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Entrepreneurship and Knowledge-Based Economies

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Abstract

Entrepreneurs are the persons who offer new products, services and technologies. They can bring the changes through innovation to maximize the social good. Knowledge is the key element of the innovation systems and the institutions which have an important role in its development can be stated as: (1) Universities and academic institutions (develop and transfer knowledge), (2) Government organizations, and (3) Innovative enterprises. Entrepreneurship is linked to economic growth as its main activity lies on transforming ideas into economic opportunities. Entrepreneurship serves as an important vehicle for economic and social prosperity by improving productivity and economic competitiveness and for this reason the participants' cooperation and links between each other is essential to acquire and diffuse knowledge for the knowledge-based economies. Universities role in the socio-economic development is important as they improve and diffuse scholarly knowledge.

Keywords: *Knowledge, innovation, entrepreneurship, economic growth*

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1. Introduction

Entrepreneurs are the persons who offer new products, services and technologies. They are the individuals who have the ideas and are willing to take the risks necessary to get a firm off the ground. They have the opportunity to challenge existing enterprises and by the same time to contribute for healthy competition in the society. The difference between entrepreneurs and other people relies on that entrepreneurs take difficult and complex decisions while the others do not want to take responsibility. By developing their business organizations, they give a vital contribution to the society and economy.

An entrepreneur can be an innovator, a risk taker, a person who operates resources, recognizes opportunities and establishes one or more businesses (Howorth et al., 2005). An entrepreneur also develops, builds and sustains a business based on new ideas, maximizes benefits and profits, and meets personal objectives (Ritchie and Brindley, 2005). So the entrepreneur is the person who brings the changes through innovation to maximize the social good. Entrepreneurship promotes capital formation and provides large-scale employment. It helps to reduce the unemployment problem of the country which is the root of all social and economical problems. Qualified entrepreneurs can form a strong economy; they are the engines of growth of a nation.

2. Literature Review of the Concept of Entrepreneurship

Entrepreneurship is studied from different disciplinary perspectives and there is found many definitions of it. The discipline of entrepreneurship generally studies the why, when and how of opportunity creation, recognition and utilization (Szirmai et al., 2011: 4). Entrepreneurial activity is the introduction of novel change into the economy, novel meaning not previously known in that context (Metcalfe, 2006: 77).

In the ancient and mediaeval worlds entrepreneurialism was hampered by the defense of vested interests by landed aristocrats, and by concepts such as just prices and usury (Casson et al., 2006:10). Since the beginning of the Industrial Revolution, economists have attempted to understand and incorporate the entrepreneur into economic literature (McDaniel, 2003:2). One of the earliest uses of the term “entrepreneur” (table 1), appears to have been introduced by Richard Cantillon, an Irish

economist of French descent, in the 1700s. According to Cantillon, the entrepreneur is a specialist in taking risk (Casson et al., 2006:3). Cantillon correctly separated the activities of the capitalist from those of the entrepreneur (McDaniel, 2002:31). Adam Smith in his classic writing, *The Wealth of Nations*, discussed the entrepreneur, but associated activities with capitalist. Although Smith adequately described the activities of the entrepreneur, he missed a great opportunity to emphasize the separate nature and activities of the entrepreneur (McDaniel, 2003:3). The entrepreneur was seen as a capitalist who tried to gain profits by risk taking. By the end of the 1700s, the French economist Jean-Baptiste Say had developed the term “entrepreneur” to mean the changing of resources from a lower productive use to a higher productive use (McDaniel, 2002:31). John Stuard Mill by the mid1800s started to associate capitalist and entrepreneur together through risk. Risk was viewed as only one activity and the risk of each group was viewed as one collective risk assumed and directed by the capitalist (McDaniel, 2003:3).

Table 1: Timetable for Early Economist Using the Term “Entrepreneurship”		
Year	Economist	Contribution
1725	Richard Cantillon	Separated activities of capitalist from entrepreneur
1776	Adam Smith	Discussed entrepreneur but associated activities with capitalist
1803	Jean-Babtiste Say	Defined entrepreneur as improving the state of resources used in production
1871	John Stuard Mill	Associated capitalist and entrepreneur together through risk
1934	Joseph A. Schumpeter	Defined entrepreneur as sociologically distinct individuals; separated entrepreneurship from the role of the capitalist

(Source: McDaniel, Bruce A., 2002:32)

Neoclassical economics developed an entire theoretical body based on the efforts of the capitalist with the complete absence of the entrepreneur (McDaniel, 2002:32). Joseph Schumpeter classified the entrepreneur as one who identifies and seizes an opportunity, offers a new product to the market, improves the production process, or offers a new contribution to the economy. This activity was called to be “innovation”, and it leads to a new production function, cause of which he listed five specific acts (table 2).

Table 2: Joseph A. Schumpeter`s Five Innovation Leading to a New Production Function

1. The introduction of a new good
2. The introduction of a new method of production
3. The opening of a new market
4. The conquest of a new source of supply of a raw material
5. The carrying out of a new organization of an industry

(Source: McDaniel, Bruce A., 2002:58)

The developing of the knowledge-based economy in the 90`s changed the relationship between science, technology, innovation and economic performance (Nagy, 2008:14).

The Oslo Manual of 1997 distinguished the following types of innovation activities in the innovation process (OECD 2002):

- a) R&D
- b) acquisition of disembodied technology and know-how
- c) acquisition of embodied technology
- d) tooling up and industrial engineering, industrial design
- e) other capital acquisition
- f) production start-up
- g) marketing for new or improved products

The third edition of the Oslo Manual (2005) classified differently innovation. It includes the following four groups of innovation (OECD – Eurostat 2005):

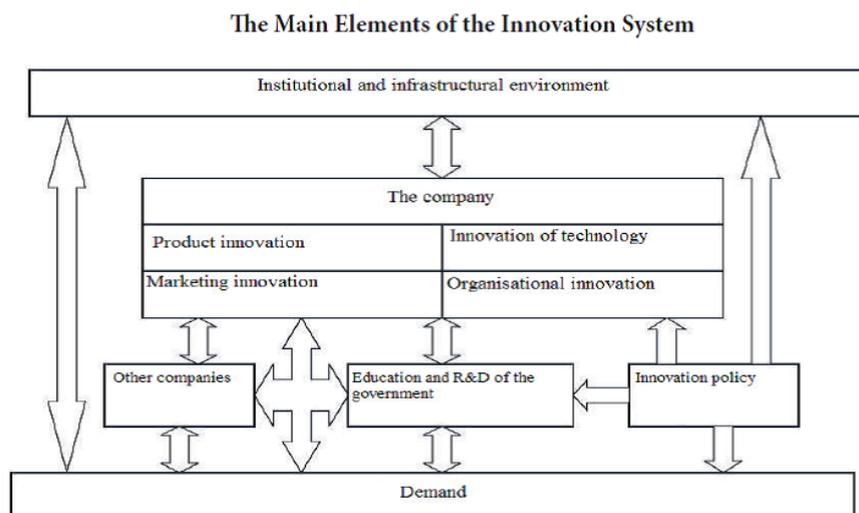
- a) product innovation, which contains significant changes in the use of goods and services.
- b) process innovation, which involves significant changes in production and transport methods.

- c) marketing innovation, which includes the application of new marketing methods.
- d) organisational innovation, which involves the using of new organisational methods. These can be changes in the business practice, in the workplace organisation, or changes in the external relationships of the company.

According to OECD-Eurostat 2005, the factors that influence the innovation activities of a company are as follows:

- ✓ the institutional and infrastructural environment
- ✓ innovation policy (different supports, incentives)
- ✓ the education system and the R&D activity of the government (e.g. the activities of the universities)
- ✓ the innovation activity of other companies
- ✓ the interaction of the above in relation to demand

The relation between these factors can be shown as a system as shown in the figure below:



Source: DSTI/EAS/STP/NESTI 2005. No. 2. In: Pakucs – Papanek 2006:8

3. Knowledge and Innovation

Innovation is the production, diffusion and use of new and economically useful knowledge, a key factor for competitiveness and growth while entrepreneurship the process of business start-up, business

creation and growth, the entrepreneurial dynamism is key to economic renewal and growth (Lewrick et al., 2010:1). Innovation is the specific tool of entrepreneurs, the means by which they exploit changes as an opportunity for a different business or service (Drucker, 1985:32). In order for companies to compete and to give dynamism to the national economy, innovation together with technical development have become of the main sources. To be a leader in the market, or simply to stay alive, companies should constantly perform innovation activity. The origin of the term innovation comes from the Latin term “innovare” that means to make something new. Most of definitions regarding innovation point to the exploration of new knowledge. Knowledge producing institutions have become more important to innovation as knowledge becomes a more significant element in new product development and in creating the organizational infrastructure for future product development (Etzkowitz, p.1). As the concept of innovation has expanded to knowledge, universities and government has become significant actors of the innovation process. It can help the innovation activity of the enterprises if they have a more or less close contact with the different research- and academic institutions and the institutions of higher level education (Nagy, 2008:1).

Knowledge is the key element of the innovation systems and the institutions which have an important role in its development can be stated as:

- ✓ Universities and academic institutions (develop and transfer knowledge)
- ✓ Government organizations
- ✓ Innovative enterprises.

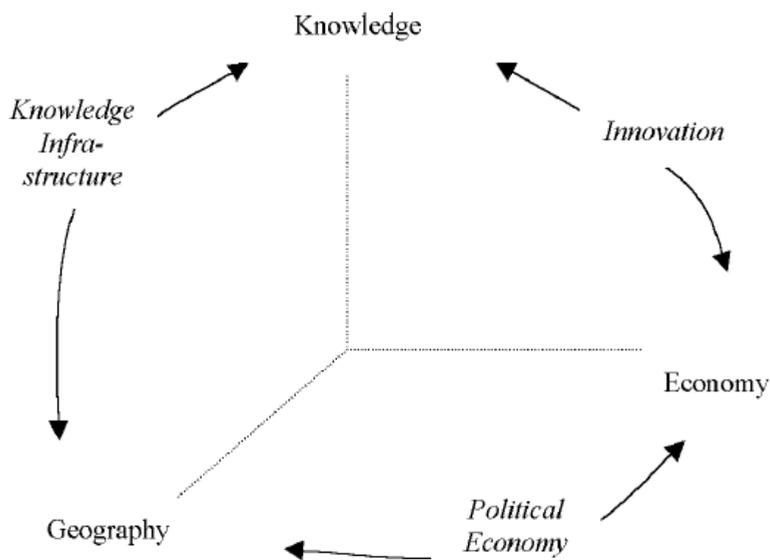
4. The Triple Helix Model of University-Industry-Government Relations

The (neo-)evolutionary model of a Triple Helix of University-Industry-Government Relations focuses on the overlay of expectations, communications, and interactions that potentially feed back on the institutional arrangements among the carrying agencies (Leydesdorff, 2001, p.1). Etzkowitz and Leydesdorff worked on this model basing their study on the permanently successful developing countries` experiences after the Second World War. It was easy to see that the industries of countries which were successful in the academic field

nevertheless significantly differed in economic performance and competitiveness (Nagy, 2008:17). It was realized that one of the most important factors in this difference was the contact that companies had with universities and government. The key to development lies in decreasing the blocking factors of the interaction so that the movements between the spheres in the different innovation systems intensify, and so the way will be open to sustainable development (Dzisah & Etkowitz, 2008).

Three functionally different sub-dynamics can be expected to span a knowledge-based innovation system: economic exchanges on the market, geographical variations, and the organization of knowledge (figure 1) (Leydesdorff & Meyer, 2003: 191). The triple helix message is that universities, firms and governments assume some of the capabilities of the other, even as each maintains its primary role and distinct identity.

Figure 1: Three Dynamics of Knowledge-Based Economy



(Source: Leydesdorff & Meyer (2003), p.192)

In the knowledge-based economies the connections and cooperations between the participants in an innovation system are

essential in the process of acquiring and diffusing knowledge (Nagy, 2008:15). Universities role in the socio-economic development is important as they improve and diffuse scholarly knowledge. The case of Silicon Valley is an example where the local university played a key role in the development of a high technology region, in which the Hewlett-Packard (HP) Company was grown. Another example is the case of the technological concentration near the Cambridge (UK), the so-called Route 128.

The academic knowledge-transfer mechanism can be classified into four larger groups (Varga 2000):

- a) Knowledge-transfer by published research results and patents
- b) Knowledge-transfer by the formal or informal contact network of the academic and business experts
- c) Knowledge-transfer by formal business contacts (spin-off companies, sale of technology)
- d) Knowledge-transfer by enterprises using the universities' physical facilities (e.g. libraries, research laboratories)

The Triple Helix model includes three main elements (Dzisah & Etzkowitz 2008):

1. In knowledge-based societies universities have a bigger role in the innovation system than the government and companies.
2. The relationship between the three main institutional spheres moves toward a cooperational relationship. Governments, companies and universities work closer and closer together on the most suitable development of the innovation policy.
3. Besides having their own place in the innovation system each participant has a role in the others' fields too. For example universities, which traditionally care about human resources and knowledge, become determining socio-economic actors.

Questions arise whether the role of the Triple Helix model would be different for developing or developed countries. According to Dzisah & Etzkowitz (2008), in the developing countries this model is seen as a normative one with elements which the various countries try to put into the right place, and configure in the best way possible. If we treat the Triple Helix model as a normative one then the preconditions of the proper circulation of people, ideas and innovations is to adapt the right model for the different national and cultural environments. In order to

do that firstly we should ensure that the relevant actors can discuss openly and honestly their strengths, weaknesses and the obstacles which have to be overcome. Secondly the opportunities and obstacles should be identified as precisely as possible. Finally an action plan has to be worked out which adapts the organizational models or develops new ones.

5. Conclusions

Entrepreneurs are the persons who offer new products, services and technologies. They are the individuals who have the ideas and are willing to take the risks necessary to get a firm off the ground. By developing their business organizations, they give a vital contribution to the society and economy. The entrepreneur is the person who brings the changes through innovation to maximize the social good. Knowledge is the key element of the innovation systems and the institutions which have an important role in its development can be stated as: (1) Universities and academic institutions (develop and transfer knowledge), (2) Government organizations, and (3) Innovative enterprises. The (neo-)evolutionary model of a Triple Helix of University-Industry-Government Relations focuses on the overlay of expectations, communications, and interactions that potentially feed back on the institutional arrangements among the carrying agencies (Leydesdorff, 2001:1). The triple helix message is that universities, firms and governments assume some of the capabilities of the other, even as each maintains its primary role and distinct identity. In the knowledge-based economies the connections and cooperation between the participants in an innovation system are essential in the process of acquiring and diffusing knowledge (Nagy, 2008:15). Universities role in the socio-economic development is important as they improve and diffuse scholarly knowledge.

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