

DYNAMICS OF THE INNOVATIVE ACTIVITIES AND THE LONG-TERM INTANGIBLE ASSETS OF MICRO, SMALL AND MEDIUM-SIZED ENTERPRISES IN BULGARIA

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Abstract:

The present report contains a retrospective analysis of the innovative activities of micro, small and medium-sized enterprises in Bulgaria. It discusses the national innovation policy in the conditions of an economic crisis. The problematic spheres are commented. The innovation index of Bulgarian companies is accepted as the main criterion and indicator as a composite measure of innovation activity, which distinguishes between the levels of novelty of an innovation (new to the company, new to the national market and new internationally) and the types of innovations combined by a company (product, process, marketing and/or organizational). Four years analysis is made for the innovation intensity in Bulgarian firms. As a result total number of enterprises which introduce different innovations increased between 3 and 9 percent.

In this paper the relationship between innovation intensity and the volume of firm's intangible assets is found. A four-year retrospective analysis is made of the long-term intangible assets (LTIA) of micro, small and medium-sized enterprises on the basis of their balance sheets. The statistic data have been processed graphically. The development trends are outlined by economical sectors. The authors conclude that Bulgaria needs an integrated national strategy for scientific, technological and innovation development, for 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 as part of the EU.

Keywords: innovative activities, types of innovations, structural analysis, long-term intangible assets.

1. INTRODUCTION

The European economy has been facing a number of challenges – climatic changes, aging population, lagging behind the new world economic centres. The decisions to cope with these challenges are basically taken at national level, within the innovation policy. For Bulgaria this means updating the existing innovation strategy and binding together the different fields of the development of science and economy.

The innovative activities of Bulgarian business is influenced by the economic crisis directly - by limiting the public and the private financing of scientific research and development, and indirectly - as a result of worsening of the conditions for carrying out innovative activities (restraining from risky investments, dismissing human resources, stagnation on the consumer markets). The long-postponed reforms in the sphere of science and education, the lack of adequately strong systematic and institutional cooperation between them and the business, as well as the inadequate management and utilization of the European modernization funds further aggravate the problems, resulting from the crisis.

The present report analyses the innovative potential of micro, small and medium-sized enterprises in Bulgaria, represented by a comparative analysis of their long-term intangible assets (LTIA).

2. NATIONAL INNOVATION POLICY AND INNOVATIVE ACTIVITIES OF THE ENTERPRISES IN BULGARIA

The influence of the crisis on the innovative activities of the business in Bulgaria is reflected in the limiting of the private financing of Scientific Research and Development Activities (SRDA) and the technological renovations. The reasons for this are lack of free financial resources (decrease of sales and increase of the cost of credits) and the existing administrative incompetence and political corruption in relation to public procurement and the management of the Structural Funds resources.

The maintenance of high levels of innovative activities by companies, especially in the conditions of an economic crisis, depends on the regulatory mechanisms applied by the state and on the access to financing and to highly qualified personnel. The measures taken in Bulgaria do not correspond to the understanding of innovations as the main factor for overcoming the crisis and maintaining a steady economic growth.

Bulgaria has remained the only EU member state which does not have a national goal about the level of financing scientific research and development activities. There is a severe cut down on the fund budgets which finance innovative projects. The National Innovation Fund of the Ministry of Economy, Energy and Tourism registered a zero year and the Fund's status remains unclear. In 2009 the budgets for scientific research in universities were finalized with 40% less registered expenses than the originally approved ones. The resources for scientific research and art activities in universities were also cut down within the reduced general budgets for 2010.

The intensity of SRDA (measured as percentage of the expenses for SRDA of the country's GDP) is one of the key factors for measuring the progress of the European Union in achieving

the goals of the new Europe 2020 Strategy - a strategy of smart, sustainable and inclusive growth. Like in most EU-27 countries the money for SRDA in the enterprises in Bulgaria has grown since 2005 at the expense of public expenditures. Nevertheless, in terms of absolute figures the expenses for SRDA remain considerably lower both in the public and in the private sector. In 2009 the intensity of SRDA in Bulgaria grew in relation to the previous year - from 0.47 % in 2008 to 0.53 % in 2009, but it is still considerably lower than the average value of this index in EU-27 (1.90 % in 2008) (R&D activity in 2009, p.1–3).

In 2009 the largest funds invested in scientific research and development activities were in the State Management Sector - BGN 199.5 mil., followed by the Enterprises Sector - BGN 108.2 mil., the Higher Education Sector - BGN 50.7 mil. and the Non-Commercial Organizations Sector - BGN 2.7 mil. (Innovation.bg, 2010). The lack of adequate instruments for attracting or supplementing the private financing of SRDA through state funds is a major problem. In practice the two systems remain parallel, which results in wasting financial and human resources. The state continues to support activities without a clear commitment to get a return, and the scientific research projects which are financed by the private sector and are carried out by public research institutes do not enhance the organizations' capacity but are of private benefit for and profit of the respective participants.

In 2010 the state expenses on science amounted to BGN 221 mil. or to 1 % of the whole budget expenditure. As in previous years, they were almost entirely spent (about 97 %) on current expenses (mainly salaries) and only 3 % were allotted to capital expenses, including the development of the research infrastructure.

The report contains information from the annual studies of innovative activities which include the *innovation index* of the Bulgarian enterprises. This index assesses the innovation of the enterprises by two groups of factors: degree of novelty of the innovation (whether it is new only for that enterprise, for the country / the market, or at an international level) and the type of innovations used by the enterprises (related to a product, a process, an organization and/or the market).

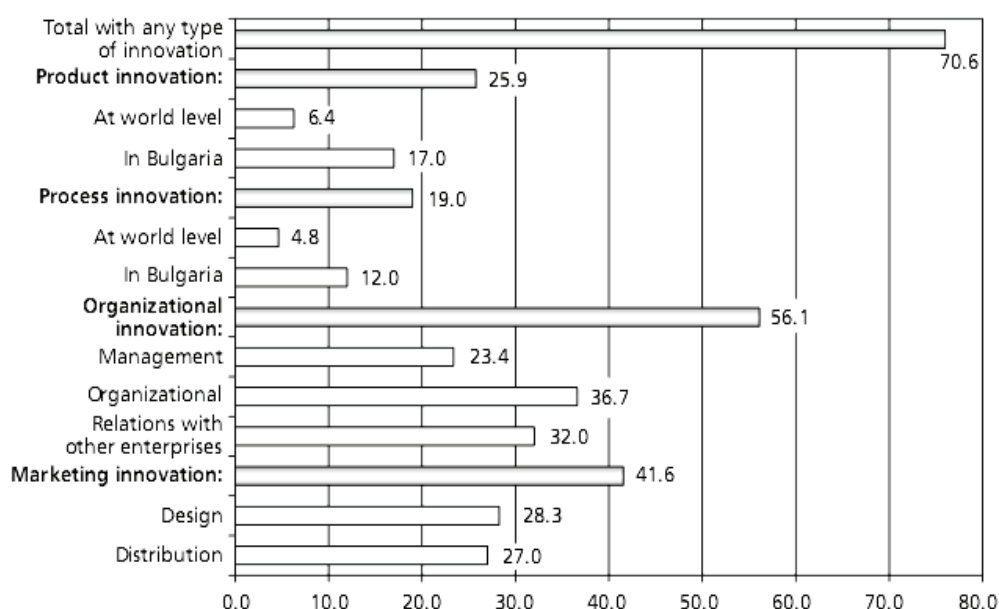
According to the innovation index of the Bulgarian enterprises for a period of three years (2006–2009) *the total number of enterprises in Bulgaria which introduce innovations increased between 3 and 9 percent*. The average innovation index of the companies operating predominantly on the international 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.

Under the indicator “*Expenses for innovative activities*” the Bulgarian enterprises follow structurally the European model – most of the enterprises invest 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 of 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 SRDA, while in Bulgaria only 47 % of the

companies provide resources for research and innovative activities. More than half of the companies limit these expenses to 5 % of the turnover. Nevertheless, 52.6 % of the enterprises, which invest in SRDA, state that for the three-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.

Process innovations (19%) (pic.1) are the results of pre-crisis planning in and around 2007 – the first year of Bulgaria’s full-fledged membership in the European Union and a year of optimism supported by the sustained growth of GDP. 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) invest in new technologies and process innovation. In 2010 process innovations have dropped sharply as a reaction to the crisis of 2009, as well as due to the large portion of the enterprises which had such a need have already implemented it.

Picture 1: Innovation activity of enterprises in Bulgaria (%)



Source: INA-4, Applied Research and Communications Fund- <http://www.arcfund.net/fileSrc.php?id=20051>

3/4 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 was that 4.8 % of the enterprises thought that the process innovation introduced in them were new to the world. Additional research showed that in these cases it was most frequently a matter of Bulgarian enterprises which had overestimated the potential of the introduced innovations or were not familiar with the foreign experience to a sufficient degree, or else 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 3/4 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 4.7 % (Innovation.bg, 2010, 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 precisely 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 2/3 of these also registering the effect of introduced marketing and organizational innovations.

In common 35 % of enterprises are innovative (with product or process innovation). This share corresponds to the 29–35 % *systematically innovating* firms (Innovation.bg, 2009, p. 24). For one year the share of innovative enterprises increased to 71 %. This could be explained with lies in 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 those *catching up* 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" – 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 index have 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 respective sub-indexes. For example, *product index growth* depends on micro- and small enterprises (up to 49 employees), *process innovation growth* distinctively comes from large enterprises (over 250), 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).

The expectations for the 2011 are that enterprises will focus 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 which 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 one-year planning horizon.

3. COMPARATIVE ANALYSIS OF THE LONG-TERM INTANGIBLE ASSETS (LTIA) OF THE MICRO, SMALL AND MEDIUM-SIZED ENTERPRISES IN BULGARIA

The innovation potential and the intellectual capital of the micro, small and medium-sized enterprises can also be studied through the condition of the companies' LTIA in their balance sheets. 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 BGN 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 BGN 97,500,000 and/or assets value not exceeding BGN 84,000,000 (Law for SME's).

The present study encompasses the micro, small and medium-sized enterprises which have submitted to the National Statistical Institute (www.nsi.bg) their annual balance sheets for the period 2006 - 2009. The study was carried out for the 12 major economical sectors, shown in Table 1.

Table 1: Economical sectors in research

No	Economical sectors
1.	Agriculture, Hunting Reserves and Forestry; Fish Industry.
2.	Extractive Industry
3.	Processing Industry
4.	Production and Distribution of Electric Power, Gas and Water
5.	Construction
6.	Commerce, Car Repairs, Personal Effects and Household Commodities
7.	Hotels and Restaurants
8.	Transportation, warehousing and communications
9.	Real Estate Operations and Business Services
10.	Education
11.	Health and Social Affairs
12.	Other activities, serving the society and the individual

The statistic data have been processed graphically using the Excel software for the purpose of visualization and easier comparison, as a result of which pictures 2,3,4,5 have been obtained for the years 2006, 2007, 2008 and 2009 respectively. The micro enterprises are coloured in blue, the small ones – in black, and the medium-sized – in yellow.

The analysis shows that the highest SRDA values for the 2006–2009 period were in the sectors: “Processing Industry”, “Commerce, Car Repairs, Personal Effects and Household Commodities” and “Real Estate Operations and Business Services”. Since 2007 there has been an increase of SRDA in Sectors Seven and Eight, too. Obviously the companies' interest towards acquiring SRDA has been expanding and from three the 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 general increase of the SRDA value in the sectors under consideration: for 2006 the most developed Sector Nine for micro enterprises had BGN

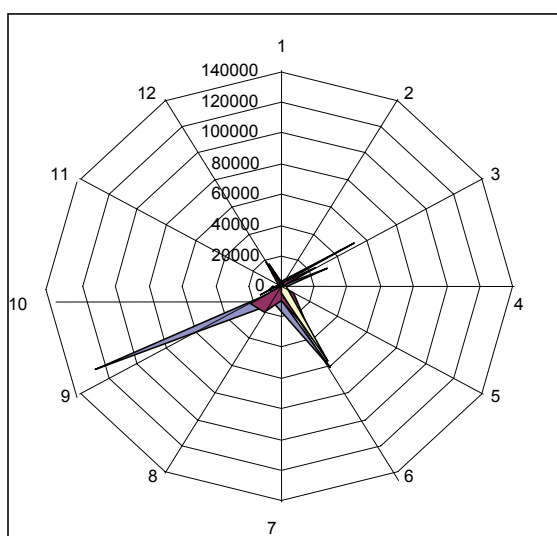
129,048 thousand and the same sector reported BGN 257,689 thousand in 2009, which is a growth of approximately 100 %.

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

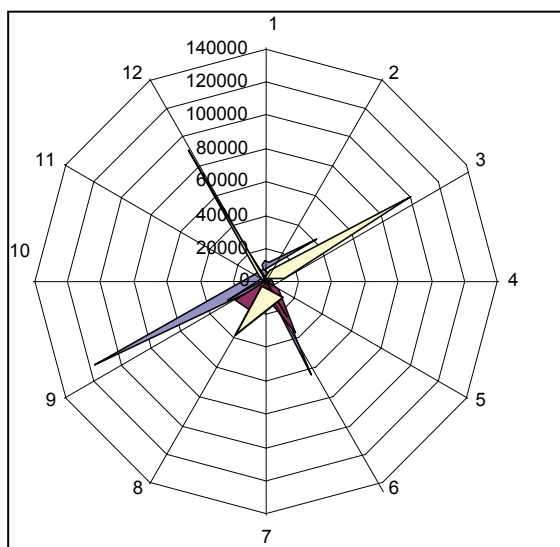
The change of the SRDA value in Sector Three is substantial, too. For the micro enterprises it was BGN 40,032 thousand in 2006, and in 2009 – BGN 27,178 thousand, which is a negative growth (drop) of 47 %. This change for the small enterprises for the same period represented a positive growth of 7 % and for the medium-sized enterprises it was also positive – a growth of 15,8 %.

The increase of the SRDA value for Sector Six “Commerce, Car Repairs, Personal Effects and Household Commodities” is steady, too. For the micro enterprises it was BGN 71,882 thousand in 2006, and in 2009 – BGN 181 996 thousand, 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 15,8 %.

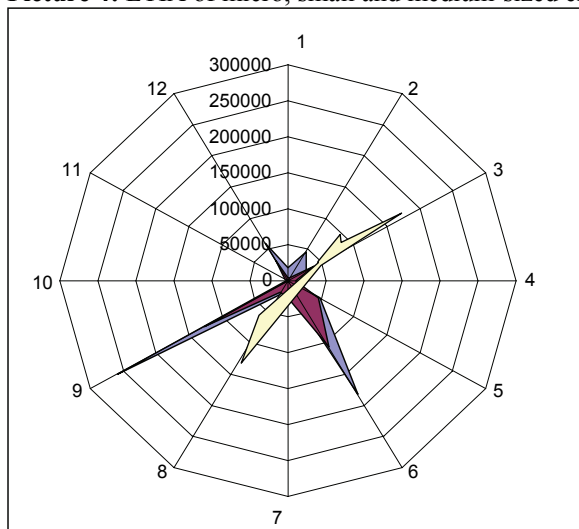
Picture 2: LTIA of micro, small and medium-sized enterprises for 2006r.



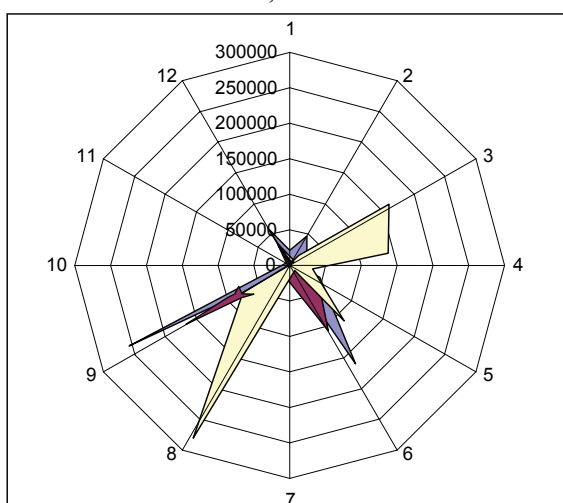
Picture 3: LTIA of micro, small and medium-sized enterprises for 2007r.



Picture 4: LTIA of micro, small and medium-sized enterprises for 2008r.



Picture 5: LTIA of micro, small and medium-sized enterprises for 2009r.



4. CONCLUSION

On the grounds of the above analysis the following conclusions can be drawn:

- There is a need for a new national policy and development of micro-economic programs for innovations, information technologies and scientific and technological development, so that Bulgaria can successfully and permanently overcome the crisis.
- Bulgaria needs an integrated national strategy for scientific, technological and innovation development, for 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 as part of the EU.
- 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 almost 60 % of the personnel engaged in scientific and research activities is in the state sector.
- It is necessary to develop the competences of all participant groups for the creation and implementation of new knowledge – research and educational groups, business organizations, technological brokers and intermediaries.
- There is no system and no instruments for cooperation between the state and the private SRDA sector.
- The financing of innovations must be combined with the implementation of several basic principles: transparency in the management of funds, superiority of the designing over the institutional approach, accurate monitoring mechanisms and control over the results.

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