INNOVATION AND ENTREPRENEURSHIP – INVESTMENT IN PEOPLE AND SKILLS

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Abstract

The paper focuses on the role of innovation, entrepreneurship and education in skills to create change and foster local/regional development in SEE. Short review of key theories and research are introduced as the basis for understanding the dynamics and practice of innovation and entrepreneurship. These include discussion on some global concepts such as smart specialization, the role of universities, national systems and institutions as well as some cases of good practice. International context is of great importance and international projects and cross-border cooperation play an important role – good example is EU Strategy for the Danube Region.

Keywords: Innovation, Entrepreneurship, Skills, Smart specialisation, Role of universities.

Introduction

There is more or less agreement among economists that innovation and entrepreneurship are crucial for economic growth and development. There are arguments in the literature and real life that incentives and general state of knowledge are important in explaining innovation. This is the reason why these two elements are relevant when discussing innovation, entrepreneurship and skills. When discussing skills we are dealing with human capital. One short definition of the concept of human capital could include the knowledge and skills that enable persons to act in a new way. Individuals invest in themselves through education and training. Individual investment in personal development is crucial, but also in every society, especially those in transition, the role of governments in developing education in general is extremely important. The major pillars of innovation infrastructure today are higher education, SMEs support and clusters.

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Innovation and entrepreneurship

Innovation is a multidisciplinary attitude; it is about transgressing boundaries of disciplines in search of developing novelties in all fields of human activities. In explaining phenomena of innovation and entrepreneurship it is common not to go too far into the past but start with the work of Joseph Schumpeter. He made many important distinctions and gave definitions of some major factors influencing innovation and entrepreneurship which stayed relevant until today and influenced many contemporary economists. He made distinction between invention and innovation, the first being an idea to be implemented in production, the second being the process of turning invention into an actual product. Schumpeter argued that it is not the same to make decision to buy some resources and the function of implementing a new production process. It is common today not to see this important difference between management and entrepreneurship in business and management literature. Schumpeter was the first to give such importance to innovation and entrepreneurship being crucial for a firm to survive in the more and more competitive market. Innovations can be numerous and located in different parts of economic processes including production, market, industrial organisation and management. Leadership is more important for an entrepreneur than ownership (Schumpeter 1934).

For the past few decades, entrepreneurship has been considered one of the basic features of production/services, besides capital, labour, and natural resources. In today’s world, it is believed that the encouragement of entrepreneurial activities is the key to economic development. Entrepreneurship is present in all fields of human activity, from economy to culture, education, sports, etc. It is important for large companies (internal, corporative entrepreneurship), but is also linked with small private companies. Following important Schumpeter’s conclusion that creativity and entrepreneurship can be characteristic of every field of human activity it became a part of the mainstream theory of entrepreneurship. Today, there is a network of entrepreneurial universities; leaders of cultural institutions and local mayors can also be entrepreneurs, not to mention governments which can behave entrepreneurially. Entrepreneurial and innovative environment is characteristic of prosperous societies.

Numerous contemporary books and articles deal with macro and microeconomic models of free market, innovation and growth, raising questions such as: how to treat consequences of innovation in aggregative models of growth; which macroeconomic conditions favour innovation and growth; which are major exogenous and endogenous elements important in explaining innovation, etc.

American economy has been for many decades the best example of entrepreneurial economy. Innovative, entrepreneurial companies (Intel, Microsoft, eBay, Google, Genentech, Chiron, Netscape…) have driven the technology revolution and have become significant players throughout US economy – not only in the information
technology industry, but also in retailing, biotechnology, financial services and many traditional manufacturing industries (Baumol 2007: 1-28). SMEs in general play very important role in U.S. economy. According to U.S. Census Bureau, SMEs accounted for 99.9 per cent of the 27 million employer and nonemployer private non-farm businesses in 2006. The vast majority of SMEs are firms with fewer than 20 employees. (www.census.gov/econ/smallbus.html)

Both technology based entrepreneurship and non-technology based entrepreneurship contribute to economic development at all levels. They are different in many aspects. First group work in more uncertain, complex and dynamic environment. This is why gestation period is longer than in non-technology group and during this period they are concentrated on planning, resource acquisition, and establishment of boundary and legitimacy while the second group is more focused on marketing. This is also one of the reasons why technology companies need larger start capital (venture) (Liao and Welsch 2003: 665). Although technology based companies are motors of economic development, it is important that governments create policies to support SMEs in general because they are significant sources of new innovations and create new employment.

Small and Medium-sized Enterprises (SMEs)

After domination of large companies in the fifties of the 20th century, in the last decades SMEs dominate in the structures of all economies making over 90 per cent of all companies. They also provide the greatest number of new work places in both developed and less developed countries. They are the holders of innovation, and due to their flexibility, can adapt to the constant challenges of the changing world faster and more efficiently. In contrast to the traditional belief that only large companies can succeed in the international market, numerous small companies have proven this not to be the case. Among SMEs, the most advantageous for the community are high-tech companies, due to their ability to innovate and contribute to community development in the long run.

SMEs by the EU definition employ between 1 and 249 persons and they represent backbone of the economy and economic growth. In 2012 in EU there were 20.7 million SMEs which represented 98% of all enterprises. 92.2% of SMEs had less than 10 employees. SMEs employ 67% of all employees in EU and produce 58% of gross value added (Anon. 2012a: 9).

In Serbia in 2010 micro firms (72,000) made 86.2 per cent of all firms which is lower than in EU27 92.1%; small firms (8,939) 10.7%, EU27 (6.6%); medium firms (2,121) 2.5%, EU27 1.1%; large companies (509) 0.6%, EU27 0.2% (Anon. 2013: 1).
Financing Local Economic and Infrastructural Development

These figures about number of SMEs do not say much about the relationship between the total number of population and total number of companies, which is probably inadequate compared with EU27. We also do not have data about number of closed SMEs in Serbia in the last several years which is obvious.

In general, SMEs in Serbia did not have substantial support from government after 2000. Our opinion is that one of the major reasons for this is that members of government were and mostly still are mentally living in the old system, believing that large companies will employ more people. This showed not to be true in any economy. It is paradoxical that in the last decade Serbian government spent more money on subsidies trying to save old large (state) companies than to support start-ups and SMEs in general. Recently, the language of government changed in favour of private companies and SMEs under the pressure of EU, but we will see how it would work in real life. It is very important to develop longer strategy on SMEs support including local and national development efforts in order to create a good business climate.

It is well known that SMEs need external support in their start-up phase and growth. The process of nurturing business start-up and growth has, for many years, been appropriately called “incubation”. The purpose of incubation is to provide all the resources that the entrepreneurs need to build successful businesses. After first incubators in U.S. in 60s of 20th century, in Europe first incubators were established in 70s and 80s. Network of incubators in Vojvodina were established after 2000 although the knowledge and awareness about their importance was present in the former Yugoslavia already in 80s.

Technology parks are still in embryonic phase in Serbia. Some of the best news is coming from the Engineering Faculty at the University of Novi Sad (UNS). In the last decade 72 spin-offs from its Faculty of Engineering were created, mostly in high-tech sector, and founders were students and professors. Total number of employees in these companies in 2011 was 1,267 and it grew 9.5% compared to the previous year. Majority of firms are located close to the University campus and they create nucleus of the technology park. Incubators and technology parks are places where universities and their external stakeholders meet and they are also the places for knowledge and technology transfer and partnerships between industry and universities.

The role of universities

Universities can be seen as one of the best places for innovation and also a natural place for knowledge and practice to meet. Entrepreneurship is much more than the transfer of knowledge and the ability to start your own company. It is also a cultural phenomenon and universities have a role to play in culture, enabling
entrepreneurialism to be a feature of any university. What does being an entrepreneurial university therefore mean? Being the birthplace of high technology spin-offs is not enough to achieve this attribute. Behaving entrepreneurially, being innovative in its programmes, research, management, engaging in institutional development, and being able to make money aside from government resources, would be some further characteristics of an entrepreneurial university. Universities should also promote and teach entrepreneurship and offer training in skills. As concrete cases show, one of the basic resources of an entrepreneurial university is its central leadership (Stanković 2006).

Universities and their stakeholders

Universities are repositories of knowledge about future technological, economic, and social trends, a gateway to global information and sources of expertise in regional analysis. They provide their region with intelligence for its forward planning, support regional infrastructure and the underlying quality of the whole environment. Universities have numerous stakeholders, internal and external. The major stakeholders are academics, researchers, professionals, students, institutional leaders and managers, national, regional and local governments, national agencies and advisory bodies, different training institutions, civil society and NGOs, supranational bodies (World Bank, OECD, etc.), and businesses and industry (including both multinational and SMEs).

How can leadership of any university deal with such a complex environment? Different departments and individual researchers naturally have links with the wider community. The challenge is to develop institutional links at university level, in order to develop a strategy that would encourage the flow of ideas, information, and research results between the university and its stakeholders in a systematic way and in the long run. Universities should give initiatives for continuous dialogue among stakeholders directed to identification of the areas of education and training that should be developed. Training needs should be transferred into priorities, strategies of cooperation among companies and other stakeholders and universities. Groups of stakeholders create partnerships working together around common interests. Not every cooperation is a partnership. This is a new experience for the universities and companies in the region (HELP 2012). There are many opportunities for joint projects financed by the EU Commission.

There are numerous possibilities of cooperation between higher education institutions and companies such as joint research laboratories, joint training programmes with specific topics – to educate people who can be potential employees with the skills most adequate for the company activities.
Financing Local Economic and Infrastructural Development

Sometimes this is a long term project such as collaborative doctoral programmes – industry experts take part in the supervisory board officially or informally, combining different goals and cultures. Initiatives can be driven individually, company driven from large companies or SMEs, university driven, or driven by national, regional, local governments. Benefits are mutual knowledge, development of trust and respect, sharing resources and facilities, joint development of new technologies or devices of joint interest, access to university laboratories, commercialization of research results, better employability of PhD students (Borrel-Damian 2009).

Teaching entrepreneurship and innovation

Entrepreneurship is a relatively new discipline at European universities. The first books and papers on entrepreneurship in the former Yugoslavia were published in the late 1980s. At universities, the first courses also started in the late 1980s, with Engineering and Economics faculties being the first to introduce such courses, yet they are still not a university wide programme. The first course in entrepreneurship at UNS was offered as an elective course to the students of the Faculty of Law in 1991. The Engineering Faculty and the Faculty of Economics also introduced obligatory courses in Entrepreneurship together with courses in Management in the 1990s. The first teachers were academicians (economists) who brought the idea from U.S. universities. One of the firsts TEMPUS projects in 1990 in the former Yugoslavia was Postgraduate Studies in Entrepreneurship which gathered academicians from several European universities, the University of Ljubljana and the University of Novi Sad. The model that inspired this initiative was the one at the Scottish Enterprise Foundation, University of Stirling in Scotland, UK. Another important part of the project was a study of university incubators and one of the examples was Barcelona Activa at Barcelona Polytechnic in Spain. Unfortunately, crisis in the region postponed implementation of the experience from the Project for many years.

There is no legal constraint on universities in Serbia to introduce entrepreneurship as a regular/elective course in different departments and faculties. But there is no tradition in teaching this subject, and there is still a lack of flexibility from both academicians and students about the need for all students to be offered courses in entrepreneurship. Narrow mono-disciplinary studies still prevail, especially at undergraduate level. As a new academic discipline, entrepreneurship does not yet have a reputation as a field of education and research at universities in general including at UNS. At the start of 2005/2006 academic year, a new course Small and Medium Sized Enterprises and Entrepreneurship: a Challenge for New Europe is being offered as an elective course within the Postgraduate European Studies programme European Studies Across Borders, which is taught in English (Anon. 2010; Anon. 2012a).
In 2007, UNESCO Chair for Entrepreneurial Studies was established at the University of Novi Sad. It was offered to the University by UNESCO and this Chair became a member of UNESCO Chairs global network (UNITWIN). Long term goal of the Chair is to contribute to development of the region through promoting and developing entrepreneurial culture at the local, regional and national levels, strengthening entrepreneurial capacity of individuals and institutions in Serbia. Short term goals of the Chair are to develop graduate studies in entrepreneurship and a general course in entrepreneurship to be offered to all students as an elective course, as well as programmes in entrepreneurship skills as a part of Lifelong Learning (LLL). Fourth generation of one year master studies in entrepreneurship in English organized by the UNESCO Chair is starting next school year (www.unescochair.uns.ac.rs ).

Since in the future there will be fewer government jobs, more and more students wish to start their own business after graduation. This is a new challenge for young people in transition economies. Unlike their parents, they will look more to private entrepreneurship. In that social context, as entrepreneurial culture is not yet becoming a part of everyday life, training in entrepreneurial skills has become a very important subject in the education system. This is why there is a need to organize specific courses in entrepreneurship not only for students in engineering and economics but also for all students. Entrepreneurship is an interdisciplinary discipline based on the notion that one becomes an entrepreneur not by birth but by education as well as by experience. Students should develop job related social skills and competencies. They should learn about the instruments and management requirements to create their own firm and/or transfer and exploit knowledge produced in the university context. This is how universities should contribute through education and research to the economic development of their wider communities in general and in transition economies especially. Within the Bologna reforms, the promotion of entrepreneurial studies will be encouraged, together with building up partnerships between the units of the university and public and private sectors. It will become more common that students from all departments choose a course in entrepreneurship as an elective course.

**Smart specialisations**

Comprehensive definition of smart specialisation is given in the Guide to Research and Innovation. The focus of policy support and investment is on key national/regional priorities, challenges and needs for knowledge-based development, including IT-related measures: policies are built on each country’s/region’s strengths, competitive advantages and potential for excellence; technological and practice based innovation is in the centre with the aim to stimulate private sector investment; stakeholders should be fully involved and should encourage innovation and experimentation; they are evidence-based and include sound monitoring and evaluation (Anon. 2012a : 9).
Smart growth is one of the key elements in Europe 2020. It has the vision for Europe’s social market economy with the aims to confront its structural weaknesses through progress in three interrelated priorities: (1) smart knowledge and innovation based growth; (2) sustainable growth promoting a more resource efficient, greener and competitive economy and (3) inclusive growth fostering a high employment economy with economic, social and territorial cohesion (Anon. 2010).

Investment in research, innovation and entrepreneurship is at the heart of Europe 2020 and it is also Europe’s response to economic crisis. Concept of smart specialisation is a way to achieve smart, sustainable and inclusive growth.

Briefly, smart specialisation or RIS3 (Research and Innovation Strategies for smart specialisation) is a strategic approach to economic development through targeted support for research and innovation. It involves a process of developing a vision, identifying the place-based areas of greatest strategic potential, developing multi-stakeholder governance mechanisms, setting strategic priorities and using smart policies to maximize the knowledge-based development potential of a region, regardless of whether it is strong or weak, high-tech or low-tech. In this context, new terms are used such as smart cities and smart regions. Smart specialisation strategy is the new way for management of structural change, including services in all sectors. Creative industries are employing more and more population. There are many innovative ways of developing these industries at the local level based on specific cultural and historical traditions (Anon. 2012a).

Skills

Training is a learning process that involves the acquisition of knowledge, focusing on skills, concepts, rules of changing of attitudes and behaviours to enhance the performance of people in work and life. It is said that the amount of training required is at least as much as the amount of change that has occurred (Anon. 2012c).

Employment and Training Administration within U.S. Department of Labor developed Entrepreneurship Competency Model consisting of nine tiers. First three tiers are related to personal effectiveness competencies, second to academic competences and third to workplace competences. Personal effectiveness competencies are essential for all life roles, and they are often referred to as “soft skills”. They include interpersonal skills – skills to work with others from diverse backgrounds, demonstration of a willingness to work, desire and dedication to achieve goals, capability to adapt to new, different or changing requirements, capability to deal with ambiguity, willingness to take risks, to assume risks, willingness to learn. Academic competencies are the following: understanding written sentences and paragraphs in work-related documents, using standard language to compile information and convey ideas, using
mathematics to express ideas and solve problems, applying scientific principles and using technology to solve problems or develop solutions, giving full attention to what others are saying and speaking language well enough to be understood by others, critical and analytical thinking. Workplace competencies include creative thinking, networking, planning and organizing, problem solving and decision making, checking, examining and recording, applying knowledge of basic business principles, trends and economics to work activities (business ethics market knowledge, business and economic principles..), knowledge of computer applications. The rest of tiers relate to the specific competencies such as entrepreneurship technical competencies, entrepreneurial focus areas and occupation specific requirements. Each of competencies in the above mentioned document is elaborated in detail and could be very useful tool for developing of any training programme (www.doleta.gov).

In the processes of innovation it is important to have opportunity orientation, to identify changes and dynamics in taste, preferences, and trends, in needs, wants, and problems, smaller markets within larger markets, to be able to use opportunities to develop and offer new products/services, to be able to improve, streamline, reinvent work processes, to balance business concept and opportunity, to evaluate opportunities, to create and undertake new business venture.

In R&D it is necessary to analyse the failure of other projects as research for possible new venture, to conduct research and development, experiment and application, to practice invention and innovation, to identify design trends, to incorporate human, environmental, and technological factors in the design process, to design a system, product or service.

In technology transfer first step should be identification of scientific research which has potential commerce value, analysis of the consequences of societal or technological change, development of practical applications for the results of scientific research, application of newly created technology to new, innovative, productive uses.

Some specific skills/technical competences are needed for an entrepreneur, such as understanding of entrepreneurial process (generating ideas, recognition of opportunities, concept development, resourcing, actualization, harvesting), leadership and team building (showing passion for goal attainment, taking responsibility for managing growth).

Unlike training in entrepreneurship, management training overwhelms the region. There is a large interest among young people to study management expecting to be managers before having any experience in any professional work. Manager for what? Many private institutions are teaching management in the region at undergraduate level although there is no tradition, practical expertise and enough teaching and training staff.
Clusters

Clusters are one of the ways of connecting universities with stakeholders. They are also one of the important parts of infrastructure for innovation. Clustering in the economy which fosters business connecting and networking is recognized as one of the strategic factors for economic development.

Flexible organization of clusters enables assembling of small businesses and giving them strength and competitiveness to enter the international market, develop new technologies and improve skills of their employees.

Provincial government of Vojvodina created Cluster development strategy 2014–2020 in order to support clustering in the region in general but focusing on areas where Vojvodina has traditional comparative advantages: the efficient use of arable land, food processing facilities, infrastructure and logistics, metals and textile industries as well as development of modern advanced technologies and ICT which can be used in the above mentioned traditional areas. In 2013, Vojvodina government opened competition for support to clusters in the region (Anon. 2013b). Incentives will be directed to support capacity building for cluster management, education and learning of new skills by the cluster members, incentives for adoption of new technologies, joint appearances and winning new international markets, financial support to clusters and business associations that have been funding on EU Calls for Proposals, financial support for creation of new clusters, financial support for work of existing clusters, etc. (www.Vojvodina.gov.rs). There are 16 recently established clusters in Vojvodina (see Anex) (Anon. 2013b).

Danube Strategy

The Danube Region covers parts of nine EU countries (Germany, Austria, Hungary, Czech Republic, Slovak Republic, Slovenia, Bulgaria, Romania and Croatia) and five non-EU countries (Bosnia and Herzegovina, Serbia, Montenegro, Ukraine and Moldova). The European Council endorsed the EU Strategy for the Danube Region in June 2011; the European Commission’s in-house science service, the Joint Research Centre (JRC), responded to this call of the Council by launching the “Scientific Support to the Danube Strategy Initiative”.

Out of the eleven priority areas identified in the Strategy, the JRC will contribute with its initiative to seven of them: waterways, energy, water quality, environmental risks, biodiversity, landscapes, quality of air and soils, knowledge society and ICT, and competitiveness.

The objective of the JRC’s Scientific Support initiative contributes to the implementation of the EU Strategy for the Danube Region (EUSDR). It addresses the scientific
needs related to the implementation of the EUSDR and helps decision-makers and other stakeholders to identify the policy needs and large-scale projects needed for the implementation of the Strategy. It also contributes to the reinforcement of ties and cooperation amongst the scientific communities of the Danube Region.

The JRC and the scientific partners identified a set of limited priorities: environment protection; irrigation and agricultural development; navigability; energy production. Supporting better European governance is an additional (transversal) priority. It brings together universities, research organisations, public partners and national and regional governments. Key partners are for instance the Academies of Science, the Danube Rectors’ Conference and the International Commission for the Protection of the Danube River (ICPDR).

Clusters have important role in the JRC initiative. Besides the above mentioned six priorities it also addresses one transversal priority, focused on the 6 scientific clusters. The water cluster will address the environmental and socio-economic consequences of changing agriculture-energy pressures on water. This requires a basin-wide perspective and cooperation with countries in the region, taking into account needs of all stakeholders. Allocation of available water across different sectors needs to be integrated into the overall economic strategy of the Danube Region, based on optimisation concepts in order to maximise growth and minimise the environmental impact. The land and soil cluster will deal with the following issues: land and soil availability, quality and related risks, preservation and restoration of above- and below-ground ecosystems and biodiversity, harmonised data collection and monitoring and awareness raising and capacity building. The air cluster will deal with air-related issues in the Region and especially the assessment of air quality sources and the assessment of the impacts of air pollution on health. The bio-energy cluster will address the challenges of energy production in the Danube Region while focusing on the development of bio-energy and its possible impacts on the agriculture sector and on the environment. The reference data and service infrastructure cluster will offer a global view of various data covering a wide-range of areas (such as water and soil quality, population, landscapes...etc.) and will encompass the whole Danube Region. It will provide access to and exchange of quality-documented data and services for large scale projects which will form the key elements of the EU Danube Strategy implementation plan. The smart specialisation cluster will use the Danube Region as a pilot area to study and foster the integration and coordination of regional or national research and innovation strategies for smart specialisation at macro-regional level. This approach can stimulate the constructive use of regional diversity by avoiding uniformity and duplication in regional investment goals as well as help develop critical mass to tackle major common challenges. (http://ec.europa.eu/dgs/jrc/index.cfm?id=2470&obj_id=4480&dt_code=EVN&lang=en).
Conclusion

The focus of this paper was on human resource development as the most important source in the region. Training in skills for the new era in the global world is one of the weak points. Rates of participation in training in the region continue to lag behind average levels in the European Union. Training must not be seen as an option but rather a fundamental component of good business practice and regional and overall development. In general, higher education institutions have the most important role in local and regional development. In the region, vocational schools should get more important role. Mutually beneficial partnerships between the education and business sectors should be based around training. Businesses can increase their specialist knowledge and facilities from education institutions in marketing, technology, product development and soft skills. Education institutions can raise capacity for market-oriented work and increase the relevance of the courses offered to better meet the needs of businesses and their employees. The role of training in successful businesses and as a component of lifelong learning (LLL) needs greater emphasis and support at the policy-making level. Local communities and regions need entrepreneurial leaders to be able to respond to the new challenges. In Serbia good examples are some local communities such as Indjija and Pećinci. Supportive environment for innovation and SMEs should come from governments at all levels, including macroeconomic and microeconomic policies.

References


www.census.gov/econ/smallbus.html (Last revised August 22, 2012)

www.doleta.gov


www.unescochair.uns.ac.rs

www.Vojvodina.gov.rs

**Annex – The list of newly established clusters in Vojvodina / Serbia**

Vojvodina Metal Cluster – VMC

Vojvodina ICT Cluster – VOICT

Association for Promoting Cooperation and Development of Tourism in the Danube Region

– ISTAR 21

Cluster for Health Tourism in Vojvodina

Fund of Microregional Tourism Cluster, Subotica – Palić

Fund Tourism Cluster Srem

Transport and Logistics Cluster of Vojvodina

Fruška Gora Cluster of Winemakers and Wine Growers – ALMA MONS

Bio-Science Cluster

Association Cluster Agroindustry Subotica

The Creative Industry Cluster of Vojvodina

Cluster of Artistic Crafts from Sombor

Serbian Association of Food Manufacturers – POLUX

Association Cluster – VOJPLAST

The Cluster for Ecological Energy and Ecological Culture – ECOPANONIA

Cluster Green Table (Plums)