

The Innovation Potential in Bulgaria: State-of-the-Art and Problems

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In the numerous strategies, projects and researches elaborated in Bulgaria there is much writing about competitiveness and innovations. As a rule the data about our lagging behind are extracted from Internet or from the reports of such international organizations like the World Bank, the World Economic Forum, etc. The public materials miss an analysis why the behavior of the majority of the Bulgarian companies is *antiinnovational*, why they invest considerable sums in hotels and in immovable properties, not in new technologies and new productions. Also there is no desire to find the true reasons for this behavior.

Some of these reasons lie on the surface and there is no need of much common sense to find them out. Other reasons stick out in examining the activities of some ministries and agencies.

The innovative potential has been a subject of national policy in the developed countries (USA, Japan, EU) and also in some developing countries (Israel, Mexico, Chile, etc.) for already several decades and it is a matter of discussion and approval by the Parliament which afterwards is consecutively realized by the governmental administrations. In Great Britain the prime minister has a Consulting Council for Science and Technologies, and in the White House (USA) there is a National Scientific-Technological Council. They deal with middle-term and long-term strategic problems of the state innovative policy. Similar councils are present also in many other countries and they allow the implementation of active innovative policies.

As a rule such policy has four substantial items:

- a) defining the national priorities and the *critical technologies* where the state efforts must be concentrated;
- b) elaboration and approval of a respective national innovative program;
- c) ensuring the necessary means to realize this program by the state and private enterprises;
- d) creation of the necessary modern financial and economic tools to realize the program.

The way these four items are projected over the real innovative policy in our country is of a definite interest:

1. Bulgaria is obliged to follow the Lisbon strategy of the EU with its major priorities the education, the science and the information-communication technologies (ICT). Using them the EU intends on accelerating the innovative processes and to catch up with USA and Japan.

Yet these priorities are not basic in the Bulgarian ten national programs related to the innovations. They are not basic also in the operative programs for the structural funds where the domination is from agriculture, ecology, social programs and the transport infrastructure, without the communications. Agriculture and ecology are not structure-defining departments and they cannot be an accelerator for the development of the innovative potential in the rest of the departments.

During the last fifteen years many political structures to please different strata of the population declare with priorities almost all departments i.e. essentially there are no priorities.

Based on the *Forsythe* methods some countries (Great Britain, USA, Russia, etc.) have defined their *critical technologies* and they aspire to technological breakthroughs exactly in them. There are no such attempts in Bulgaria and the term *critical technologies* is not accepted on a state level yet. There is no published list of the innovative companies and structures and the priorities are selected by every ministry taken alone without enough coordination with the other administrative entities. This is most evident from the programs and the normative documents of the four Bulgarian ministries that are basically responsible for the innovative and personnel potential of the country: the Ministry of Economics and Energetics (MEE), the Ministry of Education and Science (MES), the Ministry of Labor and Social Policy (MLSP) and the Ministry of Finance (MF).

Therefore and as a whole there are no approved by the Parliament national priorities nor there are *critical technologies* to realize technological breakthroughs in separate departments.

2. The previous staff of the Ministry Council of Bulgaria approved a national strategy about the innovations. How it is possible to elaborate such strategy with no clarified national priorities and *critical technologies* is clearly a Bulgarian phenomenon. There are too much general formulations, slogans, wishes, requirements, abracadabras, anything else but no clear position what is the concrete order of the day for the innovations in Bulgaria, how and with what tools the problems shall be solved. The national strategy about the innovations cannot outline the contours of any concrete national program for the innovations.

The Parliament elaborated but it did not approve a national strategy for the scientific researches. Both strategies contain an uncoordinated mutual mixture of science, innovations and technologies. The previous governing body did not consider the recommendations of the European Commission (EC) that both strategies must be replaced by a uniform strategy for scientific and technological development. Even more curious is the fact that there are at least ten strategies where the term *innovations* is used actively, probably to give proof of the demand of means for *noninnovative* goals. Generally speaking the number of strategies grows constantly but it is not the case with the innovative potential.

On the other hand in the developed countries a subject of active usage are not only innovative strategies with middle-term and long-term perspective but also

innovative programs with fixed priorities, problems, resources, fixed times. Goal-oriented national programs are elaborated for the most important scientific-technical directions and separately financed by the state budget as for example the *initiative* USA nanotechnology program since 2004.

There are no national innovative programs in Bulgaria nor there are goal-oriented national programs for the separate scientific-technical directions and technologies.

If someone wants to understand how to construct a wise and perspective innovative policy then it is sufficient to get acquainted with the real results from the creation and operation of the CORFO fund (Chile), the YOZMA program (Israel) [5], the *Valley of Deaduck* innovative network (South Korea) [6], the AVANCHI program (Mexico) [7], the NITRO and SBIR federal programs (USA) [8], the *Forsyte* program (Great Britain) [9], etc. [10].

3. The situation with the resource and staff insurance of the scientific research and development activity (SRDA) and consequently also of the innovative development of the country is even more disturbing to put it mildly. The share of expenses for SRDA for 2006 is less than 0.4% from the gross inferior product (GIP) and this means that for this decisive indicator Bulgaria lags four times behind the EU members and more than twice from the new EU members. As a whole the EU still does not reach the cherished value of 3% from the GIP and it continues to loose the competition with USA and Japan in the field of the innovations.

In Bulgaria the structure and the distribution of these expenses between the state and the private business is rather unfavourable. The expenses of the private business in the developed countries exceed 70% of the total expenses but in Bulgaria this percentage can hardly reach 16%. This means that the private business does not invest its share from the SRDA and the training of secondary and professional personnel. One can just guess whether the state administration will activate the necessary legal regulatory mechanisms to correct this *noninnovative* behavior.

By avoiding extra citations of data it is not difficult to establish that the level of the three types of education – professional, secondary and high – gradually decreases. The means for this are not sufficient.

There is no reasonable explanation why during the last decade the limit of 0.4% from the GIP cannot be exceeded for the SRDA while for the same goal lots of countries spend more than 4% of the GIP. Under the conditions of globalization such almost symbolic financing of SRDA and innovative activity practically excludes the possibility to create a competitive national economy in a long-term perspective.

4. During the last decades in the developed countries there were elaborated and implemented various financial-economic tools to realize an effective innovative policy: various grant schemes to help small and middle enterprises (SME), innovative-investment funds (IIF), guarantee funds (GF), risk funds (RF), etc. The management of these funds is realized by specially prepared teams which, together with the companies-realizers, manage the respective projects and minimize the risk and in cases with successive market realizations they insure a high returnability of the invested means.

Since the last year there is a National Innovative Fund attached to the MEE that essentially is a grant scheme for a state help of the SME.

The function of the fund can be seriously criticized but even with improved rules it cannot exert a tangible influence over the low national innovative level because its financial possibilities are more than humble: 5 millions BGN for the last year and

7 millions BGN for the present year. Just for a comparison the state subsidizes the *Tobaccos* fund with 120 millions BGN.

No other significant state-private IIF, GF and RF are created and it is hard to believe that they will start soon. The solution of the basic for these funds problem, the returnability of the invested means and their eventual profit by the companies-realizers faces serious difficulties due to the unstable Bulgarian fund market and the missing one for our high-tech companies.

Therefore the Bulgarian inventors and innovative companies must still wait (nobody knows for how long) till the respective financial-economic rules and tools for effective realization of the innovations are created.

As a whole the conclusions from the presented review of the four basic items of the innovative policy in Bulgaria are quite disturbing. Such are also the results from the licensing-innovative department for the period 2000-2005: the number of requests from Bulgarian citizen and companies has a decrease related to the subjects of the industrial property – licenses, inventions and useful models.

Therefore a quite substantial question arises: what to rely on to increase the competitiveness of this lowered innovative activity? Evidently on an import of innovations via external licenses, machines, technologies, manager skills, know-how, a process that is active at present. The Asian model is staked on that functions comparatively well due to the cheap labor but, as the last decade has demonstrated, it inevitably leads also to serious economic jars.

Active work in several directions is necessary to overcome all these defects:

1. A scientifically-based choice of the Bulgarian priorities and *critical technologies* must be made using some of the successful methods (Delfi, Forsyte, etc.). For this reason it is necessary to enroll competent specialists and experts that must decide these problems within the framework of a suitably constructed resource-insured structure.

2. It is advisable to create a National Council for Science and Technologies attached to the prime minister instead of the present National Council for Scientific Research of MES and the National Council for Innovations of MEE; it will unite the functions of the both councils and also the middle-term and long-term strategic problems of the state innovative policy.

3. It is necessary to actualize the existing innovative strategy which must grow into a National Strategy for Scientific and Technological Development. Based on it an analogous program must be elaborated with concrete priorities, goals, resources, terms. If a real possibility for a technological *breakthrough* arises in a definite area of science and technique then it is suitable to elaborate and realize a national program for a concrete scientific-technical direction.

These documents must be discussed and accepted by the Bulgarian Parliament and in this way they must become problems to the whole nation.

4. The resource insurance of such program must be realized with the possibly highest priority via the annual state budget and the means for SRDA and education must be seriously increased.

Anyway the national innovative house needs a serious reconstruction and renovation on the verge of entering the EU by Bulgaria. It is in the future to see and estimate the will, the power and the skills of the present state administration to realize all this in a deserving way.

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Состояние и проблемы инновационного потенциала в Болгарии

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(Резюме)

В работе сделана попытка исследовать болгарский инновационный потенциал при переходе к рыночной экономике.

Рассматриваются некоторые основные направления, в которых сосредоточены эти недостатки: расбросанность национальных приоритетов развития экономики, нехватка адекватных национальных инновационных программ, необеспеченность целевыми государственными и частными средствами в области инновации и неразработанность соответствующих финансово-экономических инструментальных средств для введения инноваций.

Даются некоторые рекомендации для улучшения состояния инновационного потенциала в Болгарии.