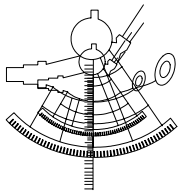
European Trend Chart on Innovation



Annual Innovation Policy Report for

Bulgaria

Covering period: September 2003 – August 2004

European Commission
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Innovation is a priority of all Member States and of the European Commission. Throughout Europe, hundreds of policy measures and support schemes aimed at innovation have been implemented or are under preparation. The diversity of these measures and schemes reflects the diversity of the framework conditions, cultural preferences and political priorities in the Member States. The 'First Action Plan for Innovation in Europe', launched by the European Commission in 1996, provided for the first time a common analytical and political framework for innovation policy in Europe.

Building upon the Action Plan, the *Trend Chart on Innovation in Europe* is a practical tool for innovation organisation and scheme managers in Europe. Run by the Innovation policy Unit of DG Enterprise, it pursues the collection, regular updating and analysis of information on innovation policies at national and European level.

The Trend Chart serves the 'open policy co-ordination approach' laid down by the Lisbon Council in March 2000. It supports organisation and scheme managers in Europe with summarised and concise information and statistics on innovation policies, performances and trends in the European Union (EU). It is also a European forum for benchmarking and the exchange of good practices in the area of innovation policy.

The Trend Chart products

The Trend Chart on Innovation has been running since January 2000. It now tracks innovation policy developments in all 25 EU Member States, plus Bulgaria, Iceland, Israel, Liechtenstein, Norway, Romania, Switzerland and Turkey. It also provides a policy monitoring service for three other non-European zones: NAFTA/Brazil, Asia and the MEDA countries. The Trend Chart website (www.cordis.lu/trendchart) provides access to the following services and publications, as they become available:

a database of innovation policy measures across 33 European countries;
a news service and related innovation policy information database;
a 'who is who' of agencies and government departments involved in innovation;
annual policy monitoring reports for all countries and zones covered;
all background material for four annual policy benchmarking workshops;
the European Innovation Scoreboard and other statistical reports;
an annual synthesis report bringing together key of the Trend Chart.

The present report was prepared by Georgi Mihaylov from the Center for Economic Development. The information contained in this report has not been validated in detail by either the Member States or the European Commission.

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Executive Summary

1. Snapshot of innovation performance

In the Regular Report of the European Commission on Bulgaria's progress towards accession to the EU in 2002, the country was recognised as being a functioning market economy. The Report for 2003 states that 'Bulgaria has achieved a high degree of macroeconomic stability and that market mechanisms are working sufficiently well to allow a more efficient allocation of resources'[1].
Achieved stabilisation of the macroeconomic framework and significant progress in structural reforms ensured a comparatively high growth of the Bulgarian economy against the background of a global slowdown in economic growth. For a fourth consecutive year GDP growth exceeds four percent. Following experts' estimates, in 2003 GDP growth is 4.2 percent against 4.8 percent in 2002 and 4.1 percent in 2001. Growth is due both to dynamic domestic demand and higher foreign trade turnover. The ratio between turnover and GDP increased from 70 percent in 1999 to about 100 percent in 2003 (according to preliminary data). Against the background of a still slowly recovering global economy in 2003, Bulgaria's foreign trade made a serious step forward. Growth in turnover (30.7 percent in exports and 35.9 percent in imports in dollar terms) is the highest in several years and the level of exports and imports hit a record high since 1989. In level terms (eliminating the impact of the low exchange rate of the dollar) growth is 9.9 percent and 14.1 percent respectively. This development is a good indicator of the improving state of the national economy and its competitiveness.

The Bulgarian economy will continue to strengthen its positions on the European market and to rely on its competitiveness based on lower production costs. Competitiveness helped increase exports to the EU in a period of halted growth in the European economy and contracted consumption on the single European market. Bulgarian exporters will benefit from equalised production conditions and higher prices of products in the new ten member states (at least for some time).

The trade deficit is largely offset by the inflow of foreign investments. According to preliminary data, the total volume of foreign direct investments (FDI) for 2003 is estimated at USD1.361 billion. It is expected that this volume will approximate USD 2 billion after subsequent revision (to include reinvested profit). This is the biggest volume of FDI since 1992. Foreign companies in the country (or companies with foreign stake) have already completed their start-up period and are developing actively, creating good basis for attracting more domestic suppliers and providing export products. The new Encouragement of Investments Bill proposed by the Government determines new priority sectors that the state is interested to develop and in which investments will be made. The bill aims to ensure the legal framework for financing infrastructure projects as part of the European infrastructure networks and conditions to provide the development of public-private partnership.

For the period 1999-2002 GDP per capita in dollar terms grew by 25.4 percent. Nevertheless, Bulgaria is lagging far behind EU income levels per capita. According to Eurostat data, average income per capita remains well below that in the EU, although it grew from 24 percent on the average EU level (by purchasing power parity) in 1999 to 26.4 percent in 2002. Differences in income across the country are comparatively low - in 2001 income per capita in five of the regions varied between 83 percent and 91 percent of average for the country and only in the Southwest region, including Sofia, did it exceed the average by 40 percent. Projected GDP growth in the next two years (5 and 5.5 percent respectively) is two times higher than that in the EU and will allow for the average income per capita to reach 32 percent. Even if the accelerated GDP growth rate (compared with EU) sustains further, by 2010 the average income per capita will hardly reach 50 percent of that in EU. Obviously much more sizeable investments for substantial economic restructuring will be needed to lay the ground for higher growth rates and higher incomes. The latest EC report on Bulgaria's progress towards accession states that convergence of income and productivity with the levels achieved elsewhere in Europe will be a serious challenge for Bulgaria.
At the same time the Bulgarian innovation system is just starting to recover from the decline since the

[1] 2003 Regular Report on Bulgaria's progress in the accession process, p. 36.

beginning of the 1990s. After the state withdrew from its active role in the innovation and research markets the system entered a period of hard times - huge 'brain-drain' processes, lack of financing for R&D and innovation, lack of interest from the newly created business 'society' and inadequacy towards the contemporary economic situation of innovation policy. Fortunately, the last few years showed a slow but steady change in the way of thinking and attitude of policy makers. Innovation Strategy was prepared and after a period of fine-tuning it was approved in June 2004 by the Council for Economic Growth. Less than two months later, in August, the Innovation strategy was adopted by the Council of Ministers.

Table 2: National Innovation SWOT overview

Strengths	Weaknesses
• Adequate knowledge base including people and learning/educational institutions • Overall macroeconomic stability for the last few years • Favourable expansion of the credit activities of the banking sector	• Lack of co-ordination among government, universities and business • Sluggish advance in the preparation of the framework that lies the basis for a successful Innovation Policy • Lack of financial resources
Opportunities	**Threats**
• Adoption and adequate implementation of the Innovation Strategy • Transfer of successful practices from most advanced and competitive Bulgarian industries that are knowledge and innovation intensive (IT for example)	• Even bigger delay in the adoption of the documents that would formulate the basis for innovation system and development • 'Brain drain' affecting the group of knowledgeable experts that guarantee the success of innovation initiatives and generate innovation

2. National objectives for innovation

The Bulgarian Government recognises the importance of R&D and innovation for the performance of the country's economy. The ideas for development have been presented in the newly adopted Innovation Strategy. The main goal that is sought through the implementation of the strategy is the increase in competitiveness of the Bulgarian industry. This means that industry should be based on a 'knowledge economy' - with a serious support and encouragement to science and research activities.
The final draft of the Innovation Strategy was publicised in June 2004 and in August it was approved by the Council of Ministers. The document is based on a comprehensive analysis of the current situation in Bulgaria and the expertise of countries with good management practices in the area of innovation.
The Innovation Strategy specifies several major proposals for new actions to be taken immediately after approval. The most important include:

- The establishment of a National Council on Innovations, acting as a consultative body under the Minister of Economy, including representatives of the business, scientific, educational and non-government organisations.
- Every year, based on the budgetary procedure, the Minister of Economy shall submit to the Council of Ministers a report, containing:
    - Evaluation of the implementation of the measures, envisaged in the strategy;
    - Assessment of the results of the activities undertaken in order to implement the measures envisaged in the strategy;
    - Planning the necessary activities for the next accounting period and allocate the financial resources respectively;
    - Proposing a change in the innovation policy, if needed.

The strategy envisages ten measures, forming the framework for conducting the innovation policy. It is necessary to develop an annual action programme, aimed at implementing the measures envisaged in the strategy based on the respective financial estimates.

The measures are divided in two groups and include:

Financial

- Establishment of an Investment Fund with the initial budget of BGN five million, envisaged in 2005 budget. BGN eight million are envisaged for 2006, and BGN 13 million for 2007.
- Promotion of employment for young specialists in small and medium-sized enterprises.
- Establishment and/or expansion, optimisation of Technological Centres.

Non-Financial

- Optimisation of the 'science-technologies-innovations' system.
- Training in entrepreneurial skills.
- Development of clusters in Bulgaria.
- Adoption of European indicators - measuring the innovative potential of industrial enterprises.
- Attracting foreign investments in the R&D area.
- Establishing and providing support to the existing technological parks.
- Establishing entrepreneurship centres in higher education institutions.

Successfully implementing the goals and measures included in the Innovation Strategy is a prerequisite and a guarantee that Bulgaria will follow the right path to achieve the desired economic growth and increase its competitiveness on international markets.

3. Appraisal of the policy process

The policy recognition of innovation as a major driver for competitiveness and economic prosperity has been declared in the past few years but in fact no dedicated policy have been implemented yet.
A major disadvantage of the policy making is the serious delay in the design and formulation of the actions to be followed. Partly it is due to the low level of coordination among state institutions and the sluggish working habit of the state administration. At the same time allocation of funds for the purpose of encouraging innovation and R&D have obviously been a major problem for policymakers.
While the problem with funding could find a partial solution in the opportunity to participate in international donor-funded programmes, the coordination and the way of working is something that should be reformed from the inside.

Several steps in this direction have been made so far. The most important is the dedicated policy towards introducing the E-government (through the E-government Strategy and Action Plan). The successful implementation of the E-government concept will lead to a substantial decrease in costs, not only in financial terms but also in terms of time and effort (and this applies to both Government and business). This provide for freeing resources that could be directed in other more competitive areas such as R&D and innovation. Electronic communication and optimisation of management and business processes in public administration (as part of the E-government) would also provide a more favourable environment for start-up businesses and entrepreneurs.

At the same time legislation concerning the administrative procedures and regulative regimes is being amended in a direction so as to facilitate the activities of companies and entrepreneurs. This is also important for the overall performance of the Bulgarian business and economy.
A direct example of bad coordination in the Bulgarian Government and the inability to utilise available resources are the continuous problems accompanying the development of the two PHARE projects related to technology grant schemes and business support services (BG_04, BG_05). Besides delays, stoppage due to abuse and subsequently forcing the procedures within shortest periods, implementation of the projects is inhibited by the difficulty in finding information about the stage of their implementation. Official websites of responsible ministries do not publish updated information and direct contact confirms once again the lack of coordination between individual institutions and dilution of responsibility when searching for the reasons for problems.

4. Implementing innovation policy – what's new!

A new structure that will have a serious impact on the innovation processes in Bulgaria is the newly introduced (with the Scientific Research Encouragement Act) National Council for Scientific Research (NCSR). The legally defined actions of NCSR include:

- Taking part in the elaboration of a new National Strategy for Scientific Research and the Report on the status and development of scientific research in scientific organisations (SO) and universities;
- Giving assessments and recommendations on the reports of the SO and universities for their scientific and research activities;
- Providing opinion on the participation of Bulgaria in international scientific cooperation;
- Preparing analysis on the condition of the scientific research and scientific cooperation of Bulgaria;
- Upon request of the Minister for Education and Science, providing opinion on other matters, concerning scientific research.

The newly adopted Innovation Strategy also introduces some totally new measures for the encouragement and support of Innovation processes. The most important is the creation of an Innovation Fund that will provide financial resources from the budget to support innovation activities. Together with that establishment, a National Council on Innovations is envisaged. The Council will act as a consultative body under the Minister of Economy, including representatives of the business, scientific, educational and non-government organisations.

1. National Innovation System in Bulgaria

1.1 Innovation performance

For almost two years the recreation of a stable and well-structured innovation system in Bulgaria has been a major issue - unfortunately more like a buzzword in the speeches of policy makers than in terms of real actions and achieved results. The Innovation Strategy was finally adopted by the Council of Ministers (CM) in August, although it was prepared in 2002, renovated in January 2003 and the 'final' draft published on the Internet site of the Ministry of Economy in June 2004. In fact, the Strategy did not go through many alterations for the period, but Government officials anyway claim that the brand new version has reflected all needs and specifics of the Bulgarian business environment and hopefully will contribute to its successful implementation in the near future.
The performance of the innovation policy and the introduction of innovative products and services have revealed a decrease in quality over the past years. This is evident when reviewing the status of the science, technology and innovation (STI) indicators in the field (Table 1 - section 2). At the same time the overall economic performance is moving towards a far more positive direction (section 1). A reason for the mismatch of the data presented might be the time period (data for STI indicators are available for 2001 and 2002). In fact it is reasonable to expect that in the next few years the situation surrounding innovation, science and research performance indicators would improve for Bulgaria, as they did in other acceding countries that have more advanced economies.

Table 1. STI and basic economic indicators (Bulgaria and EU average)

Indicator	National performance		EU 15(25) average	
Year	2000	2002	2000	2002
Growth rate of GDP at constant prices (1995) - percentage change on previous year	5.4	4.3	3.5 (3.6)	0.7 (0.8)
Annual average rate of change in Harmonised Indices of Consumer Prices	10.3	2.3	1.9 (2.4)	2.0 (2.0)
Total employment growth	-3.5	3.4	1.7 (1.1)	0.2 (0.2)
General government consolidated gross debt as a percentage of GDP	73.6	46.2	64 (62.9)	64.2 (63.2)
Labour productivity per person employed (relative to EU-15 (EU-15=100))	29.8	31.7	100 (92.3)	100 (93)
(section 2) Year	2000	2003	2000	2003
R&D Expenditure (percentage of the GDP)	0.52	0.47(2001)	1.95 (1.91)	1.99 (1.93 - 2001)
Science and technology graduates: total (per 1 000 of population aged 20-29 years)	6.6	11.7	11	-
Number of patent applications to the European Patent Office (EPO) per million inhabitants	4.15	3.67	158.72 (133.61)	158.46 (133.59)

Source: Eurostat (http://europa.eu.int/comm/eurostat/)

There are several issues that are interesting to review in more details. Over the recent years research and development expenditure in Bulgaria as a share of GDP show a continuous decline: from 1.64 percent in 1992 to 0.47 percent in 2001. A downward trend in this indicator is visible in other acceding countries as well but it is less clearly pronounced. In most EU member states (as well as some of the newly accepted members) the period 2000-2001 is characterised by an increase in R&D expenditure, which unfortunately is not the case in Bulgaria. This is one of the major problems to developing and

introducing innovations in the country, which in turn will hinder quality and adequate performance of the economy and the desired high level of competitiveness.

Most sizeable expenses were made by scientific organisations and specialised institutes in the public sector (66.23 percent). This is not the best way of carrying out such activity in market economy conditions. Only 27.1 percent of the activity is accounted for by private enterprises and from 1999 to 2001 this share was continuously decreasing. Definitely, one of the challenges faced by Bulgaria now is to follow adequate policies encouraging private enterprises to carry out research and development. Only then will adverse trends be reversed and the innovation potential of the country grow.
Contrary to innovation performance, the Bulgarian economy has experienced a generally positive development over the past few years. For the period 2003-2004 a relatively high GDP growth was achieved together with an improvement of performance indicators in a number of economic sectors in an environment of preserved macroeconomic stability. Government's commitments to improved economic policy and the positive results in some policy areas are among the factors determining some improvement in the country's business climate as well as in unemployment, inflation and government debt indicators.

Some policy areas, however, such as investment policy, transport, and health care, registered a delay or even lack of developments and reforms. Economic growth remains insufficient for a significant change in income and employment. Competitiveness is improving at sector and company level but Bulgaria is still insufficiently prepared for the economic implications of a prospective EU membership.
The first ten months of 2003 were characterised by a relatively smooth price dynamics only violated in November and December by a sharper increase in consumer prices of several food groups (bread, meat, fresh vegetables), which resulted in a total inflation rate at year-end of 5.6 percent against December 2002. However, the more shallow and smooth price dynamics since the beginning of 2003 compared to 2002 resulted in a lower average annual inflation rate for 2003 (2.3 percent against 5.8 percent for 2002).

Despite an increase in unemployment at the end of the year, which is a typical seasonal phenomenon for the period since 1991, this indicator registers a stable downward trend in the long run. The number of unemployed has decreased by 100,000 people, or 17 percent, compared to December 2002. This is the largest absolute and relative decrease observed in the month of December compared to the last three years.

The credit expansion in the banking system was maybe the hottest topic for the reviewed period. The 2003 annual growth rate of bank receivables on credits to the non-government sector amounted to 48.8 percent and the annual growth of newly negotiated loans was 38 percent. The annual growth rate in loans exceeded the growth of bank assets, 19 percent, and the growth of deposits, 20 percent. Despite the increase in loans, the condition of banks remains stable, with excellent capital adequacy and liquidity indicators and a well-functioning banking supervision. The quality of the loan portfolio is also good (about 95 percent of loans are classified as performing).
As visible from Table 1 and the above-mentioned facts on the overall performance of the Bulgarian economy and the specific role of innovation in the country, there is still much work to be done in order to improve the situation and increase the spill-over effects of innovation policy over all sectors of the economy. A serious drawback in achieving better results concerning encouraging and supporting STI initiatives is the delay in the adoption of the Innovation Strategy, which has been residing for almost two years in the Ministry of Economy for no objective reason.
At the same time, the recent update of the Strategy (dated June 2004) and a number of presentations and official statements originating from the Government provide a serious indication that this subject is finally being brought for revision and hopefully the Innovation Strategy will soon be adopted by the Council of Ministers.

Based on the information presented and the reality concerning national innovation system performance a brief SWOT overview might be prepared (Table 2).

Table 2: National Innovation SWOT overview

Strengths	Weaknesses
• Adequate knowledge base including people and learning/educational institutions • Overall macroeconomic stability for the last few years • Favourable expansion of the credit activities of the banking sector	• Lack of co-ordination among government, universities and business • Sluggish advance in the preparation of the framework that lies the basis for a successful Innovation Policy • Lack of financial resources
Opportunities	**Threats**
• Adoption and adequate implementation of the Innovation Strategy • Transfer of successful practices from most advanced and competitive Bulgarian industries that are knowledge and innovation intensive (IT for example)	• Even bigger delay in the adoption of the documents that would formulate the basis for innovation system and development • 'Brain drain' affecting the group of knowledgeable experts that guarantee the success of innovation initiatives and generate innovation

1.2 Innovation governance system

1.2.1 The national innovation system

Since the beginning of the 1990s the Bulgarian innovation system has been in serious decline. The constant lack of funds and the disorientated and unfocused policy lead to weakening the role of the state in supporting innovation policy and innovation initiatives at a time when the business was not prepared to take the 'responsibility' of the future developments of the innovation system. At present the Government is trying to turn the negative trends from the last year by preparing and following a dedicated innovation prioritising policy and drawing the next steps for an improvement of the situation. For the period under revision no major transformations in the innovation system have been made. The Government is still the main driver for innovation activities with the following structures that participate in innovation processes:

- The Ministry of Education and Science: responsible for shaping policies for the development of science and technology in the country.
- The Ministry of Economy: working on innovation strategy and policy implementation for the business sector.
- The Ministry of Foreign Affairs: activities connected with national R&D promotion.
- The Ministry of Regional Development: promoting regional innovation plans.
- The Ministry of Labour and Social Policy: working on improvement in hi-tech employment.
- The ICT Development Agency: responsible for the Bulgarian information society's strategy implementation.
- The Agency for SMEs: plans and proposes policies aimed towards increasing competitiveness and the development of entrepreneurship also through innovation.
- The Patent Office of Bulgaria: provides information and support for patent applications.
- The State Agency for Standardisation and Methodology: develops new standards, harmonised with EU standards.
- The National Centre for Information and Documentation: provides sources for innovative ideas.
- The Commission for the Protection of Competition is responsible for competitive framework conditions, which favour innovation activities.
- The State Agency for Bulgarians Abroad: responsible for promoting information for investment opportunities for Bulgarians abroad.

An important role in the policymaking process especially dealing with important economic decisions (including innovation policy) is the Council for Economic Growth (CEG). The Council is the first of its kind in Bulgaria, uniting representatives of the Government and business in a co-operative and continuous effort to work for the long-term and sustainable economic growth. The Council is formally an advisory body to the Council of Ministers, and as such institutionalises private-public dialogue on national economic policy. The routine exchange of opinions and recommendations that occurs at the Council ensures that a wide scope of views from different stakeholders is included in the policy mix and that solutions to strategic economic issues provide the broadest incentives to economic growth. Most strategic documents (including the newly adopted Innovation Strategy) are being discussed and approved firstly by the CEG and only then are passed to Parliament or the Council of Ministers.
Apart from the Government, industry associations also started implementing actions with expected effects on innovation, science and research activities in Bulgaria. Some of the most active in this field are Bulgarian Industrial Association, Bulgarian International Business Association, Bulgarian Association for Information Technologies and Bulgarian Association of Software companies. As a result from the joint efforts of these business associations the Strategy for Improving the Competitiveness of the Bulgarian ICT Sector on International Markets was prepared and approved, the Bulgarian branch of the European Software Institute has been opened and several smaller but

important projects are being carried out ('Innovation for Business' BIA, awards on innovation activities, etc.)
Last but not least in the group of players that contribute to the development of the innovation system in Bulgaria are universities and NGOs. Bulgaria has a number of technology universities that have a proven history of providing a world-level quality education to its students and there are a number of recent achievements proving that facts. For example, the Bulgarian project for creating a full-size humanoid 'Kibertron'[2] was highly regarded in many international forums and conferences. Bulgaria was the first country ever to win two out of six annual Cisco academy awards, and Bulgaria's team of mathematicians is among the best worldwide for a number of consecutive yeas. At the same time there are also several non-governmental not-for-profit organisations that have stressed the need for working towards the achievement of a competitive economy through the use of innovation and IT in all business areas.

1.2.2 Innovation policy making and delivery structures

As already mentioned, Bulgarian innovation policy making is presently gaining in experience and the delivery structures and co-ordination still seriously need to be enhanced in order to fulfil the desired goals.
The two main players that are expected to set the stage for innovation processes from the Government's side are the Ministry of Economy (ME) and the Ministry of Education and Science (MES).
Experts from ME are responsible for the general formulation of economic policy and within its structures there is a 'Enterprise Policy' Directorate, which deals with four major economic areas, namely: 'Investment Policy', 'Regional Policy', 'Innovation, Ecology and Energy' and 'Natural Resources and Concessions'. As it is logically to expect, ME's responsibilities are mainly connected with creating and supporting a business environment adequate and suitable for creating innovation. ME is also supposed to encourage companies to innovate and invest strongly in R&D.
On the other side, MES's main areas of influence are the education system (providing the knowledge and human resources for successful innovative companies), the support of science and research initiatives and providing for successful interaction between academic and business representatives.
At present there is no dedicated high-level co-ordination council that is responsible for the implementation of the innovation policy in Bulgaria.
The new Innovation Strategy, which was approved by the Council of Ministers in August, introduces the statute of a National Council on Innovations that is designed to fill the niche. The Council will be acting as a consultative body under the Minister for Economy and will include representatives of business, scientific, educational and non-government organisations.
The National Council on Innovations will be composed of 11 members. It will be chaired by the Minister for Economy, and will include one person from each of the following institutions: ME, MES, Ministry of Finance, Council of Rectors of Universities, Bulgarian Academy of Science, National Innovation Fund (creation envisaged in the Innovation Strategy). The remaining quota will be filled with representatives from the business and NGO sector. The regulation of activities of the council will be suggested by the ME and approved by the Council of Ministers.
Every year the Minister for Economy is required to submit to the Council of Ministers an annual report for the state and development of the innovation policy in the country and the functioning of the innovation system. The annual report will provide:

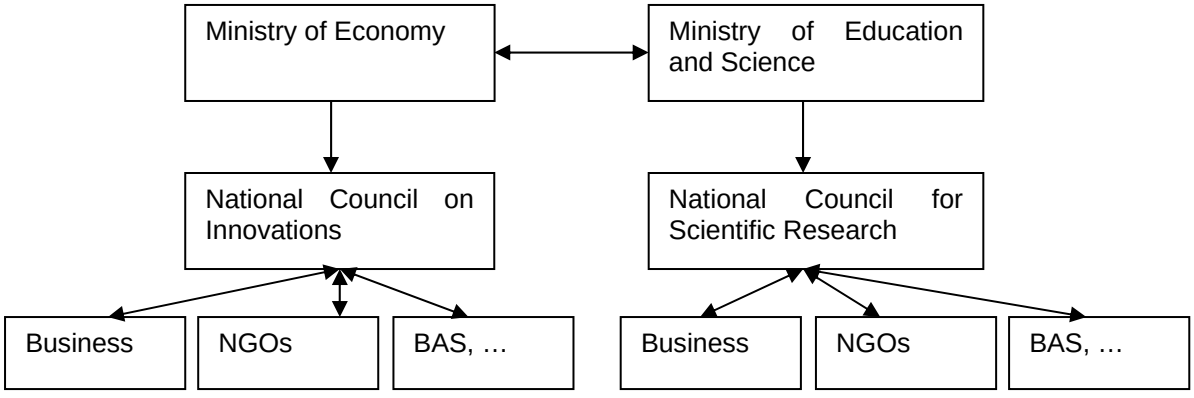
- Evaluation of the implementation of the measures, envisaged in the strategy.
- Assessment of the results of the activities undertaken in order to implement the measures envisaged in the strategy.
- Planning of the necessary activities for the next accounting period and the financial resources respectively allocated.
- Proposing a change in the innovation policy, if such is needed.

[2] http://www.kibertron.com

On the other hand, following the provisions of the Scientific Research Encouragement Act (adopted in October 2003), MES operates a National Council for Scientific Research (NCSR). In fact there has been a serious delay in the creation of the council which by June 2004 was still not operational. The legally defined mission of NCSR includes:

- Taking part in the elaboration of a new National Strategy for Scientific Research and the Report on the status and development of scientific research in scientific organisations (SO) and universities.
- Giving assessments and recommendations on the reports of the SO and universities for their scientific and research activities.
- Providing opinion on the participation of Bulgaria in international scientific co-operation.
- Preparing analysis on the condition of the scientific research and scientific co-operation of Bulgaria.
- Upon request of the Minister for Education and Science, providing opinion on other matters concerning scientific research

The NCSR has 19 members plus the chairman (the Minister for Education and Science).
They include - one representative of the Ministry of Economy (industry), one person from the Ministry of Finance, seven people from universities, four people elected from Bulgarian Academy of Science Managing Board, two people from Ministry of Agriculture and Forests, the chairman of the executive council of the Scientific Research Fund, two people authorised by the Employers Organisation, and one representative from a scientific NGO. The Council may also invite other people (representatives of the business or other NGOs), who will have the right of a deliberative vote.
Apart from the two Ministries a major player for the Bulgarian Innovation System is the Bulgarian Academy of Science (BAS). BAS is responsible for carrying out innovation and research programmes. BAS is a not-for-profit organisation created under a specific law and is generally funded by the State.



1.2.3 Regional innovation systems and policies

Since 2000 Bulgaria is officially divided into six planning regions in order to comply with the EU regional development programmes - Northeast, North-central, Northwest, Southeast, South-central and Southwest planning regions.
The regional economic policy is prepared at the ME (under the same directorate as innovation policy). At the same time the Chapter 'Regional Policy' in the EU negotiations was lead by the Ministry of Regional Development and Public Works (MRDPW). MRDPW is also responsible for the implementation of the PHARE and ISPA programmes. Unfortunately some of the projects that were supposed to have a direct impact on the innovation potential in Bulgaria (the Establishment of Hi-Tech Business Incubators and Establishment of Business Incubators in Underdeveloped Regions) were substantially delayed and as a result partially suspended by the EU. This negative development was mainly due to lack of co-ordination in the Bulgarian Government, serious delay in the terms of contracts and abuse by government officials. Therefore the country missed a great chance to improve the economic and social situation in some areas which have a number of problems since the start of the transition to market economy.
Up to now the only project that was aimed specifically at development of the regional innovation potential and was successfully accomplished was a Pilot Project for preparing a Regional Innovation Strategy for the South-Central Region of Bulgaria, carried out by the Applied Research and Communications Fund[3]. Since it was a pilot project it had neither the scope nor the aims of a full-scale programme, but nevertheless it delivered a thorough analysis of the innovation potential of companies operating in the region and designed a detailed action plan for boosting innovation performance.
Following the good practice of this pilot project the MRDPW and several NGOs prepared proposals to take part in the Regional Innovation Strategies projects under the Sixth Framework Programme. The potential for implementing such projects in Bulgaria is very high, considering the comparatively high quality of universities and educational institutions in the country. As with other good initiatives a major problem in implementation of projects might be the low level of co-ordination among academic society, business and government institutions.
In February 2004 a new Regional Development Act (RDA) was adopted (SG 14, 20.02.2004). The new act replaces the one from 1999 and introduces, on a higher hierarchical level, the new regional economic planning (the six regions mentioned above), as well as a thorough description of the regional economic policy implementation.
The main goals sought with the adoption of the new law are:

- Creation of appropriate environment for balanced and sustainable development of Bulgarian regions.
- Creation of prerequisites for a decrease in the interregional and regional differences in the economic development of the country.
- Provision of adequate conditions for growth in employment and income
- Development of cross-border co-operation.

The RDA envisaged the preparation and adoption of a National Regional Development Strategy by the end of May 2004, but there was a delay in the process and in June the strategy was not yet drafted. Together with the latter, six Regional Development Plans should be prepared.

[3] www.innovation.bg

2. Innovation policy in Bulgaria

2.1 Innovation policy framework

In June 2004 the new draft of an Innovation Strategy was published on the website of the Ministry of Economy and was adopted by the Council of Ministers surprisingly soon afterwards (19 August). In fact this 'new' document presents minor amendments to the previous one (version dated January 2003) and still there are several important subjects that have found their place in the officially adopted version.
The strategy is based on a comprehensive analysis of the current situation in Bulgaria and the expertise of countries with good management practices in this area. The major goals of the implementation of the strategy can be summarised as aiming in the following directions:

- Increase in GDP
- Increase in the value added created by the Bulgarian industry
- Increase in productivity
- Improvement of the Balance of Payments of the country
- Attracting foreign investments

The achievement of these goals presumes implementation of several steps:

- Human resources development
- Creation of new knowledge
- Transfer and implementation of contemporary technologies
- Provision of financial resources for innovative products implementation
- Development of markets

The strategy envisages ten measures divided in two groups - financial and non-financial measures for creating the framework for conducting proper innovation policy. The measures are as follows:
Financial:

- Establishment of an Investment Fund with the initial sum of ca 2.5 M Euro (BGN 5 M), envisaged in 2005 budget. Ca 4.1 M Euro (BGN 8 M) are envisaged for 2006, and ca 6.7 M Euro (BGN 13 M) - for 2007 accordingly.
- Promotion of employment for young specialists in small and medium-sized enterprises.
- Establishment and/or expansion, optimisation of Technological Centres.

Non-financial:

- Optimisation of the 'science-technologies-innovations' system.
- Training in entrepreneurial skills.
- Development of clusters in Bulgaria.
- Adoption of European indicators – measuring the innovative potential of industrial enterprises.
- Attracting foreign investments in the R&D area.
- Establishing and providing support to the existing technological parks.
- Establishing entrepreneurship centres in higher education institutions.

Apart from the Innovation Strategy which is still awaiting official adoption, several other documents that would have an influence on the innovation system in Bulgaria were approved for the period under revision.
Firstly, an entirely new Scientific Research Encouragement Act was adopted in October 2003. The idea behind the act is to ensure the regulation of the principles and mechanism for implementation of the government policy for the promotion of Bulgarian research. It also states that research is a national priority and has strategic importance for Bulgaria's development. According to the text of the act, all Bulgarian organisations, scholars and projects will be included in a register to be kept by the newly set up Research Fund. The register will also contain data on scholars and institutions receiving state subsidy, on research implementing agencies, as well as on state-financed programmes and

projects in this field. Within three months after the act takes effect, the Minister for Education and Science must issue Research Fund Rules in co-ordination with the Minister for Finance. Along with that, according to the Final Provisions of the act, the Council of Ministers was expected to approve a National Research Strategy within six months after the act takes effect, which also was delayed and had not happened by the time this report was finalised.
In 2003 another document, this time originating from the business sector, was officially presented - the Strategy on Improving the Competitiveness of Bulgaria's ICT Sector on the International Markets. The idea behind the document is to reveal the importance of the sector for Bulgaria's economic development and to outline some basic measures targeting improved competitiveness of the companies in the sector. According to the main document drawers (BIBA, BAIT, and BASSCOM[4]) Bulgaria has every chance to become a technological leader of the Balkan region and it should be quick in making use of this advantage. The strategy was later approved by the members of the Council for Economic Growth, which confirmed its acceptance of the fundamental ideas in the document and declared again their support of the Government's intentions for priority development of the ICT sector.

Table 3: main policy documents since 2000

Title of document (in English)	Date (of approval, publication, etc.)	Organisation responsible (Ministry, etc.)	Legal status (Law, Government Decision, strategy paper, etc.)	Comments (Budget set-aside, new measures, etc.)
e-Government Strategy (+Action plan for its implementation)	December, 2002 (Action plan since April 2004)	Minister of State Administration	Strategy paper	Identifies path to follow and actions to implement for the successful and timely introduction of e-government
Scientific Research Encouragement Act	October, 2003	Ministry of Education and Science	Law	Introduces the National Council for Scientific Research (NCSR)
Strategy on Improving the Competitiveness of Bulgaria's ICT Sector on the International Markets	January 2004	Council of Ministers, IT Business Organisations	Strategy paper	Marks the potential for development of Bulgarian ICT sector.
The National Strategy for SMEs Development (2002-2006) and the dedicated program for its implementation	2002	ASME, Ministries	Strategy paper	Outlines the high-tech SMEs as a priority segment.
Government Programme	2001	Government	Strategy paper	Formulates the line of policy for guaranteeing economic growth and social prosperity

Undoubtedly the document that is crucial for the future development of the innovation system and desired growth in the innovation potential of the Bulgarian economy is the newly adopted Innovation Strategy. The detailed formulation of goals, activities, timeline and resources for their implementation, which are presented in the strategy, are the background for turning a new page in STI policy in the country after the changes in the early 1990s. It is expected that the provisions of this important policy

[4] Bulgarian International Business Association, Bulgarian Association for Information Technologies, Bulgarian Association of Software Companies.

document will not only clarify the necessary steps and actions to be carried out, but will also improve the co-ordination and subordination among the major players (ministries, agencies, business and academics representatives).

2.2 Policy events & policy debates

There were several major events that were concentrated on topics related to innovation policy development and performance of the innovation system in the country. The fact is that businesses, academia and NGOs are still more active than Government, which is a positive indication of the increasing role of those players in the policy development in the country. At the same time it is obvious that co-operation with the state administration and Government is very important for achieving good results in innovation policymaking. The adoption of the Innovation Strategy is a step in this direction, showing the real dedication of Government to actively influence the area, rather than just deliver speeches and make promises.

An interesting initiative dedicated to encouraging research on innovation began in March 2004. It was started by the ARC Fund in co-operation with the Bulgarian Development Gateway and was called 'Permanent Research Seminar on Innovation'. The idea behind the seminar is to have a constant forum for discussions on methodological and theoretical problems and debating over results of concrete empirical studies in the field of social, economic and technological innovations in Bulgaria and abroad. The first meeting of the seminar was conducted on 19 March 2004 with its main topic 'Knowledge Economy: New Policy Tool'. A number of experts in the field from the Government, business, academic society and NGOs exchanged ideas on how a knowledge economy might help Bulgaria increase its economic growth and social status. Most of the participants shared the opinion that the biggest hindrances to innovation entering business are related to financial resources - lack of financing and huge expenses for implementation.

In September 2003 another innovation-related project was started also aiming at bringing innovation closer to businesses. The Bulgarian Industrial Chamber (BIA) and MSI-Bulgaria (implementing the USAID project 'Development of entrepreneurship and investments') started a new initiative 'Innovation for Businesses'. The goal of the initiative is to support the increase in the competitiveness of the Bulgarian economy by attracting more local innovations in business activities. The idea is to closely connect science and academic society with businesses, and to eliminate the 'bottle-necks' in production processes by using the available potential and equipment of science and research organisations. A directly targeted result of the project will be the reduction in access period of businesses to new inventions. Up until April 2004, six meetings were organised where innovative products in the following fields were presented and discussed: engineering chemistry, mechanical engineering, biotechnology, electronics and automatics, food and beverages industry.

Another international conference covering the Lisbon Agenda was organised in March by the Centre for Economic Development with the support of the British Embassy. The main topic was 'Towards the Lisbon Agenda Goals: Is Bulgaria's Economy Competitive?' and a thorough analysis of the Bulgarian performance according to the Lisbon criteria was presented. The participants agreed that not only Bulgaria, but also most EU member states are lagging behind the targets somewhat and that many efforts are still needed in order to get closer to fulfilling the goals.

2.3 Key developments in innovation policy measures

The government policy related to the introduction of innovations and development of innovation potential is currently being formulated with the pending Innovation Strategy. Nevertheless, there are several measures that address directly or indirectly the innovation system in Bulgaria. Table 4 provides a brief review of the measures.

BG 04 and BG 05 are part of the PHARE development programme in Bulgaria. They are targeted at SMEs that need financing for research and development activities. Under the two projects up to 50 percent of the necessary funds are granted to the beneficiary.

PROMOTOR+ (BG 06) is a joint international project, aimed at transferring the successful Spanish practices, directed to influence positively economic growth of Castilla de la Mancha, by building a framework of conditions for the establishment and development of new technology-based start-ups. The so-called 'mobile methodology' of the Spanish background, enriched with the experience of the countries from the donating group, will be adapted to the specificities of the countries from the receiving group due to four modules: entrepreneurs' identification, training, financing and incubation.

BG 07 is an intergovernmental programme between Germany and Bulgaria on the basis of which Bulgarian companies receive free consulting and expert support in areas related to technology development.

BG 09 is a programme of the Dutch Government targeted at Eastern European countries. It encourages Dutch investment in the region and supports technology transfer among Dutch and Bulgarian companies.

BG 10 is part of an international network of virtual incubators aimed at supporting start-ups and entrepreneurs in the field of technology and ICT.

BG 13 has been introduced in the Corporate Income Tax Act as a concession of 50 percent of the corporate taxes of research institutions funded by the budget.

Table 4: New and revised Innovation Policy measures over last 12 months

N°	Title	Action plan category addressed	Degree of novelty	Agency administering
BG04	Research and Development Grant scheme	III.2.	New (2003)	Ministry of Labour and Social Policy Ministry of Economy
BG05	Consulting Services for SMEs and Technology Grant Scheme	III.2, 3	New (2003)	Ministry of Labour and Social Policy Ministry of Economy
BG06	PROMOTOR+	III. 3.	New	Sofia University
BG07	Technical Cooperation with Germany	III	New	Ministry of Economy
BG09	PSO-Environment	I, III	New	Ministry of Economy
BG10	European Business Incubator - Bulgaria	III. 3.	New	Hiron Management Consulting
BG13	Incentives for state research institutes	II.6	New	Ministry of Finance, Tax Administration

3. Implementing innovation policy in Bulgaria

3.1 Fostering an innovation culture

The period under revision did not experience any particular measures for fostering an innovation culture. Mainly this comes as a result of the delayed adoption of the Innovation Strategy, without which there is no dedicated policy that is to be followed.

3.1.1. Education and initial and further training.

Since the beginning of 2004 several drafts of strategic documents concerning reforms in the Bulgarian educational system were prepared. Apart from a general 'Draft Strategy for Development of the Secondary Education System in Bulgaria', two other more specific documents were drafted - 'Strategy for Introducing ICT in Secondary Education' and 'Strategy for Implementation of ICT in Education'. Raising awareness about the benefits of ICT and improving ICT skills of the young is a very important issue that will subsequently have an impact on the overall development of the economic and social situation in Bulgaria.
Rethinking the role of ICT in education and seeing it as a means of delivering education is very important for all countries, but especially for those that are undergoing serious economic and social reforms and transformations. Bulgaria has a great tradition in exact sciences and technology education, which are still highly appreciated in spite of the problems during the last few years. The indications that the Government is planning to invest more resources and efforts in improving the current situation in the education system are a positive development and are surely crucial for the future of the country.

There are 41 universities in Bulgaria, located in 26 cities and towns. The number of students for the 2000/2001 academic year in the baccalaureate, master's and doctorate courses was 44,646. The highest share of them - about 21 percent were majoring 'Management and administration', about 16 percent were in the majors of engineering and technologies and two percent in informatics. There is a positive growth tendency in the number of baccalaureate, master's and doctorate course students in the last two majors.
Universities have to a large degree managed the change from the old focus on traditional majors applied in large-scale industries towards modern majors applied in the private sector. They have also orientated themselves substantially towards the outside and have thus adopted international standards. However, their potential for practical training is limited because laboratories and equipment lack the latest developments and are not adequate in terms of the number of research places required. This leads to weak results with regards to adequately training students and preparing them for their professional future.
The lack of modern equipment in the universities' labs is compensated to some extend by networks of training centres or certified consultants that have been created by leading ICT companies. Good examples in this direction are several Microsoft and over 100 Cisco academies acting in the country at present – most of them affiliated with academic institutions. An interesting fact is that in 2003 Bulgaria was the first country ever to win two out of six annual Cisco academy awards ('Best Project' and 'Best Student').
In addition there are a number of Bulgarian private companies in the ICT sector that deliver courses through own training centres and successfully compete with the traditional education. The scope of their training extends beyond the purely academic community and addresses much specific segments. Currently several hundred students already take part in courses offered by the academies and training centres of private ICT companies.
Furthermore, some positive trends are actually being observed, linked to the direct participation of teams of university lecturers in international projects. The most active in this field are the Sofia University, Technical University and the American University in Blagoevgrad, Together with the faculty

of informatics and mathematics of University of Sofia, specialised companies and centres were created in order to undertake project co-ordination and execution. A company of the kind is VirTech Ltd., and the NGO Centre on information and communication technologies which is particularly active in terms of the elaboration of master's programmes in the field of e-learning and distance learning on modern information and management technologies. It is be expected that such companies would be able to build up an entrepreneur's culture in the education and by an appropriate support on behalf of the state the higher education institutes and the private sector would be able to develop successfully.
An important development in teaching entrepreneurial nature and skills is the successful implementation of the JOBS project[5] (Job Opportunities through Business Support), carried out by UNDP and Ministry of Labour and Social Policy. The project began active operation in 2000 and for the four years have succeeded to create a steady network of 35 business centres in 42 municipalities, including 13 business incubators and three information business centres. At this stage, four of the business incubators are virtual. The main activity of the business centres is leasing premises for the production or provision of services to new or faltering companies. The advantages are the preferential rentals, accounting and other types of office services provided to eligible entrepreneurs.

3.1.2. Mobility of students, research workers and teachers

There were a number of measures envisaged in the governmental programme that were targeted at improving the mobility of students. The most important of them were:

- Providing a stimulus for independent student work and creating conditions for a more effective educational process.
- Aligning the educational process and scientific activity of young people to market needs.
- Creating conditions for the practical training of students and for gaining professional experience through summer work (apprenticeship).
- Creating conditions for post-graduate education.
- Developing a system for start-ups of small technological firms by senior students.

Apart from the above, there are several programmes and initiatives that provide internships for students both in Bulgaria and abroad. One of the successful government programmes is the so-called 'Bulgarian Dream', organised by the Ministry of Transport and Communications for three consecutive years. In 2003 over 30 students had the opportunity to work in different companies.

In 2004 another project funded by PHARE under the Economic and Social Cohesion programme was started. The subject of the project is 'Lifelong learning and vocational education and training' and it is aimed at providing opportunities for specific groups of young people (unemployed, new graduates, high-risk groups, school drop-outs, etc.) to expand their knowledge and acquire new skills. The project envisages the training of about 2200 young people between 16 to 29 years old, as well as about 450 teachers who will improve their qualifications. The total amount of funding for the projects accounts for EUR 5.334 million, with EUR 4 million provided under the PHARE programme.
It is considered that initiatives of this type will on the one hand improve the potential and skills of the young people to become more competitive, and on the other will partially contribute to solving the 'brain-drain' problem. Both effects will undoubtedly influence the Bulgarian economy in a positive way, which is undoubtedly the basic goal of any economic policy measure.

[5] Information about JOBS project is also included in the Trend Chart Report for Bulgaria, Covering period: September 2002 - August 2003.

3.1.3. Raising the awareness of the larger public and involving those concerned

As already mentioned a of strong innovation policy is still lacking in Bulgaria and the initiatives for the development of innovation and the creation of innovative products are coming to a great extent from businesses.
The 'Innovations for Business' initiative of BIA and MSI-Bulgaria for example is aimed at improving the relations between business and research institutions by acting as a mediator between the two sides and also by organising dedicated meetings to clarify the benefits of such relations. The organisers found that there was a huge gap between the ideas of researchers and the demand of business people. The reason for this is twofold. On one side, the business complains that there is not enough information on the new innovative products created by the research teams, while on the other the 'producers' of innovations claim that there is no demand for their work.
The above example is a proof that one of the major problems in Bulgaria is the co-ordination and communication among the different players. This same problem was also noticed and commented in an analysis prepared by the Centre for Economic Development as part of a multinational project of the EBRD called 'Enterprise Policy Performance Assessment'. Although approached from a different perspective, the results of the survey and analyses concerning information provision and awareness among business showed same interesting facts. It was concluded that a bigger part of the entrepreneurs were unaware of institutions, policies and programmes focusing on enterprise development. There is little or no communication between private enterprises and government institutions on SME policy. This is further complicated by a lack of trust in the State and in related institutions in general.
Another initiative that is targeted at starting debates and improving the environment for innovations is the 'Permanent Research Seminar on Innovation'. The seminar will publish material - working papers, research papers and other documents related to innovation and innovation policy, thus contributing to raising awareness and understanding the importance of innovative thinking. It will also provide the basis for debates on new reports, dissertations, conceptions and methodologies for innovation research, with a view to helping and supporting the people involved in research and innovation through information dissemination and discussions on different topics.

3.1.4. Fostering innovative organisational and management practices in enterprises

Over the past several years there were a number of initiatives, programmes and projects targeted at fostering innovative behaviour and implementing successful management practices in enterprises.
In 2003 an earlier started PHARE project was partially drawn to successful implementation - BG0102.02 'High-Tech Business Incubators'. The project foresaw the establishment of several business incubators and provision of support for research and development activities. At the end of 2003, 49 companies were selected to receive the grants for R&D. The grants provide free financial aid for companies that propose to develop a new product or service that has the potential to become a best-seller or fill a certain market niche.
At the same time another delayed PHARE sponsored project was also restarted - BG 0102.01 'Consulting services for SMEs and Technology Grant Scheme'. Under this project 89 Bulgarian companies were contracted and received support from the PHARE programme. The implementation of both projects is envisaged for 2004 and some projects may take more than a year to be completed. Spending of funds for such project types is strictly monitored by PHARE experts. It can therefore be expected that results of using these grants will be as planned.
In 2004, PCMagazine Bulgaria and Spisanie.com launched a new initiative 'IT Innovation of the year'. The goal of the competition is to present the newly created IT products in Bulgaria and to distinguish those of highest quality and importance. Partners in the initiative are the Bulgarian Association of Software Companies (BASSCOM), the ICT Development Agency, the Bulgarian Web Association, the Bulgarian Association of Information Technologies and the Association for Information Security.

Since 1993 the Bulgarian-American Enterprise Fund has organised 'The Most Successful Young Entrepreneur' contest. For 2003, a total of USD 16,500 was awarded to the six most promising and successful entrepreneurs. Over the ten years that the contest has been organised, more than 4,000 young people have participated in the seminars organises by BAEF and over 980 business plans were assessed. The most positive fact is that over 75 percent of the projects are successfully operating years after their start with the support of BAEF.
An active role for fostering innovation potential and management practices in Bulgarian SMEs is carried out by the Agency for SMEs (ASME). The Agency works in close co-operation with several Bulgarian banks and international donor organisations that have showed interest in supporting the entrepreneurs. Examples for successful co-operation include the national award for SMEs (Encouragement Bank), Internship Programme for students from the Economics and Business Administration Departments, and awards for Project of the Year and Product of the Year.
State bodies, central institutions, local and regional institutions, NGOs and international organisations, sponsor special seminars on entrepreneurship. The Bulgarian Chamber of Commerce and Industry organises courses on quality management (ISO 9000), taxation issues and structural funds on a regular basis.
From early 2001, the newly created Institute for Public Administration and European Integration started organising courses for officials, notably on improvement of services provided to enterprises.

3.1.5. Public authorities and support to innovation policy makers

The fact that there is still no operational Innovation Strategy in Bulgaria logically affects the way of working and the attitude towards support for innovation. Although in 2004 there have been clear statements that innovation policy and entrepreneurship are priority issues for the policy makers, this are still no evident actions being taken.
The delay in the implementation of several international donor-sponsored projects (e.g. PHARE) also contributes to the assumption that many efforts are needed in order to improve the co-ordination and the quality of work of the state administration. Businesses, on the other hands become more active and might prove crucial for creating the future environment for broadening the innovation potential.

3.1.6. Promotion of clustering and co-operation for innovation

Clusters are being discussed in the newly adopted Innovation Strategy as one of the measures for improving innovation policy.
The purpose of the measure is to promote and introduce the best EU practices in cluster creation. In the implementation of the measure, companies that are interrelated or have supplementary business use a common specialised infrastructure, labour market and services will be targeted.
The Government anticipates that cluster creation will result in:

- Raising activities in vertical and horizontal integration for creation of more added value,
- Increase in the trust amongst enterprises and state representatives for boosting the economy,
- Initiating the formation of well-structured networks of enterprises on a sectoral or regional basis, aiming at increasing their innovation potential,
- Broadening the access of enterprises to contemporary technologies and all types of information,
- Implementation of measures for diffusion of new technologies in certain industrial sectors.

The new Innovation Strategy envisages a set of activities that will be necessary in order to achieve the desired results. Namely these include:

- Creation of appropriate framework for cluster development,
- Creation of centres that would provide consultation services, including the support of start-ups,
- Start of specialised programmes for training and education,
- Organisation and dissemination of information amongst clusters,
- Development of the research network, providing services to clusters,
- Start of pilot projects for creation of clusters.

The Ministry of Economy is the authority that is responsible for the implementation of this measure, which is planned to start in 2005.
The new Innovation Strategy also includes as a measure the establishment of Technology Parks as major instruments in stimulating technology driven entrepreneurship[6]. The creation of Technology Parks is an old debate started in 1998 by the Centre for Economic Development that elaborated a dedicated Law on Technology Activities and Technology Parks. Unfortunately the Law was not adopted by the Parliament of the time due to dissension among ICT associations.
At the same time (in March 2004) the Council for Economic Growth decided to establish four clusters in Bulgaria, one of them dedicated to the information and telecommunication technologies. The council members expect that all business associations of the ICT sector will enter the cluster, along with the state agencies that carry related activities and representatives of the ministries concerned with ICT. Surely the creation of an ICT cluster in Bulgaria will be very useful for raising the competitiveness of the ICT sector, and as in the case with the Innovation Strategy, the sooner the real actions begin, the better results could be expected.

3.2 Establishing a framework conducive to innovation

The last few years were very important for the development of Bulgarian legislation, since the harmonisation and synchronisation processes with EU laws took place. For this reason most Bulgarian laws were repeatedly amended and brand new laws entered into force. As a result the country has a legislation that is to a great extent comparable to EU legislation, but due to the fast developments and the large number of laws to be amended, the quality in some cases is not sufficient. Bulgaria still suffers from the fact that law enforcement is not as desired and planned, although the Government is putting all its efforts in changing the situation in this respect.

3.2.1 Competition.

Competition in Bulgaria is legally guaranteed by the provisions in the Law on Competition Protection (LCP) and the Law on Consumer Protection and Trade Rules (LCPTR). Although both laws have been regularly updated in order to meet the constantly changing economic environment, problems with the existing unfair competition are still awaiting a solution. Bulgaria closed the chapter 'Competition Policy' from EU accession negotiations in June 2004, which is also an indication of the positive development in the field.

The current LCP was officially promulgated in 1998 and since then has been amended several times (1999, 2002, 2003). The update of the law was needed to a great extent in order to fulfil the EU criteria for legislative harmonisation. Almost similar is the situation with LCPTR. The law was initially adopted in 1999 and amended in 2003.

Although everything seems to be in order with the legislation concerning competition in Bulgaria, business representatives are sharing a different view. A detailed marketing research and analysis of the 'hidden' economy in the country carried out by Vitosha Research[7] reveals that the biggest problem for Bulgarian business is the high level of unfair competition. The report for 2003 was prepared on the basis of three consecutive surveys of Bulgarian companies (table 5) and clearly shows that more than 50 percent of the interviewees find the problem with competition the most serious disadvantage of the economic reality in Bulgaria. This problem is more often encountered by SMEs than by companies.

[6] Detailed information is also included in the Trend Chart Report for Bulgaria, Covering period: September 2002 - August 2003
[7] www.vitosha-research.com

Table 5: Hindrances to business in Bulgaria in 2003 (percent of companies that share the same opinion)

Biggest Problem	January	March	November
Unfair/illegal competition	57.4	52.6	52.3
Crime	32.5	41.8	49.2
Access to finance	49.6	39.6	40.6
Corruption in state administration	39.6	38.5	39.0
Procedures and rules for establishing a start-up	10.9	7.2	10.2

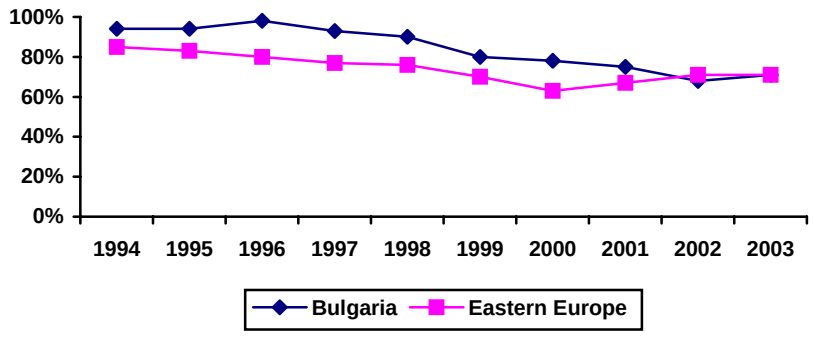
It is obvious that unfair competition is still a major obstacle, sometimes bigger than the establishment of a start-up for example. It is even ranked higher than the access to finance, which is generally considered a serious drawback of Bulgarian economic reality.

3.2.2 Protection of intellectual and industrial property

Bulgaria has an up to date legislation concerning intellectual and industrial property - the Copyright and Related Rights Act and the Patents Act were amended in 2003 with a view of EU accession legislation harmonisation. At the same time the situation is similar to this in competition area - but law enforcement is encountering serious problems.

An often-cited problem regarding IPR protection in Bulgaria is software piracy. According to the 'First Annual Global Software Piracy Study' (2004) of the Business Software Alliance[8] and IDC, Bulgaria takes 22nd place among the countries with the highest piracy rate. At the same time the situation for the last few years is improving following a number measures taken by the Government (the last year is an exception). As seen from the chart below, from 1994 to 2003 the software piracy rate has gone down from 94 percent to 71 percent (peaking 98 percent in 1996 and lowering down to 68 percent in 2002). The situation in Bulgaria is not very different from the overall performance of the countries of Eastern Europe (EE), and, as visible from the chart in 2002, the piracy rate in Bulgaria is less than EE's average and a year later is just the same.

Chart 1. Software Piracy Rates



Apart from the above-mentioned two acts Bulgarian legislation includes several other laws guaranteeing industrial property rights. These are namely: Law on protection of new plant varieties and animal breeds (adopted 1997, last amended 2004), Law on industrial design (adopted 1999, last amended 2003), Law on marks and geographical indications (adopted 1999) and Law on the topography of the integrated circuits (adopted 1999).

[8] www.bsa.org

Together with keeping the legislation in line with EU requirements, Bulgaria is in co-operation with the World Intellectual Property Organisation (WIPO) in order to constantly improve the IPR system and thus support the increase in competitiveness of SMEs, industry, R&D and other organisations.
In 2002 there was a total of 4,992 applications to the Bulgarian Patent Office from Bulgarian citizens/companies (289 for new inventions, 127 for utility models, 4,043 for marks (national), 503 industrial designs and 30 for new plant varieties and animal breeds). A total number of 2,231 patents were granted for the same year to Bulgarians.

3.2.3 Administrative simplification

A major step in the direction of lessening the administrative burden and simplifying the communication and interaction with the state administration is the adoption of a Concept on improving the one-stop shop service and a Strategy for E-government. Both documents are aimed to facilitate individuals, businesses and government administration, reduce the sources of corruption and save time and money. The Concept and the Strategy envisage all operations to pass through the Internet.
One of the best practices in the area of administrative procedures is the introduction of the 'one-stop shop service'. By Decision No.878 of CM of 29.12.2002 a Concept on improving administrative service in the context of the one-stop shop service principle and a Base Model of One-Stop Shop Service were adopted. These documents formulate the underlying principles of administrative service, providing guidance on the work of administrative structures at national and local level.
The objectives to be achieved as set out in the Concept are: unification of terms and concepts of improving administrative service; information integration; processes and services; business environment simplification; and building an E-government.
Over recent years the organisational principle of the 'one-stop shop service' has been introduced to various degrees in some structures of the central and local administrations. This involves Information and Services Centres established with the support of the American International Development Agency where the practice of providing municipal administrative services has been optimised. Information Entrepreneur Desks operate on the same principle. In the municipalities where such units exist[9], problems related to licence and permissive regimes have been significantly reduced and SME representatives do not consider them significant.
The E-Government Strategy (December 2002) provides for the introduction of a minimal package of services provided through Internet by 2005 – 12 services for individuals and eight for businesses.
The main goal of the E-government is to provide high-quality, economically efficient and easily accessible public administrative services to individuals and business entities. To assess the level of performance of administrative services according to the Strategy, four possible stages have been determined:

1. Information: The institutions publish generally accessible information on the Internet.
2. One-way interaction: The institutions provide an opportunity to download documents (forms, applications, etc.) related to services.
3. Two-way interaction: Besides information and downloading of forms the user can send electronic letters, forms, etc. to public institutions, but public administration is not obliged to respond in real time or by the same means.
4. Transaction: Individuals and companies communicate with public administration electronically and online. There is a mechanism to confirm the validity of the transaction.

At present most of the state institutions have covered the first stage (information), several of the services are in second stage (one-way interaction), and with the advance of the strategy implementation and certification of e-signature providers, the third stage is soon expected to be introduced in a certain number of aspects.
A pilot project of the E-government started in September 2003. The electronic services provided refer to both individuals and businesses. The specific services are: change of address registration of individuals (temporary service that works only for a certain period); reference to the Delfi information

[9] According to FRMS data, such organizational structures based on the one-stop shop service operate in 70 municipalities.

system for information about court registration of all legal entities in Bulgaria; access to the database of the National Social Security Institute, issue of statements about social security contributions paid by individuals and statement of social security contributions paid by employers.

3.2.4 Amelioration of legal and regulatory environments

During the past few years several major actions concerning the reduction of the bureaucratic hurdles have been implemented. They could be generally summarised in steps for improving regulatory regimes, reducing barriers to start-up business, simplifying rules and reducing government intervention in economic activity.
In this line of reasoning, by Decision of the Council of Ministers No.139 of 12 March 2002 an intergovernmental group was established and the ASME was determined as the co-ordinator of its activity. The expected positive effect from the activity of the Working Group is simplification of the licence, permit and registration regimes. About 600 regimes were reviewed. By CM Decision No.392 of 7 June 2002 the proposals of the intergovernmental working group were approved, recommending removal and simplification of the regimes. The proposals cover over 300 regimes and envisage removal, simplification or preservation in conformity with health and public safety requirements or implementation of certain EU legislative acts. The decision calls for the removal of 73 regimes and the simplification of another 119. Currently secondary legislation is being amended in execution of this decision. As of early April 2004, 144 regimes are in the process of being removed and simplified or have already been removed or simplified and no steps have been taken for the other 48 regimes, i.e. implementation is 75 percent.
At the same time a database of regulatory regimes was created as part of the Register of Administrative Structures and the Acts of the Executive Bodies and is accessible via Internet since February 2003. The database contains detailed information on the regimes administered by central and local municipal bodies and enables entrepreneurs to receive fast information on regulatory requirements, administrative procedures, documents, required fees for obtaining licence, permit or registration.

An important step in optimising the business environment was the drafting and adoption of the Restriction of Administrative Regulation and Administrative Control on Economic Activity Act (SG 55/17.06.2003, which came into force in December 2003). This involved formulation of general principles for imposing administrative procedures and compliance of effective and future regimes with these general principles. The essence of the Act is to regulate generally the relations between merchants and central and local bodies in terms of commencing, conducting and termination of economic activity.

In summary the main positive aspects of the Act are:
- Introduction of a licence, registration and permit regime shall be effected by operation of a law.
- The list of economic activities for which licence regime may be established has been approved (these economic activities number 39).
- Preliminary assessment of the impact of tabled draft laws on business environment is mandatory;
- Silent consent is introduced for single transactions.
- One-stop shop service is introduced - according to the National Union of the Municipalities such one-stop shops are in operation in 70 of the 264 municipalities in Bulgaria.
- The administration shall provide full and complete information on the terms, due fees and the methodology of calculation thereof, and assist in the completion of documents.

Expected positive effects from the introduction of the Act are: greater transparency and predictability of the business environment, more clear rules, less corruption. It should be noted however, that the effect of the Act is to be felt in the future.

3.2.5 Innovation financing

The transition to a market economy and the bank system collapse in 1996-1997 had a negative impact on the level of financial resources available to companies. The difficulties experienced by entrepreneurs that needed crediting in the last few years (before 2003) were enormous. It is not surprising that in this situation innovation financing was a major issue for all those who dared to innovate or implement innovations.
The same conclusions are visible in the results of a survey carried out by the National Statistical Institute (www.nsi.bg) in 2003. The survey concerned the overall performance of the SME sector in Bulgaria. Part of the survey touched the problems related to innovation financing and implementation. When asked about the hindrances to innovation in their companies, the owners/managers outlined as a major problem the lack of financing (69.8 percent) and the high price of innovation (53.6 percent). Unfortunately Bulgarian SMEs find it very difficult to apply for a grant (before programmes such as PHARE) or a loan from a bank, mostly because they cannot afford paying an experienced consultant or they do not have the history required.

3.2.6 Taxation

Since its initial promulgation in 1998 the Corporate Income Tax Act (CITA) has been amended and supplemented over a dozen times. The last amendments were adopted in June 2004 and would come into force in January 2005. The same is true for the Personal Income Taxation Act.
The purpose of the amendments to the tax laws is above all to create favourable conditions for business development. That is why the decrease of the tax burden is more substantial for entities subject to taxation under the Corporate Income Tax Act compared to persons liable under the Personal Income Taxation Act.
A major improvement concerning corporate income tax was introduced in 2003. It was decided that the tax burden for companies would decrease from 23.5 percent to 19.5 percent. In addition to this decrease of four percentage points, there are also other facts that are substantial for the business. Most important of them were the equalisation of the VAT registration threshold with the ceiling on annual turnover subject to presumptive taxation (BGN 50,000), the tax relief regime for certain types of expenses (e.g. when employer is hiring a long-term unemployed person), etc.
The CITA provides a concession in the corporate tax for the law-established research institutions funded by the state budget. Currently the concession accounts for 50 percent of the total corporate tax being remitted to the institution. It was decreased from 80 percent in 2002 probably due to lack of financial resources and fiscal problems.
The amount of personal income tax follows the same pattern of decrease as the CIT but with a slower pace. One substantial change that was not included in the latest amendments but is being widely commented by the Government and tax experts was the introduction of family taxation that would guarantee a higher level of fairness in taxation and equal standing for all tax liable entities.

3.3 Gearing research to innovation

The years after 1989 proved to have a serious negative influence both on research and development activities and innovation policy. The problems in transforming the economy and the lack of a consistent policy lead to a decrease of R&D spending as a percentage of GDP from 1.64 percent in 1992 to 0.47 percent in 2001. At the same time more than 60 percent of the funding came from the public sector, while private enterprises accounted for less than 28 percent, with this number continuously decreasing for the period 1999-2001.
With this in mind it is not surprising that bringing R&D and innovation initiatives to a level that is necessary for a successful economic development requires a lot of effort and dedicated policy and funds. The Government started with the preparation of an Innovation Strategy more than two years ago, and finally after a serious delay in August 2004 it was passed through the Council of Ministers.

3.3.1 Strategic vision of research and development

There was not a thorough and accurately formulated innovation policy in Bulgaria before 2002. The new (at the time) Government made the first steps towards strengthening the innovation potential by paying attention to innovation in the government programme and most of all by carrying out the project for Science, Technology and Innovation (STI). The project was developed by the Ministry of Economy and Ministry of Science and Education with the financial and expert support of the Dutch Government.
The document went through several revisions to come to the version adopted in June 2004 by the Council for Economic Growth.
The main goal of the Innovation Strategy is the increase in competitiveness of the Bulgarian industry. This according to the document means building up an industry based on the so-called 'knowledge economy', namely introducing new products, materials and production technologies, management and services, that result from implementation of contemporary science research.
This will lead to:

- Increase in GDP
- Increase in the value added of the Bulgarian industry
- Increase in productivity
- Increase in the export potential
- Improvement of the balance of payments
- Attracting more foreign investment

Surely the accomplishment of these tasks needs some major prerequisites in order to become true. Namely the most important of them are:

- Human resources development
- Creation of new knowledge
- Transfer and implementation of advanced technologies
- Availability of financial resources for implementation of innovative solutions
- Markets development

The Innovation Strategy looks closely at both the current situation and ways and specific measures for its improvement. A serious strength of the strategy is that unlike some other strategic documents of the Bulgarian Government this one includes a detailed prescription of actions, responsible institution and period for accomplishment. Therefore, it is logical to expect that the official approval of the strategy by the Council of Ministers should automatically start the implementation process. This will fortunately improve the innovation environment in Bulgaria and provide alternative sources for the missing funds for research and development.

3.3.2 Strengthening research carried out by companies

Up to now Bulgaria cannot vaunt of any specific actions or even less of any success in supporting companies' research and innovation activities. There were 'more important' issues to solve with managing a transitional economy and working for macroeconomic stability. Now that these factors have become reality it is time to turn to measures that would improve the competitiveness of the country with certain and quick results with strengthening the R&D policy and supporting innovation initiatives being by far some of the proven drivers for boosting up economic performance.

3.3.3 Start-up of technology-based companies

There is no specific policy for start-ups in the high-tech sector or technology-based companies. There was a PHARE project on establishing Hi-Tech Business Incubators (BI) that was seriously delayed and in 2003 the BI part of the project was cancelled.

Different studies and research show that in Bulgaria the time period and indirect costs[10] for starting up a business are considerably higher than in the EU: every entrepreneur in Bulgaria passes through ten procedures and waits 30 days to register a company, while best practices in EU provide for European SME to pass through one procedure taking up to three days[11]. Together with that over the past two years the procedures for business start-up in Bulgaria have not been eased up and convergence to European trends has been delayed. This refers primarily to the number of various administrative steps in the registration process. In Bulgaria they are eight, or close to the leading CEE countries: six in Hungary, seven in the Czech Republic, and eight in Slovenia. By comparison, in Ireland, Great Britain and Finland these procedures vary between one and three. At the same time Bulgaria outruns by these parameters EU member states with a comparatively low GDP per capita like Greece and Portugal[12]. A conclusion may be drawn - there is a strong potential for improvement of the administrative environment for business start-ups in Bulgaria, the materialisation of which requires investing more funds to be indirectly channelled to business. This conclusion is underpinned by the Global Competitiveness Report 2002-2003[13], in which Bulgaria ranks 62nd according to the indicator administrative barriers to business, and 79th according to the indicator administrative barriers to start-up companies (out of 102 countries). This shows significant potential for improvement in order to enhance competitiveness of Bulgarian companies.

Besides indirect costs for start-ups in Bulgaria, there is a certain amount of direct costs as well. Starting up business in Bulgaria is comparatively cheap. Direct costs for start-ups in Bulgaria are estimated at EUR 132[14]. Compared with income per capita, however, these data suggest a potential for improving the measures in economic policy. For example, in Bulgaria the time and costs for start-ups are estimated at about 25 percent of annual income, while in EU leading countries such as Ireland and Finland their share is reduced to 17 and ten percent[15]. By these indicators Bulgaria outruns many CEE countries and some EU countries including Greece, Portugal and Spain.

As a result of these regulations the process of business start-up in Bulgaria is comparatively relieved but is still far behind the indicators of best practices. A process of active start-up of new enterprises is underway in the country – between 15 and 20 percent of new enterprises start up per annum as a share of existing enterprises[16].

At the end of 2003, new measures in economic policy were proposed, with the potential to encourage entrepreneurship. A serious step in this regard is the already mentioned: the Restriction of Administrative Regulation and Administrative Control on Economic Activity Act and the newly adopted Encouragement of Investments Act and the amended SMEs Act (as of July 2004).

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[10] Indirect costs depend mainly on the time for communication of entrepreneurs with the administration, related to a specific number of registration procedures and conduct of business activity.

[11] OECD. South East Europe Region. Enterprise Policy Performance: A Regional Assessment. Oct. 2003, p. 28; see also Djankov, La Porta, de Silanes, Shleifer. The Regulation of Entry. The World Bank Policy Research Working Paper 2661, Aug. 2001, p. 38

[12] Djankov, La Porta, de Silanes, Shleifer. The Regulation of Entry. The World Bank Policy Research Working Paper 2661, Aug. 2001

[13] World Economic Forum. The Global Competitiveness Report 2002-2003

[14] OECD. South East Europe Region. Enterprise Policy Performance: A Regional Assessment. Oct. 2003

[15] Djankov, La Porta, de Silanes, Shleifer. *The Regulation of Entry*. The World Bank Policy Research Working Paper 2661, Aug. 2001

[16] European Commission. Benchmarking Enterprise Policy. Results from the 2002 scoreboard. Nov. 2002

The Scientific Research Encouragement Act adopted in 2003 gives indications of support to the economic policy for creating a new, knowledge-based economy in Bulgaria.
Together with that the business incubation initiatives are often discussed by the Government, NGOs and private sector, but little has been done in this direction. Maybe the most advanced project concerning the establishment of business incubators in Bulgaria is the JOBS project (details already discussed in 3.1.1).

3.3.4 Intensified co-operation between research, universities and companies

The transition period resulted in the worsening of the situation concerning co-operation between research institutions, universities and companies. With the governments having other important decision to make and the withdrawal of the state from its active role in research and innovation markets, the linkage between the different players became blur and difficult. This fact is also clear when reviewing the performance of Bulgaria regarding the 'University/industry research collaboration' index from the Global Competitiveness Report 2003/2004. In this respect Bulgaria ranks 80th (out of 102 countries examined), with a score of 2.6 (scale 1 to 7, 7 meaning intensive and ongoing university/industry collaboration). Regarding this indicator compared to other EE countries Bulgaria outruns only Macedonia (ranked 82, score 2.5).
Slightly better (having in mind that some of the countries did not receive ranking in this field) is the situation concerning 'Technology Transfer Subindex' from the same report, where Bulgaria occupies 67th place, scoring 3.79.
These two facts, although not providing a complete and thorough reflection of the situation, give an idea of the unsatisfactory status of co-operation between research, academic and business institutions in the country.
At the same time in 2003 there are several initiatives that are aiming at improving the co-operation among different parties concerning innovation and research. Firstly it is the BIA project 'Innovation for Business', which above all targets to rebuild the bridge between science and industry.
Together with that the Innovation Relay Centre (IRC) in Bulgaria provides opportunities for technology transfer through the IRC network and its website (www.irc.bg).
Interesting information about the development of Bulgarian science and research may be found on the Democrit website (www.democrit.com) - the Information Centre for News and Resources on Bulgarian Science.

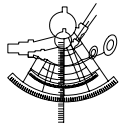
3.3.5 Strengthening of the ability of companies, particularly SMEs, to absorb technologies and know-how

Measures BG 03, BG 04 and BG 05, which target SMEs and start-ups, provide companies with access to resources needed to acquire new technologies and endorse a know-how transfer process. Several important measures that will undoubtedly have a positive impact on increasing the ability of companies to absorb new technologies and know-how are also included in the new Innovation Strategy.

Firstly the strategy envisages the support of highly qualified young specialists in SMEs. The idea of the measure is to encourage companies to hire new graduates and young experts that would result in increasing the innovation potential of SMEs that make use of the programme. The encouragement scheme will be active for a period of 18 months while a young researcher or analyst is hired and the scheme will include reimbursement of the total amount of social and health insurance contributions made by the employer.

The strategy also proposes entrepreneurship encouragement, actions for attracting more FDI in R&D activities and above all the creation of a National Innovation Fund that will support all projects related to scientific research, innovation initiatives and introduction of innovative products and solutions.
This way of stimulating innovation is preferred over giving tax incentives for R&D because:

- Tax incentives are not effective for companies that make little or no profit.
- In the case of tax incentives, the expenses have to be pre-financed; reimbursement is only issued after expenses have been made.
- It is difficult to establish which expenses are related to R&D.



4. List of TREND CHART measures

Ref	Country	Title	Evaluation	Status	Archived	Start	End	Creation	Last update
BG 1	Bulgaria	Info centres	N/a	Web published	0	2001	2004		10/11/2003
BG 2	Bulgaria	One-stop-shops	N/a	Web published	0	2000	2002		10/11/2003
BG 3	Bulgaria	Guarantee fund for Micro-crediting	The Guarantee Fund had extended loans for 616 projects at a total value of EUR 3,06m by the end of September 2002. Forty two percent are dedicated to start-ups. The Fund guarantees 70% for SMEs and 100% for start-ups.	Web published	0	2001	running		10/11/2003
BG 4	Bulgaria	Research and Development Grant Scheme		Draft submitted	0	2002	2004	06/07/2004	06/08/2004
BG 5	Bulgaria	Consulting services for SMEs and Technology Grant Scheme		Draft submitted	0	2001	2004	06/07/2004	06/07/2004
BG 6	Bulgaria	PROMOTOR+		Draft submitted	0	2003	No End Date Planned	09/07/2004	06/08/2004
BG 7	Bulgaria	Technical Cooperation with Germany		Draft submitted	0			09/07/2004	09/07/2004
BG 8	Bulgaria	PSO-Environment		Draft submitted	0			09/07/2004	09/07/2004
BG 9	Bulgaria	PSO-Environment		Draft submitted	0	2004	No End Date Planned	09/07/2004	06/08/2004
BG 10	Bulgaria	European Virtual Incubator - Bulgaria		Draft submitted	0	2004	No End Date Planned	09/07/2004	06/08/2004
BG 11	Bulgaria	Incentives for state research institutes		Draft submitted	0			09/07/2004	09/07/2004

BG 12	Bulgaria	Incentives for state research institutes		Draft submitted	0			09/07/2004	09/07/2004
BG 13	Bulgaria	Incentives for state research institutes		Draft submitted	0	Before 1995	No End Date Planned	09/07/2004	06/08/2004
BG 14	Bulgaria	Better Dissemination of Scientific Research and Linkage with Business		Draft submitted	0	2005	No End Date Planned	25/11/2004	25/11/2004

Archived: 0 means no, 1 means yes

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