Mc Adam (2006); considering the main issue the impact on the entrepreneurial activities and the use of the networks to support the growth of the firms. The authors also consider that the comprehension of the needs of the tenants is a priority in order to link the most appropriate network, know-how and resources. Totterman and Sten (2005) mention the support given by business incubators, granting credibility to tenants and hence helping them to build their own business networks. Considering the different needs of the tenants and the different type of incubators, how can a business incubator support entrepreneurs to build up business networks?

1.3 Research problem

After discussing the main issues related to business incubators, the problem defined for this thesis is: How can business incubators impact the growth of tenants in terms of knowledge transfer and networks creation?

- Which model of business incubator is the most appropriate to the needs of the tenants?
- How physical proximity influences the knowledge creation and transfer between firms?
- How can a business incubator support entrepreneurs to build up business networks?

1.4 Purpose

The purpose of the research is to comprehend the concept of business incubation and the impact of incubators in the knowledge transfer and network creation between tenants. This purpose will be reached through the description of business incubators models, processes and characteristics; the analysis of the learning practices concerning knowledge and networks creation as key success factors for the development of start-ups; and finally recommending how to implement the findings in the incubators in Bolivia.
1.5 Outline of the thesis

Chapter 1. Introduction
Chapter 2. Methodology
Chapter 3. Theoretical framework
Chapter 4. Empirical findings and Analysis
Chapter 6. Final discussion and Conclusion
2. Methodology

The investigation follows a case study for the methodology. This chapter discusses the main reasons for the chosen method and finally an introduction to the case company, as well as details concerning the information collection.

2.1 Research Strategy

In order to collect and analyze empirical evidence, there are five main different strategies: experiment, surveys, archival analysis, history and case studies (Yin, 2003); to choose the strategy, it is considered the type of research question, the control related to behavioral events or the focus related to contemporary or historical events.

The case study approach is chosen for this thesis, since it is a type of qualitative study and investigates a real environment. A case study also involves “how” questions in contemporary events, in this case, related to business incubators. According to Yin (2003) there are at least four applications for a case study model: it explains complex causal links in real-life interventions, describes the real-life context in which the intervention has occurred, describes the intervention itself and finally, explores the situations in which the intervention do not have a clear set of outcomes. The following study consists in the understanding of business incubators concept and key success factors applied to an incubator in Bolivia, in this case, called NeoEmpresa.

On one hand case study gives the opportunity to understand the uniqueness and the activity of a specific case in certain circumstances, but on the other hand a case study approach is limited to a single case or limited group. Other weakness related to this approach is that there are no common methods for collecting and analyzing empirical data, which is a critic related to the lack of rigor in the procedures to follow, this is opposite comparing with other investigation approaches like experiments and surveys.
It is important to understand that a single case study is not representative of other cases; therefore it could be mentioned as a disadvantage. However, the purpose of the study is to investigate the knowledge transfer and networks creation as key success factors inside business incubators, not necessarily to see if the results are representative or not. This criticism is related to generalizing the investigation to theoretical propositions, not to population or universe.

Yin (2003), proposes that a case study could be seen in different ways. There are three research approaches for case studies: the explorative approach, the descriptive approach and the explanatory approach. Each one of them has its own characteristics: the main objective of the explorative approach is to collect as much information as possible in the related area; the descriptive approach explains the phenomenon after a clear problem; and the explanatory approach has the purpose of explaining a particular event, with an established problem and the aim of verifying the connections among the variables.

The present study uses the explanatory approach, since the purpose of the investigation is to explain the business incubation characteristics as well as understand the importance of knowledge transfer and network creation inside business incubators through a case study in Bolivia. Besides the critics mentioned before, case study research is considered the most appropriate method for the present research.

2.2 Research method and procedure

In order to proceed with the case study research, Yin (2003) suggests three different approaches called inductive, deductive and abductive. An inductive approach implies observation in order to address models or theories. A deductive approach works the other way around, it confirms the theory in reality, testing the models, theories or hypothesis. An abductive approach combines both methods.

In the present study, the approach is abductive, since it combines inductive procedure when incubators activities are observed, and at the same time, the deductive procedure is used
when models and theories are mentioned and questioned in order to understand and generate new models that apply to the reality in Bolivia according business incubators characteristics.

The following research analyzes the problem from a qualitative point of view, which implies that the reality is constructed by the observer, with the purpose to understand and interpret social interaction with a smaller group of analysis. The investigation uses qualitative methods to facilitate the understanding of the impact of knowledge transfer and network creation (Yin, 2003).

2.3 Case study design

According to Yin (2003), there are five components of the case study design: (1) the study questions, (2) the propositions, (3) the units of analysis, (4) the logic linking between the data and the propositions and finally (5) the criteria for interpreting the findings.

To continue with the case study, it is important to define the method of analysis. Yin (2003) proposes four types of case study:

<table>
<thead>
<tr>
<th></th>
<th>Single case design</th>
<th>Multiple case design</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Holistic</strong></td>
<td>One context - One case</td>
<td>Multiple context - multiple cases of analysis</td>
</tr>
<tr>
<td>(single unit)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Embedded</strong></td>
<td>One context - multiple units</td>
<td>Multiple context - multiple cases of analysis and multiple units</td>
</tr>
<tr>
<td>(multiple units)</td>
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Table 1. Basic types of designs for case studies  
Source: Yin (2003)

In order to decide the method, Yin (2003) considers that single case study is justified when it is (1) a critical case for testing an existing theory; (2) an extreme or unique case; (3) a typical case that implies a common situation and the results are assumed to be informative;
(4) a revelatory case of a previously inaccessible case, and (5) a longitudinal case which studies a single case through the time.

Hence, according to the theory, the most suitable type for case studies for the present thesis is the single case design, since only one business incubator is taken in consideration, and embedded-multiple units’ perspective considering the main points: knowledge transfer and network creation inside business incubators.

At the same time, the systematic combining process proposed by Dubois and Lars (2002), mentions that the theoretical framework, empirical fieldwork and case study evolve at the same time, and it may help to the development of new theories or approaches (figure 1). Systematic combining could be discussed in two processes: (1) matching theory and reality and (2) direction and redirection of the study. Both of these processes are affected by the following factors: reality, theories, evolvement of the case and analytical framework.

![Figure 1. Systematic combining](Source: Dubois and Lars (2002))
2.4 Research method

The following research method represents the abductive approach relating the framework, case study, empirical findings and theory.

2.5 Data Collection

The information for the investigation was collected using primary and secondary approaches. Primary data consists of methods used by the researcher like observation, surveys or interviews; while secondary data is the one collected from external sources, in this case: journals, research articles, books and internet. According to Yin (2003), some aspects as documentation, interviews, direct observation and participant observation, are relevant and used in case studies. Fisher (2007) suggests that interviewing is the most commonly used methods in master research; suggesting the following plan for interviews:

- Roughly sort and list areas of questioning.
- Edit and prioritize questions.
- Consider the methods that will be used to analyze the questions.
- Decide on which questions are going to be open and which closed.
- Put questions into sequence.
- Check the questions for relevance to your research topic – do not ask questions that are impertinent.

In the present investigation the primary data is collected through interviews to the directors of the case study organization, Neoempresa.

### 2.6 Validity and Reliability

In case studies, the validity and reliability ensure the quality of the investigation which is based on the interaction of between the phenomenon and the context. Validity is related to the developed of the theoretical framework and the link with the reality, concerning the relation between empirical data and theory, in this case the relation between the theoretical framework about business incubators and NeoEmpresa, the case study, a business incubator located in La Paz, Bolivia; the concepts of knowledge transfer and network creation as learning practices. Reliability has the aim of minimizing the errors in the study, as well as demonstrating if the research findings are replicable (Yin, 2003). Yin (2003), argues four related areas, construct validity, internal validity, external validity and reliability.

Construct validity, according to the author, relates the empirical analysis with the theoretical framework which has to match in order to create high construct validity in the case study (Yin, 2003). In the research in order to obtain construct validity, the concepts about business incubators match among them considering the linkage between the incubation models, knowledge and networking. It also includes multiple sources of information, as well as having direct contact with the business managers of the business incubator in study, NeoEmpresa.

The internal validity occurs during the data analysis, for explanations and logic models, according to Yin (2003) and it is acceptable when the theories and empirical findings match each other. The theoretical framework is related to NeoEmpresa, the business incubator in study, its purpose and activities towards the actual tenants, in order to understand the
incubation model and its participation in the start-ups development concerning knowledge and networking.

For Yin (2003), external validity takes place during the research design considering that the findings are able to be generalized in other contexts, besides the case study. This research focuses on business incubators, the incubation models and the learning practices related to knowledge transfer and network creation. The main purpose is to understand business incubators operations and the activities that are relevant inside the organization for the tenants and managers. Through the description, analysis and explanation of the concepts and the case study, it is pretended to contribute to the theory related to business incubators and the development of stronger and effective organizations. In order to consider generalizations after the study, it is important to understand that the findings of the investigation consider that business incubators’ models strongly depend on the reality of each region where it is established and that it could be applicable to other incubators with similar realities. The situations where empirical findings and research study took place and its consistency are considered relevant for explaining the “context bound extrapolations” (Merriam, 1998), which are more valid than generalizations.

Reliability, according to Yin (2003), during data collection, demonstrates that the findings can be repeated with the same results, in order to reduce possible errors. To increase reliability it could be used a case study protocol and a case study data based, however the concept of “reliability” is more considered in experiments rather than case studies. By working with people, the results could be different according each situation and context, even with the same actors; therefore it is difficult to repeat the research as well as to expect the same results in a case study. The consistency of theoretical and empirical findings ensure the reliability of the case study (Merriam, 1998), therefore in order to avoid misunderstandings, the present research tried to be as clear as possible when contacting the actors involved. The interviews with the managers were in their native language, Spanish; therefore the collection of information was easier and understandable, hence at the same time was easier to explain and clarify theoretical concepts related to the subject.
2.7 Purposive sample

The case study is based on the criteria of finding an established business incubator located in Bolivia. NeoEmpresa is an outdoors business incubator located in La Paz, Bolivia. The foundation was established in December, 2004; as a non-profit private organization with the support of private institutions and entrepreneurs interested in promoting and motivating a new business culture in Bolivia.

The foundation had the initial purpose of being an indoors business incubator, working with pre-incubation, however because of the lack of initial resources the organization had to adapt the business incubator model to an outdoors accelerator model which mainly works with entrepreneurs that already have initiated some operations.

Today NeoEmpresa has three business managers who administrate the foundation; for the interviews process, two of them were interviewed.

<table>
<thead>
<tr>
<th>Name</th>
<th>Oscar Saavedra</th>
<th>Gonzalo Galleguillos</th>
</tr>
</thead>
<tbody>
<tr>
<td>Position</td>
<td>Business Manager</td>
<td></td>
</tr>
<tr>
<td>Date of the interview</td>
<td>may.03.2010</td>
<td></td>
</tr>
<tr>
<td>Language</td>
<td>Spanish</td>
<td></td>
</tr>
<tr>
<td>Duration</td>
<td>90 min</td>
<td></td>
</tr>
<tr>
<td>Location</td>
<td>NeoEmpresa, Av. Arce #2017 La Paz, Bolivia</td>
<td></td>
</tr>
<tr>
<td>Interviewer</td>
<td>Mayra Villarroel Rojas</td>
<td></td>
</tr>
</tbody>
</table>

Table 2. Profile of interviews
Source: Own elaboration

Ch. 3. Theoretical Framework

This chapter gives a theoretical framework about business incubators, the characteristics of these organizations, the typology or models that categorize incubators as well as the role of the incubators with knowledge transfer and network creation.
3.1 Business incubation – Business incubator

For some authors, the concept of business incubators has become of daily use; however it can be easily misunderstood and it is becoming more an umbrella word that is used for institutions with different objectives (Aernoudt, 2004). According to Aernoudt (2004), business incubators nurture young firms, when they are most vulnerable, helping them to survive and grow during the start-up period. This idea is supported by Peters, Rice and Sundararajan (2004), when they mention that incubators are considered as a vehicle for enterprise development and an evolving innovative organizational form.

The American National Business Incubation Association (NBIA\(^2\)) describes business incubation as a dynamic process of business enterprise development. “*Business incubation is a business support process that accelerates the successful development of start-up and fledgling companies by providing entrepreneurs with an array of targeted resources and services*”\(^3\). The Association considers that the business incubator’s main goal is to produce successful firms that after graduation provide potential jobs, and strengthen local and national economy by commercializing new technologies and reinforce development of the region. From an economic point of view, Bøllingtoft and Ulhøi (2005) consider that some incubators have been established to accelerate regional economic development which also helps to capitalize investment opportunity; while others for commercializing academic research, in order to create contact between high-tech firms with universities. According to Grimaldi and Grandi (2005), the concept of incubation seeks to link technology, capital and know-how, and in this way promote the entrepreneurship, the development of new companies and the exploitation of technology.

Incubators provide management guidance, technical assistance and consulting to young companies, as well as shared basic business services and equipment, technology support services and assistance for funding (NBIA). Grimaldi and Grandi (2005) also mentions how Business incubators provide different kind of support services; besides space and

\(^2\)www.nbia.org
\(^3\)http://www.nbia.org/resource_library/what_is/
equipment; such as “assistance in developing business and marketing plans, building management teams, obtaining capital and access to a range of more specialized professional services”. Karatas-Ozkan, Murphy and Rae (2005) associates business incubation with business support and advice activities; these services may consider a luxury that new ventures cannot afford at the beginning of their operations (Bøllingtoft and Ulhøi, 2005). A true incubator is not only about the services mentioned before; it also provides access to operational know-how and new markets (Aernoudt, 2004). During the development of business incubators, Peters, Rice, Sundararajan (2004) considers that the role has changed, and a BI is not longer consider just a business center with office facilities; which Karatas-Ozkan, Murphy and Rae (2005) agrees when they mention that the concept goes beyond the provision of a shared office and workspace facility; now it the offer consists of training, networking and consulting in different expertise areas (Peters, Rice and Sundararajan, 2004). Bøllingtoft and Ulhøi (2005) consider that business incubators have the potential for creating and exploiting synergies because of the combination of the different resources, services and skills. However, one important role of incubator management is to keep political rivalry at low level in order to maintain technological, productive and commercial achievements; moreover the management has to formulate explicit internal and external networking policies in order to succeed (Rostgaard Evald and Bager, 2008).

Incubators vary in the way they deliver their services, the structure and the types of clients they serve (NBIA), focusing on the main goal: to produce viable and freestanding firms (Aernoudt, 2004) and, the creation and development of enterprises (Karatas-Ozkan, Murphy and Rae, 2005). However, Bøllingtoft and Ulhøi (2005) consider that incubators differ in their purpose, organizational structure, operating policy and institutional affiliation.

Aernoudt (2004) evaluates the relation between business incubators, business angel networks (seed capital funds), entrepreneurship and the growth of new technology based firms. The model the author proposes shows the relation among the actors of the entrepreneurship process (Figure 3). Real incubation leads to real entrepreneurship (arrow
1). Business angel networks stimulate entrepreneurship (arrow 3) and indirectly incubators by financing projects (arrow 2). The increase of entrepreneurship lead to the growth of new technology based firms (arrow 4); which has a positive impact on regional and social issues. The growth of NTBF leads to an increase in entrepreneurial activities (arrow 5) and therefore more projects for incubators (arrow 6). According to the model, the rotation of the incubators increases as well as the possibility of networking between tenants and graduates (Aernoudt, 2004)

Figure 3. The dynamic process of entrepreneurship, incubation and business angel networks.

However, each incubator has different aims, like diversifying rural economies, increasing employment and transferring technology from universities and corporations (NBIA), as well as providing supporting infrastructure to compensate failures in the market mechanism (Bøllingtoft and Ulhøi, 2005). At the same time, the tenants have also different aims, therefore the selection of companies must be very careful in order to focus on firms that suit the program, meaning that tenants would benefit from each other (Totterman and Sten, 2005). On the other hand, the size of the incubator is also relevant since, as mentioned by Totterman and Sten (2005), a very industry-specific incubator may raise competitive issues and a very wide range may reduce the synergy opportunities among tenants.

A good incubator could be measured by the number of “new, young enterprises with growth potential, an optimal rotation rate, a high survival rate of graduates (...)”, a positive
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impact on the perception of entrepreneurs and on the creation of an entrepreneurial culture, a positive impact on the perception of entrepreneurs and on the creation of entrepreneurial culture, strong links with industry, R&D centers and universities; and finally a structure facilitating access to financial markets” (Aernoudt, 2004). But on the other hand, the graduation of a tenant depends on: the income level, deadlines given by the incubator (from 1 to 3 years), and the increase in rent as incentive for non-performing startups to leave the incubator (Peters, Rice and Sundararajan, 2004). Aernoudt (2004) agrees with Peters, Rice and Sundararajan (2004) while considering that the rotation ratio in the incubator, meaning the time the tenant stays in the incubator, is on average three years, time considered the necessary in order to grow up young firms (Aernoudt, 2004) and let them become independent and self-sustaining businesses (Grimaldi and Grandi, 2005). The entrepreneurial process involves the incubators services and the number of graduates; however, it is also considered that the number of graduates cannot be reliable for measuring the incubator’s ability in the entrepreneurial process, and the services do not only consist of the infrastructure, but also the coaching and networking offered by the incubator (Peters, Rice and Sundararajan, 2004). The model presented by Peters, Rice and Sundararajan (2004), pretends to understand the impact of each service of the incubator on the number of graduates (Figure 4). The authors also mention that the number of graduates depends on the typology of the incubator. The next section explains the types or model of incubators.

Figure 4. Relational model explaining factors affecting the graduation rates of tenants in the incubation centers.

3.2 Types/models of business incubators

Business incubators share the objective of encouraging entrepreneurship; however, as mentioned by Grimaldi and Grandi (2005), the different services and resources of business incubators give rise to different incubating models or types. McAdam and McAdam (2007) easily divide the types of incubators considering the main priority: the source of funding, coming from a private investor, government or university. As well, Peters, Rice and
Sundararajan (2004) consider three types of incubators, based on their governance structures and business models: (1) Non-profits, focused on diversifying the local economy (small business incubators); (2) university based incubators, linked to universities; and (3) for-profit incubators (private organizations). This division is also agreed and supported by Bøllingtoft and Ulhøi (2005) which considers that the opportunities offered by the incubators are connected to their specific mission and goal. Taking into account goals as a factor to distinguish incubators’ models, Bergek and Norrman (2008) consider that the performance evaluation of the incubator is linked to the main goal (Figure 5).

According to Bøllingtoft and Ulhøi (2005), for-profit seed capital incubators have the goal to capitalize investment opportunities and help the tenants with their financial issues. These incubators generally are sponsored and managed by private corporations, with the main goal of making profit. University based incubators, called academic incubators by Bøllingtoft and Ulhøi (2005), also known by science parks, research parks or technology parks; have the main goal to transform research and development findings into new products or technologies, as well as develop the skills and practical knowledge of the incubation team (Karatas-Ozkan, Murphy and Rae, 2005). According to Bøllingtoft and Ulhøi (2005), non-profit development corporation incubators can be both, publicly sponsored or non-profit sponsored. The investigation of Peters, Rice and Sundararajan (2004), shows that the highest number of graduates was observed in non-profit incubators.

Grimaldi and Grandi (2004) consider that business incubators’ characteristics define the models or types of incubators. These characteristics are: institutional mission, industrial sector, location, market, origin of ideas, phase of intervention, incubation period, sources of revenue, services offered and management teams. Based on these, the authors identify four
different main types of incubators, very similar to the previous authors: Business innovation centers (BICs), University Business Incubators (UBIs), Independent Private Incubators (IPIs) and Corporate Private incubators (CPIs). The model the authors propose involves two “spectrums” (model 1 and model 2); in model 1, public BIC and regional public incubators are placed; where the services are oriented towards the provision of tangible assets and market commodities. At the same time, model 1 provides access, through networks mainly of public entities, to external source of finance, technical and economic/management competencies and daily support. Model 2 consider private incubators, CPIs and IPIs, where the services provided involve the provision of finance and more intangible and high-value assets, as knowledge, in a short time orientation. The role of these last type of incubators involves connecting incubates with external actors, increasing a networking attitude. According to the authors, UBIs could be placed between the two models, since its main goal is to provide knowledge-based companies, with access to technological knowledge, infrastructures and academic networking and at the same time they rely on incubatees’ fees and public subsides (Grimaldi and Grandi, 2004).

Figure 6. Incubating models
Source: Grimaldi and Grandi, 2004

Aernoudt (2004) presents a well structured classification of business incubators, categorizing them according to their sponsors/stakeholders or according to their objectives. Since each type of incubator deals with market failures, Aernoudt (2004) distinguishes three main types and two categories, described in the following table.
Business incubators: knowledge transfer and networks creation as key success factors
Mayra Villarroel Rojas

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Table 3. Typology of business incubators

On the description, Aernoudt (2004) describes that the incubators whose primary goal is to focus on the narrowness of regional development gaps are called economic development incubators; incubators that focus on the development of technology-oriented firms are called technology incubators.

The typology of business incubators proposed by Aernoudt (2004) summarizes the considerations of previous authors and at the same time brings up some specific categories: Social incubators and Basic research incubators. The first one offers business development services, business support, business accommodation and logistic support to young firms and has the aim of supporting the development, growth and employment of people with low employment capacities such as disabled people, minimum guaranteed income beneficiaries, low skilled workers, long term unemployed, immigrants, etc. The second one links the incubation principle to the fundamental research, mainly working with high technology firms (Aernoudt, 2004).
3.3 Knowledge creation and knowledge transfer in business incubators

The resource-based view proposed by Peters, Rice and Sundararajan (2004), emphasizes the importance of knowledge as a resource in business incubators. The authors also suggest that in order to reconfigure these resources, it is necessary that organizational learning takes place. Generally the sources for acquiring the resources come from the networks available to the firms (Peters, Rice and Sundararajan, 2004). Other author, Studdard (2006), considers that significant outcome gained by the firms in the incubation process is knowledge acquisition through the interaction with the business incubator manager, whose main role is to assist the firm with the ability to acquire knowledge. The knowledge required depends on the different incubators’ objectives and typology (Studdard, 2004). However, the closed structure of an incubator promotes the engagement in social relationships, which gives the firm a better position for motivating trust and increase business process knowledge (Studdard, 2004).

Innovative high-technology communities are supportive environments of venture creation and emerging opportunities (Cooper and Park, 2008). “Tacit knowledge flows within and between organizations through the movement of human capital from department to department, from organization to organization and from existing organization to new venture” (Cooper and Park, 2008). The movement of human capital brings vital new different ideas, perspectives and access to external networks; which add value to the environment for opportunity recognition and exploitation (Cooper and Park, 2008).

In order to remain alert to opportunities and trends, it is important to maintain the attraction and intra-regional movement of new ideas and ways of thinking (Cooper and Park, 2008). Finn’s (2007) findings imply that the complexity of knowledge creation has a strong impact in business incubators as a part of a regional system of innovation; and that the cooperation in knowledge creation between the different actors is crucial. The concept of knowledge creation, based on Nonaka’s theory, mentioned by Hansson (2007), implies that the interaction between management, organization and the creation of knowledge is the core of the concept of “ba”, and it proposes a model called SECI that involves the externalization,
socialization, internalization and combination in a spiraling process in order to convert tacit into explicit knowledge and vice versa (Hansson, 2007). The author also considers that the concept of “ba” is useful for the challenges that knowledge organizations are facing and to understand knowledge creation and improvement in business incubators. In order to become an important factor in the knowledge economy, business incubators have to integrate themselves in other knowledge-creating organizations (Hansson, 2007).

3.4 Advantages of physical proximity

The location of the firms is an important factor since the influence of entrepreneurs being together is reflected in the opportunities and the reputation gained by the firm in the incubator (Cooper and Park, 2008). It is common among ventures the interconnection of individual knowledge networks in order to create complementary new knowledge combinations (Cooper and Park, 2008) and at the same time, the way the incubator is constructed affects networking activities and the pattern of collaboration (Bøllingtoft and Ulhøi, 2005); therefore, as mentioned by Cooper and Park (2005), it also affects the knowledge flow. On the other hand Totterman and Sten (2005) consider that shared space is essential for constructive network, hence the advantages provided by the incubator goes beyond facilities (McAdam and Marlow, 2008). McAdam and Marlow (2008) consider that the network relationships are influenced by close proximity and personal interaction, and it is reflected through the access to experts, the building of strategic networks and the future performance of the incubator. At the same time, Peters, Rice and Sundararajan (2004) consider that the learning process involves the acquisition of information and knowledge via networks and through interaction among tenants.
3.5 Network creation in Business Incubators

Aernoudt (2004) considers networking, between tenants and graduates and among tenants inside the incubator, as a very important aspect of the process of incubation. Bøllingtoft and Ulhøi (2005) agrees with that discussion adding that social aspects of the incubator cannot be ignored and they play an important role when the young firms decide to move in the incubator. It is considered by the tenants that belonging to a business incubator network can enable them to receive critical information, much earlier than external individuals and at the same time, they consider that business incubators help the find access to appropriate business networks (Totterman and Sten, 2005). However, Totterman and Sten (2005) also mention that the relationships among incubator tenants are not that sophisticated compared to the relations between all the actors of the network.

Totterman and Sten (2005) imply that focusing on offering space and facilities is not the key aspect for business incubators, since it should focus on supporting the development of business networks; therefore incubators have to ensure good networks for the tenants benefit in a long term. Hence, business incubators must consider the tenants mix and industry focus that may motivate synergies during and after the process of incubation. Bøllingtoft and Ulhøi (2005) support the idea of a network incubator as provider of value to start-up through network connections: partnerships, talented people and experts.

According to Bøllingtoft and Ulhøi (2005), the social capital theory, also called network theory, is based on contractual relationships; nevertheless, it is also important to consider social dimensions, strong ties based on personal relationships that play an important role during entrepreneurial process and in the acquisition of knowledge and complementary resources. Peters, Rice and Sundararajan (2004) agree with the previous description, adding that social network theory plays a significant role in many aspects of the organizational emergence and also propose that incubators can be view as brokers in social networks, meaning actors that facilitate the link between persons who are not connected directly. In this context, the incubator becomes an intermediary to a much larger set of networks. However, Bøllingtoft and Ulhøi (2005) considers that social capital can be difficult to build and even more difficult to maintain, therefore being a broker, or a “hub” (Bøllingtoft and
Ulhøi (2005) of these networks and dealing with “good or bad networks” may be a factor of the incubator’s success (Peters, Rice and Sundararajan, 2004).

Bøllingtoft and Ulhøi (2005) consider two types of networks in business incubators: internal and external network. Internal networks motivate social capital building, resources sharing and ties development among tenants (Bøllingtoft and Ulhøi, 2005), those relations that take place inside de incubator (Totterman and Sten, 2005). External networks that take place in the surrounding environment link the tenants with potential partners, customers, local businesses, etc (Bøllingtoft and Ulhøi, 2005). What is interesting, is that the fact that incubatees all operate under one roof makes collaboration much more likely and collaborative relationships can involve formal or informal partnerships, joint ventures or information sharing (Bøllingtoft and Ulhøi, 2005). It is logical to think that business incubators personnel need to help tenants in terms of internal and external networking, however it can happen in different ways, as mentioned by Totterman and Sten, 2005. Tenants can receive help with getting central positions in networks, with the focus on the structural dimension of social capital; then business incubator personnel can help tenants with their business development process, trying to transform the incubator into a strong community (Totterman and Sten, 2005). Finally, business incubator personnel should work hard with trust building between tenants in order to facilitate the development of the tenant’s business and by this context, business incubator personnel need to focus on the relational dimension of social capital (Totterman and Sten, 2005).

Bøllingtoft and Ulhøi (2005) consider that the mechanisms that facilitate of hider networking in an incubator can be divided into two categories: mechanisms connected to individuals and their relations with each other and mechanisms related to the construction of the incubator and the social environment. At the same time, the size of the incubator is important. If the incubator grows too big, it is possible that the networking becomes unreal (Bøllingtoft and Ulhøi, 2005).

McAdam and Marlow (2008) argue that there are four roles related to networks’ performance: the provision of access to new ideas and resources, the achievement of credibility through the formation of alliances/partners, the exchange of knowledge and collective learning and finally the connection to relationships that facilitate entrepreneurial
goals and enterprise growth. Bøllingtoft and Ulhøi (2005) considers that entrepreneurial actor’s capital is constituted by all the social relationships and social structures, while individual social capital is constituted by the set of social relations, or ties. The access to collective social capital, via a business incubator or a networked incubator, gives the opportunity of social and economic development.

3.5 Business Incubator’s support

Totterman and Sten (2005) argue that tenants benefit from participating in the incubator community since it is possible to share experiences and knowledge related to business interests. It is also considered that the main reason for being part of an incubator is to build up young firms and connect the relationships among tenants and also between tenants and the members of the incubator network. Therefore, the business incubator needs to have access to a large network (Totterman and Sten, 2005). It also considered, that incubator managers are important while establishing trust and supporting the network development and social interaction inside the incubators. However, tenants sometimes do not want to be located in the same incubator with other companies of the same industry, because of high competition therefore, the incubator “should select companies that are operating somewhat closely to each other, but without overlapping fields of business” (Totterman and Sten, 2005).

At the same time, Totterman and Sten (2005) argue that without the assistance of incubator personnel, an entrepreneur might not easily locate the right individuals from complex networks. The authors also mention that in order to “determine Social Capital in the incubator context, it is evident that functional incubator space and existence of synergy among tenants are central assets for constructive networking”. Therefore, the level of ‘structural social capital’ is higher when tenants with similar needs are located under the same roof (Totterman and Sten, 2005)
3.7 Summary of theoretical framework

After considering the concepts of different authors, the theoretical framework aims to answer the questions related to the problem established on chapter one.

- **Which model of business incubator is the most appropriate to the needs of the tenants?**

  o In conclusion, the concept of business incubation includes a shared office space rented to incubatees; support service to reduce overhead costs, professional business support, internal and external network creation.

  o After describing different incubation models, it is considered that each incubator should be able to identify the characteristics that define the type of incubator where it belongs. In order to categorize a business incubator it is necessary to understand its goals and objectives. The incubators models or typology propose different identifying factors, however the characteristics of each incubator define its typology. It is also considered that the performance of the incubator and its tenants is completely related to the matching of the goals of both of them.

  o It is also considered that the number of graduates increases when the objectives of the incubator match those of the tenants.

- **How physical proximity influences the knowledge creation and transfer between firms?**

  o Knowledge transfer and knowledge creation depend on business incubators’ objectives and typology. It also considered that knowledge flows inside the organization through the movement of human capital, therefore it is important for incubators to integrate themselves as knowledge creating organizations.
- The physical proximity plays an important role inside the incubator. Network creation and knowledge transfer depend on the integration of the tenants, meaning that the facilities offered by the incubator should reflect the advantages of actually being together. Sharing information and building relationships increase the tenants and the incubator future performance.

- How can a business incubator support entrepreneurs to build up business networks?
  - Business incubators are considered a “hub”, a link between tenants and the incubator’s network. Later the incubator has become a place for network development and social interaction for the incubatees that could be a crucial factor when deciding which incubator is more successful.

  - The interaction of the networks represent an opportunity of social and economic development, considering that the relations built through the incubator help the tenants during the time inside the incubator and after graduation.
4. Empirical Findings and Analysis

The following chapter presents the empirical findings obtained from NeoEmpresa, the business incubator as the case study. The study reflects the theoretical concepts applied to the reality of a business incubator in Bolivia. NeoEmpresa is presented and its mission, vision, goals and history are mentioned in order to have an idea of its operations. The analysis takes place through the description of the organization and the development of the main concepts: knowledge and networks.

4.1 NeoEmpresa

NeoEmpresa was founded as a non-profit organization, in December, 2004, in La Paz, Bolivia. As mentioned before, the organization is constituted by private institutions and entrepreneurs that are interested in promoting a new business culture in Bolivia. The final goal of the foundation is to promote entrepreneurial culture according to the needs of the country, encouraging the creation of new competitive enterprises in areas that involve knowledge and innovation in the productive processes for the national industry, in this way the organization promotes the development of the entrepreneurial spirit and the renovation of business in Bolivia.

The organization is focused on the creation and development of a business incubator in La Paz, which will promote the creation of new firms that during pre-incubation stage have reached pre-feasibility. It encourages the ideas proposed in the contest “Ideas emprendedoras” (“Entrepreneurial ideas”), besides other projects that come from universities or individual motivation from all over the country.
4.2 Strategic approach

4.2.1 Mission and Vision

**Mission**

“To support the creation and acceleration of dynamic and competitive enterprises through the application of a business management model focused on the identification of high potential business opportunities”.

**Vision**

“To become the reference institution in the process of business creation and acceleration, focused on high potential economic sectors, promoting competitive, equity, transparency, sustainability and social responsibility values”.

4.2.1 Objectives

NeoEmpresa has established the following strategic objectives, in order to reach its institutional mission:

- To promote business creation through the generation of entrepreneurial ideas and the support to entrepreneurs on their first business activities.
- To provide services of business development and financial research for established enterprises that need some kind of loans and also need to consolidate their businesses.
- To encourage the development of special projects which promote the improvement of enterprises in Bolivia.
4.3 Institutional values

The institution has as institutional values the following:

- **Transparency and credibility.** To perform our activities in a clear, transparent and open way, earning the trust of our clients and institutional partners.

- **Integrity.** To act with ethic and in the right way in all our activities, basing our relationships with respect and consideration.

- **Compromise.** To develop our work with the maximum effort and dedication, in order to fulfill our client and institutional partners’ expectations.

- **Social responsibility.** To promote the business development in Bolivia through a model that respects our staff, the community and the environment.

4.4 History

The founding members of NeoEmpresa are Bisa Leasing S.A., Grupo Nueva Economía, Nuestra Señora de La Paz University, FUNDA-PRO and private entrepreneurs (Sr. Eduardo Bracamonte, Sr. Jaime Apt, José Alfredo León y Carola Capra). On 2007 the private business SOBOCE was added, as well as Mr. Eduardo Garrett. Finally, on 2009 the “Asamblea de la Bolsa Boliviana de Valores” and Mr. Armando Alvarez were included.

After a structural process, on October, 2005, the business incubator started its operations as the project: “Business incubator - seed your venture”, which received an important contribution from CAF⁴. Since then and with the technical support of the Antioquia’s Technological Based Business Incubator – IEBTA, Colombia; Neoempresa started with the implementation of the operative processes. The transfer process took around 14 months, Gonzalo mentions: “(...) we went there (Colombia), they (IEBTA) came here, we were trained and we also acquired the know-how about a business incubator. It took some time

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⁴ Corporación Andina de Fomento (CAF) is a multilateral financial institution that mobilizes resources from international markets to Latin America, in order to provide multiple banking services to both public and private clients of its shareholder countries. The Institution is committed to sustainable development and regional integration.
to bring everything to the Bolivian reality; it is not the same a venture in Colombia and in Bolivia, the culture and the idiosyncrasy is completely different.” (Galleguillos G., 2010)

When the foundation started to work with an innovative model for creating new enterprises in Bolivia, the opportunity of an alliance with FUNDA-PRO, Maestrías para el Desarrollo (Development Master Programs, UCB) and Grupo Nueva Economía was presented in order to execute the four years “Entrepreneurial Culture Encouragment Program” (PFCE), which had the economic support of the MIF\(^5\)/IDB\(^6\). The main goal of the alliance was to promote the creation of dynamic firms through a value chain, where NeoEmpresa had the responsibility of advising and support the start-ups promoted by the program, besides administrating a Specialized Technical Assistance Fund in favor of those private enterprises.

As a consequence of the first year’s experiences, the foundation implemented, with the help of CAF, a second project that established Entrepreneurial Assistance Centers in six private and public universities in La Paz, Cochabamba and Santa Cruz. This helped the institution to settle its strategic focus inside universities, to match business planning tools and to promote its own operative processes: dynamic ventures.

During 2007, the operative processes inside de Business Incubator was validated and consolidated and at the same time, the experience gave birth to new special projects in alliance with other institutions.

During 2008, NeoEmpresa promoted the first angel investments network in Bolivia, called “Genesis”, which was motivated by FUNDA-PRO and today is constituted by well-known entrepreneurs. In this process the foundation transferred its projects’ evaluation and selection model and supported the evaluations and selection of 87 projects of the network’s first year.

During the first semester of 2009, new work fields were established for NeoEmpresa, therefore it was necessary to re-structure the main field, focusing strategically as a Business Accelerator instead of Business Incubator. In this sense, the Directive Board and technical

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5 The Multilateral Investment Found (MIF), Fondo Multilateral de Inversiones (FOMIN).
6 Inter-American Development Bank (IDB), Bando Interamericano de Desarrollo (BID).
staff of NeoEmpresa started a strategic planning process, where the operation of the organization was established in three main working areas:

- **Business planning**, meaning the support in the idea clarification, business model design and business project elaboration processes.
- **Business management**, focused on the acceleration of business projects and its transformation into high value enterprises.
- **Special projects**, related to the projects that support private and public institutions that look forward the development of entrepreneurship.

During the same year, NeoEmpresa signed a contract with one of the biggest private firm in Bolivia, SOBOCE (Sociedad Boliviana de Cemento S.A.), with the goal of support the entrepreneurship promoted by its Corporate Social Responsibility Program, which promotes the employment generation through the development of entrepreneurship in the country.

### 4.5 Structure

As a foundation, the organization has a structure based on an assembly, a directive board, a president, etc.; but essentially there are three business managers that are in charge of the business incubator’s performance.

“It is a horizontal structure between us; we are a team of three business managers with the main role of supporting entrepreneurs in running their businesses, from three different perspectives: commercial, financial and operations. The three of us develop the strategic decisions.” (Saavedra O., 2010)

Figure 7 presents NeoEmpresa’s organization chart.
4.6 Working model

NeoEmpresa looks forward innovation in every venture it takes responsibility on; it looks for nontraditional ventures, the ones that add value to the products or services. As mentioned before, the mission and vision of the organization is to support new ventures in order to constitute and strengthen Bolivia’s, particularly La Paz, business network. The concept of business network refers to the number of ventures in the country, which is also related to the networks.

“(The business network) is related to the quantity and quality of the ventures in Bolivia. (...) We support ventures that have to potential of being competitive, that have an interesting innovation degree. Therefore it is not only about the quantity, but also the quality.”(Saavedra O., 2010)

Today NeoEmpresa has changed its initial perspective from Business Incubator to a Business Accelerator. The business managers in charge of the organization, consider that becoming an outdoors incubator was the best option since it is a foundation, the incubator has resource limitations and it depends on different founds of bigger organizations, therefore they could not start as an indoors incubator.
“(...) At the beginning we had the idea of being a Business Incubator that could offer physical space, but when starting the operations, we realized that the model was very expensive. We had the relation with some public institutions that could give us the infrastructure, but we did not have projects to sustain it. Therefore we started with outdoors incubation; no one works inside the incubator that is why we are a small team.” (Galleguillos G., 2010)

The initial business model made sense at the beginning, yet the business managers agreed that they did not have enough resources for developing an indoors incubator, therefore the outdoors incubator was more adequate.

“(...) actually when this project was born, we were looking forward to help an idea that was in the head of someone or in paper, then from the head shape it methodologically, that is what most incubators do, create a tool document called a business plan and make it arise, from a legal point of view, investments, technology, etc.” (Saavedra O., 2010)

The initial working model for NeoEmpresa included a process that went from the selection to the post-incubation stage (figure 8); however nowadays because of the outdoors concept of incubation, the perspective of the Outdoors Business Incubator has changed and it has become more a Business Accelerator.

“Becoming an indoors incubator would be ideal, however today our project portfolio, well most of them, have their own offices. Becoming an indoors incubator depends on the future projects.” (Galleguillos G., 2010).
According to the theory, the typology of this business incubator could be categorized as an Economic Development Incubator that focuses on regional or local development and business creation and at the same time many sectors are involved.

“As sectors, we focus on industry and services, not commerce. Inside these sectors we look for something innovative, for example we do not support handcraft, even though it could be considered as industry or manufacture, because we believe that it is highly imitable. On the other hand, we support Lupica, which is a venture that is establishing strong tendencies; they work with many artisans who make very innovative handcrafts, designs, collections, etc. At the same time there is a lot of innovation in the commercializing technology.” (Saavedra O., 2010)

At the same time as a category identified by Aernoudt (2004), NeoEmpresa would be a Social Incubator because of its interest in the integration of social categories and the employment creation. “The main goal (of NeoEmpresa) is to support new ventures, start-ups, and dynamic enterprises, promote employment creation; step by step this is becoming real (...).” (Galleguillos G., 2010). The employment creation is a very important aspect for NeoEmpresa, as mentioned by the business manager Gonzalo: “The business incubator supports the employment creation in the society, clearly not directly, but we advise future entrepreneurs to start a new venture and more than everything to generate employment in
order to improve the life style in the community (...). Then the incubator is a tool or physical space that allows to strength that all these aspects through the time.” (Galleguillos G., 2010)

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Table 4. Typology of business incubators

The actual working model in NeoEmpresa includes a selection process; however it focuses on the incubation stage (figure 9). The selection is flexible, made according to the business managers criteria; they expect from the entrepreneurs a clear idea of the project. Projects that have already started its operations, in less than five years, have preference; however they can accept any project that has innovation characteristics.

“More over we expect that they (entrepreneurs) have it clear. If they have a business plan, much better, if not they can fill a form here. We are pretty flexible in this sense. Today we have preference for entrepreneurs that have already started operations no more than 5 years ago, but we are open to any good project that has not started yet.” (Saavedra O., 2010)
The *post incubation stage*, initially proposed by the organization, do not take place today. NeoEmpresa do not supervise the graduates’ steps after the incubation stage, however it is open to receive the ventures again if necessary.

“*The initial model had it (post-incubation) because of the business model we thought we would work on, today it is not applicable.*” (Galleguillos G., 2010)

“*However, we did not have the case yet, we are not closed to the option. The initial model compromised us to participate in the venture, now if the graduate needs something more the project may come back, but we do not call to see how everything is going.*” (Saavedra O., 2010).

Considering the theory, the authors Peters, Rice, Sundararajan, (2004) imply that the infrastructure, the coaching and the networking are relevant to determine the number of graduates in a business incubator. NeoEmpresa, as an outdoors incubator, do not have the infrastructure available to measure the number of graduates. Nowadays, the organization manages around twelve tenants per year, even though they signed contracts with thirty ventures at the beginning.
“In average we managed, in the last four years, around twelve ventures per year. We signed contract with over that thirty ventures (...), most of the ventures take a lot of time, other die on the way. In average, with a team of three or four managers, there are twelve active ventures per year.

Considering the time of the incubation process, the managers consider that between 6 and 10 months is based through models, according to the managers of NeoEmpresa. To get graduated, the model could take around 18 and 24 months. But according to the business incubator experience, it depends on the venture’s condition; “(...) if the venture has started its operations (...) the coaching is more specific and complete, this means around 8 to 12 months (to graduate).” (Saavedra O., 2010). In case that the venture do not have started operations, but it has a team and a clear idea of the market, the incubation process could take around 2 years, according to the experience of NeoEmpresa, after developing the legal processes, the investment stage and the running experience.

On the other hand, the goals of the incubator are completely related to its performance, as mentioned by Bergek and Norrman (2008). In the case of NeoEmpresa, as a non-profit organization, the opportunities that it offers are linked to the mission and goal.

“(...) the business incubator has to give to the entrepreneur all the conditions to develop the venture, which would be ideal. During these 4 or 5 years, we have been developing the condition, an environment where the venture can grow and get stronger. These conditions are not only up to the incubator but also to the external factors. (...) It is necessary to strengthen the business network” (Galleguillos G., 2010)

As mentioned by the managers of NeoEmpresa, Bolivia do not have the appropriate external conditions, it is considered that the reality limits the entrepreneurs ideas and progress. On the other hand, the purpose of supporting new ventures, dynamic enterprises, employment generation, is giving results. “In general, we are accomplishing our goals as incubator, based on the three main objectives.” (Saavedra O., 2010).
The business managers mention that the value that the business incubator offers to its tenants is based on their experience, since they have already gone through the process of creating different new businesses. Considering this aspect, the managers commented about what a business incubator should offer to its tenants and if it matches with what NeoEmpresa does.

“(…) the demand is over the offer of the incubator’s capacity, La Paz needs more time for pre incubation stages (…). We left aside that segment and focused on the ventures that are already running. Even though there are centers in the universities for this group, still the market needs more support, which is the less profitable.” (Saavedra O., 2010)

In this aspect, it is important to consider that one business incubator focused only on one stage of the incubation process is not enough to support and develop the whole business network and the entrepreneurial culture. NeoEmpresa needs more capacity to support the pre-incubation segment, meaning by capacity the resources to sustain a bigger organization.

4.7 Knowledge transfer inside NeoEmpresa

According to Cooper and Park (2008), knowledge flows within and between organizations and the movement of human capital promotes the creation of new ideas and adds value to the environment. Because of being an outdoors business incubator, NeoEmpresa cannot measure the impact of the knowledge creation among tenants; however it is considered by the managers that the incubator generates knowledge by linking the tenants with experts.

“(…) We are 3 full time business managers, (…) but if a venture needs an expert in marketing or foods, for example, with the technical assistance found we can find experts that may help, capacitate the entrepreneurs with their ventures” (Saavedra O., 2010)
“Inside the incubator, among the managers there is knowledge transfer about the tenants. With the business model and the technical assistance, the technical transfer is done through experts, who are part of the incubator’s working network, but they actually do not work inside the incubator.” (Galleguillos G., 2010)

At the same time, it is important to understand that tenants do not share much knowledge since they are not together indoors. The knowledge and information shared among the tenants is limited to the interaction and the network created by the business managers.

The knowledge creation and transfer is completely linked to the existing networks inside a business incubator, since through the networks the relationships are built and the knowledge is shared.

“As an outdoors concept, the incubator builds a social network (...) where the tenants can share experiences. For example, if one has a venture with a specific business model and other venture wants to use the same model, we introduce them, in this way they share experiences and advices; however it is not something we measure. Tenants do not share daily time among them.” (Galleguillos G., 2010)

NeoEmpresa considers “knowledge” as “experience”, which can be shared and can also help others in future decisions. “Technical knowledge” is different among ventures, but the “experience” of being in the business incubator increases the credibility of the tenants and the relationships are valuable.

“Knowledge understood as the experience of being inside the incubator, and the relationships (...) are valuable. Now it can be seen some entrepreneurs as mentors of others” (Galleguillos G., 2010)

In this case, NeoEmpresa is not representative as an indoors incubator for the concept of knowledge sharing inside the organization, however the “knowledge” as “experience” is completely related to the creation of networks and the relationships/contacts that tenants build up after it.
4.8 Networks

Neoempresa has a network consisting of private institutions, firms, persons (consultants), universities, financial entities and support programs for entrepreneurship that provide services in different areas and functions of the organization with the goal of assisting the incubating firms during the different development stages.

Oscar and Gonzalo agree with Aernoudt (2004) when they mention the importance of networking through a business incubator. However by being an outdoors incubator, the tenants of NeoEmpresa barely have activities together: “There are not many activities among tenants, sometimes we have trainings, sometimes related to business plans that sometimes the entrepreneurs need, in that case we gather them together. In this way we optimize efforts.” (Galleguillos G., 2010).

It is important to understand that as an outdoors incubator, NeoEmpresa focuses on the key aspect for business incubators: business networks, as indicated by Totterman and Sten (2005). These networks are clearly distinguished by Bøllingtoft and Ulhøi (2005) as two types of networks in business incubators: internal and external network.

The internal network in NeoEmpresa is mainly based on the relation between the tenants and the business managers. The incubator does not gather together the tenants, although some of them are introduced according to their interests. The internal network among tenants is weak, because of the lack of interaction among them since they do not share anything inside the incubator. On the other hand, the external networks are important actors for NeoEmpresa. Gonzalo mentions: “It is our way of working, the creation of ties between ventures, network creation.” (Galleguillos G., 2010). NeoEmpresa considers that “Red Bolivia Emprendedora” (Entrepreneurial Bolivian Network) has more contacts, institutions and firms on its data base; however NeoEmpresa builds up networks of the interest of the ventures they work with. External networks influence in the growth and development of the tenants through the contact they have with other related businesses, “(...) sometimes it is

7 The “Entrepreneurial business network” is an organization that gathers together private and public institutions that support entrepreneurship in Bolivia. The purpose is to encourage an entrepreneurial culture in the country through the promotion of the business activity, economic sustainability and employment generation (http://www.boliviaemprendedora.org.bo/)
important that we are there (in the meetings) to make the “match”, then the relation is fluid among them” (Saavedra G., 2010).

“(…) for example, as a tenant, one need specific support, advise, knowledge or experience; well we link the tenant with the contacts, they can go as NeoEmpresa in order to gain credibility. This strengthen NeoEmpresa and the tenant.” (Galleguillos G., 2010)

As mentioned by Bøllingtoft and Ulhøi (2005), social capital can be difficult to build and even more difficult to maintain, therefore being a broker or a “hub” may be consider a success factor for business incubators. In the case of NeoEmpresa, it is considered that the working style is through network creation and network development. At the same time the managers consider that after the incubation process, the contacts built during the period are relevant and generate value to the venture.

4.9 Synthesis

The case study, NeoEmpresa, gave a perspective of a business incubator completely linked to the Bolivian reality. It is possible to consider that business incubator should be indoors, or has a specific models, however, after analyzing NeoEmpresa, it is possible to understand that the external factors of each country affect the development of entreprenurship.

In order to answer the main questions of this thesis, previous theoretical and empirical information will be taken in consideration.

- Which model of business incubator is the most appropriate to the needs of the tenants?

  - The empirical findings match the theoretical concepts when understanding that the different incubation models depend on the goals and objectives of each incubator. As presented by NeoEmpresa, the organization had to adapt its initial theoretical model to a particular one that matches with the reality
of the country. Bolivia has difficulties when it comes to new ventures or venture creation, and at the same time it is difficult to manage and measure the entrepreneurs’ responsiveness towards the help that an incubator offers them.

- The actual model that the case study is using as business incubator matches the needs of the tenants today, however the organization depends on different founds and projects that sustain its activities.

- It is important to mention that the concept of an indoors incubator may be applicable when the incubator has the resources to sustain that infrastructure. However in the case of NeoEmpresa, the organization did not have enough projects to justify such infrastructure.

- Even though NeoEmpresa has changed its initial indoors model to a outdoors incubator and finally managing a concept of “Business accelerator”, the main goals are still valid. The support to the tenants, the employment creation, the creation of internal and external networks, are the base of its operations.

- How physical proximity influences the knowledge creation and transfer between firms?

- It is consider physical proximity as relevant when knowledge needs to be created or transferred, however it can be fixed in the case of an outdoors incubator. NeoEmpresa presents a concept of experience as knowledge, in this order, it is understood that experience transfer among tenants is more relevant for this incubator. In this case, the business managers manage to match the interests of the tenants and get them together for developing future relationships.
- How can a business incubator support entrepreneurs to build up business networks?

- NeoEmpresa’s model presented itself as a “hub” that matches the interested actors, it is how it works. After analyzing the behavior of a business incubator, it is possible to state that the main objective of the organization is to be a link between different actors. It is possible to say that tenants develop a strong and productive network for their future, being the most important support that the incubator gave them.

- The contacts created during the incubation period generate value to the tenants; therefore it is consider that the business incubator is a valuable tool for new ventures to get in touch with relevant contacts and to develop their business network.
5. Final Discussion and Conclusion

The final conclusions are based on the previous chapter, considering the theoretical framework and empirical analysis. The conclusions answer the initial questions for the research related to business incubators models, knowledge transfer and network creation, and how these aspects are completed interrelated.

5.1 Business Incubator’s most appropriate model

Every business incubator has different objectives and goals depending on the environment where it develops its activities. The external factors and environment determine how the business incubator can support and encourage the development of the region. It is important to notice that each model has its own characteristics; however each country has its own idiosyncrasy. The country culture and the people’s behavior towards entrepreneurship determine the main goal and activity of the business incubator located in the region.

As seen on the case study, it is possible that a business incubator starts its operations with a specific model, but during the process of settling down as an organization, it is possible that the initial model changes according to the needs of the ventures in the region.

NeoEmpresa presented a case where it is possible to understand why a business incubator changes according to external factors. The organization went from the initial idea of an indoors incubator to an outdoors, and then to a business accelerator. Today the business model does not include pre-incubation stage, neither post-incubation. It is understood that the main limitation is related to the resources that the organization gets from other institutions, and at the same time is relevant how start-ups need the support of this kind of organizations. Bolivia as a developing country needs the developing of new ventures and more over adding significant value to the products that already are produced in the country.

The incubation model, as presented on the theory, depends on many aspects, including as a basic the infrastructure in order to determine if the incubator would offer indoors or outdoors support. In the case of NeoEmpresa, it was important from the beginning to have the appropriate infrastructure, but at the same time have enough projects to sustain it. The
The Business Incubator Centers (BICs) include services and the provision of tangible assets and market commodities. It also provides access through networks, technical and economic management support. In the case study, NeoEmpresa does not provide of a tangible infrastructure, however it provides the intangible support.

The model proposed by Grimaldi and Grandi (2004) is considered the most appropriate in order to understand business incubators’ purposes and characteristics. The main reason for that assumption is that the model explains the interaction among the different types of business incubators, their purpose and participation in external environments. Hence, the best incubation model depends on the reality of the region and the goals of the incubator.
At the same time, the incubation model can change according to the needs of the tenants as well as the limitations of the organization.

NeoEmpresa has the potential to grow as an experienced model of incubation in Bolivia, although it needs the support and founds of more institutions in order to grow, it has the potential to expand. The needs of the tenants, especially pre-incubation stage, could be manage through the expansion of the incubator, which would have to adapt its model in order to embrace more responsibilities.

On the other hand, in order to establish a business incubator in any country it is important to understand the business context of the region. In the case of Bolivia, the later policies that the government has established brought up different point of view in the country’s economic perspective. Many remain skeptical and think that the government promote inefficiency and do not understand the competitive business reality; but at the same time the autonomy promoted in the departments (or states) in the country, leads to the management of the region resources, which could be understandable as an investment into the region’s development (Rochlin, 2007). The government policies and each region’s decision, related to entrepreneurship, lead entrepreneurs to look for different options that may support the establishment of their new ventures. NeoEmpresa considers that Bolivian context for making business is hard because of the country’s idiosyncrasy and the people’s cultural behavior towards entrepreneurship. The external environment when NeoEmpresa was created influenced the decision of the transition from an indoors towards an outdoors business incubator and later to a business accelerator. The lack of resources and support from external actors have a strong impact on the case study’s operations, mainly because the incubator depends on founds obtained through different institutions.
5.2 Knowledge and Network creation

In this point, two of the initial questions are gather together since, according to the investigation, one does not exist without the other. It is understood that in order to share knowledge it is necessary that physical proximity exists so the actors can develop a relationship that allows them to share their experiences and their knowledge.

Definitely, an indoors business incubator gives the opportunity to the tenants to be together constantly, which allows them to create bounds and develop productive relationships. NeoEmpresa as an outdoors incubator cannot promote this kind of development; however it acts as a “hub” for new ventures and helps them to create their business networks, matching the tenants with the contacts they need. Neoempresa has found the way of sharing knowledge as “experience sharing” among the interested tenants; yet the actors do not have much interaction or activities. The incubation process in NeoEmpresa includes the collaboration of experts which can be considered as knowledge transfer from external actors to the tenants. This aspect is important since normally, the tenants cannot afford to get the advice of experts.

Knowledge cannot be defined as a capability for NeoEmpresa, since it does not occur explicitly in the process of business incubation proposed by this organization. As an outdoors incubator, the case study does not have a clear learning process; the managers consider “learning” or “knowledge” as the sharing of experiences among tenants. However, as mentioned before, a business incubator model may vary according to the situation of the institution and the region; therefore, knowledge transfer could be increased in situations where tenants share a physical space and time together.

The network creation is relevant for tenants, and even though NeoEmpresa do not continue supervising a post-incubation stage, they confirm that the ventures continue with the relationships after leaving the incubator, and that these relationships are valuable for the development of the business.
As mentioned in the theoretical framework, network creation depends on the managers in order to transform the incubator into a community, where tenants are able to interact and develop strong ties for future business. The size of the incubator determines the size of the network as well as the focus of the managers in all the participants, therefore it is recommendable that the incubator is big enough to create and develop the relationships, meaning social capital.

In conclusion, a business incubator develops a network that enables the tenants to create durable relationships that help them building their own business networks. The physical proximity surely encourages the development of closer relationships which leads to knowledge and experience sharing as learning practices for the networking inside and outside the incubator.

NeoEmpresa’s actual model limits the tenants’ participation in the incubator. The relationships depend on the managers; therefore it is important that the incubator organizes more activities between incubatees in order to develop closer contacts. If the model changes to an indoors incubator in the future, it can be easier to manage and to measure the impact of having all the participants together in the same physical space.

Finally it is important to mention that the need for understanding business incubators is first focused on the management, the evaluation and the development of the programs, as mentioned by Karatas-Ozkan, Murphy and Rae (2005), therefore by analyzing NeoEmpresa as a case study for this research, it is possible to purpose the following contributions to the theory: A business incubator model strongly depends on the purpose of the incubator in the region and the resources it has for the development of the organization. Being an indoors or an outdoors incubator is not relevant as long as the organization achieves its goals. The incubation model also influences the process of knowledge transfer and network creation since both of them depend on the participation of the managers and tenants. Knowledge as experience could be easily transferred while tenants share time and physical space; however on an outdoors incubator, as the case study, it mainly depends on the managers as a “hub” for these relationships. At the same time, the research proposes that business incubators’ main purpose and a considered learning practice is to create relationships among tenants and other actors outside the incubator, meaning “networking”.

6. References


Business incubators: knowledge transfer and networks creation as key success factors

Mayra Villarroel Rojas


www.neoempresa.org.bo, NeoEmpresa web page.

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Lnu.se
Linnaeus University
SE-391 82 Kalmar/SE-351 95 Växjö
Telephone +46 772-28 80 00