

Innovation Activities in Entrepreneurial Firms: The Case of Bulgaria

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1 Introduction

Innovation activity of Bulgarian business is subject to a number of challenges – an aging population, climate change and competition from new economic centres in the world. As a member of the European Union, Bulgaria has formulated its innovative targets in line with the European Strategy “2020,” related with employment, scientific-research activity, education, energy, climate change and poverty reduction until 2020. This requires updating of the National Innovation Strategy and Innovation Act. Compared with other European countries, Bulgaria has a low GDP per capita, and research and development costs are twice lower. The financial crisis has resulted in the slow renewal of enterprises, due to limited funding, delayed reforms in science and education, lack of systematic and institutional interaction between them and business, and inefficient administration and use of European funds for modernization.

In this paper data was taken from national reports on SMEs and national innovation policy. The problems in the development of innovative activities and measures to be taken are described. The authors analyse the relationship between the intangible assets value and the innovation potential of micro, small and medium enterprises in Bulgaria. The types of innovations implemented in the last 4 years are viewed. Comparisons and conclusions by economic activity are made.

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Table 1 Gross domestic product in Bulgaria

GDP/year	2006	2007	2008	2009	2010	2011
<i>Million (euro)</i>	26,476	30,772	35,430	35,493	36,052	38,483
<i>Growth (%)</i>	6.5	6.4	6.2	-5.5	0.4	1.7

Source: National Statistical Institute – www.nsi.bg

2 National Innovation Policy

Innovation policy is a key area for improving the competitiveness of the Bulgarian economy and acceleration the growth potential in the post-global crisis (Innovation Policy and Sectoral Competitiveness 2011). Bulgaria is in demographic crisis, with low levels of Gross Domestic Product (GDP) per capita (Table 1).

The intensity of scientific-research and development activity is low compared to other European countries. The reasons are rooted in both the old Innovation Strategy (since 2004), pending renewed Innovation Act, which are affected by the insufficient capacity of administrative bodies to absorb project funds from the Structural Funds of the European Union. By adopting the project of Innovation Act prepared in 2011 it will provide for institutionalization of the Bulgarian Fund for Innovation (successor to the National Innovation Fund). It can ensure a complementarity between the financing sources of innovation, aimed at both SMEs and large enterprises doing well. It will comprise all national, bilateral and multilateral programs to promote innovation.

Representatives of various sectors of Bulgarian society engaged in one form or another with issues of innovation policy, met in September 2012 in the Bulgarian Industrial Chamber to identify concrete measures and steps to create a genuine Innovation strategy of Bulgaria. Developing a new Innovation Strategy provides an assessment of the effectiveness of already applied measures in the field of innovation policy and the supply of sophisticated mechanisms for coordination of research and innovation policy.

To measure progress in achieving the objectives of the new strategy “Europe 2020” – for smart, sustainable and inclusive growth, the European Commission prepared a proposal for an “Innovation Union.” The index proposed from “Innovation Union” includes 25 indicators to assess innovation. However it does not provide an opportunity to reflect hidden innovation, typical of low-tech sectors. In them lack of formalized research activity is combined with high innovative activity based on organizational and marketing innovations, and the introduction of technological innovations from outside. Indicators oriented to measure only the intensity of research (costs, patents and personnel engaged in R&D), remain out of sight of European politicians and innovative activities and companies. In addition, they distort national profiles of innovation, which warrants for inaccurate conclusions. Data for the research and development (R & D), submitted by the National Statistical Institutes lag highly from time between occurrence and publication (1–3 years) and became the basis of erroneous political decisions in dynamic environment. For Bulgaria, as a state “catching up,” this delay is even more critical

because it does not allow for quick disclosure of problems with EU alignment and the opportunity to take appropriate actions.

The Gross Innovation Product of an economy or its innovativeness is assessed by:

- The new products and services introduced,
- The new technologies created,
- The scientific results achieved.

Like other EU countries, Bulgaria has shown a high growth rate of Gross Innovation Product in the period of 2006–2010 (Bulgarian Innovation Policy 2011, p. 22).

The *innovation product* comprises the result from new and significantly improved processes, products and services based on new and/or adapted knowledge and know-how. It is determined by the innovation activity of enterprises in the country and is the most important indicator for assessing functioning of the national innovation system (ARC Fund 2009). Currently, according to Innovation Union Scoreboard (2012), Bulgaria is located in the “timid” innovators (other groups are innovation leaders, middle innovators, innovation followers).

The *technological product* is a result of the creative efforts of the participants in the innovation process. Its unique characteristics and economic significance make it attractive as an object of transfer. Patent activity is an important indicator of innovativeness. Its growth begins with foreign companies on the Bulgarian market, and then in the Bulgarian companies. The number of patents issued (Bulgarian Innovation Policy 2011, p. 24) increased by 40 % annually in 2010–2011. About 70 % of patent holders are individuals. Among the countries with the most number of patents and foreign investments in Bulgaria are Germany, USA, UK, China, Italy, Belgium, Netherlands, Austria and others.

An important prerequisite for increasing the innovation activity of the country are the *scientific products* created by scientific organizations and scientists. Bulgaria fits successfully in international research networks and is well positioned with respect to the availability of research personnel. The share of university graduates 20–29 years of age in the field of mathematics and applied sciences in Bulgaria are close to the EU average.

The number of scientific publications increased until 2007 and then declined to 23 % in 2010. In SCOPUS, the contents of 54 Bulgarian publishers in 25 editions for different periods are presented. The highest participation has natural sciences, above all chemistry, physics and biology, including border and interdisciplinary fields and related pharmaceuticals, medicine and agriculture.

The National Roadmap for Research Infrastructure (2010) defines the priority areas for the development of research infrastructure that includes major scientific centers serving specific economic and social needs of the country, the region of Southeast Europe and the pan-European infrastructures in which Bulgaria will participate. These are:

- Energy,
- Marine research,

- Information and communication technologies,
- New materials for various applications,
- Social studies.

Bulgaria signed a memorandum in three pan-European research infrastructure projects – EURO-ARGO, BBMRI, and LARIN. In addition to these projects, EA ESMIS and MTITS participate in building a pan-European high performance computing infrastructure (PRACE) and the development of a national high-performance centre that provides access to computing resources for scientists and researchers.

The impact of the crisis on innovation activity of businesses in Bulgaria is affected by the limitation of private funding for research and development and technological innovation. As most countries in the EU-27, in Bulgaria the cost of R & D in enterprises increased since 2005 at the expense of public expenditure. In 2009 R & D intensity (measured as percent of R & D expenditure of GDP) in Bulgaria increased – from 0.47 % in 2008, 0.53 % in 2009 to 0.55 % of GDP in 2010, but still lags far behind the average of this indicator for the EU-27 to 2 % (NSI 2010). The global economy continues to recover from the recession, but in the last quarter of 2011, the Eurozone GDP began to fall. And the pace of GDP growth in Bulgaria in 2011 accelerated to 1.7 %. Unlike previous years, in 2010 in Bulgaria it was observed that the R & D expenditure increased by 3.6 times in businesses (BGN 212107 thousand) and in higher education (BGN 49546 thousand) but in the public sector (Bulgarian Academy of Sciences and departmental research units) only twice as much (BGN 157132 thousand).

The *National Reform Programme* (2010–2013) has formulated the innovation target for investment in research and development to be in the amount of 1.5 % of GDP in 2020 (but in other European countries, the target is 3 %). Investment in science and innovation in Bulgaria is below the potential of the national economy.

According to the Law for Promotion of Research funds, financial incentives for research are provided by a subsidy from the state budget and from other sources, such as specialized funds, procurement, national scientific programs and projects of various departments in accordance with the objectives and priorities set in the National Strategy for Research.

The fund “Research” is the only working government instrument in recent years. There are no precise and clear principles for long-term sustainability in the financing of innovation and scientific technological activities. There is a lack of capacity, initiative, and interagency coordination of innovation activity. The State administration body is inefficient in the distribution and control of the utilization of funds under the Operational Programme “Competitiveness,” which supports innovation through projects in several axes. Bulgaria has not proposed measures and does not benefit from the Temporary Community framework for State Aid measures to support access to finance in the economic crisis.

Difficulties arise also in the development of sectorial policies. They should be based on a thorough analysis of the capabilities and needs of the participants and their specific competencies in carrying out production activities. Setting as priority,

only innovation of high-tech activities and services, and ignoring the traditional low-tech industries leads to leakage of factors important for the competitiveness and growth of the national and regional economies, and the spread of new technologies and know-how in the country. It is necessary to also include the intensity of the interaction between economic activities within the innovation system.

Strengthening the innovation potential and economic restructuring towards intensive knowledge sectors, high technology sectors and high value-added sectors, depends also on the development of *human capital*. Although the population in Bulgaria has above average levels of education, more than 40 % of the population has low literacy and numeracy. This contrast is evidence of low quality and insufficient consideration of the labor market needs. Curricula and teaching methods in schools and universities are not in congruence with the rising demands of the labor market for new knowledge and skills, including core competencies, ability to use information technology and entrepreneurial skills.

A major challenge facing Bulgaria remains the low quality of education when measured under the National Reform Programme (2012), which plans to improve the functioning of the factor for sustainable growth calling for “Improving the quality and effectiveness of education and training systems.” The planned upgrade of the system, in addition to increasing the knowledge and skills of the workforce allows for achieving a better match between the educational level and qualification of the workforce and the requirements of the labor market. As a result of the measures taken by the Government to reduce the share of students leaving school early, it has reported the reduction in the number of “school leavers.” Thus, the proportion of people aged between 18 and 24 years with education below secondary, who are not included in any form of education, decreased from 14.7 % in 2009 to 13.9 % in 2010, which is lower than the European average of 14.1 %. Over the past 10 years, there has been an increase in the share of the population aged 30–34 having completed tertiary education and a reduction in the share of early school leavers from 20 % to 13 %. This is a good prerequisite for achieving the National Goal 4 – “*The share of early school leavers of 11 percent by 2020 and the share of 30–34 year-olds with tertiary education – 36 percent by 2020.*”

To enhance the entrepreneurial and innovative culture, the 3 years project (2010–2012) “Construction and development centers for the promotion of entrepreneurship at universities in Bulgaria” is held. The project is implemented through a contract between the Ministry of Economy, Energy and Tourism and four high schools – Technical University – Plovdiv, Technical University – Gabrovo, University of Forestry – Sofia and International University College – Dobrich. The total project budget is EUR 0.4 million from the University Fund for the promotion of entrepreneurship and the utilized amount in the first 2 years of the project was EUR 0.16 million. So far, the project has trained over 1,020 students in various courses in entrepreneurship, and has assisted are 14 start-up student companies with equipment. A competition took place for “Best Business Idea for Start-up” and “Best Young Entrepreneur.” It should be noted that accredited private universities in Bulgaria were not included in these projects, although they are very flexible and entrepreneurial and self-financed a large part of their projects.

3 Innovation Activities in Bulgarian Enterprises

Acknowledged is the role of entrepreneurship in the national innovation system. It is represented by start-ups and ways of interaction and exchange of information, know-how and technology among the participants in the innovation economy. Entrepreneurship is crucial for the stability and adaptability of the national innovation system. The organization of innovation activities in firms depends on many factors.

The organization of innovation activities in firms depends on many factors. Among the most important are: the knowledge and skills of the entrepreneur, the mode of governance, human resources involved in innovation activities, the degree of development of innovation infrastructure in the company, the results of the development and implementation of new ideas, firm size and technological intensity of the sector. The administration of the state regulatory mechanisms and access to finance, influence the level of innovation activity.

Data for the number, structure and dynamics of the legal entities of the non-financial sector showing a steady upward trend in the number of micro and small enterprises continued in 2009. For the first time since 1996 their number exceeded 300,000 (Bulgarian Innovation Policy 2011, p. 29). But this does not increase the potential for technological innovations. With the exception of the newly established high-tech micro start-ups, enterprises with less than 10 employees are less innovative and reproduce existing marketing and organizational innovation. The number of newly-registered (Fig. 1) compared to re-registered companies in terms of type of ownership shows that the entrepreneurs are oriented mainly to limited-liability companies (LLCs) (44.8 % are new as compared to re-registered single-member limited liability companies and 32.3 % new as compared to re-registered limited liability companies). While the shares of the new sole traders and joint-stock companies compared to their re-registered equivalents are some 15 %. The increase is related to the changes in the regulatory framework and easier registration. The larger share of newly-registered limited-liability companies is a positive factor for innovative entrepreneurship because of the relatively higher innovation potential LLCs have in comparison with sole traders.

In terms of life cycle, the number of active enterprises grew in 2009 in all sectors of the economy, two of which – Production and Distribution of energy as well as Real Estate, registered the highest growth, 2.3 and 1.9 times respectively. The “Production and distribution of energy” is the only one in Bulgaria, which showed growth in the number of start-ups, while all other sectors experienced a decline after 2008. Most affected by the crisis are companies in the industry.

The highest share of surviving enterprises at 91 % is in the Mining and Quarrying industry, while the lowest share at approximately 65 % is in Real estate (which, according to the new classification, also includes Construction). The enterprises with the highest survival rate are those from the Financial and Insurance sector, where the relative share of surviving enterprises is about 13 %. This share is nearly four times less than the EU average (about 50). The short life-cycle of

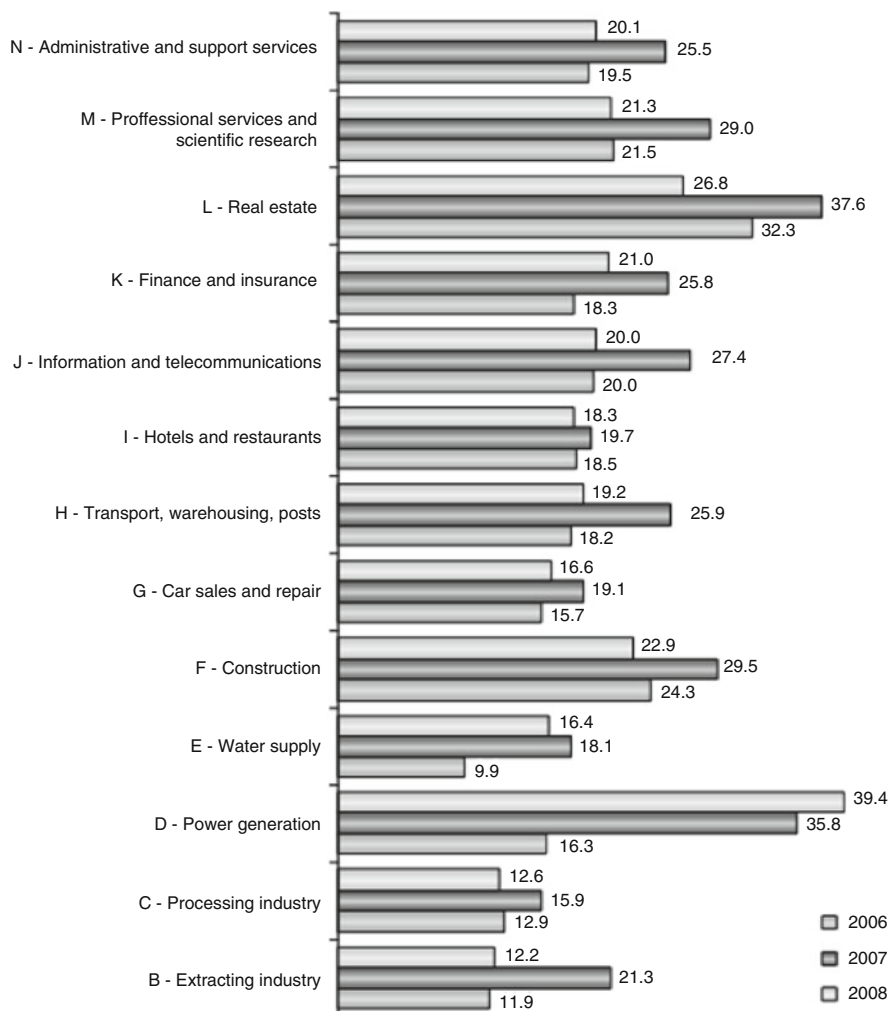


Fig. 1 The share of new established enterprises from all active enterprises (Source: National Statistical Institute 2010)

business enterprises is an obstacle for sustainable development at company and sector level, and is a barrier to innovation. Therefore the policy for promotion of entrepreneurship and innovation has to assist in increasing the average life-span of the active Bulgarian enterprises.

More than half of Bulgarian entrepreneurs are age 46 and older. Young entrepreneurs (under 29 years) account for approximately 5 % of entrepreneurs in the sector and the elderly (over 60 years), about 15 %. One third of Bulgarian Small and Medium Enterprises (SMEs) are family businesses (33 %). Almost 70 % of family firms are managed by their founder.

In 2011 the number of non-financial enterprises in the Bulgarian economy amounted to 353,588 and 352,844 of them are SMEs (Ganeva et al. 2012). The average number of employees in SMEs is 4.5. In 2010 revenues from activities in SMEs were 136,112 million, having declined by 1.4 % compared to 2009. In the services sector there is a growth of 2.2 %. The industry sector is characterized by a decline of 13.9 %. Investments in fixed assets decreased by 2.8 %.

According to the National Statistical Institute (2010) data the share of innovative enterprises in Bulgaria increased in all groups from 2006 to 2008. For small businesses an increase is observed in the share of innovative enterprises from 17 % to 20.3 %; on medium firms, from 26.4 % to 32 %; and the large firms, from 52.7 % to 59.2 %. Companies in the Industry (sectors Extractive Industry, Processing Industry, Energy Production and Distribution and the sectors of Water Supply, Channel Services, Waste Management and Recover) are more innovative than those of Services – 23.8 % and 14.5 % in 2006, and 29.2 % and 16.3 % in 2008.

According to data from the study made by the Agency for SMEs in 2011, the most common innovation activity in Bulgarian SMEs is associated with changes in business processes with an aim of optimization and cost reduction (Table 2). Two-thirds of the medium enterprises and a little more than one third of micro and small enterprises are engaged in such activities. The least popular innovation is related to the implementation of joint initiatives in the field of education between individual enterprise and academia. Only about 9 % of SMEs fall under this category in 2010. In this case, however, as in all other innovation activities, there is a strong influence on the size of the company. In medium-sized enterprises, innovation activity is much higher than that in micro-and small businesses.

To account for innovation, Bulgarian SMEs are used as an index (Ganeva et al. 2012, p. 128) that includes: Development of innovation infrastructure in the enterprise and development of new products and implementation of them on the market. The index takes values from 0 to 100. Values approaching 100, show a very high innovation activity and values approaching 0 indicate a lack of innovation activity. In 57 % of SMEs low innovation activity was observed. In 25 %, rather low; 10 % moderate; 6 %, rather high and an insignificant share of 2 % of enterprises have high innovation activity. The innovation activity of Bulgarian companies is still very low compared to Europe. In medium-sized enterprises, innovation activity is nearly three times higher than in small firms. Data show that 73 % of enterprises have low activity in respect of intellectual property. Having a low degree of internationalization are 78 % of SMEs. Best practices are widely used by 12 % of SMEs.

In 2011 the most innovative companies were in the field of Manufacturing and Construction, and the less innovative were in Trade and Services. According to the administrative division of Bulgaria, a stable trend of innovation activity higher than the national average for three regions of Bulgaria (among 6) was observed. In 2011–2012 the factors related to competitiveness for the economic recovery of the individual SME were growing significantly.

Innovativeness of enterprises by two aspects:

Table 2 Innovation activities of Bulgarian SMEs

Innovation activity	Micro (%)	Small (%)	Medium (%)
Implementation of major changes in business processes to optimize and reduce costs	31	35	67
Enterprise has sufficient financial resources to fund all its innovation	14	10	22
Staff whose job description includes research-development activities	10	15	36
Employees are trained in the field of actual innovation in the sector over the last 5 years	23	39	42
Launched an improved version of an existing product in the last year	21	33	61
Launched new product at market in the last year	12	20	44
Availability of library with professional literature (books, manuals, magazines, etc.)	30	35	47
Developing a new product that is expected to enter the market in the near future	10	5	31
Practice using the developments of researchers and institutions to create new or improve existing products, services and processes	9	7	22
Availability of own department for research and development	9	5	22
Joint initiatives with education institutions (apprenticeship programs, training, career counselling, scholarship programs, advice on drawing up educational plans, etc.)	7	3	28

Source: Survey SMEs 2012, NOEMA, Bulgaria

- Type of innovations used by the enterprises (related to a product, a process, an organization and/or the market) and
- Degree of novelty of the innovation (whether it is new only for that enterprise, for the country/the market, or at an international level) shows the following.

Process innovations (19 %) are the results of pre-crisis planning in and around 2007 – the first year of Bulgaria’s full-fledged membership in the European Union (Bulgarian Innovation Policy 2008). Along with this, EU requirements for the quality of end products and the opportunities for financing led a number of enterprises (mainly in the sectors of Agricultural produce processing, Food and drink industry, Energy, including energy efficiency and green energy) to invest in new technologies and process innovation. In 2010 process innovations have dropped sharply as a reaction to the crisis of 2009, and also due to the large portion of the enterprises which had a need to already implemented it. Three-fourth of the process innovations is *the transfer of technologies from abroad* which have already found application in the same industry. Interesting is that for 2009, 4.8 % of the enterprises thought that the process innovation introduced in them were new to the world. In these cases it was most frequently a matter of Bulgarian enterprises which had overestimated the potential of the introduced innovations or a lack of familiarity with the foreign experience to a sufficient degree, or it was a matter of foreign enterprises (multinational companies) having introduced their own projects in divisions located in Bulgaria, frequently with the help of a Bulgarian subcontractor.

Product innovations (launching new products or services) were introduced by 26 % of the enterprises in the country in 2009. The structure by degree of innovation is similar to that of process innovations. About three-fourth of the enterprises offered products new to Bulgaria or to the company; the share of enterprises which developed products or services new to the world market was 4.8 % (Bulgarian Innovation Policy 2011, p. 17). Probably in this case, too, as with process innovations, there was a measure of overestimation by the enterprises. At the same time, the novelty of the product, even with established multinational companies, may frequently be doubtful and be related to a new design of packaging or product characteristics difficult to discern by consumers. The claim of novelty is frequently part of a company advertisement strategy. In a number of cases, the “innovation” explicitly featured in the advertisements of the respective products is an excuse for the price premium the consumer is asked to pay, or a distinguishing tool. A positive development is observed with Bulgarian producers who branded new product series specifically as “innovation.”

About 10 % of all enterprises (half of the cases with process innovation and nearly 40 % of those with product innovation) invested simultaneously in new processes and products in 2009, with two-third of these also registering the effect of introduced marketing and organizational innovations.

Thirty-five percent of enterprises are considered to be innovative (with product or process innovation). This share corresponds to the 29–35 % considered to be *systematically innovating* firms (Bulgarian Innovation Policy 2011, p. 24). For 1 year, the share of innovative enterprises increased to 71 %. This could be explained by the so-called *optimizing enterprises* (26 %). Their innovation activity is limited mainly to organizational and marketing innovation. Such an approach could be considered as a reaction to the crisis:

- Considerable changes in the organization of work, mainly with the objective of cost cutting (minimizing losses) and/or restructuring of activity (37 %);
- New or considerably changed relations with partners along the value chain (32 %);
- Changes in product design or packaging (28 %);
- Application of new or considerably changed methods of sale and distribution of the goods and/or services (23 %).

The group of *catching up* enterprises relies on product diversification and partly on process innovations already made in previous periods. This group constitutes 12 % of all enterprises, demonstrating a higher innovative potential than the “optimizers,” which is a result of the new products they have already launched on the market (local, regional or national).

The largest contribution to the growth of the innovation activity is *marketing innovations*, with the exception that the influence of *organizational* innovations in the group of enterprises with 10–49 employees is most significant. The various groups of enterprises contribute differently to the growth of the various innovations. For example, *product innovation growth* depends on micro- and small enterprises (up to 49 employees), *process innovation growth* distinctively comes from large

enterprises (over 250), and growth of *organizational* innovation is evenly distributed. Growth of marketing innovation is dictated by micro-enterprises (under 10) and the group of the large enterprises (over 250). In 2011 enterprises focused on product and marketing innovation at the level of the already introduced technological solutions.

Innovations are a long-term commitment and require a specific attitude that cannot be built in a year or several months, which is the most common span of operational planning. The influence of strategic planning is expressed by the increase of the average innovativeness of the Bulgarian companies with a 3-year planning horizon by 50 %, compared to the enterprises with a 1-year planning horizon.

The scale and diversity of innovation activities in Bulgarian SMEs depends on many factors. If one looks at the size of the company, it appears that larger companies are significantly more innovative and perform more innovation than smaller companies. Other factors such as patent activity, internationalization and implementation of best practices also have an influence.

As *patent activity* increases in an enterprise, the innovation activity also increases. In 2010, 10 % of SMEs had a registered trademark in Bulgaria; 6 % had a registered trademark abroad, and in 2011 the registered trademark (at home and/or abroad) was 13 %. Based on patents, there was no change in these registrations; at the time they remained at approximately the same levels (Ganeva et al. 2012) as in 2010 – 7 %. There is polarization in terms of registered intellectual property depending on the size of the company: 42 % of medium-sized businesses have a registered trademark as do 9 % of the microenterprises. For registered patents the following was observed: 14 % of the medium-sized businesses have such, compared to 3 % of small businesses. In 2010, areas of Trade and manufacturing were the most advanced in terms of patent activity, and in 2011 there was a trend in the advances of SMEs in Manufacturing. It should be noted that Bulgarian SMEs experience significantly more financial difficulty when registering intellectual property than large companies and do not have sufficient financial resources to register.

Another influencing factor is the *internationalization* of innovation activities of the firm. With greater openness toward foreign markets, the innovation is higher. Exporters among Bulgarian SMEs are relatively small at 11 %. On the other hand, the share of exporters among medium-sized enterprises is 58 %. The share of microenterprises involved in “export” is 10 %, while that of small-sized enterprises is 15 %. Companies with the largest share in the growth of exports are processed products, and from the commodity group “machinery and equipment.”

Innovativeness of the companies operating predominantly on the international market is *three times higher* compared to the ones operating only on the local markets (situated within 30 km from the enterprise) and twice higher compared to the regional markets (situated within 100 km from the enterprise). Only 26 % of the Bulgarian enterprises operating in innovation-intensive business sectors are engaged in specific international activities supporting innovations, e.g. cooperation with local partners in other countries, employing personnel from other countries to

work full-time or part-time, carrying out market testing of innovative products in other countries and outsourcing, or investments in foreign companies. The share of medium-sized companies who import is the same as those exported (58 %). In the case of imports, there is a stronger presence of micro and small enterprise, at 17 % and 22 % respectively, than in exports.

In 2011, 10.7 % of SMEs were involved in clusters and at 4 % there was a significant growth of indicators compared to 2010. The type of enterprise breakdown is 10 % of micro, 15 % small and 19 % of medium-sized enterprises.

Best practices are related to ICT, human capital and strategic management. The higher the degree of implementation of best practices, the higher is the innovation activity in the enterprises. In 2011, there was a slight increase over the previous year. The rate and extent of best practices in enterprise were as follows:

- 12 % – widespread;
- 22 % – moderately;
- 44 % – rather low;
- 21 % – the lowest level.

The implementation of best practices is significantly more prevalent among medium-sized enterprises. Most of these are found in the Northeast region of Bulgaria (near Varna city). No significant differences with respect to best practices existed in different fields of activities.

Human resource management in large companies differs significantly than in SMEs. It was found that by recruitment, SMEs do not use science-based criteria and ensure less employee training, because the costs are higher than the expected returns. These companies have fewer financial resources, less time for staff training and apply slightly modern motivational tools.

Regarding the implementation of best practices in Bulgarian SMEs other factors beyond the size of the enterprise effect it (Ganeva et al. 2012):

- *Characteristics of entrepreneur* – the younger and more highly educated entrepreneurs generally apply best practices at a greater degree; and regarding the gender of the entrepreneur women entrepreneurs apply more good practices;
- *The level of competitiveness* in relation to other factors in the company's development: access to finance (better access related to the implementation of more practices), innovation activity (higher innovation activity leads to a more widespread application of best practices), and activity in terms of intellectual property (contributing to the implementation of these practices).

The share of Bulgarian SMEs using ICT in business increased: 45 % of businesses have a website, 61 % have a digital signature of the management, 32 % have the ability to order online, and information management systems are a part of 11–15 % of enterprises. In 2011, 36 % of SMEs had corporate training and 13 % had external specialized training in ICT.

In respect to *orientation to the future* – 56 % of Bulgarian entrepreneurs had short-term business plans, and 24 % had medium term plans. Developed marketing

strategies exist in 30 % of companies in the SME sector. Best practices are widely used by 12 % of businesses and a fifth apply best practices at a lesser rate.

Under the indicator “*Expenses for innovative activities*” the Bulgarian enterprises follow structurally the European model, that calls for most of the enterprises investing in innovative activities below 5 % of their turnover (24.7 % of the enterprises in the representative sample), followed by the enterprises which make investments of up to 25 % (18.4 % of the enterprises) and over 25 % of the turnover (3.9 % of the companies). However, the discrepancy in respect to the relative share of the enterprises which make such investments is substantial: for the EU-27, 85.2 % of the investigated companies state that they invest in R&D, while in Bulgaria only 47 % of the companies provide resources for research and innovative activities (Bulgarian Innovation Policy 2011). More than half of the companies limit these expenses to 5 % of the turnover. Nevertheless, 52.6 % of the enterprises, which invest in R&D, state that for the 3-year study period, they increased these expenses and only 10.1 % were forced to reduce it. With 37.3 % of the enterprises there was no change of the expenses for research and innovations.

Innovation activities are characterized by high risk. In 2011, the most common source of funding among Bulgarian SMEs was means of the owner (62 %). Access to finance is very difficult for 69 % of enterprises and 86 % of SMEs do not have sufficient financial resources for investment.

To assist SMEs in Bulgaria in 2010 under the Operational Programme “Development of the Competitiveness of the Bulgarian Economy” (OPDCBE) concrete actions were taken to improve access to finance for enterprises using financial engineering instruments. The special Holding Fund “Jeremy Bulgaria” Ltd. was created, responsible for the implementation of these instruments. Financial instruments for improving access to finance for SMEs, which are organized to date, are five: Emerging business fund, Venture Fund, Growth Fund, Mezzanine Fund and Guarantee Fund.

With these tools through a combination of public support and private investment, the “Jeremy Bulgaria” EAD contribution to finance micro-small, medium and medium-sized enterprises totaled 562 million euro, 199 million of which, will be granted OPDCBE until 2015, while others, mostly private funds, will continue to be provided in the longer term. For the support of investment activity of enterprises within OPDCBE to December 31, 2011 have announced five procedures for technological modernization of SMEs, two procedures for technological modernization of large companies and one procedure for technological upgrading of enterprises and cooperatives of people with disabilities. Implementation of projects under these procedures will continue until 2015. In 2012, the amount of new loans guaranteed under the Guarantee Fund in which five banks lend to SMEs, with less stringent conditions, is up to 200 million euro.

One of the problems explored by the Bulgarian Chamber of Commerce (2012) is a limited relationship between business and academia. A survey conducted in July 2012 showed 60 % (10 % increase) confidence in the scientific institutions that provide the following conclusions: First, the state should allocate more money from the budget for the development of science and innovation. Second, the use of these

funds should be tied to the cooperation of science in the form of business' obligation to invest such funds (whether it be 5 % or 10 %, it makes sense to incorporate a legal rate); and self-participation of companies, which will provide greater persistence on their part to achieve the innovation goals followed by the rapid deployment of actual innovations. Third, universities, research institutions, and the Bulgarian Academy of Science should receive more funding, but in most cases it should be linked to their ability to work on issues that will attract businesses.

In 2012 the Bulgarian SMEs competitiveness remains low. Access to finance is very difficult for 69 % of them. The short and long-term sustainability of the SME sector depends on its successful development in terms of access to finance, innovation, intellectual property, internationalization and implementation of best practices. Therefore, national economic policies should be aimed in this direction.

4 Role of Intangible Assets for Innovation Activities of Enterprises

This article explores the status of intangible assets of micro, small and medium enterprises on their balance sheets and is looking for the impact on the innovation potential of firms. It should bear in mind that the National Statistical Institute (NSI) does not publish data on intangible assets. The authors have ordered the collection of data from balance sheets in NSI.

According to the Bulgarian Law of the Small and Medium-Sized Enterprises, micro enterprises are the enterprises which have an average number of up to 10 employees and an annual turnover of up to BGN 3,900,000 and/or assets value not exceeding a BGN of 3,900,000; small enterprises are the enterprises which have an average annual number of up to 250 employees and an annual turnover not exceeding a BGN of 97,500,000 and/or assets value not exceeding a BGN of 84,000,000 (Bulgarian Small and Medium Enterprises Promotion Agency 2011).

The present study encompasses micro, small and medium-sized enterprises, and was submitted to the National Statistical Institute (2010) with their annual balance sheets for the period 2006–2009. The study was carried out for the 12 major economic sectors, shown in Table 3. After 2008 there was another classification of economic activities.

The statistical data has been processed graphically using the Excel software for the purpose of visualization and easier comparison. The result includes Figures of 2, 3, 4, and 5, which have been obtained for the years 2006, 2007, 2008 and 2009 respectively.

The analysis shows that the highest values of Intangible assets for the 2006–2009 period were in the following sectors: “Processing Industry,” “Commerce, Car Repairs, Personal Effects and Household Commodities,” and “Real Estate Operations and Business Services.” Since 2008 the sector “Real Estate Operations” includes Construction. Sector 3 predominately includes medium-sized enterprises

Table 3 Economical sectors in research

No	2003	Economical sectors	2008
1.	A	Agriculture, hunting reserves and forestry; fish industry	A
2.	C	Extractive industry – mining and quarrying industry	B
3.	D	Processing industry	C
4.	E	Production and distribution of electric power, gas and <i>water</i>	D
		Supply of water, channel services and waste management	E
5.	F	Construction	F
6.	G	Commerce, car repairs, motorcycles	G
		Personal effects and household commodities	
7.	H	Hotels and restaurants	I
8.	I	Transportation, warehousing and communications	H
9.	K	Real Estate operations and business services	L
10.	L	Education/professional activities and scientific research	M
11.	M	Health and social affairs	N
12.	N	Other activities, serving the society and the individual	

Source: National Statistical Institute 2010

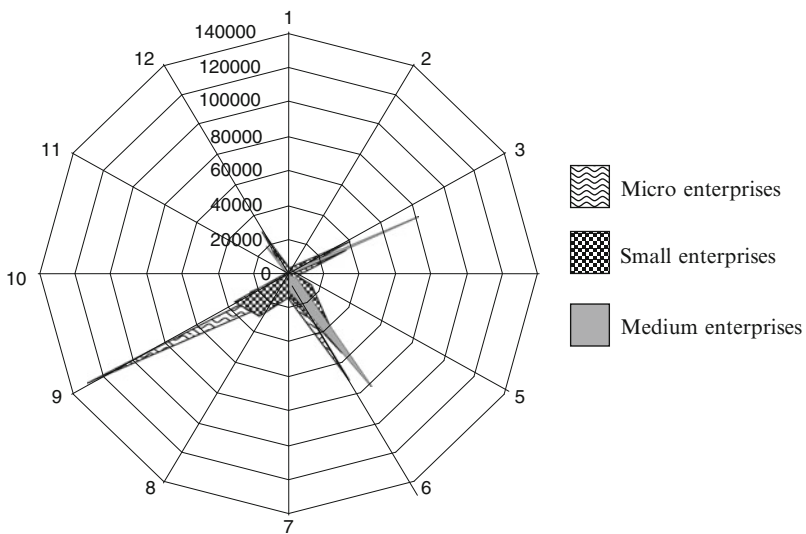


Fig. 2 Intangible assets value of micro, small and medium-sized enterprises for 2006 (Source: Own research)

and sector 9, micro enterprises. Since 2007 there has been an observed increase of intangible assets in sector 8. Obviously the companies’ interest towards acquiring intangible assets has been expanding and from *three* sectors in 2006 this interest increased to *five* sectors in 2009. This tendency coincides with the state of these assets in the economically developed countries.

There is also another tendency of the general increase of the intangible assets value in the investigated sectors: for 2006 the most developed sector 9 for micro

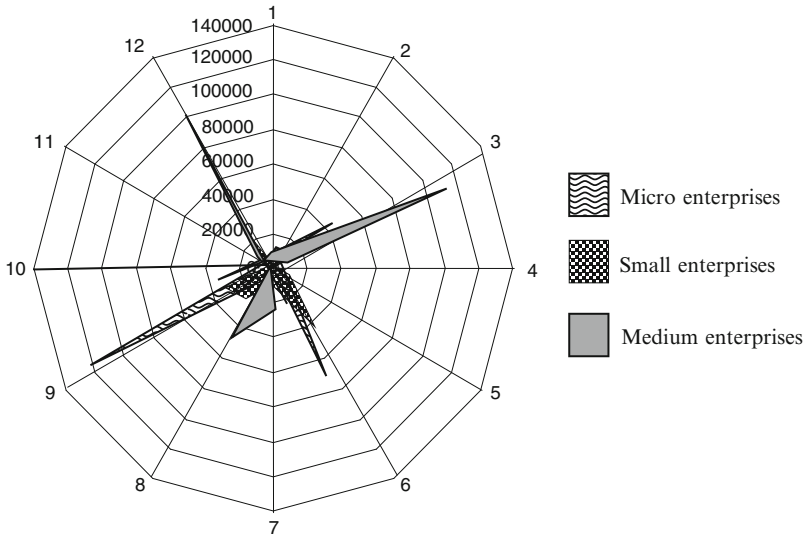


Fig. 3 Intangible assets value of micro, small and medium-sized enterprises for 2007 (Source: Own research)

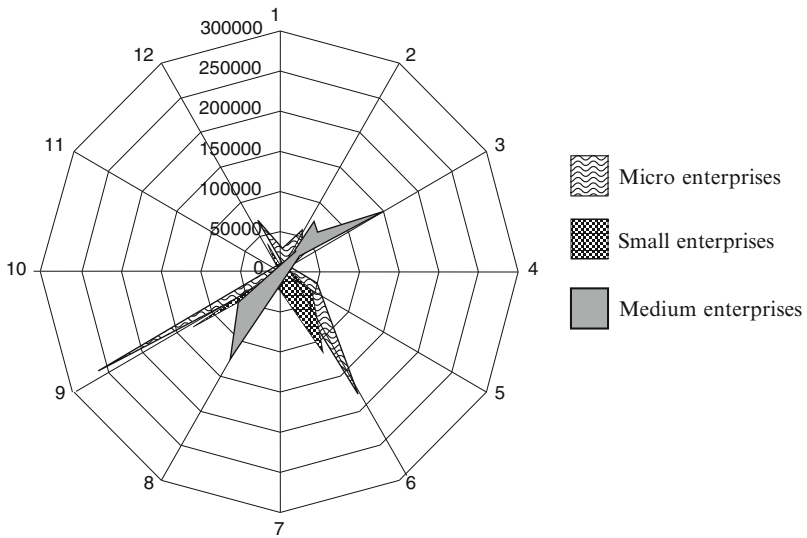


Fig. 4 Intangible assets value of micro, small and medium-sized enterprises for 2008 (Source: Own research)

enterprises had a BGN of 129,048 thousand and the same sector reported a BGN of 257,689 thousand in 2009, which is a growth of approximately 100 %.

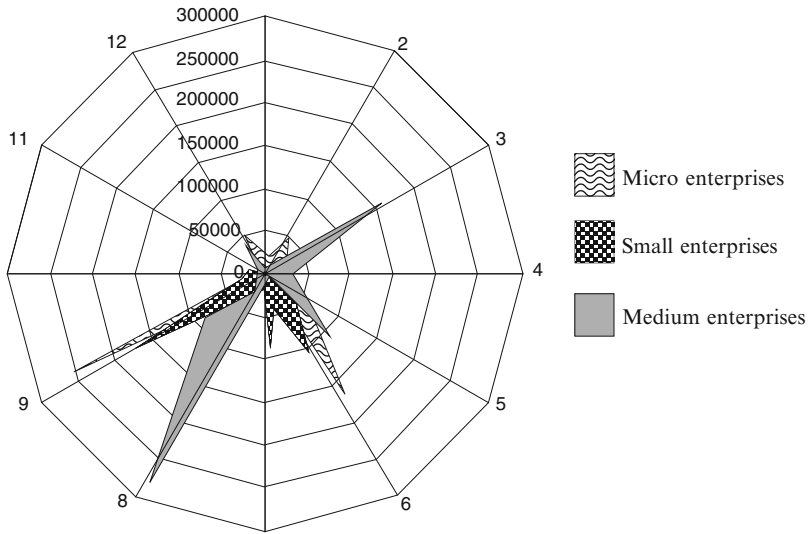


Fig. 5 Intangible assets value of micro, small and medium-sized enterprises for 2009 (Source: Own research)

A similar growth has been reported for the small and medium-sized enterprises, which is 407 % and 265 % respectively.

The change of the intangible assets value in sector 3 is substantial, too. For the micro enterprises the BGN was 40,032 thousand in 2006, and in 2009 the BGN was 27,178 thousand, which is a negative growth (drop) of 47 %. This change for the small enterprises for the same period represented a positive growth of 7 % and for the medium-sized enterprises it also represented a positive growth of 15.8 %.

The increase of the intangible assets value for sector 6 “Commerce, Car Repairs, Personal Effects and Household Commodities” was steady too. For the micro enterprises the BGN was 71,882 thousand in 2006, and the BGN was 181,996 thousand in 2009, which represents a growth of 153 %. This growth for the small enterprises for the same period was 202 %, and for the medium-sized enterprises it was 77 %. It is noteworthy that the sector of “Hospitality” represented an important sector for the Bulgarian economy in the form of tourism, of which investments in intangible assets began in 2009. Apparently the managers in these sectors underestimated the role of intangible resources to improve service quality and staff qualifications.

As a result of analysis, the authors argue that there is a relationship between the intangible assets value in SMEs and innovation activities of enterprises.

5 Conclusion

On the grounds of the above analyses the reasons for unrealized innovation potential of national economy were revealed. The following conclusions and recommendation can be drawn:

- Bulgarian SMEs are not sufficiently competitive in terms of access to finance, innovation, intellectual property, internationalization and implementation of best practices. Actions must be taken to provide a stimulating environment for research and innovation by reducing the administrative burden, increasing the access to finances for SMEs through the internationalization of research and innovation in the European and international projects.
- There is a need for a new national innovation policy and development of programs for scientific and technological development, and information and communication technologies, so that Bulgaria can maintain a long term standing at a level aligned with the average European level.
- Bulgaria needs an integrated national strategy for: scientific, technological and innovation development; defining priorities (economic sectors, technological fields) which will become the driving factor for the development of the economy as a whole; for applying working mechanisms in order to achieve the strategic goals of Bulgaria in accordance with the EU strategy “Europe 2020.”
- The financing of innovations must be combined with the implementation of several basic principles: transparency in the management of funds, superiority of designing over the institutional approach, accurate monitoring mechanisms and control over the results.
- It is necessary to develop the competences of all participant groups for the creation and implementation of new knowledge in the form of research and educational groups, business organizations, technological brokers and intermediaries.
- The number of people engaged in research and development activities is insufficient and the structure of the employment in the respective sectors is ineffective; in Bulgaria most of the personnel engaged in scientific and research activities is in the state sector.
- There is no system and no instruments for cooperation between the state and the private sector in the field of research and development activity.

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