

Knowledge role for start ups in business incubators

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Abstract: The impact of the knowledge economy and management on SMEs is major and multidimensional. This is particular relevant for start-ups, small companies founded by entrepreneurs which has to cope with challenges (and opportunities) of the new economy without having many tools to deal with. From knowledge management point of view, the major challenges for new entrepreneurs' lies in when and how to build flexibility, environment-sensing capabilities and an internal capacity to generate, share and use knowledge and innovation.

Whilst the benefits of focusing on knowledge as a strategic organizational development driver is accepted, the management of the process of doing so is particularly difficult in most new SMEs. This is due to lack of management processes knowledge and/or abilities, weak organizational culture and a lack of adequate skills within the business to research, develop and manage innovative ideas.

Start-ups can manage this process of developing through innovation in a number of ways: strategic alliances, constant and consistent education and training of the staff, implementing knowledge management tools or setting up a business incubator.

One approach to this is via business incubators – essentially entities set up to incubate and manage new business opportunities. Such entities allows smoother and faster knowledge generation, providing a small company part of the prerequisites to develop. The following paper seek to analyse the relationship between knowledge management and business start-ups by using business incubators.

Key words: knowledge management, business incubator, start-ups.

1. Literature review.

A business incubator is an economic development tool designed to accelerate growth and success of start-ups providing support such as resources and services [1]. The main goal of a business incubator is to produce successful SMEs that will address initially domestic markets and are financially viable. The purpose of a business incubator is to increase the chances of a start-up to survive at the beginning, but it adds value by maximizing the firms' growth potential, also [2].

There is no just one universally accepted definition of business incubator. Dozens of definitions are available in academic literature, reflecting local cultures, scholars' vision or national policies [3]. This is the case considering that the concept itself it's constantly evolving, different countries and societies understand this concept differently and last but not least depending on the point of view, typologies and approach business incubator could be defined in many ways.

Allen considers a business incubator as a facility that provides affordable rent to new companies, shared accommodation and logistical services, and supports business management and financial assistance [4]. Chinsomboon [5] considers it a controlled environment that fosters the care, growth, and protection of a new venture at an early stage before it is ready for traditional means of self-sustaining operation. At the 1998 Helsinki workshop, a business incubator was defined as a place where newly created firms are concentrated in a limited space. Its aim is to improve the chance of growth and rate of survival of these firms by providing them with a modular building with common facilities (telefax, computing facilities, etc.) as well as with managerial support and back-up services. So, in this instance the main focus is on local development and job creation [6]. The European Community Business and Innovation Centres– as they are officially known – are defined as support organisations for innovative small and medium-sized businesses (SMEs) and entrepreneurs operating in the public interest. They are set up by the principal economic operators in an area or region, in order to offer a range of integrated guidance and support services for projects carried out by innovative SMEs, thereby contributing to regional and local development [7]. According to U.S. National Business Incubation Association, a business incubator is an economic development tool designed to accelerate the growth and success of entrepreneurial companies through an array of business support resources and services [8]. They regard as critical elements of an incubator issues such as on-site management, marketing and management resources, physical space, shared IT services, etc. An important issue included in the definition is the assistance in accessing finance or start-up

capital to ensure enterprise growth. Gonzalez and Lucea [9] defines a business incubator as a controlled environment that helps new ventures at an early stage until they are able to sell-sustain through traditional means. Roussel [10] defines a business incubator as high-tech business clusters, the role of which is to pool resources to provide “brick and mortar” facilities, hands-on help, personal connections and expertise while, according to the European Commission [11], the concept is used to describe organizations that, in various ways, help entrepreneurs to develop their ideas from inception through to commercialization and the launching of a new firm. A business incubator is an organization that accelerates and systematizes the process of creating successful enterprises by providing them with a comprehensive and integrated range of support, including: incubator space, business support services, and clustering and networking opportunities [12]. Hackett and Dilts [13] considers that a business incubator is a shared office space facility that seeks to provide a strategic, value adding intervention system of monitoring and business assistance with the objective of facilitating the successful new venturing development while simultaneously containing the cost of their potential failure. A business incubator is usually composed of small work units, its customers, giving them a learning environment and support to enterprises and emerging companies at an early stage, making them one of the most advantageous support for young entrepreneurs [14].

Incubators provide three main support to develop a successful start-up [15]:

- a. an entrepreneurial environment and training;
- b. direct access to consultants, trainers and investors;
- c. visibility in the market.

There are many benefits offered by business incubators to start-ups [16]:

- Encourage rapid growth and high survival rates for them;
- Help identify opportunities to invest;
- Facilitates the commercialization of new ideas, to research universities and research institutes;
- Help create new jobs and solve problems of urban and rural economic development.

Some scholars [17] focused on the stages in incubation, considering that are three stages:

- 1) First generation, focused on providing accommodation/working facilities;
- 2) Second generation, focused on business support service;
- 3) Third generation, emphasizing networks development.

Others emphasized the evolution of the concept, describing three generation of business incubators.

First generation business incubators, common during 1950s – 1980s, offered mainly affordable office space and shared resources [18]. Cheap accommodation/working space was critical to many start-ups and has been identified by tenants as the most important benefit of joining a business incubator. Second generation, common during mid 1980s – mid 1990s, reached the highest peak when business incubators became a popular economic development tool to promote the creation of new technology-intensive companies [19]. There was need not only in just office space and shared resources but also in additional business support services (training, mentoring and other knowledge based services). Third generation, common after mid90s, adds networking into the equation. They provide access to technological, professional, and financial networks, to external resources and knowledge. At that time appeared also several new linked concepts like: virtual incubator, networked incubator, knowledge based incubator and online incubator.

Business incubators serve the following specific objectives [20]:

- Increasing the likelihood of successively business critical early years;
- Significantly reducing the "time release" for many companies;
- Possibility employers to focus on their key product development and providing assistance to a very large number of topics;
- Marketing research results;
- Creation of new jobs;
- Encouraging entrepreneurship and training.

The following factors have been identified as the most critical to the successful and superior use of business incubators for new venture formation [21].

- The ability to evaluate and react to risk well;
- The access to the right expert at the right time;
- Protection of product;
- To understand and exercise technology transfer privileges and intellectual property rights;
- To foster actions oriented towards the production of academic spin-offs and entrepreneurial spin-offs;
- To strengthen the education system;
- To define programs for assistance and training in entrepreneurial functions;
- Stimulation of existing market;
- To promote venture-capital actions;
- Having developed a good success formula, replicate it and franchise it.

Other factors have been identified as having been most contributing to failure in the use of business incubators for new venture formation [22]:

- Incompetence risk;
- Entrepreneurial team lacking sufficient capability, principally in marketing;
- Input sourcing;
- Managerial competence;
- Inexperience risk;
- Lack of familiarity with target market and relevant track record;
- Product risk;
- Insufficient uniqueness of product/service relative to competitors (differentiation);
- Inadequate product protection;
- Untapped market potential.

Both factors have, among their items, something in common: knowledge.

Although learning and therefore knowledge were used in management since ancient times, knowledge management has become part of academic literature in the last part of last century. In the present economy, learning and knowledge have become key success factors on international markets and intangible resources are of vital importance [23]. Competition between existing firms shifted from tangible resources (capital, raw materials, land, machinery and equipment, etc.) to intangible ones. In terms of intangible resources, items like knowledge and ability to use it (knowledge management) are crucial. Knowledge become the basic resource form many SMEs, one easy way to achieve prestige and competitive advantage. Generation, acquisition and use of knowledge - to name just a few of the transformation of knowledge - are extremely important for sustainable economic, social and cultural development [24].

This tendency applies equally to individuals, organizations, institutions, firms, regions or states. Actual economic environment is characterized by volatility, high income to employees and rapid changes in international competition. As a result, contemporary organizations cannot compete without skilled white collars and competent employees. Therefore, methods that companies use to manage and exploit knowledge, processes and technologies specific to their activity, including computer technology, are extremely important [25]. According to some specialists, no economic activity has attracted more attention in the last decade as knowledge management [26]. The same specialists notes, however, that while there are many inconsistencies, controversies and points of view radically different [27]:

- For some it is a form of information management;
- Other specialists approach it as a system to facilitate access to distributed IT;
- For others is just a temporary management fashion.

Today, knowledge management has become a science, a ramification of management with its own body of concepts, theories, models and best practices and a business.

2. Discussion.

It is an accepted thing that all successful companies generate and use knowledge. Whilst many new start-up entrepreneurs will simply hire smart people and leave them work, research have indicated that successful knowledge initiatives not only address this processes but also focus on the team structure and internally on the working circumstances to develop knowledge [28]. Start-ups faced with new technologic opportunities such as the Internet or biotechnologies still find it very difficult to find the organizational structures to face them.

SMEs are traditionally less involved than LSEs in knowledge management related activities, in the production of internal knowledge resources and in the access to external ones. For instance, in European Union, 9.5% of innovative SMEs cooperate with other partners, with higher percentages in the leading innovative countries like Denmark, Finland or Germany [29].

On the other hand, research on knowledge management mostly focus on large companies, even though an increasing part of literature start to analyse the positive aspects of implementing knowledge management in SMEs (Gassmann and Keupp [30], Van de Vrande et al. [31]). Moreover, empirical studies [32] show that SMEs in industrial or service sectors are more and more open to cooperation, in search for external sources of knowledge. Recent data reveals that the collaboration of European SMEs in innovation is growing at an annual rate of 7.8% and becomes a driving force of the EU innovation performance [33].

In any business, knowledge can come from three sources: own, attracted and acquired [34]. So, two out of three sources are external. Almost all experts, when referring to knowledge management, tend to usually consider internally generated knowledge and, to a lesser extent, the purchased one. Due to capacity multiplier for knowledge, the spectacular development of the Internet, web-sites, electronic libraries, the proliferation of conferences, seminars, fairs, exhibitions, etc., accelerating expansion of the media and their accessibility to people and companies, attracted resources - which are cheaper or sometimes for free - can be a major source of knowledge for SMEs. Moreover, some SMEs have developed strong international focus on acquiring knowledge and promote an organizational culture favouring this approach. Their knowledge is often the main pillar of competitive advantage.

The third category, the knowledge acquired, is usually the most well-known and discussed by practitioners. The causes that generate this situation are multiple [35]:

- Knowledge in the form of projects, computer programs, studies, etc., are purchased to meet the goals and specifically outlined needs of the organization;
- This type of knowledge involves spending budgeted money and expressly specified in the contracts, which form the subject of monitoring and evaluation of the managers and owners;
- The responsibility and applicability of each acquired knowledge set is precisely determined.

For a start-up, the volume of knowledge acquired is relatively low due to the costs involved. However, there is a tendency to amplify the commercial transactions which have as their object knowledge - outlining an increasingly observable knowledge market, consisting, for instance, of best management IT, marketing, financial, technological practices.

For SMEs, the reasons for relying more on external sources of knowledge are the same as for larger companies. The competition based on knowledge intensifies, and the knowledge related products or technologies development process accelerates. It thus becomes more and more difficult for SMEs to develop new product and technology by their own [36]. Some SMEs build their knowledge base gradually through incremental accumulation, usually from domestic market. Others take a more radical approach and build innovation capacities that allow them to target the international market directly [37]. So, even well-established SMEs have difficulties in acquiring knowledge when they need it and at the pace they need it.

For start-ups, incubation can facilitate an efficient treatment of knowledge using knowledge cycle competence of incubator' specialists and networks of companies within. We consider a knowledge cycle grouped into five specific phases that correspond broadly to specific functions:

- Assessment of knowledge available and accessible, both internal - its organizational and individual - and those of external stakeholders and potential partners. Incubator specialists can provide crucial know how in this stage;
- Forecasting needs and sources of knowledge, starting, of course, with existent knowledge and the mission and strategic objectives of the start-up;
- Getting knowledge within and outside the start-up. Business incubators can provide feedback on entrepreneurs' business ideas through specific networks they established and counselling services they provide;
- Managing use and development of knowledge. In this stage the start-up operates complex operations on knowledge, largely repetitive, generating new products and services, dealing with more stable innovation process.
- Enhancing knowledge gives finality to previous phases, the phase in which the company benefits the most from previous stages. Typically, in this phase the start-ups begin selling knowledge, often in the same incubator network they were initially. Exploitation of knowledge can take place among partners in the incubator or outside.

Knowledge has two major concepts associated with it - strictness and absorptive capacity. Strictness refers to the possibility and the ability to transform knowledge into an explicit, transferable information. There are people and organizations that have this capability at a high level and others who, while possessing similar knowledge, fail in a less sensitive measure to raise the posts transferable [38].

Absorptive capacity designates the ease with which the receiver perceives knowledge, understand and retain it [39]. Other authors has defined it as a firm's ability to recognize the value of new information, assimilate it, and apply it to commercial ends [40]. It is studied on individual, group, firm, and national levels. According to Cohen and Levinthal [41] it is the ability of a firm to recognize the value of new, external information, assimilate it and apply it to commercial ends. Some authors have redefined the concept through the distinction between a potential absorptive capacity and a realized absorptive capacity and identified four dimensions: acquire, assimilate, transform and exploit [42].

According to Nicolescu [43], the main factors of absorptive capacity are:

- a) Macro-social factors, which reflects the main elements on the economy, culture, population etc., quantity, quality, cost, etc. of existing and used knowledge in a country;
- b) Individual factors that consider various forms, potential or manifest characteristics of the persons involved in the processes of generation, acquisition, use, storage, protection etc. of knowledge;
- c) Organizational factors, expressing the structural and functional parameters of various natures of each entity, with relevant influence on the generation and use of knowledge. The maximum absorptive capacity is achieved when there is a heavy congruence between the three categories of factors. Naturally, congruence does not occur by itself, but depends largely on the characteristics of the people involved and the characteristics of each organization and management of the environment in which it operates.

Absorptive capacity is instrumental in understanding knowledge-capital formation, being a prerequisite for its formation. It is considered as an essential capacity to build competitive advantages over competitors. In a business incubator, a start-up builds up its knowledge-capital through dynamic knowledge management of its knowledge capacities which Lichtenthaler [44] define as a firm's critical capabilities of managing internal and

external knowledge: inventive, absorptive, transformative, connective, innovative and desorptive capacities. These six capacities are linked through three knowledge processes - knowledge exploration, retention and exploitation - performed either internally or externally. The combination of these capacities used by a start-up can explain their difference in knowledge trajectories, organizational and innovation performance.

The knowledge's start-up needs come from two main sources categories:

- Outside the company, from other organizations, individuals, media etc.;
- Within the company, through acquisition from other members of the organization, from other groups or pool of knowledge of the organization as a whole.

Very often, most knowledge learned by the new start-up and its employees come from the environment. It is therefore very important to know which are the major factors influencing knowledge transfer within the incubator. Knowledge previously owned, which gives it the ability to recognize the value of new knowledge or information and to assimilate and use for commercial purposes is absorptive capacity. According to S. Zahra and George G. [45], absorptive capacity has four complementary dimensions or, considering their content rather four essential components:

- a) Acquisition, which is defined as the ability to recognize, evaluate and purchase a new knowledge that is critical to the organization's activities;
- b) Assimilation, referring to the company's ability to acquire new external knowledge processes and procedures for analysing, processing, understanding and interpretation of such knowledge;
- c) Transformation, which takes into account the company's capacity to develop such procedures and processes to facilitate combining existing knowledge with new knowledge acquired and assimilated;
- d) Operation, which lies in the company's ability to use new knowledge gained commercial organization to achieve its objectives.

Based on these four dimensions, professionals covered defines two types of absorptive capacity:

- a. Absorptive capacity potential that lies in the ability to acquire and assimilate external knowledge. This capacity expressed receptiveness to new knowledge of the organization and enhances its ability to adapt and innovate
- b. Achieved absorptive capacity, which is the ability to transform and exploit new knowledge, to obtain quantifiable performance of the firm.

Practice shows that the companies differ in the level at which possesses two capabilities. The organization is engaged in intense learning processes, the capacities are developed both with positive effects in terms of effectiveness and efficiency of the organization. Knowledge management is essential for a start-up to identify and consider both forms of knowledge, tacit being more difficult to meet and process.

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