

A conceptual framework for analyzing knowledge-based entrepreneurship

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Abstract: *The concept of knowledge-based entrepreneurship (KBE from now on) has recently appeared in the literature and, therefore, its investigation is still at a very early stage. This article presents a conceptual framework for analyzing the phenomenon of KBE and its impact on innovative behavior and growth of greek firms active in high-tech sectors. Linking knowledge-based entrepreneurship, innovativeness and growth of newly established greek firms can draw useful conclusions for both the firms themselves, and for formulating public policies to promote innovation and foster entrepreneurship in general.*

Keywords: *Knowledge-based entrepreneurship, knowledge management, innovation, dynamic capabilities.*

I. INTRODUCTION

The KBE is a very important socio-economic phenomenon that drives innovation, economic growth and development, and is at the base on the competitiveness of all economies (Groen, 2005). This article presents a conceptual framework which will form the basis for designing a structured questionnaire to examine the characteristics of KBE in new greek firms active in high tech sectors.

Initially we define the KBE and explain basic concepts. Then bundle the literature of KBE into three broad categories and summarize the results of a literature review in each of them. The next section contains the proposed KBE model, and the article closes with a summary of some final conclusions.

II. KBE: DEFINITIONS AND MAIN CONCEPTS

The KBE associated with the so-called knowledge economy is characterized by the crucial role of information and communication technologies, the high proportion of knowledge-intensive activities, the greatest asset of intangible resources in relation to the relevant chapter material resources on the total share capital and the increased spending on research and development (R&D) (Stam & Garnsey, 2008; Foray, 2004). When talking about KBE we refer to activities where the role of creating new knowledge is central to value creation (KEINS, 2006).

Many argue that a better term for KBE is innovative entrepreneurship. This is because this form of entrepreneurship includes innovation of product or process through the creation of new knowledge (Radosevic *et al.*, 2010). Of course, this knowledge does not automatically lead to innovation and economic

growth. Carlsson *et al.* (2007) report that: a) the factors that facilitate or hinder the transformation of knowledge into economically useful knowledge and b) the presence or absence of a mechanism that will allow this conversion, significantly determine the efficiency of converting the knowledge into innovation and new economic activity. Such a mechanism may be KBE.

Starting from a broader definition of entrepreneurship and incorporating into it the concept of knowledge, we pose that “entrepreneurship is the process of creating something new with value by devoting the necessary time and effort in knowledge-intensive economic activities, assuming the accompanying financial, psychic, and social risks and receiving the resulting rewards of monetary and personal satisfaction and independence” (Hisrich *et al.*, 2005; Bosma, 2010). Defining KBE at the enterprise level, we focus on five key features. KBE is (Malerba & McKelvey, 2010):

1. New firms.
 2. Innovative firms (in terms of production processes based on knowledge).
 3. Firms with significant knowledge intensity in their activities.
 4. Firms that exploit innovative opportunities in various sectors.
- And (Teece, 2007b):
5. Firms, through appropriate strategic choices, achieve competitive advantage.

Therefore, KBE is new and innovative firms with high knowledge intensity in their activities, involved in a process of conversion knowledge into innovation. That is, these firms are transforming knowledge into new or significantly improved goods and services that may hit the market. They are still firms that exploit innovative opportunities in various fields and achieve through their strategy a competitive advantage.

III. KBE AND THE EXISTING LITERATURE

We group the literature related to KBE into three broad categories: knowledge-based entrepreneur, knowledge management and strategy of knowledge-based firms.

A. Knowledge-based entrepreneur

Unlike entrepreneurship studied academically since the late '30s, the concept of knowledge-based entrepreneur (KE) is relatively new (Cooke and Porter, 2007). The study of the characteristics of KEs has recently appeared in the literature (Carayannis & Formica, 2006) and is linked to the multifaceted nature of knowledge. Interest

in KE stems from the common assumption that such entrepreneurs belong to the cream of the economy of every country and contribute positively to them through their successful entrepreneurial performance (Szalavetz, 2007).

Skrzeszewski (2006) defines the KE as the person that “specializes in the creation and use of cognitive resources to create new ventures or services that will lead to personal and social well-being, or will improve and enhance services.” The KE should have adequate personal knowledge capital to be able to create value and wealth of knowledge. He also creates value in knowledge markets, through the unlimited resources of knowledge introduced in order to progress in society, economy and environment.

The literature focuses on the study of types of capital (financial, human, social) that is available to the KE establishing a new firm (e.g. Madsen *et al.*, 2008), level of experience and education held (e.g. Christensen *et al.*, 2000), the networking forming before and during the business process (e.g. Brüdel and Preisendörfer, 1998; Ruef *et al.*, 2003), the factors that determine success or failure (e.g. Szalavetz, 2007) and even the proximity of the KE experience between them, depending on the sector of activity (e.g. Cooke and Porter, 2007).

B. Knowledge management

In the literature of KBE the concept of knowledge management (KM) is considered as a business tool that leads a firm to improved performance, competitive advantage and higher levels of innovation. The KM refers to the recognition, activation, registration, distribution and transportation between people's explicit and tacit knowledge, to increase the efficiency of the business and creating a business environment that supports and facilitates the processes of growth knowledge and which leads in turn to create business value.

Coulson-Thomas (2004) talking about the “challenge” of knowledge entrepreneurship highlights the need to move to a stage after the sharing of knowledge, which will also includes the creation and exploitation. Firms can better utilize their expertise and create new tools based on knowledge to increase productivity and improve performance. However, as emphasized in much of the literature, these tools are not best practices for all firms and therefore, depending on their own merits, the KM will always be adjusted accordingly.

In today's “new economy” the firm's success depends not only on the shares held by the market, customers and the market size, but also on a successful KM (Hejduk, 2005), while knowledge workers are the value of firms of the 21st century.

C. Strategy of knowledge-based firms

A firm can be understood as a set of unique resources and capabilities, which is the basis of shaping strategy

(Hitt *et al.*, 1999). Technological knowledge is a resource that can generate superior business value and the exploitation of this knowledge is central to KBE. According to Strand (2006), knowledge is one of the most important resources of the firm and its implementation is at the heart of value creation. On the same wavelength by Grant (1996) believes that knowledge is the most important strategic resource of the firm, stressing the role of the individual and the firm held and implementation.

The concept of dynamic capabilities is a dynamic theory of enterprise resource that helps us understand how a firm's resources (human, technological, economic, organizational) evolve through time, and therefore, it maintained its competitive advantage (Konstantopoulos, Sakas, 2010, Teece, 2007b). Associated with elements of KBE, like innovation, organizational learning and knowledge management, providing a perspective based on knowledge. Besides, there are many who argue that it is an extension of the visa based on knowledge. Also, procedures for the development of dynamic capabilities include methods for building R&D, information technology helpful to codification procedures, problem solving, knowledge sharing, knowledge development and absorptive capacity.

IV. A MODEL OF KBE

Our model of knowledge-based entrepreneurship is called “The KBE model”. The overview is as follows:

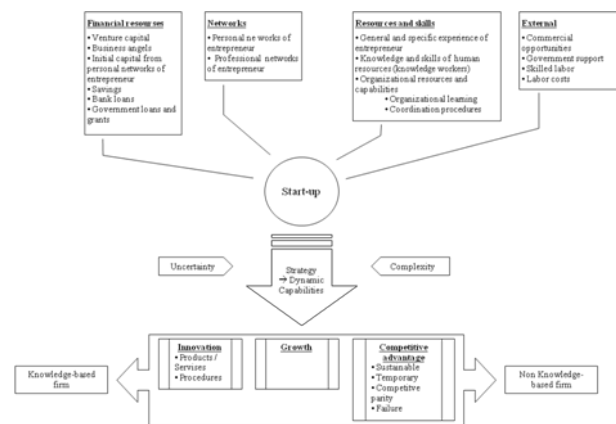


Figure 1. The KBE model.

At the core of the model is the creation of new venture (start-up). The strategic choices of the firm held a central role in our conceptual model, and refer mainly to the dynamic capabilities of the firm and the role of the entrepreneur during the initial development. Indeed, the study of the dynamic capabilities in new firms serves also the innovativeness of the model, as up to now the literature of dynamic capabilities focuses on existing firms. Firms according to the yields achieved (in terms of innovation, growth and competitive advantage), are divided into knowledge-based firms, those that grow strongly, consolidating their market

position and "simple" firms that simply survive without achieving a particularly innovative performance.

Each firm depends on a set of factors required for its creation, such as economic capital (venture capital, business angels, original capital from private networks operator, savings, bank loans, government loans and grants), the resources and skills (general and specific experience and education of entrepreneur, knowledge and skills of human resources, organizational resources and capabilities, organizational learning, coordination and control procedures), the external environment (market opportunities, government support, provision of skilled labor, labor costs) and the networking (personal and professional networks of entrepreneur). The transformation of these factors on business performance and growth is determined by the strategic choices of firm, affected by uncertainty and complexity.

Conducting extensive field research will try to identify the characteristics of KBE and gain an overview of the factors that shape knowledge-based firms. More specifically, using a structured questionnaire which will be handled on a representative sample of new firms belonging to different sectors of high technology and complemented by strains of the founding team, we look to industry experience, knowledge and skills of the founder or founding team of the firm, the process of creating the firm and the necessary resources required, the strategies followed by the firm, its evolution through time, and the innovative and economic performance. This will create a typology of these firms, based on particular characteristics.

V. CONCLUSIONS

The systemic approach attempting through this theoretical work differs from most of the literature, which often studied specific variables or levels of variables rather than connections between them. Exploring the role of dynamic capabilities is of great importance for research and to conduct meaningful conclusions about the new knowledge-based firms because they largely determine the growth, gain competitive advantage and general development. Furthermore, the association between KBE, innovativeness and growth of newly established greek firms can contribute to shaping public policies to promote innovation and foster entrepreneurship.

The creation of an appropriate conceptual framework for studying the phenomenon of KBE will have no essential if not combined with empirical research. The aim of the conceptual framework was created to provide a basis for designing structured questionnaire to examine the characteristics of KBE in greek firms.

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