INNOVATION AND ECONOMIC DEVELOPMENT – CORRELATIONS AND CONDITIONS

Veland Ramadani, PhD[1]

Shqipe Gerguri, MA[2]

Gadaf Rexhepi, PhD[3]

Selajdin Abduli, MsC[4]

Apstract

Innovation is not a new phenomenon. Arguably, it is old as mankind itself. There seems to be something inherently "human" about the tendency to think about new and better ways of doing things and to try them out in practice. Innovation is essential for sustainable growth and development. In the modern economy, innovation is crucial factor for value creation, growth and employment. Innovation will lead to new businesses as well as to the increased competitiveness of existing enterprises.

As a country where EU integration is among the top priorities considering the Innovation Union Scoarboard (IUS) indicators, Republic of Macedonia belongs to the modest innovators, with performance well below the EU27. Republic of Macedonia is a full-fledged partner in the Programme for Competition and Innovations of the European Union. The Programme for Competition and Innovation is especially important for the small and medium sized enterprises in our country, because it will provide them with internationalization, as well as an easier access to the financial assets, more appropriate use of information and communication technologies, development of the IT society and promotion of the importance of new renewable resources of energy and energy efficiency.

There are several core conditions which enable innovation and encourage economic growth and development. According to OECD the most important are: strong standards and effective enforcement of intellectual property protection; dynamic competition and contestable markets; a strong and sustainable fundamental research and development infrastructure; encouraging information and technology communication developments and a strong emphasis on education at all levels.

This paper specifically elaborates the proper way of using terms such as innovation, invention, creativity and science, because in daily conversations they are often used interchangeably. The paper also addresses the meaning of innovation, innovation sources, types of innovation etc.

Key words: *Innovation, invention, competition, economic growth, development*

JEL Classification Codes: *O1, O31, O40*

[1] *South East European University at Tetovo-Faculty of Business and Economy, Ilindenska bb, 1200 Tetovo, Macedonia, E-mail: v.ramadani@seeu.edu.mk*

[2] *South East European University at Tetovo-Faculty of Business and Economy, Ilindenska bb, 1200 Tetovo, Macedonia,E-mail: s.gerguri@seeu.edu.mk*

[3] *South East European University at Tetovo-Faculty of Business and Economy Ilindenska, bb, 1200 Tetovo, Macedonia, E-mail: g.rexhepi@seeu.edu.mk*

[4] *South East European University at Tetovo-Faculty of Business and Economy Ilindenska, bb, 1200 Tetovo, Macedonia, E-mail: s.abduli@seeu.edu.mk*

1. Intruduction

Enterprises today act under a big pressure by other enterprises, which offer the same or similar production or service, or they are under the pressure of the customers who expect more and more from the product they consume. In order to face with the new conditions and situations, enterprises are made to continuously search for new ways of production, namely offering new products or enhancing existing ones. In other words, they should continuously introduce innovations. But, what in fact do innovations represent?

Innovation is a process of transforming the new ideas, new knowledge into new products and services. Joseph Schumpeter defines innovation as an activity which leads to new producing function, new product. He divides this activity in several steps, as follows (McDaniel, 2002, p.57-58): a) *Introducing a new product*: the entrepreneur should produce, namely introduce a new product which can be easily sold and which is not offered in the market; b) *Introducing a new method of production*: innovation should offer a new scheme of production which through existing inputs can lead to an increased output, decrease of costs per 2unit product, introduction of new inputs and change of existing ones; c) *Opening new markets*: innovations can increase the sell in new regions, and also increase the number of customers; d) *Finding of appropriate sources of raw materials*: The raw material supplier can often lower raw materials' quality or increase their price and this directly influences over the quality and the selling price of the new product. Therefore, the entrepreneur should find an appropriate source of inputs, which are needed for production of new products; e) *Establishing a new organization in the industry*: Schumpeter describes this step as an entrance of the entrepreneur in the monopoly market, where there has been no competition previously; or creating conditions through which the entrepreneur would take the monopoly position in the market. Lionnet (2003, p. 6) defines innovation as a process by which a novel idea is brought to the stage where it eventually produces money. It is a dynamic technical, economic and social process involving the interaction of people coming from different horizons, with different perspectives and different motivations. Ramadani and Gerguri (2011, p.102) define innovations as a process of creating a new product or service, new technologic process, new organization, or enhancement of existing product or service, existing technologic process and existing organization. UK Department of Trade and Industry (2003, p.18) defines innovation as the successful exploitation of new ideas and it is central to meeting this challenge; it involves investments in new products, processes or services and in new ways of doing business.

According to the given definitions, if we analyze their separate elements, we can say that we classify: innovations in production – development or enhancement of a specific product; innovations in services – offering new or enhancing of existing services; innovations in process – finding of new ways of organizing and combining inputs in the process of production of specific products or services; and innovations in management – creating new ways of organizing business resources.

The importance and definition of innovations can be explained from several aspects. From the aspect of *customers*, innovation means products with better quality and better services, which together mean a better way of life. From the aspect of *businesses*, innovation means sustainable growth and development, realization of great profit. For the *employees*, innovation means new and more interesting job, which requires more mental faculty, which results in higher salaries. From the aspect of *whole economy*, innovation represents a bigger productivity and development for all (Ramadani and Gerguri, 2011, p. 102).

In daily conversation, terms like *innovation, invention, creativity* and *science* are often used interchangeably. But, for academics, researchers and policymakers there are important

distinctions between these terms and these distinctions give each term a unique, specific meaning. Invention is the first occurrence of an idea for a new product or process, while innovation is the first attempt to carry it out into practice (Fagerberg et al, 2004, p.4). Creativity is thinking about new things, while innovation is making new things. Creativity is an ability to develop new ideas and ways of facing problems and possibilities, while innovation is an ability to perform creative solutions in order to enhance people's life. Hence, enterprises can be successful only if they invent and make new things, or if they make the old ones in a new way (Zimmerer and Scarborough, 2002, p. 37). According to Cannon (1991, p.17), the distinction between these terms is as follow: *Creativity* represents an opportunity to create new appearance, content or process by combining existing inputs or factors of production; *Inventiveness* is a process of creating something new, which assigns a contribution to the level of overall mankind knowledge; and *innovation* is linked to the definitive marketing of the new product, service or technologic process, which is a result of the inventiveness.

Also, very important issue is that where do innovation come from? Which are the innovation sources or ideas for potenctial successful innovations? IBM made a study about the potencial sources of innovations, which was based on phone interviews with over 750 CEOs and business leaders. This study found "that 76% of CEOs ranked business partner and customer collaboration as top sources for new ideas. This greatly contrasts with internal R&D, which ranked eighth as a source for new ideas — cited by only 14% of CEOs". The top sources can be considered sources outside of the company (De Ridder, 2008). There are the IBM's top sources of innovation: Employees, Business partners, Customers directly, Consultants, Competitors, Associations, Internal Sales & Service Unites, Internal R&D, Academia, Think-tanks and Labs or other institutions. Another research shows that innovation s come from the inside of company (28.4%), suppliers (26.4 %), customers (25.8 %), competitors (24.9 %), and exhibitions (24.6 %). Such innovation sources as universities and other non-profit R&D institutions scored just 3.7 % and 2.9 %, respectively (Ukrainski and Varblane, 2005, p. 20-21).

Innovation is a major factor of economic growth and performance in the globalised economy. The relationship between innovation and economic growth and development has been well studied. However, that is not to say that it is well understood. Innovation brings new technologies and new products that help address global challenges, new ways of producing goods and delivering services boost productivity, create jobs and can help improve citizens' quality of life.

Innovation is the throbbing heart of the twenty-first century economy, consistently pumping new revitalizing activity through the system. The opposing force is commoditization—probably the single most powerful force in business today—which rapidly takes what was distinctive and profitable and rapidly makes it commonplace and marginal, sucking out the vitality and profitability(Torun and Çiçekci, 2007).

2. The correaltions between innovation and economic growth and development

Federal Reserve Board Vice Chairman Roger W. Ferguson, Jr. says that innovation benefits consumers through the development of new and improved goods, services, and processes, an economy's capacity for invention and innovation helps drive its economic growth and the degree to which standards of living increase (Federal Trade Comission, 2003, p.4). The capacity and the ability to create economic value are critical to competitive advantage and growth for firms, industries and countries. The question then becomes how to best organize resources to create, diffuse and sustain innovation and, moreover, how to

leverage investments made in science and technology, research and development and related capabilities with the ultimate goal of reaping rewards in terms of wealth creation and increased standards of living.

Table 1. Innovation Union Scorecard indicators

Main type / innovation dimension / indicator	Data source	Reference year	No data available for
ENABLERS			
Human resources			
1.1.1 New doctorate graduates (ISCED 6) per 1000 population aged 25-34	OECD / Eurostat	2008	CN, IN
1.1.2 Percentage population **aged 25-64** having completed tertiary education	OECD / Eurostat / national sources	2008	
Open, excellent and attractive research systems			
1.2.1 International scientific co-publications per million population	Science Metrix / Scopus	2008	BR, IN, RU
1.2.2 Scientific publications among the top 10% most cited publications worldwide as % of total scientific publications of the country	Science Metrix / Scopus	2007	
Finance and support			
1.3.1 Public R&D expenditures as % of GDP	OECD / Eurostat / national sources	2008	
FIRM ACTIVITIES			
Firm investments			
2.1.1 Business R&D expenditures as % of GDP	OECD / Eurostat / national sources	2008	
Linkages & entrepreneurship			
2.2.3 Public-private co-publications per million population	CWTS / Thomson Reuters	2008	
Intellectual assets			
2.3.1 PCT patents applications per billion GDP (in PPS€)	OECD / Eurostat	2007	
2.3.2 PCT patent applications in societal challenges per billion GDP (in PPS€) (climate change mitigation; health)	OECD / Eurostat	2007	
OUTPUTS			
Innovators			
Economic effects			
3.2.2 Medium and high-tech product exports as % total product exports	UN / Eurostat	2008	
3.2.3 Knowledge-intensive services exports as % total service exports	UN / Eurostat	2008	
3.2.5 License and patent revenues from abroad as % of GDP	WorldBank / Eurostat	2008	

Source: Inno Metrics, 2011

According to the main findings of the Innovation Union Scorecard 2010 on their average innovation performance across 24 indicators presented in Table 1, the countries can be divided into four groups: Innovation leaders, innovation followers, moderate innoavtors and modest innovators (Inno Metrics, 2011).

• *Innovation leaders show* a performance well above that of the EU27. In this group belong Denmark, Finland, Germany and Sweden.

•*Innovation followers* show a performance close to that of the EU27 such as Austria, Belgium, Cyprus, Estonia, France, Ireland, Luxembourg, Netherlands, Slovenia and the UK.

• *Moderate Innovatiors* show a performance below that of EU27. In this group belong Czech Republic, Greece, Hungary, Italy, Malta, Poland, Portugal, Slovakia and Spain.

• *Modest innovators* show a performance well below that of EU27 such as Bulgaria, Latvia, Lithuania and Romania.

In all countries, indicators used in these analyses show an absolute improvement in the innovation performance over time, except Lithuania. The report shows that within the Innovation leaders, Finland and Germany are the growth leaders. Table 3 presents the annual growth rate for the rest of EU27 countries (Inno Metrics, 2011, p.11).

Table 2. Innovation Growth Leaders

Group	Growth rate	Growth leaders	Moderate growers	Slow growers
Innovation leaders	1.6%	Finland (FI), Germany (DE)		Denmark (DK), Sweden (SE)
Innovation followers	2.6%	Estonia (EE), Slovenia (SI)	Austria (AT), Belgium (BE), France (FR), Ireland (IE), Luxembourg (LU), Netherlands (NL)	Cyprus (CY), United Kingdom (UK)
Moderate innovators	3.5%	Malta (MT), Portugal (PT)	Czech Republic (CZ), Greece (GR), Hungary (HU), Italy (IT), Poland (PL), Slovakia (SK), Spain (ES)	
Modest innovators	3.3%	Bulgaria (BG), Romania (RO)	Latvia (LV)	Lithuania (LT)

* Average annual growth rates as calculated over a five-year period
Source: Inno Metrics, 2011, p.11

According to the Fourth Community Innovation Survey in collaboration with the European Commission of the European Innovation Scoreboard, Frunză (2010, p.10-11) observed that among the EU27 Member States the highest proportion of companies with innovation activity in 2002-2007 period was recorded in Germany (65% of enterprises), Austria (53%), Denmark, Ireland and Luxembourg (52% each), Belgium (51%) and Sweden (50%), while the lowest rates were observed in Bulgaria (16%), Latvia (18%), Romania (20%), Hungary and Malta (both 21%)..

As a core conditions which enable innovation and encourage economic growth are: strong standards and effective enforcement of intellectual property protection; dynamic competition and contestable markets; a strong and sustainable fundamental research and development infrastructure; encouraging information and technology communication developments, a strong emphasis on education at all levels (OECD, 2004).

2.1. The strong protection of intellectual property

Innovation and intellectual property increasingly dominate the economy. As technology advances, no firm has the resources to stand alone, and collaboration with others is becoming essential. This means that new business models are needed for developing intellectual property and sharing in its value. In 1421 the Government of Florence awarded the world's first patent to Filippo Brunelleschi for a means of bringing goods up the usually unnavigable river Arno to the city. He demanded and was duly awarded legal protection for

his invention, being given the right for three years to burn any competitor's ship that incorporated his design (Dawson, 2002).

Intellectual Property Rights such as patents, trademarks copyrights, registered industrial designs, integrated circuit topographies ect, are known as key factors promoting innovation and growth in today's economy. Designing an effective and appropriate system of IPRs is complex for any country. The mechanisms by which IPRs operate vary across functional areas such as mentioned above and their importance differs across sectors. The nature and the purposes of these mechanisms are distinctive, although they share certain fundamental characteristics that bring them under the IPRs Umbrella. The strength of IPRs depends on the demand characteristics, market structure and other forms of business and competition regulation. Intellectual property helped make possible the conditions for innovation, entrepreneurship and market-oriented economic growth that shaped the 20th Century. In the 21st Century, IPRs increasingly will define these conditions, and will dictate the pace and direction of innovation, investment and economic growth around the world (Torun and Cicekci, 2007, p. 11).

Since the 1995 Green Paper on Innovation, the European Commission and the Governments of several Member States have emphasized the role of Intellectual Property Rights (IPR) as an incentive to firms to invest in innovation and as a means of appropriating their investments in innovation. If we look at one of mechanisms of IPR such as patenting, one of the main concerns over time has been a lower rate of patenting by European firms compared to American firms, as identified in several editions of the EIS (European Comisson, 2005). The difference in patenting rates between the US and Europe is partly due to a difference in industrial structures. For example, compared to the US, a higher percentage of European value added and employment is from manufacturing sectors with low to moderate background patent rates[5], such as transportation equipment. The US, conversely, has a higher concentration of firms active in high-technology sectors with high background patent rates such as pharmaceuticals, biotechnology and IT equipment.

Table 3. The equivalent subsidy rates of patents by industries

	USA	**FRANCE**	**GERMANY**
Pharmaceutical Industrial Chemicals Food, kindred and tobacco products	22% 14% 2%	4.1% 7.2%	15.2%
Semi-conductors Electronic Components Communication Equipment Computer	23% 13% 39% 8%		 12.5%
Metals Rubber Products	23% 19%		
Aircraft and Missiles	4%		
Instruments Medical Instruments	16% 21%		

Source: Lévêque and Ménière, 2006, p. 10

From the Table 3 we can see different studies carried out at different periods of time in different countries and with different methodologies. In the table we can see the

[5] The *background patent rate* is defined as the number of patents per employee or unit of value added or sales

importance of patents to recover investments and their effects on innovation depends on industrial sectors. Unsurprisingly, for pharmaceuticals patent protection is a key mechanism (drugs can easily be imitated) whereas it is not for missiles manufacturers (purchaser of weapons do not want the invention being public). We must always keep in mind that patent stimulates innovation differently from one sector or one technology to another. There is not a universal effect of patents (Lévêque and Ménière, 2006, p. 10).

2.2. Dynamic competition and contestable markets

Competition is the critical driver of performance and innovation. It benefits everyone by enabling to choose from an array of excellent products at affordable prices. Competition encourages the adoption of innovation as companies evolve and offer new ideas in order to flourish in the marketplace.

Products should compete on their own merits, and consumers everywhere should have the ability to easily choose the best products available for purchase. Fair and open competition dictates that the best product wins, and market forces prevail. Competition among firms generally works best to achieve optimum prices, quantity, and quality of goods and services for consumers. Competition can stimulate innovation. Competition among firms can spur the invention of new or better products or more efficient processes. Firms may race to be the first to market an innovative technology. Companies may invent lower cost manufacturing processes, thereby increasing their profits and enhancing their ability to compete. Competition can prompt firms to identify consumers' unmet needs and develop new products or services to satisfy them.

2.3. Research and development infrastructure

Research and development (R&D), resulting in new goods, new processes and new knowledge is a major source of technical change. R&D is a fundamental input into the innovation process and innovation is an important factor that influencies productivity growth and competitiveness. As defined by the Frascati Manual (OECD, 1993, p. 29) "R&D comprises creative work under-taken on a systematic basis in order to increase the stock of knowledge and the use of this stock of knowledge to devise new applications". The relationship between R&D and innovation is a complex, non-linear one. However, it is recognized also that it is difficult for substantial advances in technology to occur without work undertaken on a systematic basis (even serendipity tends to develop in such a context), and R&D is a good indicator of this broader phenomenon.

2.4. Development of information and technology communication

In the last two decades, the information technology sector has been responsible for more economic activity, more wealth creation, more productivity and more worldwide economic growth than any other sector in the economy. Economies, consumers, businesses and governments reap the benefits of technological innovations. R&D is not the only source of new technology: in modern, industrial economies, other activities, such as learning by doing or design are conducted in most cases on the basis of new technology coming out of R&D (*e.g.* changes in the organisation of business related to the use of information and communication technology.

Technological change is the rate at which new knowledge is put into physical forms and diffused for use in the economy. Major technological advances, such as the steam engine or microprocessors are known as *general purpose technology* as they have broad applications and productivity-enhancing effects in a number of different sectors. As a result, general purpose technologies induce dramatic economic changes by creating innovation that rejuvenates existing sectors and, in the process, create new industries and services. A historical example is the steam engine, the Internet is a more recent example. The Dot-Com bubble notwithstanding, the Internet has fundamentally changed the way business transactions take place, creating efficiencies and productivity growth for existing firms as well as new opportunities for entrepreneurs (Feldman, 2004, p. 7).

According to a study done regarding ICT (Information and communication technologies) Innovation and Economic Growth in Transition Economies, suggest that ICT is already playing a significant role in the transition economies, with ensuing economic benefits. However, it is also evident that the introduction of new technologies must be accompanied by a range of complementing factors for ICT to be effectively utilized and to contribute to productivity gains and economic growth. In particular, firms must develop appropriate and new marketing strategies, invest in equipment, and undertake processes of organizational change. This raises a critical question of whether the reason for some firms having yet to experience economic benefits from ICT lie with their failure to undertake the complementary efforts, or if it is due to some limitations inherent in ICT itself (ECORYS, 2007).

2.5. Impact of education on the economic growth and development

Education represent very important determinant of economic growth and development (Barro, 2001). Sandberg (1982) showed for 21 European countries that there exists a relationship between the literacy rates in 1850 and per capita income in 1970, but not between literacy and income in 1850, suggesting that literacy affects economic well-being in the very long-run. This finding is further supported by Nunez (1990) for 49 Spanish provinces. Unfortunately, in most of these studies it is unclear how literacy translates into better economic outcomes.

Innovation driven economic growth is a process of continual transformation. The economy expands into new materials, new sources of energy, new processes and new products, and it contracts from old onis requires a mobile labour force. People have to be ready to move from one occupational position to another maybe several times within a generation. This is not possible without the support of a system of education and training, which provides both general purpose and learning skills and diversified specialization possibilities as the national educational systems supervised by the state, has done for years. There are some tendencies towards international integration of education, but this is mainly on the post graduate level and as a supplement to national systems.

A large number of literatures suggest that education's contribution to economic growth has been variable across countries over time, and it is proven to have made a substantial contribution to growth. Education accounts for between 15 percent and 25 percent of growth in the U.S. national income per employee. Its contribution to economic growth has tended to increase over time (Becker and Lewis, 1993). As coverage of primary education has expanded rapidly in the developing world, higher education has gained importance. Thus, countries which have invested heavily in creating a well-developed infrastructure for tertiary education have reaped enormous benefits in terms of growth. Education has been a particularly important driver in the development of the capacity for technological innovation,

as the experience of Finland, Korea, Taiwan, and Israel clearly shows (Lopez-Carlos and Mia, 2006, p. 89-105).

3. Innovation and Republic of Macedonia

As a country where EU integration is among the top priorities considering the IUS indicators presented in figure 1 and the group division, Republic of Macedonia belongs to the modest innovators, with performance well below the EU27. Considering the IUS Report "*relative strengths are in innovators relative, weaknesses are in open, excellent and attractive research systems, finance and support and intellectual assets. High growth is observed for new doctorate graduates, knowledge-intensive services exports and license and patent revenues from abroad. A strong decline is observed for pct patent applications and community trademarks. Growth performance in human resources, firm investments and outputs is above average, growth performance in finance and support and intellectual assets is below average*" (Inno Matrics, 2011, p.57).

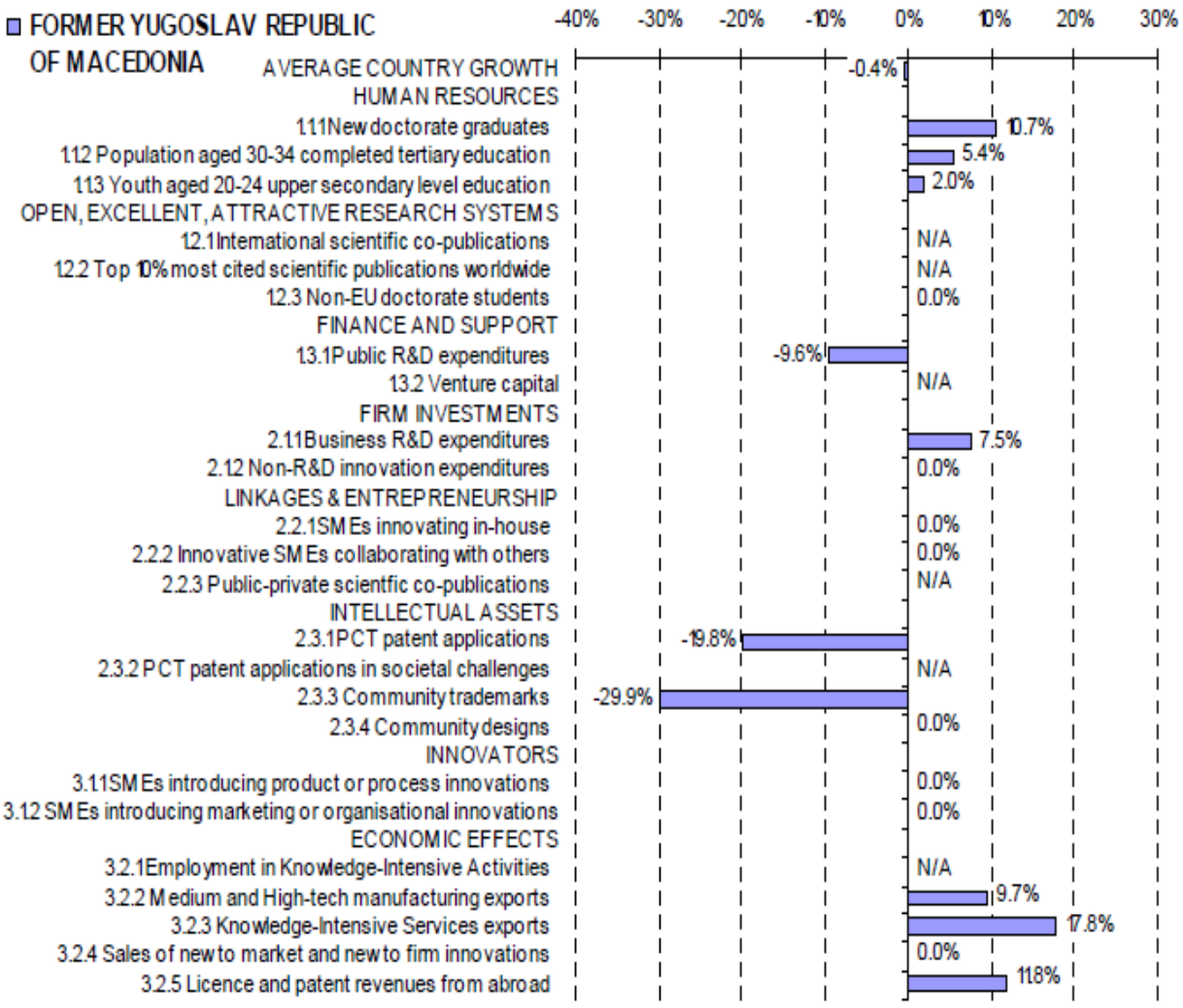

Figure 1. Annual average growth per indicator and average country growth
Source: Inno Matrics, 2011, p.57

Growing role of innovation in economic and social development, and how governments can help ensure that innovation is translated into new products and techniques that can help society meet the global challenges of the 21st century. Therefore, significant efforts are invested in preparing the country for EU membership – national legislation is being adapted to EU legislation in all areas covered by EU law, EU standards are adopted in economic, political and social areas and comprehensive horizontal reforms of the public administration are conducted. Government officials and commentators have recognized this reality and have called for a variety of different substantive incentives for stimulating innovation (Analytica, 2007).

In 2006, the Government of the Republic of Macedonia adopted the Programme for Scientific Research, Technology and Technological Development which along with the newly developed draft Laws on Higher Education and on Scientific and Research Activity, regulate research activities and set priorities in this area (Analytica, 2007, p.5). Since Republic of Macedonia singed the above mentioned programme, in the area of Information Society, the government launched several initiatives with 'e' prefix: E-Citizens, E-Education, E-Business, E-Government, and E-Infrastructure, and IT is now an integral component of every government policy.

Republic of Macedonia is a full-fledged partner in *the Programme for Competition and Innovations of the European Union (CIP)*. Starting from January 1st 2008, Republic of Macedonia officially started with the implementation of this programme for the period 2007-2013, and in this way, it became the second country after Croatia which is not a member of EU, but has joined this Programme. Through this programme, the European Commission gives an impulse to the entrepreneurship, innovations and the development of small and medium sized enterprises, which in EU are considered a backbone for the national economies. The aim is to encourage the competition and innovations in the European Union, bearing in mind that this could lead to an increase in the economic growth in the member-countries and candidate-countries for membership in EU.

The Programme for Competition and Innovation is especially important for the small and medium sized enterprises in our country, because it will provide them with internationalization, as well as an easier access to the financial assets, more appropriate use of information and communication technologies, development of the IT society and promotion of the importance of new renewable resources of energy and energy efficiency.

The Programme for Competition and Innovation of the European Commission is planned for the 2007-2013 period and it has a *budget of 3.6 million Euros*, and it is divided into three basic programmes: Entrepreneurship and Innovation Framework Programme (EIP), Information and Communication Technologies Policy Support Programme (ICTPSP) and Intelligent Energy Europe Programme (IEE).

Entrepreneurship and Innovation Framework Programme (EIP) has several defined goals:

- Providing more efficient access to financial resources for the small and medium sized enterprises (SMEs) by co-guarantees and co-investments of the local banks and funds for the capital venture
- Ensuring business and innovation services through a developed network of regional centres;
- Supporting and promoting entrepreneurship and innovation;
- Supporting ECO – Innovations

The Programme for Competition and Innovation of the European Commission foresees cooperation among owners of the small and medium sized enterprises, state institutions and organizations, organizations of the civil society. It is specific that co-

financing of the projects is conditioned with cooperation through the consortium or network of co-operators.

Regarding to the innovations in the Republic of Macedonia, the Bureau for protection of the intellectual property conveyed a research in order to find out the reasons of undertaking innovative activities by the enterprises. The results of this research are shown in Figure 2.

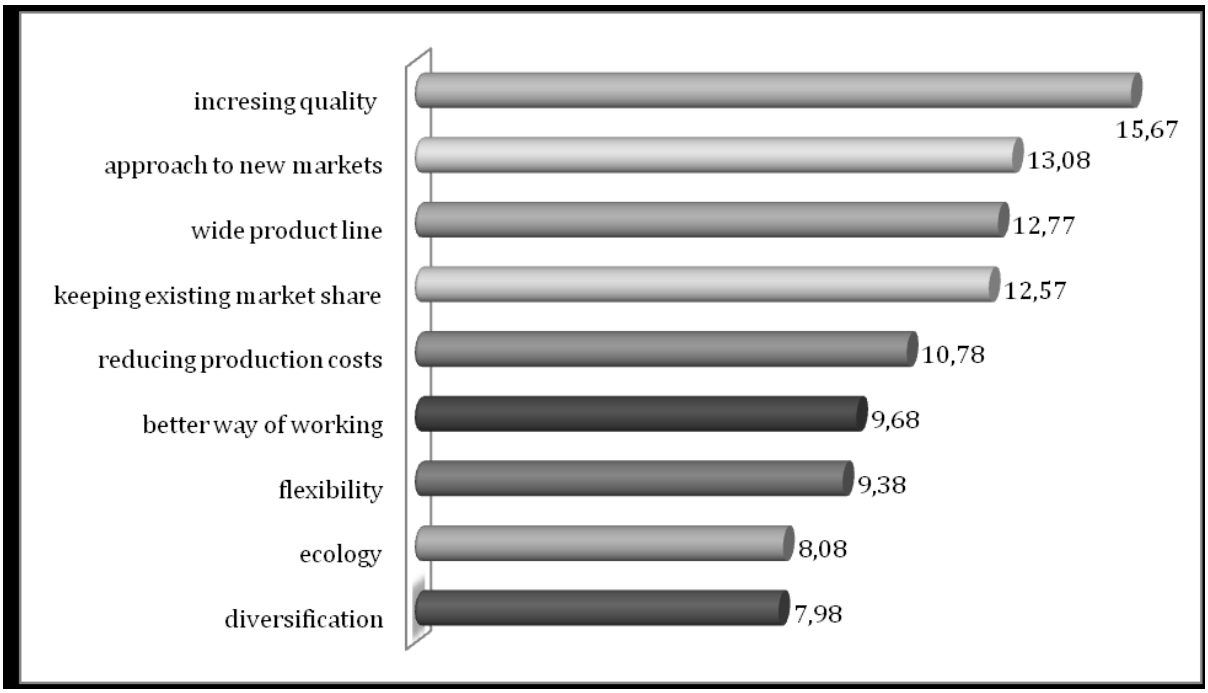

Figure 2. Reasons for undertaking innovative activities
Source: APERM, 2004, p. 49

To reveal the types of benefits that innovation brings to companies, we will use the empirical data from our research, which was carried out during January–April 2010 in 119 small and medium sized enterprises from different cities of the Republic of Macedonia. The data shows that improving the quality of products and services offered to customers is the first ranked benefit from innovation. This benefit was mentioned from 27% of respondents. Further benefits are ranked as follows: creating better conditions at work (by 18% of respondents), maintaining the existing position in the market (17%), entering new markets (13%), creating flexibility at work (9%), improving the ecological environment (5%) and diversification of product range (2%).

Conclusion

Innovations represent an activity of creating a new product or service, new technologic process, new organization, or enhancement of existing product or service, existing technologic process and existing organization. According to the given definition, if we analyze its separate elements, we can say that we classify: innovations in production – development or enhancement of a specific product; innovations in services – offering new or enhancing of existing services; innovations in process – finding of new ways of organizing and combining inputs in the process of production of specific products or services; and innovations in management – creating new ways of organizing business resources.

The importance and definition of innovations can be explained from several aspects. From the aspect of customers, innovation means products with better quality and better services, which together mean a better way of life. From the aspect of businesses, innovation means sustainable growth and development, realization of great profit. For the employees, innovation means new and more interesting job, which requires more mental faculty, which results in higher salaries. From the aspect of whole economy, innovation represents a bigger productivity and development for all.

Growing role of innovation in economic growth and development, how governments can help ensure that innovation is translated into new products and techniques that can help society meet the global challenges of the 21st century. EU integration is among the top priorities of Macedonia. Therefore, significant efforts are invested in preparing the country for EU membership – national legislation is being adapted to EU legislation in all areas covered by EU law, EU standards are adopted in economic, political and social areas and comprehensive horizontal reforms of the public administration are conducted. Government officials and commentators have recognized this reality and have called for a variety of different substantive incentives for stimulating innovation. Several core conditions enable innovation and encourage economic growth: strong standards and effective enforcement of intellectual property protection, vigorous competition and contestable markets, a strong and sustainable fundamental research and development infrastructure, encouraging information and technology communication developments, a strong emphasis on education at all levels, etc.

As a country where EU integration is among the top priorities considering the IUS indicators presented in table and the group division, Republic of Macedonia belongs to the modest innovators, with performance well below the EU27. From January 1st 2008 Republic of Macedonia officially started the implementation of the European Union CI Programme for the period of 2007 – 2013, which became the second country after Croatia, which is not part of the EU but is part of this programme. Competitiveness and Innovation Programme (CIP) is particularly important for small and medium enterprise in Republic of Macedonia, which would make them become international, and have a better access to financial resources, better usage of information and communication technologies and development of the technological society.

REFERENCES

1. Analytica, 2007. *EU Approximation in Macedonia: Progress in Science and Research and Information Society*, Analytica-thinking Laboratory.

2. APERM, 2004. *Observatory of SME Development*, Ministry of Economy, Skopje, Macedonia.

3. Barro, R. J., 2001. Human Capital and Growth, *American Economic Revie*w, 91(2), 12–17.

4. Becker, W. E. and Lewis. D. R, 1993. *Higher education and Economic Growth*, Kluwer Academic Publisher.

5. Cannon, T., 1991. *Enterprise: Creation, Development and Growth,* Butterworth, Oxford, UK.

6. Dawson, R., 2002. *Living Networks Anniversary Edition, Leading your Company, Customers and Partners in the Hyperconnected Economy* Financial Times/ Prentice Hall, USA.

7. De Ridder P., 2008. *Sources of Innovation: Where do business leaders think ideas & innovation come from?* in http://www.openinnovators.net/sources-of-innovation-where-do-business-leaders-think-ideas-innovation -come-from/.

8. ECORYS, 2007. *ICT, Innovation and Economic Growth in Transition Economies*, InfoDev Publication.

9. European Comission, 2005. *European Innovation Scoreboard (2006) - Comparative Analysis of Innovation Performance*, Maastricht Economic Research Institute on Innovation and Technology.

10. Fagerberg, J., Mowery, D. C., and Nelson, R. R. (2004), *The Oxford Handbook of Innovations*, Oxford University Press, Oxford.

11. Federal Trade Comission, 2003. To Promote Innovation. *A Report by the Federal Trade Commission*. Federal Reserve Bank of Atlanta.

12. Feldman, M., 2004. *The Significance of Innovation*, Rotman School of Management University of Toronto.

13. Frunză, R., 2010. Knowledge And Innovation - Essential Factors For Overcoming The Current Economic Impasse, *CES Working Papers*, Vol. 2, No.3, p.5-16

14. Inno Metrics, 2011. *Innovation union scoreboard 2010*, European Commission.

15. Lévêque, F. and Ménière, Y. (2006), *Patents and Innovation: Friends or Foes?* CERNA.

16. Lionnet, P., 2003. Innovation-The Process, *ESA Training Workshop*, Lisbon.

17. Lopez-Carlos, A. and Mia, I., 2006. *Israel: Factors in the Emergence of an ICT Powerhouse.* The Global Information Technology Report 2005–2006. Hampshire: Palgrave Macmillan. 89–105.

18. McDaniel B. A., 2002. *Entreprneurship and Innovation: An Economic Approach*, M.E Sharpe, London, England.

19. Nunez, C. E., 1990. Literacy and Economic Growth in Spain, 1860-1977. In *Education and Economic Development since the Industrial Revolution*, ed. by G. Tortella, Generalitat Valenciana, Valencia.

20. OECD, 1993. *The Measurement of Scientific and Technological Activities: Standard Practice for Surveys of Research and Experimental Development – Frascati Manual 1993*, OECD, Paris.

21. OECD, 2004. Creativity, Innovation and Economic Growth in the 21st Century, *A BIAC Discussion Paper*.

22. Ramadani, V. and Gerguri, S., 2011.Innovation: Principles and Strategies. *Strategic Change*, Vol.20, Issue 3-4, Chichester: Jonh Wiley and Sons.

23. Sandberg, L. G., 1982. Ignorance, Poverty and Economic Backwardness in the Early Stages of Euorpean Industrialization: Variations on Alexandre Gerschenkron's Grand Theme, *Journal of European Economic History*, 11(3), 675–97.

24. Torun, H., and Çiçekci H. T., 2007. *Innovation: Is the engine for the economic growth,* Ege University, Izmir, Turkey.

25. Ukrainski, K. and Varblane, U., 2005. *Sources of Innovation in the Estonian Forest and Wood Cluster*, Tartu University Press, Estonia.

26. UK Department of Trade and Industry. 2003. *Innovation Report*. Ministry for Science and Innovation. London.

27. Zimmerer, T. W. and Scarborough N. M., 2002. *Essential of Entrepreneurship and Small Business Management*, 3rd edition, PrenticeHall, New Jersey, USA.