



RECOMMENDATIONS FOR STRENGTHENING THE ROLE OF SMALL AND MEDIUM-SIZED INNOVATION ENTERPRISES IN COUNTRIES OF THE COMMONWEALTH OF INDEPENDENT STATES

VERSION 1

Prepared by the Division for Certain Countries in Europe and Asia



Table of Contents

INTRODUCTION	3
1. THE ABSOLUTE NEED TO STRENGTHEN THE ROLE OF SMALL AND MEDIUM-SIZED INNOVATION ENTERPRISES IN THE ECONOMIC DEVELOPMENT OF SOCIETY	4
1.1. Transformation of innovations into a decisive factor for economic growth	4
1.2. Small and medium-sized business as the most optimum form of entrepreneurial activity in the field of innovation.....	6
1.3. Dissemination of the experience of developed countries in supporting and stimulating innovation activities of small and medium-sized enterprises	7
2. GENERAL CHARACTERISTICS OF THE ROLE OF SMALL AND MEDIUM-SIZED INNOVATION ENTERPRISES IN THE ECONOMIC DEVELOPMENT OF CIS COUNTRIES	10
2.1. Specific features and trends of innovation development of small and medium-sized enterprises in CIS countries.....	10
2.2. Legislative and normative base of small and medium-sized innovation enterprises in CIS countries.....	14
2.3. Role of the State, its central and local authorities, including national patent offices, in the innovation development of SMEs	16
2.4. Staff potential for innovation activities in CIS countries.....	18
2.5. Financing of the innovation activities of SMEs	20
2.6. General state of infrastructure of small and medium-sized innovation enterprises in CIS countries.....	22
2.7. Interaction of State and private capital, university and scientific research bodies with industry and business	24
2.8. Interfirm relations and patent-licensing activities.....	26
3. MEASURES TO STRENGTHEN THE ROLE OF SMALL AND MEDIUM-SIZED INNOVATION ENTERPRISES IN CIS COUNTRIES	27
3.1. General approaches to the formation of an innovation economy	27
3.2. Priorities of State policy for guaranteeing the transition to an innovation method of development and support for innovation activities of SMEs	29
3.3. Recommendations on the formation and improvement of infrastructure for the innovation activities of small and medium-sized enterprises	32
3.4. Development of the innovations market and capitalization of the results of intellectual activity	34
CONCLUSION	36
Bibliography	38

INTRODUCTION

The exclusive role, which is currently assigned everywhere to innovations as a whole, and also to the innovation activities of small and medium-sized enterprises (hereinafter – SMEs), is predefined by the general requirements of the transition from an industrial to an information society, in which new technologies and knowledge, forming real concrete benefits, are becoming a defining factor for economic growth, and also the increase in the role of SMEs in the economic development of society.

The specific features of the social and economic development of countries of the Commonwealth of Independent States (hereinafter – CIS) have consisted for the past two decades in concentrating basic attention on creating a normative base and the requisite conditions for the successful promotion of market reforms. Thus, while developed countries in the west have directed their main efforts and financial resources to guaranteeing a transition to an innovation method of development and have made notable progress towards technological renewal, CIS countries have been obliged to focus on resolving the problems of the transition from an administrative-command to a market economy: on developing and adopting a legislative base for radical economic reforms, privatizing State enterprises in the main sectors of the national economy, forming the foundations of market economy mechanisms, etc.

In addition, the period in question has been noteworthy at the same time for the recognition of the importance of SMEs and the formation in a number of western countries of an effective system of support for the operations of such enterprises. At the same time, in CIS countries this period has been associated above all with the implementation of major macroeconomic projects to weaken the role of the State and optimize the operations not only of the largest firms, but also most of the sectors of the national economy, by means of economic integration, by means of economic integration into the world economy, which has taken place, primarily, through big business and significant structural changes to the economy.

Thus, in countries in the region in question the objective conditions and possibilities for serious qualitative changes in the development of technology have matured significantly later. Moreover, the effect of a number of political, economic and social factors characteristic of economies in transition has also been preserved, and these factors are seriously hampering the transition to an innovation model of economic growth, the expansion of the SMEs sector and its more active involvement in the innovation process.

On the whole, in the opinion of many specialists, noticeable improvements in the innovation development of CIS countries have not as yet been observed. Nevertheless, in most CIS countries specific steps are already being taken to strengthen the innovation trends of economic development and support the operations of the SMEs sector. However, a number of campaigns to stimulate innovation activities and the operations of SMEs, conducted during the past few years in a number of CIS countries, at their first stage, have in a specific sense become a tribute to fashion or acted as pre-election slogans. In practice, the innovation trends of the economies in most CIS countries are currently only at the stage of formation. The real effect of legislation devised and adopted in this sphere is significantly neutralized by the non-development of market relations, the low level of maturity of the competitive environment, unjustified bureaucracy in the executive, the limited nature of financial resources necessary to create favorable conditions for the functioning of innovation SMEs, high risks, negligible involvement in the global intellectual area, the absence of appropriate infrastructure, the low level of innovation culture and the inertia inherent in economic thinking.

Measures to support SMEs and stimulate innovation activities have developed historically in all places as two independent processes. The promotion and stimulation of small and medium-sized businesses primarily occur without relation to its innovation component. At the same time, the stimulation of innovations has become a vital requirement for economic growth as a whole, including for major enterprises. In specific terms the situation also remains thus at the current time. The formal approach to the problems of stimulation of innovation activities on the one hand, and SMEs on the other, may create a false impression of the intentions to obtain abundant privileges and benefits for innovation SMEs. However, this is not completely the case. The exclusive significance of the innovation component of small and medium-sized business for the economic and social development of society, the heightened risks accompanying the introduction of new technologies, goods and services, and their enormous potential possibilities, in economic and social terms justify in the future virtually any, even the most important financial efforts and privileges to motivate innovation activities among SMEs. In this context, the most important thing is to provide for the use of devoted resources for specific purposes.

These recommendations have systematized the experience of a number of western countries in relation to the successful stimulation of small and medium-sized innovation enterprises, and give the general characteristics of the parameters and role of SMEs in the economic development of CIS countries, as well

as identifying the factors hampering the enhancement of their role and the receptability to the introduction of innovations.

The recommendations are an attempt to present in general terms the organizational, institutional, fiscal, financial-credit and other operating levers that are most acceptable for CIS countries and which may be used for the purposes of strengthening the innovation component of SMEs. They are devised taking into account the level achieved in the development of the innovation activities of SMEs, based on a study and comparison of the normative base of CIS countries, economic and innovation development strategies adopted to support SMEs, and the economic and intellectual potential available.

Within the process of developing these recommendations, scientific and practical literature has been used in relation to innovation development questions, together with a number of materials from the United Nations Economic Commission for Europe, the CIS Executive Committee, annual reports of patent offices of CIS countries, data received as a result of the processing and dissemination of information and evaluations of specialists from national patent offices, contained in the questionnaire sent in October 2008 by WIPO, statistical reporting materials, other information obtained as part of the special analysis undertaken by the authors of the state of innovation activities in SMEs in the Russian Federation and Republic of Moldova, and also fact-finding trips to Azerbaijan, Armenia, Belarus, Kyrgyzstan and Ukraine.

Unfortunately, not all patent offices provided the requested information. When devising the recommendations, the authors attempted partly to fill the gap which had formed from other sources, although information relating to a number of countries is incomplete.

The work has been done at the initiative and with the assistance of the Interstate Council on Industrial Property Protection in CIS countries, national patent offices of the CIS countries, and under the leadership and with the financial support of the World Intellectual Property Organization.

The conclusions and proposals formulated in the work reflect to a specific degree the subjective assessments of specialists from the patent offices that participated in the research done, the experts from other organizations whose services they used, and also of the authors of these recommendations.

The authors wish to express sincere thanks to the heads and specialists of national patent offices, who provided the requisite information and gave assistance in collecting the materials necessary to devise the recommendations, organize meetings with the representatives of State bodies of CIS countries, involved in devising a legislative and normative base, and also coordinating the innovation activities and development of the SMEs sector.

1. THE ABSOLUTE NEED TO STRENGTHEN THE ROLE OF SMALL AND MEDIUM-SIZED INNOVATION ENTERPRISES IN THE ECONOMIC DEVELOPMENT OF SOCIETY

1.1. Transformation of innovations into a decisive factor for economic growth

The transition effected during the past few decades from an industrial society, which has largely exhausted its potential for economic growth, to an information society based primarily on the use of knowledge, information and new technologies, is conditioned by the transformation of the latter elements into a decisive factor for the economic growth of society. A substantial reduction in the past few years in the pace of economic growth virtually heralds the culmination of the era of the industrial society. Qualitative improvements, which have occurred in the modern economy under the influence of the ever increasing harnessing of its innovation trends, give rise in principle to new requirements for the organization, forms, and methods of management and regulation of macro and microeconomic processes, appropriate to the conditions of the post-industrial (information) society.

The innovation method of development, which is manifested more and more in the development of the global economy, provides indicators of the economic growth of society as a whole and individual firms directly dependent on the dynamic pace at which the latest technologies are devised and introduced. In the context of increased competition, which accompanies the process of globalization, only the uninterrupted introduction of new technologies, goods and services may preserve the previous ones and also achieve new advantages over competitors.

Unfortunately, the economic theory and practice of economic activity is, up to the current time, governed primarily more and more by the traditional factors of economic growth. The efforts of managers are directed more and more, in fundamental terms, to making the best possible use of the traditional factors.

The role of innovations as a new factor in economic growth continues to be underestimated, despite the fact that, as shown by special research, their importance has become equal to and, according to certain parameters, significantly exceeded, the overall effect of all the traditional factors of production. Thus, according to the assessments of western experts, global economic growth is already based, more than 75 per cent, on the achievements of scientific and technical progress, more than half of the profits obtained by firms are generated as a result of the promotion of new goods and services on the market, while the share of non-material assets in the value of the long-term assets of firms from western Europe is close to 50 per cent (in the United States of America to 70 per cent), thereby preserving quite high rates of growth which significantly exceed the rates of growth of other assets. In this connection, reference should also be made to the significant increase in the importance of innovation development as a consequence of the increasingly acute problem of the exhaustibility of traditional and, especially, raw material resources. Contrary thereto, innovations as a result of creative and intellectual activities are virtually inexhaustible.

All this points to the fact that innovation development is to an ever greater extent being transformed into the most important component of the reproduction process as a whole, and stable economic growth, the preservation and creation of new competitive advantages, is becoming possible only provided that the transition is made to an innovation model of economic development.

Of course, new technologies also previously served from time to time as important stimuli for economic growth. The specific and unique nature of the current stage consists in that innovations have become a **decisive factor** for economic growth, which is universal in nature.

Thus, it may be concluded that there is no alternative to the innovation method of development at the current time.

The underestimation of the unique possibilities offered by innovation development relates firstly to the majority of the least-developed and also post-socialist countries. To a significant extent, this is the consequence of a low level of innovation culture, relative accessibility of natural and raw material resources, and also the primary use during the past two decades of the potential for regrowth, which in a number of CIS countries was an important resource for the support of sufficiently high rates of economic development. However, at the present time the phenomenon of regrowth has also virtually exhausted its resources.

Further reliance on the use of natural riches, the intensive use of which in many CIS countries during the past few years has become an important source of budgetary income, combined with reduced prices for raw material resources, not only contradict the principle of the limited nature of such resources, but also distort the actual value correlation of reproduction factors, thereby virtually distorting the foundations of entrepreneurial activity and reducing the innovation grounds for economic development.

The innovation method is in essence a new model of economic growth, appropriate to the post-industrial society, which does not have other similar methods or alternatives to it. Moreover, the innovation model of growth is at the heart of the new economic situation of society, the transition to which for CIS countries will, in our opinion, be no less complex or lengthy than the transition from the administrative-command economy to a market system, which has taken almost two decades and in essential terms is not yet fully complete.

It would therefore be a mistake to hope that the transition to an innovation model may be guaranteed only by devising and adopting a number of legislative and normative acts, able to overcome the inertia inherent in economic thinking and the high risks, to create appropriate stimulation mechanisms for the process of devising and using new inventions. In reality, this constitutes serious reconstruction of the whole economic mechanism on a micro and a macroeconomic level, the need for which stems from the radical change to the role played by technical progress in the development of modern society. According to its scope and complexity, this process is equal in importance to or even exceeds the transition to a market economy, industrialization, reconstruction and other processes of the economic and social transformation of society.

The complex and non-standard transition to an innovation model of economic growth is also proven by the experience with the implementation of the Lisbon innovation strategy of the European Union which, according to a number of indicators, was a failure and, a few years later, was subject to specific modifications.

Thus, the specific features of innovations themselves as a factor in economic growth consists of their non-exhaustibility which stems from the uninterrupted process of generating new ideas, knowledge, information and durability, as well as their non-material nature. Taking into account the fact that all the remaining factors of economic growth, used by humanity over several millennia, have directly opposing qualities, the

task of a transition to an innovation method of development is exclusively complex, since it presupposes radical changes to the fundamental principles of the economic development of society, which currently are traditionally based primarily on making the best possible use of the material, financial and labor resources available. In the most general terms, the task is one not simply of stimulating innovation activity in several sectors or spheres of activity, but in endowing the whole of economic development with innovation-based policies.

1.2. Small and medium-sized business as the most optimum form of entrepreneurial activity in the field of innovation

The experience of most developed countries bears witness to the fact that small and medium-sized businesses are sufficiently effective and represent the most dynamically developing sector. Major corporations, which have unquestionable priority in the opportunities for attracting financial, material and labor resources to carry out large innovation projects have undisputed advantages in a whole number of sectors and spheres of activity. At the same time for many spheres the optimum and most productive are small forms of organization of economic activity. The development and introduction of innovations are, to a significant extent, part of this group.

The main advantages of small and medium-sized enterprises have been researched sufficiently fully, are confirmed by the practice of economic activity of all market economy countries and include the following:

flexibility, a sense of initiative, dynamism and maneuverability in taking managerial decisions:

absence of inertia inherent in the adaptation to constantly changing technological and market operating conditions;

increased receptability to new, original innovations and technologies;

absence of manifestations of bureaucracy and formalism in the organization of a firm's activities;

a high level of capability in providing diversification of goods and services in accordance with the momentum of demand, and accelerated reaction to changes in economic circumstances;

relatively low capital intensity;

a quicker return on investments (as much as twofold);

the production of SMEs largely corresponds to modern trends for the individualization of demand.

The expediency of support for SMEs from the State is governed by a number of factors, including social and macroeconomic elements:

SMEs help to reduce unemployment, thereby swallowing up a significant number of employed people, which has a beneficial effect not only on the social development of society, but also on the pace of economic growth;

SMEs help to form the middle class which consolidates the stability of social systems, based on market-economy principles;

they also help to diversify the economy and create healthy competition;

SMEs are usually responsible partners and disciplined budgetary payers;

the financial difficulties of individual SMEs are, as a rule, not reflected in macroeconomic processes;

SMEs are much less involved in the processes of capital flows overseas;

SMEs usually benefit from the loyal nature of public opinion.

to a significant extent, **the advantages of small enterprises relate also to the innovation sphere**, as shown by the following:

in small enterprises the most beneficial conditions are established for creation which, by its very nature, is individual;

creative activities are, by their very nature, alien to superfluous organization, hierarchical concerns, and are characteristic of major firms, and at the same time they are characterized by the striving for freedom which is an important condition for achieving anticipated results.

in small firms, an inventor, owner and manager often act as a single individual, which in a significant sense virtually removes the basic contradiction of corporate management;

new information technologies create favorable conditions for the operation of small enterprises, which were previously possible only within major firms.

Not without reason do many large corporations, whose activities are associated with new economic sectors and have expressed innovation designs as a result, rise to the level of small firms.

During the past few years the importance of small enterprises has increased everywhere and in all spheres, including that of innovation. This is not by chance. Western experience of entrepreneurial activities clearly confirms the advantages of SMEs in innovation development. Thus, according to specialists' observations, 46 out of 58 leading inventions in America and Western Europe in the twentieth century belong to individuals and small firms. In accordance with the data of the National Scientific Fund of the United States of America, firms with up to 500 employees, calculated for each dollar invested in scientific research activities, gave 24 times more new inventions than large corporations (with more than 10,000 employees).

Based on the fact that SMEs largely correspond to and assist the formation of a mature competitive environment, which is the driving force for the participation of private capital in innovation activity, it may be concluded that SMEs are an important factor for the acceleration of technological development.

1.3. Dissemination of the experience of developed countries in supporting and stimulating innovation activities of small and medium-sized enterprises

The model of innovation enterprise, promoted in the 1920s by Joseph Schumpeter, which is currently commonly considered to be a classic model, is integrated in basic terms into the market-economy mechanism so that the effect of market forces creates, in objective terms, effective grounds for innovation activity. In accordance with the model in question, a specific segment is constantly identified among entrepreneurs, which does not content itself with average profit even in the efforts made to enhance it in relation to investment in new technologies, goods and services.

This mechanism is of course still in operation now. The competitive environment, which is typical of mature market relations, and helps to reduce profit standards and the level of profitability, in practical terms significantly expands the field of activities for the use of technological innovations. Nevertheless, even in western countries, where mature competition exists, natural market forces clearly show that they are insufficient in terms of motivating innovation activities and the need for additional mechanisms to support and stimulate processes to devise and master new forms of technologies, goods and services.

In the past few decades, in western countries complex systems have been formed to stimulate various aspects and stages of the innovation process, which include a multitude of direct and indirect instruments for stimulating effects, and which allow a sufficiently broad spectrum of forms of activity to be covered, beginning with research and culminating in the market promotion of new technologies, goods and services. It goes without saying that the greatest interest is in the experience of countries which form the so-called technological nucleus of global development: United States of America, Japan, Germany, United Kingdom and France. In the west, three basic models have been formed for innovation development (American, Western European and Japanese), which possess many common, but also a number of distinguishing, features. They are sufficiently broadly presented in scientific and practical literature. During the past few years significant experience of the stimulation of innovations has been accumulated in a number of other countries, which actively promote technological development: Sweden, Netherlands, Finland, Republic of Korea, China, Israel, Singapore etc.

Of undoubted interest also is the experience of the European Community in coordinating the innovation policies of countries in the Union and strengthening integration for the purposes of creating a single science and innovation common European area.

Taking into account the fact that it is impossible to disseminate all the huge experience gained of the stimulation of innovation processes as part of these recommendations, we will restrict ourselves only to the most effective direct and indirect measures, aimed primarily at the innovation development of SMEs. **The main forms of support and stimulation for innovation activities of SMEs**, used in developed countries, in the most general sense include the following:

direct financing of scientific research and development work to create and use innovations in the form of subsidies for devising and promoting new technologies, goods and services which usually constitute about 50 per cent of overall expenditure of firms for these purposes (United States of America, France etc.). A significant portion of this expenditure is commonly used to stimulate the innovation activities of SMEs. For example, within the general scope of State subsidies in Germany, aimed at financing inventions in industry, the share of SMEs is about 30 per cent. In the United Kingdom, a special State program has been set up, by means of which expenses of small innovation enterprises for new inventions are subsidized. The most widespread form of subsidies during the past few years are grants, which are given both by the State and also by different international and public organizations, as well as by special funds, by means of financing of innovation projects on a competitive basis.

Special loans for innovation activities, granted as a rule on specific conditions and which envisage full or partial compensation of bank interest from special funds, or the State budget. This stimulation measure has been most widespread in Western Europe. So, in Germany SMEs which invest resources in the modernization of production facilities, control of the launch of new types of products or measures for rationalizing the use of energy, receive special loans up to 50 per cent of the resources spent for these purposes by an enterprise itself, while bank loans for acquiring new equipment are insured from the State budget. In Italy, special loans for technological innovations are granted up to 80 per cent of the cost of an innovation project for a period of up to 15 years.

The grant of tax privileges and holidays relates to measures for indirect stimulation of the activities of small and medium-sized innovation enterprises. Based on the fact that an enterprise's profit is the foundation for financing innovation activities, and increasing it leads to growth in companies' innovation opportunities, and also on the stimulating and regulating functions of taxes, many developed countries, beginning from the 1960s, actively use the tax system for the purposes of stimulating innovation development.

In practical reality in different countries various approaches are used to tax privileges: specific or single-purpose grant, establishment of temporary frameworks etc. The most widespread and effective forms of tax privileges are: a reduction in tax rates on profits, used to finance research and development, acquisition of high-technology equipment and other purposes linked with innovation activities; a reduction in the taxable base for the size of expenditure aimed at conducting scientific research and developments, which in some countries significantly exceed actual expenditure on research (in separate periods they constituted in Singapore up to 200 per cent, Australia – 175 per cent, United Kingdom 125 per cent, and for SMEs – 150 per cent); a so-called research (investment) tax credit, granting in essential terms a postponement of tax payments on profit, used for innovation purposes and promoting the reduction of the overall tax burden (USA, Japan, France, Spain, Ireland, Canada, Netherlands); the inclusion of expenditure on research and development in the self-costing of products; tax holidays on profit obtained from the introduction of innovation projects, granted for a number of years; the establishment of privileges for taxation on profit obtained as a result of the use of patented inventions, utility models, know-how and other intellectual property subject matter; a reduction in the taxable profit on sums of contributions to funds used for innovation activities, the acquisition of tools and equipment, transferred to the scientific research and innovation spheres, etc.

In the United States of America small innovation enterprises automatically come under the special taxation system in that the level of taxes is set 25 per cent lower than for other small enterprises. The fiscal legislation of a number of countries also envisages the possibility of the extension of a right to different tax privileges, where they cannot be used as a result of profit being directed to innovation aims. In this regard, the period of extension may be from one to 15 years.

On the whole, according to results of research conducted during the past few decades in different countries (United States of America, Canada, France etc.), it may be concluded that the provision of tax privileges to stimulate R&D positively influences an increase in investments in research and developments in the private sector. It is for this reason that in many industrially developed countries (United Kingdom, United States of America, Japan, France, Canada, Australia, Republic of Korea, Singapore, Netherlands etc.), tax privileges and holidays are widely used to stimulate innovation activities.

At the same time, the existing ambiguity in the evaluation of the role of tax privileges in activating the innovation process and difficulties connected with their correct application, as well as problems relating to the complication of fiscal legislation and administration of corresponding privileges, have led to a situation

whereby a number of countries (Germany, Finland etc.) have rejected them or use them in a very limited manner.

The establishment of systems of privileges for depreciation charges is a fiscal measure and, essentially, leads to the establishment of accelerated terms for redemption of equipment and, especially, its high-technology component. For these purposes, the service periods for equipment are usually set at up to three years, while for other basic funds they are up to five years. Transferring the depreciation charges to the cost price of production allows the taxable portion of profit to be reduced. This is widely used in the United Kingdom, Germany, France and other countries. In a number of countries, special systems are used for the redemption of scientific equipment, which in addition to stimulating effects enhance the competitiveness of scientific and innovation activities.

Privileges or full exemption from the payment of customs duties for imports of scientific and high-technology equipment.

Support for venture capital activities, designed to assist special financing for innovation activities. So-called **venture investing** is one of the most effective mechanisms of an active innovation policy, which to a significant extent removes or, at least, significantly mitigates the eternal contradiction between an investor and an entrepreneur regarding the periods for the return of and reward on funds invested. Foreign experience of the operation of venture capital shows that it is usually generated through the funds of private corporations, pension and insurance companies, banks, investment funds and other sources.

Venture companies pursue the aim of obtaining profit from subsequent sales of shares in innovation firms. The stimulation of venture financing is achieved by establishing privileges for them based on tax rates on income from securities operations.

In a number of countries, the State is an active participant in venture financing, especially at the initial stage of development of this financial institution. In this regard, it may act through the State venture fund, which invests directly in innovation enterprises (United Kingdom, India), or by creating a "fund of funds", which invests in private venture funds (Israel, Finland, Singapore), or a mixture of the two (Canada, Finland, Japan). Another form of direct participation by the State in venture financing is the provision of State guarantees to compensate for possible losses from the financing of innovation activities (Western Europe, Singapore, United States of America, Japan). With no relation to direct participation by the State in the formation of venture capital, as a rule it provides significant tax and other privileges for its functioning.

The formation of an innovation infrastructure, the main elements of which are consulting, financing, information and other components, and also special organizational structures designed to assist innovation activities, above all SMEs: science-technology parks, innovation incubators, technology transfer centers, technopolises, clusters and other innovation networks, as well as spin-off and start-up companies.

Assistance with patenting, privileges and postponements for payment of patent fees, granted to SMEs, and also to individual inventors by national patent offices or from budget funds. In a number of countries for the different categories of applicants, including for SMEs and natural persons, a special level of patent fees is set (Austria, Germany, United States of America). Thus, in the United States of America in order to stimulate patent activities by SMEs up to 50 per cent of expenses, associated with obtaining protection documents, is paid from budgetary funds. About 25 per cent of patents are granted on the above conditions. In Austria, postponement or exemption from payment of fees is applied, if an invention is designed to save energy.

National patent offices also practice other forms of support for innovation activities by SMEs primarily relating to information, consulting and organization. Among the latest forms of this kind reference may be made to the experience of the National Institute of Industrial Property of France which, as part of the support provided for SMEs to protect and use intellectual potential, offers pre-diagnostic services in relation to enterprises' intellectual property. These services are used to identify appropriate intellectual property subject matter, devise recommendations to provide effective protection and optimum commercial use for them in order to create and implement actual specific advantages.

On the whole, support for innovation activities on the one hand and, on the other, SMEs, has in many respects taken the form of two independent systems which function primarily in accordance with individual rules. However, despite the limited nature of normative acts aimed at stimulating innovation activities among SMEs, they also have a sufficiently wide sphere of contact within the fiscal and customs spheres, promotion of innovation projects and corresponding infrastructure (science and technology parks, innovation incubators, start-up companies etc.).

In most developed western countries, complex systems have been developed for the stimulation of innovations by SMEs. The existence of different forms of stimulation makes it possible to choose from their wide variety those which to the greatest extent meet the specifications for activities and the corresponding stage of the life cycle of a specific innovation project. The combination of the above complex systems with the effect of mature market mechanisms, which have effectively attracted private capital to finance the development and use of innovations, has led to the formation of a highly effective mechanism aimed at accelerated technological modernization.

Between 75 and 85 per cent of the growth in GDP already comes from technologies and products, the production of which is based on new knowledge and technical solutions in western countries.

In this context, the main task for CIS countries consists not simply in using the most effective mechanisms to motivate the innovation activities of SMEs, approved in the practice of western countries, but in their adaptation to the specific features of the economic and social development of the region within the development of their own models of innovation development, based on the scientific and innovation potential achieved, and the financial and material resources available.

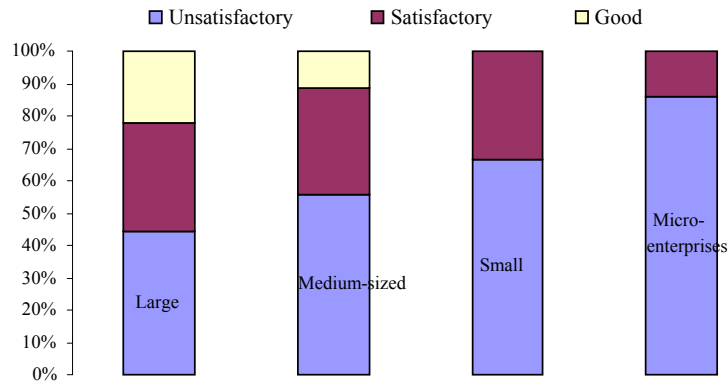
2. GENERAL CHARACTERISTICS OF THE ROLE OF SMALL AND MEDIUM-SIZED INNOVATION ENTERPRISES IN THE ECONOMIC DEVELOPMENT OF CIS COUNTRIES

2.1. Specific features and trends of innovation development of small and medium-sized enterprises in CIS countries

The CIS countries traditionally have significant managerial, scientific research, invention and technical potential, as required for innovation development and guaranteeing a transition to the innovation model of economic growth. In excessively complex conditions of the transition to market relations in most countries, despite the huge difficulties connected with the substantive reduction in financing for scientific research and development activities, the dismantling of the administrative-command system of interaction between science and production, the most important components of this potential have, in many cases in truncated form, been preserved. Moreover, in a number of countries the innovation method was heralded as a priority for further economic development (Russian Federation, Ukraine etc.), which points to the fact that the State authorities and scientific-technical community have grasped the importance of the exclusive role of innovations in the context of modern society, and also of the need for transition to an innovation model of economic growth.

On the whole, CIS countries have, to different degrees, been involved in innovation development, although even in those places where major efforts have been undertaken in this direction, the activities to support the processes of devising and using new inventions has not yet become systemic. This is shown by the unfavorable innovation climate which has been formed in virtually all countries, as reflected in the low level of innovation activities of enterprises in the majority of sectors in the national economy, and especially SMEs, low demand for innovations, characteristic of the real sector of the economy, the negligible interest of entrepreneurs in modernizing production on a new technical basis, the absence of motivation from private capital for innovation activities, the low level of involvement of SMEs in the process of devising and using innovations, the undeveloped nature of the intellectual property market and especially of the innovations market, and also the insufficient degree of integration of non-material assets in the economy. The data from the research conducted show that in most CIS countries, the innovation activities of SMEs as a rule are significantly fewer than among large enterprises (see diagram 1).

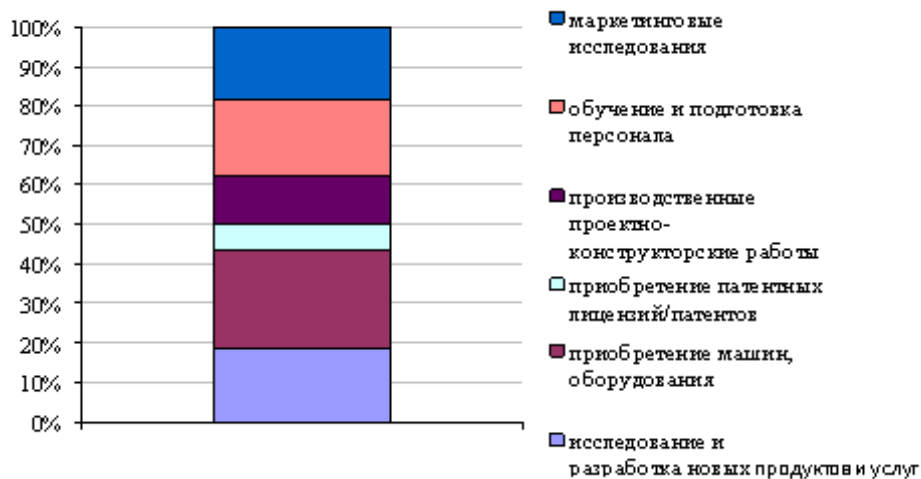
Diagram 1: Innovation activities of enterprises based on their size



Special research into the level of innovation activities in a number of CIS countries also shows the existence in most sectors of industry of a long-standing stable trend whereby the innovation activities of SMEs lag behind their level in large enterprises.¹

The qualitative parameters of the innovation development of SMEs are characterized by the fact that forms of activity prevail in such development, which may be included among innovations only with specific conditions (acquisition of new machines and equipment, marketing research, staff training), and to a much lesser extent the licensing of new technologies, project-design developments etc. (see diagram 2).

Diagram 2: The most widespread forms of innovation activities of SMEs



Key: Blue: marketing research
 Red: staff training and preparation
 Purple: production development work
 Light blue: acquisition of patent licenses/patents
 Crimson: acquisition of machines and equipment

¹ See for example: L.N. Nekhorosheva and S.A. Yegorov, Innovation Activities of Small Enterprises and their Evaluation//Problems of and Prospects for Innovation Development of the Economy in the Context of Overcoming the Global Financial Crisis, Materials of the Fourteenth International Scientific and Practical Conference on Innovation Activities, Kiev – Simferopol’ – Alushta, 2009, pp. 288-297.

Mauve: research and development of new products and services

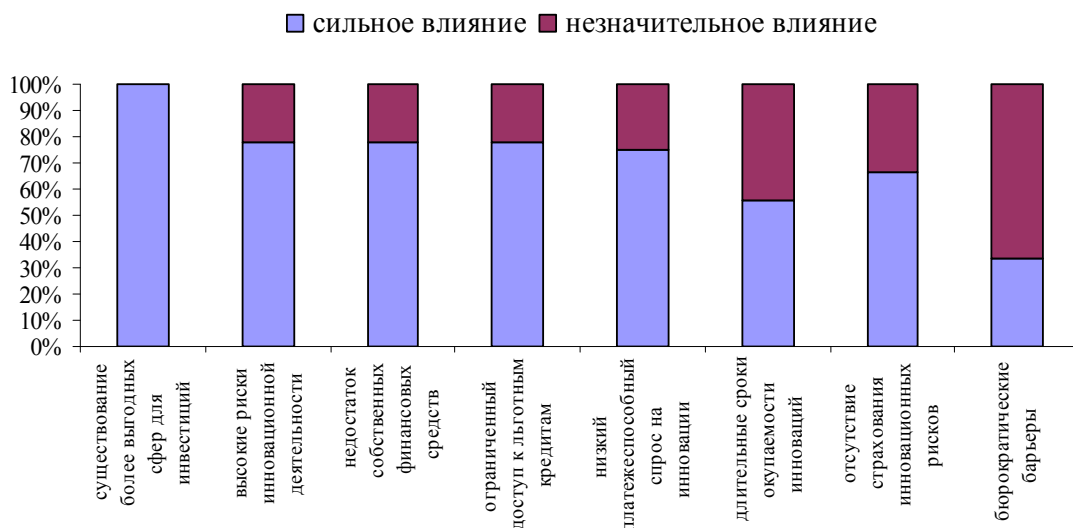
The data from the research conducted are confirmed also by other analytical materials. Thus, according to the data of the State Committee for Science and Technology of the Republic of Belarus, the expenditure structure for technological innovations in 2007 shows a share of 47.2 per cent for the acquisition of machines and equipment².

The statistical data also bear witness to the extremely low level of innovation activities of enterprises in most sectors of the national economy. Thus, in the Russian Federation the share of organizations developing and introducing new inventions has stabilized in the past few years at a level not exceeding ten per cent³. According to the data provided by the State Statistics Committee of Ukraine in 2006 innovation activities constituted only 11.2 per cent in industry of the work of the enterprises investigated. The share of innovation enterprises in Belarus is about 13 per cent. At the same time, in the most developed countries this indicator exceeds a level of 50 per cent.

In the opinion of many experts the mechanism for economic activities which has been established in the post-Soviet period in the CIS countries is essentially anti-innovation. In actual fact, in the past 20 years the innovation activities of all countries in the CIS have been noticeably reduced, and in a number of countries continue to decline. This relates fully also to innovation SMEs⁴. These trends and basic principles which gave rise to them have become a commonplace in scientific and practical literature devoted to the problems of innovation development in CIS countries.

The processing and analysis of the information provided by patent offices of CIS countries on the role of small and medium-sized innovation enterprises in the economic development of such countries basically confirms the opinions of experts cited above regarding the state of innovation activities as a whole, and SMEs in particular. The main factors hampering the innovation development of SMEs include, in the opinion of experts, the most influential as follows: the existence of more beneficial spheres for capital investment; the lack of own financial resources and limited access to special loan resources; high risks characteristic of innovation activities and absence of a system to insure them; long periods for a return on innovation expenditure; bureaucratic hurdles (see data given in diagram 3).

Diagram 3: Factors hampering innovation development of SMEs



Key to table: Purple box: Strong influence
Crimson box: Negligible influence

Beneath graph from left to right:

- Existence of more beneficial spheres for investment

² State of and Prospects for Development of Science in the Republic of Belarus, based on the Results for 2007: Analytical Report, A.N. Korshunov et al. Minsk: "Bel ISA" State University, 2008, p. 27.

³ http://www.gks.ru/bgd/regl/b08_13/IssWWW.exe/Stg/d5/21-36.htm

⁴ State of and Prospects for Development of Science in the Republic of Belarus, based on the Results for 2007, p. 306.

- High risks of innovation activities
- Absence of own financial resources
- Restricted access to special loans
- Low effective demand for innovations
- Lengthy periods for return on innovations
- Absence of insurance for innovation risks
- Bureaucratic hurdles

The generalization of the state of innovation potential among SMEs in CIS countries carried out using SWOT elements of the analysis revealed the following strong and weak aspects:

Among the strong aspects, representing an important component of the competitive advantages in the economic development of CIS countries, the following characteristics may be identified:

- ✓ traditionally high scientific potential with the ability to solve the most complex technical tasks. Thus, the scientific potential of Russia according to certain evaluations constitutes about 10 to 12 per cent of the world total;
- ✓ the presence of a developed network of scientific research academic and sectoral institutions which to a significant extent have preserved their potential;
- ✓ a comparatively high level of education among the population;
- ✓ a relatively high level of training of engineers;
- ✓ a significant share of students in technical institutions of higher education and universities specializing in natural sciences;
- ✓ a high level of potential for inventive activities;
- ✓ a traditionally strong role of the State in scientific research and innovation activities.

Weak points include:

- ✓ a distorted age structure among scientists, developers and inventors;
- ✓ traditional lack of receptability among enterprises to innovations;
- ✓ absence of real competition and, consequently, the presence in many sectors of excess profitability, which thus become more attractive than innovation activities in investment terms;
- ✓ weak coordination with the private sector in devising priorities and measures for the financial support of R&D;
- ✓ limited innovation orientation of the scientific research sphere;
- ✓ deterioration of sectoral science and especially development activities of industrial enterprises which previously provided the main scope of applied research aimed at resolving practical production tasks;
- ✓ the undeveloped nature of infrastructure to support innovation development, especially as it applies to SMEs;
- ✓ a low level of innovation culture;
- ✓ a low level of innovation information management, hampering the adoption of innovation-related solutions;
- ✓ the undeveloped nature of specific forms of financing for innovations (venture, competitive financing, special loans etc.);
- ✓ the absence of a market for innovation developments and an unjustifiably low level of capitalization for such developments;
- ✓ backwardness in technical terms of many sectors of industry, manifested in the superdeterioration of basic funds, especially the supply of machines, and consequently the low level of competitiveness of products;
- ✓ the negligible rate of renewal of products manufactured;
- ✓ the absence of regular monitoring and evaluation of innovation policy measures for carrying out corrective measures, as manifested in the low demand for new technologies and the undeveloped nature of technology transfer;
- ✓ the negligible level of integration in the world scientific and innovation area, and in the global innovations market;
- ✓ the low level of actual enforcement of intellectual rights and weak development of mechanisms for disposing of these rights;
- ✓ the bureaucratic and easily corruptible nature of State officials.

It may thus be concluded that the anti-innovation character inherent in the economic development of CIS countries is systemic.

When analyzing the state of innovation activities in CIS countries, emphasis is frequently placed on its scientific component to the detriment of its entrepreneurial aspect. An approach of this kind conceals the

danger of exaggerating potential possibilities and expectations of innovation development, and ignoring the motivations for devising and using new inventions.

2.2. Legislative and normative base of small and medium-sized innovation enterprises in CIS countries

The normative and legal regulation of innovation activities is extremely important for the provision of innovation development and functioning of SMEs. A study of the state of the legislation of CIS countries demonstrates that in most of them the main elements of the normative and legal foundations of innovation development and support for small and medium-sized enterprises have been created or are in the development stage.

Although special legislative and normative acts, aimed at supporting innovation development and activities of SMEs, have not yet been adopted in all countries, this does not mean that legal and normative foundations for the functioning of the given spheres of activity are completely absent. A number of mechanisms to support SMEs and innovation activities have been enshrined in legislation, regulating the general foundations and principles of entrepreneurial activity: civil, fiscal and customs codes, other legislative acts from various sectors of the law, presidential decrees, regulations of the cabinets of ministers, various concepts, strategies and programs for economic development adopted at the federal, regional or sectoral levels.

A general review of the legislative and normative acts for the innovation development of CIS countries bears witness to the fact that, despite the presence of rich foreign experience and the adoption by the CIS Interparliamentary Assembly of a model law relating to innovation development, in CIS countries specific differences in approaches to the formation of such acts exist. Therefore, in a number of countries general framework laws on innovation activities (Azerbaijan, Armenia, Kazakhstan, Kyrgyzstan and Ukraine) have been adopted or are being developed. Of those countries the most active work in this area is being done in Ukraine, where a number of essential legislative acts were adopted as far back as the 1990s. To date, in this area a relatively broad legislative and normative base has been created for scientific research and innovation development, the granting of special privileges and preferences, and the formation of the requisite infrastructure. The main legal acts for innovation development in Ukraine are Basic Law No. 40-IV on Innovation Activities, of July 4, 2002, Basic Law No. 433-IV on Priorities for Innovation Activities, of January 16, 2003, Basic Law No. 991-XIV on Special Rules for Investment and Innovation Activities of Technology Parks, of July 16, 1999, etc. It should be pointed out that in Ukraine technology parks are granted privileges similar to those for free economic zones.

In other countries, general legal regulation of innovation development is integrated into legislative acts which define the foundations for the functioning of scientific research activities and innovations as a whole (Moldova and Uzbekistan). In this regard, in Moldova the status of the corresponding law has been raised to the level of a code, in accordance with the provisions of which the Academy of Sciences is entrusted with the functions of coordination and organization not only of scientific research but also of innovation activities.

In certain CIS countries (Belarus, Georgia and Russian Federation), where there are no special laws on innovation development, the matter is regulated by laws on science and the foundations of science and technology policy, entrepreneurial and investment activities, presidential decrees, regulations of the cabinets of ministers, aimed at strengthening measures to devise and introduce into the economy the results of intellectual activity, the development of innovation infrastructure, creation of favorable conditions for devising and using new inventions, modernizing production and mastering new forms of products.

An analysis of the qualitative condition of legislation in CIS countries, which regulates innovation development and compares it, points to the **fragmentary nature, which is a consequence of the absence in most CIS countries of methodological approaches**, allowing the complex nature of the formation of an integrated innovation model of economic growth to be provided for. The fragmentation in question is manifested in the regulation only of individual segments of innovation development and the use of only certain levers from the whole arsenal of stimulation measures approved in global practice. In this connection, the efforts made in the past few years by a number of CIS countries to form a category mechanism for innovation development, including definitions of underlying concepts and arguments for the need to create national innovation systems, appear to be completely justified.⁵ It goes without saying that

⁵ M. Bunchuk, National Innovation Systems: Main Concepts and Applications (based on materials of foreign authors) //mb1709@hotmail.com; O.G. Golichenko, National Innovation System of Russia, State

superfluous enthusiasm for theoretical developments hides a certain danger of becoming involved in endless discussions on the nature of categories and concepts, principles for the construction of national innovation systems and its main components, although they do constitute an essential stage in the transition to an innovation model of growth.

The legislative and normative acts of a number of countries are **framework in nature** and establish only the most general principles, aims and tasks of innovation development, without defining specific mechanisms and levers for their implementation.

The other distinguishing feature of the normative and legal base for innovation activities in CIS countries is the fact that legislative initiatives **lag behind** and also there are amendments to legal acts **from momentum characteristic of the transition period to a knowledge-based society**. Unfortunately, in this field legislation does not have a necessary pre-emptory function. This is also evidenced by the fact that a number of legislative acts, adopted in the 1990s, designed to accelerate technical progress and create favorable conditions for SMEs, although remaining in force, in certain countries are hopelessly outdated and no longer meet the requirements of the time.

Many legislative acts aimed at regulating innovation activities, as indeed are other legislative acts of CIS countries, are characterized by their excessively **discretionary nature** which is manifested in the superfluously broadened powers of State authorities, which gives rise to bureaucracy, unjustified and lengthy agreements, and in the final analysis the inability of entrepreneurs and inventors to defend themselves when faced with the arbitrary will of officials.

The weak point of legislative and normative acts is the legal enshrinement of basic concepts used in the practice of innovation activities. This is undoubtedly the consequence of turbulent scientific discussions, devoted to the category mechanism for innovation activities. In the opinion of specialists, despite the existence of a number of contradictions, the terminology of innovation activities is most fully reflected in the standard introduced in 2005 in the Republic of Belarus, which was subsequently adopted as the Interstate standard of the CIS⁶. This gives the definition of 41 terms in Russian with the English, German and French equivalents included.

It should also be pointed out in particular that the legislative and normative base of CIS countries, as a rule, **does not direct innovation activities to achieving final results**, which are produced in advanced technologies, or new goods and services.

A number of legislative provisions on innovation activities are **declaratory**. For example, the Law of Ukraine on Scientific and Science and Technology Activities established the rule for financing scientific and technical activities from the State budget, to the tune of 1.7 per cent of GDP, while between 2001 and 2006 actual financing did not even reach one per cent. A similar condition is observed also with the expenses for education and the specific weight of special-purpose program financing for scientific research.

Finally, we note the **absence of stability and consistency** inherent in legislation relating to innovation activities in certain countries. Thus, in Law of Ukraine No. 2505-IV on Amendments to the State Budget for 2005, of March 25, 2004, all the privileges for innovation and investment activities were abolished, while in Law No. 3333-IV of January 12, 2006, they were re-established for innovation projects carried out within technology parks and the frameworks of priority trends.

On the whole, the dissemination of legislative and normative foundations for the innovation development of SMEs in CIS countries allows the conclusion to be drawn that in all places real steps have been taken to form a system of legal regulation for their activities and provide them with different privileges and preferences. A comparative analysis of the legislative and normative base for the stimulation of innovation activities and support for SMEs bears witness to the fact that the legal foundations for the support of SMEs are more mature and result-oriented in comparison with the normative basis of the grounds for innovation development, while small and medium-sized business is a more mass phenomenon than innovation activities.

In CIS countries, as well as in most western countries, the SMEs involved in the innovation process are subject to the effect of legislative and normative acts aimed at stimulating the development and

and Method of Development, Moscow: Science, 2006; N.I. Ivanova, National Innovation Systems as a Self-Development Mechanism in the Global Economy <http://www.ptechonology.ru/Innovac/24.html>

⁶ E.B. Lisina, Issues of the Legal Regulation of Innovation Activities in CIS Countries, Materials of the First CIS International Innovation Forum, Moscow – Kiev – Simferopol' - Alushta, 2006, see 252.

introduction of new inventions, and also supporting small and medium-sized businesses. However, despite expectations, a situation of this kind does not create for them any sort of perceptible real benefits allowing the excessively high risks connected with innovation activities to be covered.

As convincingly shown by the practice of economic activity, the use of any measures for stimulation purposes is effective only when legalized objective criteria exist, to serve as a basis for granting support and the corresponding privileges. In relation to the subject matter of these recommendations, the criteria for including economic activity in the category of innovation activities, and economic subjects in the category of SMEs, appear to be such in the first instance.

In a number of CIS countries (Armenia, Belarus, Moldova, Uzbekistan and Ukraine) criteria for innovation activities are enshrined in legislation. Moreover, in Ukraine the above criteria allow not only individual forms of activity but also an enterprise as a whole to be classified as innovative. Thus, the Law of Ukraine on Innovation Activities defines as innovation enterprises the following organizational forms of activity: innovation centers, technoparks, technopolises and innovation business incubators. At the same time the law in question provides the basis for classifying as innovative any other enterprise, which develops, manufactures and sells innovation products and services, the scope of which in monetary terms exceeds 70 per cent of the overall volume of sales. However, on the whole, the criteria mentioned often are so blurred that their practical use generates difficulties which cannot be overcome.

The situation with the criteria for classifying enterprises as small and medium-sized is much better. Thus, in Azerbaijan, Armenia, Belarus, Moldova, Russia, Uzbekistan and Ukraine legislation contains firm quantitative criteria for the activities of SMEs (number of employees, volume of sales, in some cases the assets balance sheet). The quantitative expression of these criteria differs. In some cases (Azerbaijan and Uzbekistan), it is differentiated according to sectors of the national economy, and in others (Armenia, Moldova and Russia) alongside small and medium-sized enterprises are microenterprises, while in Belarus medium-sized enterprises are not specifically identified.

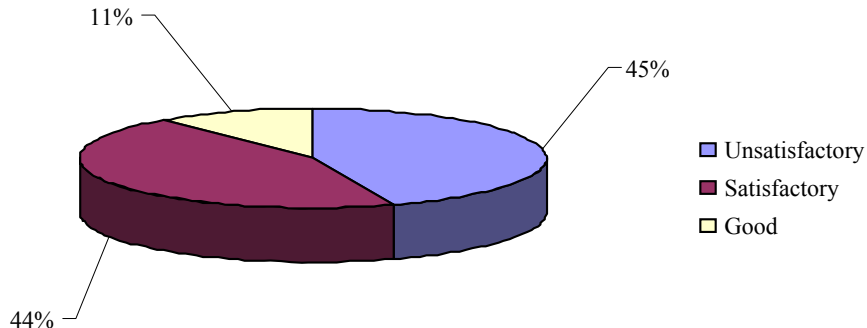
2.3. Role of the State, its central and local authorities, including national patent offices, in the innovation development of SMEs

In CIS countries an unusually large role has been formed in objective terms and is traditionally preserved for the State regulation of economic development as a whole, innovation activities, and also the functioning of SMEs in particular. This is caused by the unique tasks of a period of radical economic reforms, and in relation to innovation development – by the fact that about 80 per cent of scientific research potential, the functioning of which is financed primarily from the State budget, is concentrated in the hands of the State.

A low level of receptability of private capital to innovations, high risks characteristic of the implementation of appropriate projects, complexity and the failures of the transition to an innovation model of economic growth, which integrates in addition to scientific research, budgetary, fiscal, credit, customs, investment and other components of economic policy, points to the expediency of and essential need to preserve the exclusive role of the State in regulating innovation activities, and also broadening the role of local authorities.

A situation of this kind presupposes a high level of requirements in terms of the effectiveness of State regulation of innovation activities. However, according to the results of the research carried out (see diagram 4), in CIS countries it is evaluated by means of indicators of below average level. This is also evidenced by an analysis of the literature devoted to the state of the innovation process and statistical data concerning assimilation of new technologies and products.

Diagram 4: Effectiveness of State regulation of innovation activities



In the past few years in a number of countries there has been a marked tendency towards an increased role for subnational regions in the coordination and stimulation of innovation activities. Significant territorial disproportions in innovation development, which are especially characteristic of large CIS countries, point to the particular topical nature of devising an effective regional policy for the transition to an innovation method. The regional authorities of State in the Russian Federation and Ukraine are to the greatest extent possible involved in conducting an active innovation policy, and many regions of both countries have significant scientific research, research and development, and production potential. Thus, in 54 regions of the Russian Federation social and economic development strategies have been adopted (they are being developed in 29 regions), an important component of which is innovation development. In a whole number of areas, laws on innovation activities have been adopted. The most active regions in Russia in innovation terms are Moscow and the Moscow region, St. Petersburg, Tatarstan, and the Sverdlovsk, Samara, Novosibirsk and Tomsk regions. In this connection, it should be pointed out that according to the assessments of experts from the Higher School of Economics only five or six Russian regions are ready for the transition to an innovation method of development.

In Ukraine innovation development programs have been adopted in the Dnepropetrovsk, Zaporozhe and Cherkassy regions. In Belarus worthy of attention is the experience of the Mogila region in the formation of innovation infrastructure.

The activities of national patent offices to support innovation development go beyond the framework of their direct functions in operational terms. Nevertheless, the process of registering patents for inventions and other intellectual property subject matter, accompanying patent research, transforms these offices into original information banks, depositories of technical novelties, which have significant economic potential. Thus, the organization of effective work by patent offices to provide information and consultancy services, especially for SMEs, opens up for them huge possibilities for the activization of innovation activities.

Taking into account the unusual importance of their information resources, patent offices in virtually all countries provide SMEs with primarily free access to them, and also offer multifaceted consultation assistance. With a supply of qualified specialists in the field of patent information, they provide services for conducting patent research on a fee-paying basis. The only exceptions are Azerbaijan and Georgia, where these services are provided free of charge. It is also to be noted that patent offices in many CIS countries provide SMEs with effective assistance in the organization of participation in exhibitions of scientific and technical achievements, and international innovation exhibitions.

An effective form of motivation for the innovation activities of SMEs by patent offices is the provision of special rates for the payment of patent fees, and also fees for the registration and legal protection of other intellectual property subject matter. Currently, similar special rates are also provided for and used in Armenia, Kyrgyzstan and Moldova which, according to the requirements for entry to the World Trade Organization (WTO), have unified patent fees for residents and non-residents. In this regard, fees for the registration and legal protection of intellectual property subject matter for SMEs, as well as for other categories of applicants in certain countries, have become virtually out of reach. In these conditions for SMEs, scientific research institutions and natural persons in the Republic of Moldova, significant special rates within the limits of five to 15 per cent of the prescribed fees were established.

2.4. Staff potential for innovation activities in CIS countries

The transition to an innovation model of economic growth gives rise to new requirements in the training of competent staff, able to generate new knowledge and take informed decisions regarding its involvement in the economy. This is especially important for SMEs, whose possibilities for recruiting competent staff are limited, while an inventor, manager and active staff member are often the same person.

The training of specialists for the innovation sphere presupposes not only the formation of skills to produce new knowledge, but also of competence in managing the process of their commercial use.

The delays in university education, the lack of receptability of the economy to innovations etc. are the most important obstacles on the path to training qualified specialists for the innovation sphere.

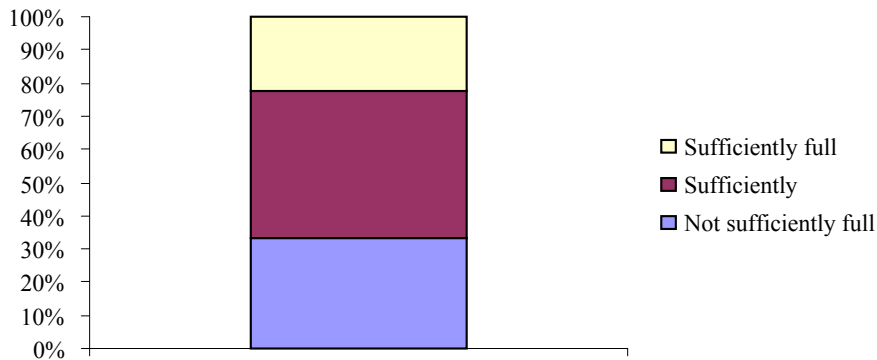
The main trends in staff training for the requirements of innovation development are:

- ✓ education on technical and natural specializations;
- ✓ training of staff in the sphere of innovation management, intellectual property law, marketing of new products etc.
- ✓ general education and training provided through integration into study programs of all specializations and disciplines, connected with innovation and intellectual activities and technology transfer;
- ✓ retraining of specialists for professional activities as patent attorneys, assessors, intellectual property auditors etc.;
- ✓ educational programs aimed at increasing the qualifications of and retraining specialists in various sectors and spheres of activity, including SMEs. This form is particularly important for CIS countries since, despite the traditionally high level of education systems, sufficient attention is not devoted to retraining the adult population.

The training of staff in technical specializations is the foundation of the development of innovation and inventive potential. In the past two decades in CIS countries a trend has dominated whereby the share of higher education institutions providing training for staff according to natural, including technical, profiles and the specific importance of students in appropriate specializations, has been reduced. The research conducted has shown the preservation only in a number of countries (Belarus, Georgia, Russian Federation and Uzbekistan) of the sufficiently high role played by technical institutions of higher education. Thus, in the Republic of Belarus of 51 active higher education institutions, training for technical specialists has been provided in 30 such institutions.

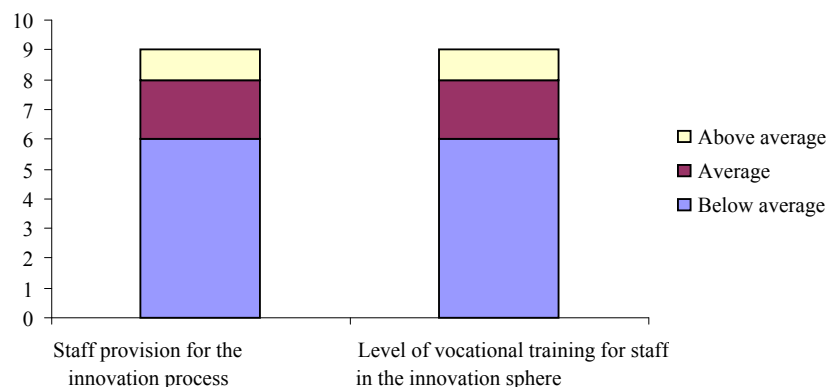
However, in the opinion of most experts participating in the research conducted, university education systems in CIS countries, despite the existence in a number of countries of programs for the training of specialists in innovation activities, the presence of State strategies aimed at modernizing the education process and approval of university education standards as a whole, as emerges from the data presented in diagram 5, do not satisfy the tasks of a transition to an innovation model of economic development, and the training of scientific and engineering staff does not fully meet contemporary requirements. In our opinion, this is linked to a significant extent to the fact that the modernization of education systems in CIS countries is only at its initial stage.

Diagram 5: Compliance with modern requirements of the system of training for scientific and engineering staff



As a whole, staff provision for the innovation process in CIS countries and the level of vocational training of staff in the innovations sphere is assessed by experts to be below average, something which does not meet modern requirements (see diagram 6).

Diagram 6: Staff provision for the innovation process and vocational training



The provision of the actual study process by qualified teaching staff, method-related and study literature, and vocational training for teaching staff is assessed in most countries by extremely low indicators. This relates especially to disciplines linked with the innovation process and intellectual property, and, to a lesser extent, with information technologies.

A situation of this kind is in many ways the result of the low level of demand noted by experts, including among SMEs, for specialists in the sphere of innovations, intellectual property and technology transfer.

The training of staff as part of university education in specializations linked to innovation activities and intellectual property is done primarily in countries which have significant innovation and production potential (Russian Federation, Ukraine). Thus, in Moscow and Kiev intellectual property institutes have been set up and are operating successfully, which provide education in the form of postgraduate training in intellectual property law and intellectual property management, while as part of short courses – they offer a wider range of specializations. A number of countries in the CIS provide training in these educational institutions for specialists from their patent offices, and also patent attorneys, assessors of intellectual property subject matter etc.

The incorporation in university study programs of training for specialists in different areas and disciplines, linked to innovation and intellectual activities, is to a great or lesser extent being carried out in all CIS countries. It is inherent to the greatest extent in the education systems of Azerbaijan, Belarus, Moldova, Kyrgyzstan, Russian Federation and Ukraine. In the Republic of Belarus, following the creation in 2005 of

the Inter-Office Scientific Method Council on Intellectual Education, beginning in the 2006/2007 academic year, a course has been taught in all institutions of higher education on the “foundations of intellectual property management”. Nevertheless, in most CIS countries, as a result of the delays in university education there is still a very long way to go before all students are fully involved in all specializations.

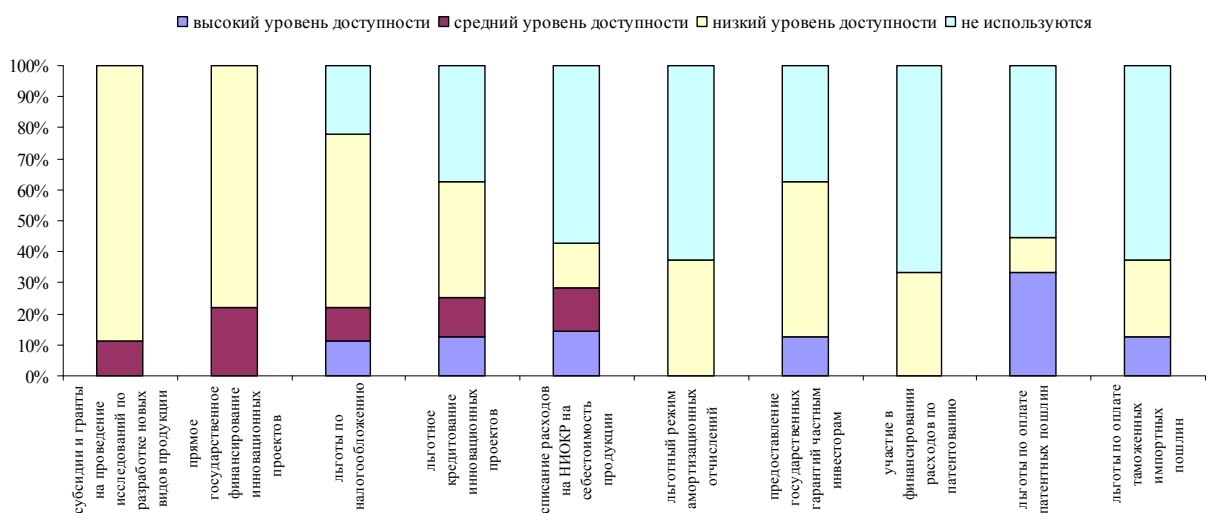
A number of patent offices, State agencies and technology transfer and innovation development centers, as well as those supporting SMEs and a number of higher education institutions, public and commercial bodies, provide training in the form of short courses on a fee-paying or free of charge basis to educate patent attorneys, specialists in the area of innovation and intellectual activities, the marketing of innovations and new products, intellectual property evaluation etc., and also retraining for specialists in State management authorities, the scientific research sphere, and the various sectors of the national economy. Among specialists from national patent offices, the distance learning provided by the WIPO Worldwide Academy enjoys great popularity.

On the whole, for CIS countries the insufficient participation of university centers in professional training and retraining of specialists in the field of innovation and intellectual activities, and involvement in the economy and the commercialization of new technologies, goods and services, is characteristic. To a somewhat lesser extent, this relates to Belarus, the Russian Federation and Ukraine.

2.5. Financing of the innovation activities of SMEs

High risks, the lack of specificity and the difficulty in predicting future income and expenditure for implementing innovation projects makes the financing of innovations one of the weakest links in the innovation process. In the case of SMEs, the financing of innovation activities is complicated by the absence of equity capital, and also of mortgaged property, which is essential for providing access to loan resources. The survey conducted on the whole confirms these statements. So, the main factors hindering the innovation development of SMEs include, according to experts in most countries, the lack of their own financial resources for the assimilation of new technologies and limited access to special loan resources. Thus, traditional methods of attracting financial resources usually used in the economic activities of enterprises are unsuitable for the financing of innovations. At the same time, as shown by the data in diagram 7, specific methods of financing and other State support for the innovation development of SMEs are characterized by a low level of accessibility.

Diagram 7: Accessibility of levers of State support for innovation development of SMEs



Key to diagram 7:

- Purple box: high level of accessibility
- Crimson box: medium level of accessibility
- Yellow box: low level of accessibility
- Blue box: not used

Beneath graph:

- subsidies and grants for conducting research to devise new forms of products

- direct State financing of innovation projects
- taxation privileges
- special loans for innovation projects
- writing-off of R&D expenses for cost price of products
- special rules for depreciation charges
- provision of State guarantees to private investors
- participation in financing patenting expenses
- special rates for payment of patent fees
- special rates for payment of customs import duties

The acute deficit in budgetary resources, characteristic of all CIS countries in the 1990s, and for most of them up to the current time, undoubtedly restricted significantly the possibilities for transition to an innovation method of economic development. Frequently even those financial resources which were originally intended to support innovation development were used in the final analysis for other purposes. Thus, the Supreme Council of Ukraine adopted legislation on three occasions (1991, 1998 and 2002) concerning financial provision for innovation development, although not one of those legislative acts was fully implemented. Similar examples may be quoted also in relation to other countries. On the whole, the scope of financing for science and innovations in CIS countries does not meet either the elementary requirements of their development, or those of world standards, according to which they must reach a level of three per cent of GDP.

In developed countries, financing for innovation activities is conducted primarily from non-State sources. In countries with an unfavorable innovation climate, low motivation for participation of private capital in the funding of scientific and innovation activities and negligible demand for new technologies, characteristic of CIS countries, the State is obliged to bear the main burden of expenses for the development of science, and to a significant extent for developing and promoting innovations. However, the negligible level of resources aimed at the development of science and innovations, which in CIS countries ranges (according to the data for 2007) from 0.1 per cent of GDP in Tajikistan up to 1.3 per cent in Russia, makes budgetary financing in a number of countries (Armenia and Kyrgyzstan) virtually inaccessible, according to specialists' assessments. In the other countries, it is combined with significant difficulties. Thus, in Ukraine according to the data of Goskomstat, in 2006 as in previous years the main source of financing for innovation activities were firms' internal funds which constituted 84.6 per cent, while State budgetary resources represented 1.9 per cent and loan sources 8.3 per cent. The successful resolution of the problem of financial provision for innovation development presupposes the existence of specific forms of financing and also the correct choice of the key stages of implementation of innovation projects which to the greatest extent possible need financial support.

The classification of forms of financial provision for innovation activities presupposes the selection of two main aspects: **internal and external funding**. Internal funding is based on the use for innovation purposes of part of a firm's profit and depreciation charges, as well as of founding capital. For SMEs, as a rule this form is unsuitable owing to the limited nature of their internal funds.

The most effective and adequate for SMEs is external financing which consists in attracting resources from the State budget, investors, finance-credit institutions and non-financial organizations. The most widespread sources in CIS countries are firms' internal funds, loan resources, direct allocations from the State budget for implementation of innovation projects and, to a much lesser extent, venture capital and other sources.

At the same time it should be noted that in a number of CIS countries (Armenia, Georgia, Kazakhstan, Russia, Uzbekistan and Ukraine) the first steps have already been taken to create extrabudgetary funds to finance innovation projects and use State-private partnership in supporting the introduction of innovations.

It should also be pointed out that in most CIS countries in order to optimize the use of State budgetary resources, aimed at innovation development, the principle of competitive selection of projects is used. Thus, in Belarus, even the distribution of resources from the National Fund for Fundamental Research, aimed at financing research projects carried out by smaller scientific groups or individual scientists, is done on a competitive basis. In Moldova, the Agency for Innovations and Technology Transfer, created in 2005, carries out competitive financing of innovation projects, provided that no less than 40 per cent of private capital is involved.

In virtually all the countries that participated in the research, according to experts' assessments, the loan resources, despite their limited availability, are used to finance innovation activities more widely than State budgetary resources. This kind of assessment undoubtedly points to the existence of significant difficulties in the financial support for the innovation process from the State.

An original form of loans for innovation activities is constituted by leasing operations. They allow SMEs, without recourse to expensive loans, to acquire advanced technologies using a system of split payments and transferring the corresponding expenses to the cost price of products, thereby allowing the tax(able) base and fiscal burden to be reduced.

Venture financing in CIS countries is developing with extreme difficulty and in an uneven manner. At the current time, venture funds have been created only in the Russian Federation, Ukraine and Kazakhstan. In Russia they began to function in 1995, but they developed most after 2000. As of the end of 2007 in Russia there were more than 100 venture capital funds with an overall volume of resources invested of more than 10 billion dollars. Of course, against the background of Western Europe, where venture funds annually operate in the hundreds of billions of dollars, these amounts are insignificant, although they provide hope in terms of their high rates of growth during the pre-crisis period.

If, at the initial stage of formation of venture financing in Russia, this was based primarily on foreign investments, subsequently the share of national capital rose significantly. However, as a result of the fact that Russian venture funds are created mainly as part of large scale finance-industrial groups and companies, their sphere of activity is significantly reduced, since access for outside organizations, including SMEs, to financing through funds of this kind is virtually closed. It should also be pointed out that an important distinguishing feature of Russian venture funds is their weak level of innovation.

It is as yet premature to judge the activities of business-angels in financing innovation development in CIS countries, since in most of those countries the favorable environment and conditions for the investment of their capital are absent.

2.6. General state of infrastructure of small and medium-sized innovation enterprises in CIS countries

Infrastructure as a component of any national innovation system is the most important condition of successful innovation development. The complex nature of the processes incorporated, high risks, lengthy nature of circulation of capital and, at the same time, the exceptional, including social, importance of innovation development makes the infrastructure for innovation activities the basic condition of the durability of this specific form of entrepreneurial activity. For CIS countries the creation of an innovation infrastructure is especially topical, as in the context of the administrative-command economy this component of innovation development was completely absent. On the other hand, small and medium-sized innovation enterprises have a particular need for appropriate infrastructure as a result of the limited nature of the financial resources and operating conditions, the absence of experience of carrying out economic activity, forming business plans, implementing innovation projects etc.

The infrastructure for innovation activities and support for SMEs should be understood as all the institutions making organizational, educational, consulting, information, material-technical, financial and other provision for the functioning of innovation-oriented enterprises. Thus, infrastructure in the broad sense combines the activities of all institutions, organizations and firms offering direct and indirect support and providing assistance for innovation development. However, the relative institutional and functional isolation of legislative-normative, financial, educational, market and other components has led to their conditional detachment from the innovation infrastructure. Therefore, in most cases infrastructure is interpreted in a narrow sense, as activities limited directly by the service of the innovation process.

In this sense, the infrastructure for innovation activities includes, as a rule, the activities of technoparks, innovation business-incubators, innovation-technology centers, technology transfer centers, consulting, information and other bodies providing different kinds of services for small enterprises active in the sense of innovation. This segment of support for innovation activities is known as the institutional infrastructure of the innovation process.

Science and technology parks as subjects of the innovation infrastructure are required to create for new companies, especially SMEs, favorable conditions for entrepreneurial activity in the science and technology sphere, based on the formation of conditions and provision of a broad spectrum of services: provision of material and technical, including an experimental base, marketing, consultancy, patent-licensing and information, educational support etc. Of significant interest is the experience of Ukraine, where technoparks have been created within the leading institutions of the National Academy of Sciences in the form of virtual structures and operate under the rules of free economic zones, with the provision of additional benefits regarding the taxation of profits, interest-free loans, accelerated depreciation of main funds etc.

The purpose of **innovation business-incubators** is to provide assistance to small innovation enterprises at the initial stage of their activities by offering special rates for rental payments for facilities and equipment, consultancy on matters relating to entrepreneurial and patent-licensing activities, and so on. Innovation-business incubators often function within technoparks.

Innovation-technology centers provide educational, presentational, consultancy, exhibition-related and other services, and devise and examine business plans and innovation projects.

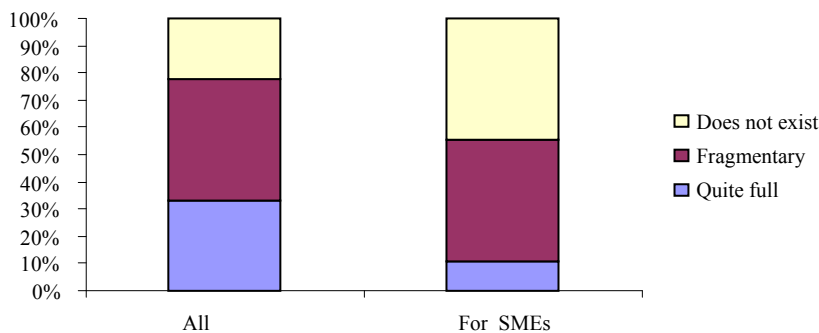
Technology transfer centers provide support in the search for investors and purchasers of intellectual property subject matter, and partners to conclude licensing agreements and conduct market research for the innovations market.

The information infrastructure is the most important precondition for the formation of an innovation-oriented economy, since in the contemporary context the significance of information resources increases significantly for the adoption of effective innovation management decisions. The information infrastructure for innovation activities in CIS countries is based on the State information system provided by scientific and technical libraries and information resources of patent offices, inter-sectoral, academic and regional centers for scientific and technical information, and also commercial information and consulting centers. An important role in the exchange of scientific and technical information is played by exhibitions and international innovation shows.

Attached to the information infrastructure is also a statistical component which reflects the main indicators of innovation activities. In most CIS countries, as shown in diagram 8, statistical data relating to innovation development are fragmentary and are dispersed according to different sources, which significantly reduces the possibility of research into the momentum of innovation processes, level of innovation activity of enterprises, monitoring of the innovations market, definition of indicators of scientific and technical activities, and international ratings of innovation development.

To date, in most CIS countries the level of renewal of products, firms' expenditure on R&D, indicators of licensing activity, innovation development of SMEs etc. have not yet been defined. A situation of this kind hinders the analysis of the pace of innovation development and a comparison of the indicators of innovation activities, and the development of long-term innovation-oriented economic policy.

Diagram 8: State of statistical reporting of innovation activities



The experience of developed countries bears witness to the fact that the greatest success in technological development is achieved by those States which have a functional and widely developed innovation infrastructure.

The first attempts to form individual elements of innovation infrastructure in certain CIS countries were made as far back as the 1990s. Thus, in Russia already by the end of the 1990s there were about 60 technoparks and approximately the same number of business-incubators and innovation centers.

As shown by the results of the research conducted, in CIS countries awareness exists everywhere of the exclusive role of infrastructure in providing for the innovation development of SMEs. Moreover, in a number of countries a series of effective measures have been taken to establish such an infrastructure. In this regard, infrastructure to support the functioning of SMEs is, on the whole, developing separately from the innovation infrastructure and somewhat outpaces it. This is manifested by the fact that if it may be

stated in relation to infrastructure to support SMEs that in most countries that participated in the research, its main elements have been established (consulting and financial components, simplified registration of SMEs, including by using the principle of a "single window" etc.), the innovation infrastructure in many countries has been created only in fragmentary fashion.

The elements of innovation infrastructure are most fully represented in Armenia, Russia and Ukraine. In Belarus, Moldova and Uzbekistan they are formed only in relation to technoparks, innovation business-incubators and technology centers, and in Georgia- business-incubators, innovation technology centers and support for start-up and spin-off companies. In other countries the infrastructure for innovation activities is virtually absent (Azerbaijan and Kyrgyzstan) or data have not been provided (Kazakhstan, Tajikistan and Turkmenistan).

The information received does not allow the effectiveness of the functioning of innovation infrastructure to be judged fully. Nevertheless, indirect indicators relating to the assessment of the innovation climate, innovation activity and demand for innovations by the real sector of the economy, which in most CIS countries are lower than the average, testify to its unfavorable condition.

An analysis of quantitative indicators of infrastructure (overall number of technoparks, business-incubators, innovation-technology centers etc.) for those countries where information of this kind is available also points to their evident insufficiency, especially at the territorial level.

The broadest network of infrastructure organizations for SMEs and innovation development has been established in the Russian Federation, where at the end of 2008 there were about 150 business-incubators, 80 innovation-technology centers, and also in Belarus and Ukraine (16 science and technology parks, 24 innovation business-incubators and 10 innovation centers attached to higher education institutions).

2.7. Interaction of State and private capital, university and scientific research bodies with industry and business

The general failing of the functioning of the scientific research sphere in CIS countries is its weak innovation orientation, the reasons for which are connected to the relative isolation of obsolete organizational structures for research activity and the predominance in mutual relations with the entrepreneurial environment of pre-market principles.

For post socialist countries, which inherited from the administrative-command system the monopolistic role of the State in the sphere of scientific research, the creation of a system of effective partnership with the private sector which, in western countries finances more than half of R&D expenditure, is the most important problem in the transition to an innovation model of economic growth.

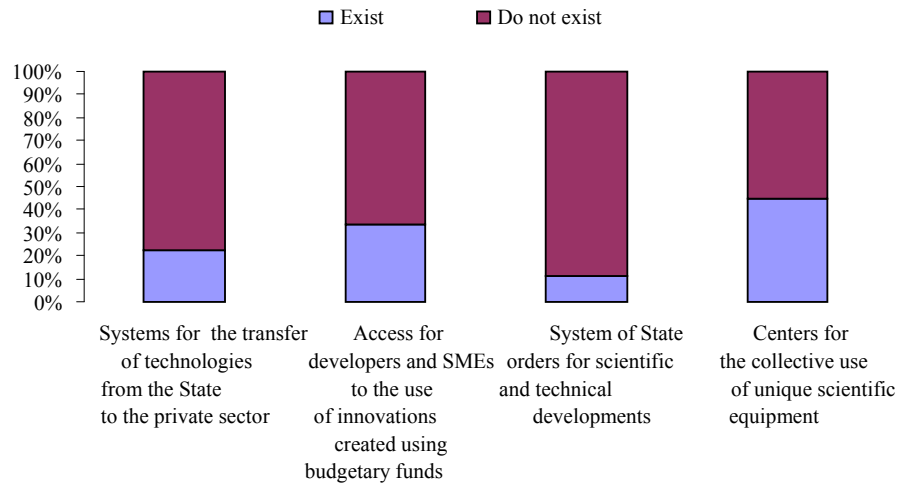
The partnership between the State and private sectors has, in the past two decades in most western countries, had a tendency to clear expansion in different forms of activity.

The main aim of the expansion of the State-private partnership in the sphere of innovation activity is the enhancement of the effectiveness of innovation projects and the transfer of part of the risks to the private sector which, as a rule, provides the most effective form of control over the rationality of use of resources. The most important trends in the deepening of this kind of partnership in the innovation sphere are the joint enterprises for implementation of innovation projects, joint project financing, and also the transfer to firms of technologies devised using budgetary funds.

Global experience shows that the State is most effective in the creation of fundamental knowledge, while applied research is developed most rationally and used in structures functioning on the basis of private property.

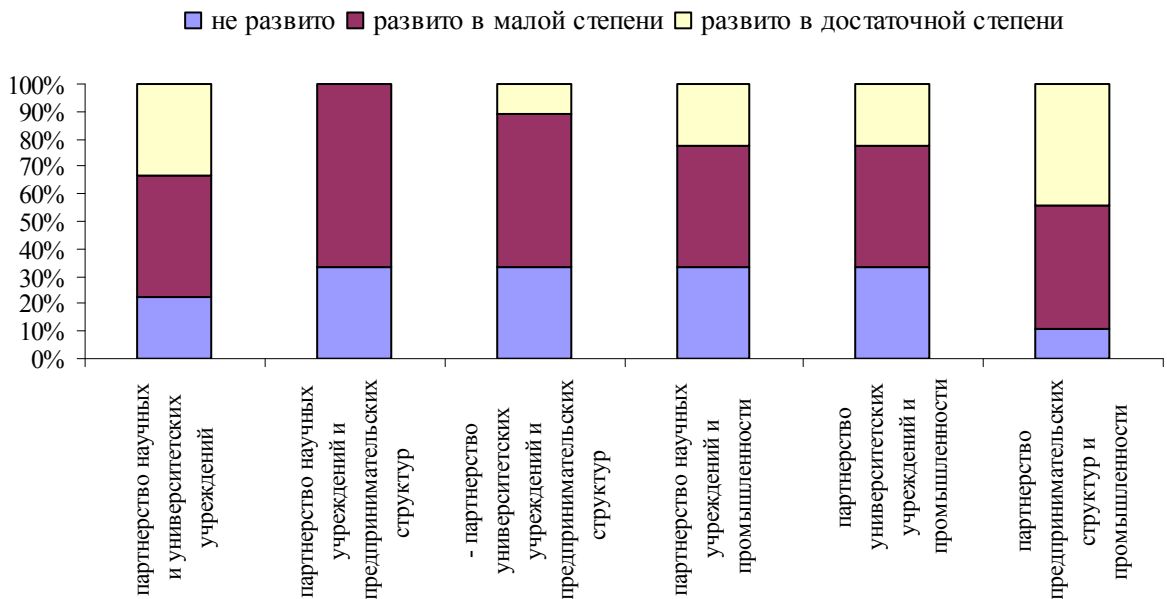
The research conducted showed an absence in CIS countries of effective systems for the transfer of technologies from the State to the private sector (see diagram 9). Even in those cases where respondents pointed to their existence (Uzbekistan and Ukraine), references were made to the creation of appropriate conditions through the adoption of legislative foundations for the transfer of technologies or creation of appropriate organizational structures, and not to real forms of interaction.

Diagram 9: Forms of transfer and use of technologies



On the whole, the development of partnership between scientific and university organizations on the one hand, and industry and entrepreneurial structures on the other, as shown in diagram 10, is assessed in terms of extremely low indicators.

Diagram 10: Development of partnership between the scientific education sphere and the entrepreneurial environment



Key: Headings: Purple box: Undeveloped
 Crimson box: Slightly developed
 Yellow box: Sufficiently developed

Beneath the graph left to right:

- Partnership of scientific and university institutions
- Partnership of scientific institutions and entrepreneurial bodies
- Partnership of university institutions and entrepreneurial bodies
- Partnership of scientific institutions and industry
- Partnership of university institutions and industry
- Partnership of entrepreneurial bodies and industry

The main reservation for the activation of cooperation between scientific research and university bodies with industry and business in post-Soviet countries is the resolution of the problem of rights to use the

results of scientific activity, created using budgetary resources. Despite the fact that at the level of patent legislation this has been settled, the absence of access for the scientific research sector as a developer to the use of the results of their activities, becomes a factor which often hampers innovation development. The results of the research conducted indicate the topical nature of this problem for all CIS countries. Its successful resolution could assist the activation of innovation activities by means of broader involvement of innovations in the economy, based on the conclusion of licensing agreements and the formation of statutory capital using intellectual property subject matter for small innovation enterprises which are squeezed in terms of their financial resources.

As known, following the adoption in the United States of America of the Bayh-Dole Act, in accordance with which universities, non-profit organizations and small enterprises were granted the right to transfer to industrial companies licenses for the use of inventions devised as a result of research financed from State budget funds, a significant wave of innovation has been recorded in the United States of America.

2.8. Interfirm relations and patent-licensing activities

According to the indicators of patent activity, a number of CIS countries occupy comparatively or even higher positions than the post-socialist countries of Central and Eastern Europe. Nevertheless, the research and innovation activities in countries in this region do not give concrete results in the form of tangible specific benefits. One of the reasons for the situation that has emerged is the purely technological approach to innovations, inherited from the plan economy, only as a means of modernizing production, whereby relations between developers and consumers of technology were primarily outside the market.

However, inventions, know-how and other results of intellectual activity in the context of a market economy are also potential sources of income and subjects of market relations. In the past few decades, the innovations market has been the most dynamic segment of the global market, the annual rates of growth of which in the pre-crisis period have reached double figures, and the annual turnover of licensing agreements has exceeded 500 billion dollars. The largest players on the global market for licensing agreements at the beginning of the twenty-first century were: United States of America – 30 per cent, Japan – 15 per cent, United Kingdom – nine per cent and Germany – eight per cent. The meager share of CIS countries on this market and the negative and increasing external trade balance for technology transfer show that the activation of the internal market for innovation developments and integration into the global process of technology transfer conceal great economic opportunities for countries in the region.

Unfortunately, in CIS countries the innovations market, in the same way as the intellectual property market as a whole, has not yet been formed, which hinders their involvement in the economy on the basis of market principles. This is confirmed by statistical data and the results of the research carried out. So, most respondents assessed patent activity among residents and non-residents on the internal market to be higher than the activity relating to the disposal of rights in intellectual property subject matter. At the same time, patent activity and activity in relation to the disposal of rights in intellectual property subject matter among residents abroad is assessed in terms of extremely low indicators. Of course, the latter is in many respects the result of the financial difficulties occurring, especially for the SMEs sector. In order to overcome these difficulties in a number of countries (Armenia, Belarus, Kyrgyzstan and Russia) patenting support systems have been created abroad. However, patent office specialists in a number of CIS countries, where special funds have been created for these purposes, show that they are not always used fully owing to the absence of inventions worthy of protection in other countries.

The absence of an innovations market is also evidenced by the extremely low level of reflection of their cost on firms' balance sheets. According to experts' assessments, the share of non-material assets among long-term assets of firms in countries of the region is about one per cent, while in Western Europe it is close to 50 per cent, and in the United States of America around 70 per cent.

In the Republic of Moldova, in 2007 patent office specialists undertook research into the share of non-material assets among long-term assets of firms and their development, beginning from 2001 onwards. The research was conducted according to the data of the National Statistics Office for 39,000 firms which provide financial reports. The results confirmed the experts' assessments cited above. The share of non-material assets during the above period varied from 0.9 per cent to 1.1 per cent in the context of general growth of their absolute indicators. In this regard, the majority share of the non-material assets taken into account (about 70 per cent) consisted of the cost of software, which is represented on the balance sheet in terms of the cost of acquisition, without carrying out additional work to assess them. The share of patents for inventions in the value of long-term assets was in total 0.01 per cent.

An important condition for the activation of the innovations market is the existence of the institution of intellectual property assessors. In a number of CIS countries (Armenia, Belarus, Moldova, Russia, Uzbekistan and Ukraine) the efforts of patent offices led to the creation of institutions of this kind, which are in operation, although the innovation component of their activities is negligible. Thus, during the five years that have elapsed since the certification in 2004 of the first seven intellectual property assessors in the Republic of Moldova, of the 83 objects assessed by them the number of patents for inventions stood at only 23, i.e. 28 per cent.

The data from national registers of patent offices on agreements for the alienation of rights in intellectual property subject matter constitute important information characterizing the formation of the innovations market in CIS countries. The patent laws of CIS countries envisage compulsory or optional (Moldova and Ukraine) registration of licensing agreements and agreements for the assignment of rights. Statistical data concerning agreements for the transfer of rights in intellectual property subject matter in CIS countries show a negligible share of patents among the overall number of commercialized objects and the predominance of the assignment of rights in comparison with licensing agreements. Thus, in Moldova in 2008 the share of patents in agreements for the alienation of rights in intellectual property subject matter stood in total at 1.5 per cent. Therefore, it may be observed that the innovation market in CIS countries is at the initial stage of formation.

3. MEASURES TO STRENGTHEN THE ROLE OF SMALL AND MEDIUM-SIZED INNOVATION ENTERPRISES IN CIS COUNTRIES

3.1. General approaches to the formation of an innovation economy

The general systemic character of the measures to transfer the economy to an innovation method of development lies in the exceptionally complex and coordinated nature of the tasks which must be solved in order to utilize economic development for innovation purposes. The main problem on this road lies in arousing the interest of private capital in innovation activities. This interest may be based only on the realization that innovation is the only way to achieve high, long-term income. The research conducted within the World Economic Forum pointed to the persistent dependency of economic growth on technological and institutional development and the macroeconomic environment.

However, the practice of entrepreneurial activities in CIS countries during the past two decades has not given any real grounds for conclusions of this kind. Moreover, the absence of a mature competitive environment, the significant level of monopolization of a number of sectors, ineffective anti-monopoly activity of the State and accessibility in relation to cheap natural resources have provided an open playing field for excessively profitable entrepreneurial activity, without the need to make additional risky investments of capital in innovation development.

The absence in CIS countries of statistical reporting and also of the transparency of entrepreneurial activity, and the practice of double-entry bookkeeping do not allow a judgment to be made on the real average sectoral levels of profitability. However, according to the evaluation of experts, in most sectors during the pre-crisis period, and in certain cases also currently, profitability significantly exceeds the optimum parameters, which are traditionally required to motivate entrepreneurial activities in the context of the market economy. A high level of business income, especially financial and trade-intermediary operations, and high interest rates on deposits significantly reduce the attractiveness of investing in the real sector of the economy, all the more so in the promotion of innovation projects.

In essential terms, this is the anti-innovation model of economic development which initially reduces the segment of new inventions which have real commercial potential. A model of this kind significantly increases the demand for the effectiveness of innovation developments and begins by excluding many of them. In reality, this situation virtually excludes private entrepreneurs from the innovation process, since in the conditions formed a real chance of commercial success exists only for the implementation of those projects whose potential profitability exceeds the average level established many times over. On the whole, this situation is the result of the absence of a mature competitive environment.

The research done by the Moscow Carnegie Center, which on the whole confirms this trend, points to the dual influence of competition on firms' innovation development⁷. Thus, the enhancement of competition obviously leads to a reduction in profitability and a decrease in profit, thereby creating effective grounds for

⁷ K. Kozlov, D. Sokolov and K. Yudaev, *Innovation Activities of Russian Enterprises*. M.: Moscow Carnegie Center, Working Materials, No. 5, 2004, p. 9.

the activization of innovation activities. However, at the same time it helps to limit firms' internal funds, including those required for financing innovations. In the context of the normal functioning of market mechanisms, the banking system and venture capital, the lack of internal funds is compensated by credit, loan and other resources attracted, which increase the responsibility and effectiveness of use of financial resources aimed at innovation development, and is the natural method of attracting resources in market economy conditions.

Thus, without creating a mature competitive environment based on adequate anti-monopoly legislation, it is not possible to create a functional model of innovation development. Ignoring market mechanisms and attempts to change them by means of different administrative levers for the management of scientific research and innovation activities unavoidably leads in the final analysis to the deceleration of the innovation process, the loss of the positions achieved and the senseless wasting of resources. In this regard, the absence of a mature competitive environment hinders not only the acceleration of the innovation process, but to a similar extent the expansion of the sphere of SMEs.

Nevertheless, in CIS countries, where the establishment of an effective competitive environment is at its initial stage, it is premature to rely in innovation development primarily on the effect of natural market forces, since they are not able to overcome fully the opposition to innovation development characteristic of virtually all countries. The lack of receptability of the real sector of the economy to innovation activities and the attempts to reject innovations are an adequate reaction on the part of entrepreneurs to the destructive beginning which in principle is to be found in any new invention. The founder of the innovation economy, J. Schumpeter, as known, pointed to the fact that innovations "destroy the usual order of things" and give rise to "creative destruction". In these conditions, even Western countries which have age old market traditions in the use of new inventions resort, as demonstrated, to taking action to devise policies aimed at motivating innovation activities.

Of course, this should not at all lead to neglect or a rejection of market mechanisms for motivating innovation activities in favor of administrative mechanisms, but points to their insufficient nature and the need to provide strengthening and compensation by means of State support measures which should also primarily take account of market principles. Thus, the optimum innovation model of economic development should be based on comprehensive use of market motivation for innovation activities, and also additionally to provide extra strength and support by means of the levers of State. Such interaction between market and administrative mechanisms in the economy for innovation development is not at all contradictory, but as shown by the advanced practices of developed countries is mutually supporting.

In our view, the need to overcome the trends towards opposition to innovations, the unfeasible complexity of creating an innovation model of economic growth, which penetrates virtually all spheres of vital activity, and the exclusive economic and social significance of innovation development for modern society point to the fact that difficulties in the implementation of any innovation policy are concealed in its original isolation from the other components of economic policy, with which it is in sharp contradiction. These are contradictions relating to the introduction by innovations of economic disproportions which require structural transformations, the distribution of development resources etc., and the surmounting of which generates significant difficulties for the transition to an innovation method of development. The specific isolation is also concealed in the idea of national innovation systems, although the corresponding conception does of course bear signs of complexity and functionality.

In our opinion, the task inherent in the transition of the economy to an innovation method of development is feasible only for a holistic economic policy, the essence of which lies in the innovation trends of the economy as a whole, and for all activity according to its regulation in particular, while the aim is the transition to an innovation model of economic growth. In this regard, innovations are examined not only as an essential condition of development, but also as the natural state of the economy and an adequate means of forming competitive advantages in relation to the market economy at the current stage of development of society.

On the whole, the most important tasks in the transition of the economy of CIS countries to an innovation model of development, regulated by the macroeconomic conditions of the optimum integration of innovation activity into the reproductive process, which stem from the results of the research conducted and the spreading of the advanced practices of other countries, are:

✓ the formation of a mature competitive environment for the purposes of creating a favorable climate and real market motivations for the activity of private capital in the innovations sphere, the increase in the level of innovation activities of firms, the commercial demand for innovations from the real sector of the economy, and the receptability of business to new inventions;

- ✓ the development and adoption of a long-term social and economic policy, the main component of which would become innovation development, endowing all its components (budget, fiscal, credit, customs, industrial etc. policies) with clearly expressed innovation trends;
- ✓ the creation of a complex and effective legislative and normative foundation for innovation activities with a high level of stability and predictability, free from excessive discretionism, able adequately to regulate innovation development for moving ahead, the need for which is determined by lengthy periods of implementation of innovation projects and a reward for investments made;
- ✓ the introduction of amendments into the founding normative and legal acts regulating entrepreneurial activity as a whole, including the functioning of SMEs, using the procedure for prior examination of legislation in relation to the existence of innovation trends and innovation motivations;
- ✓ the expansion of State-private partnership in the field of innovation activities for the purposes of dividing between the State and private capital typical risks, optimized use of resources and the enhanced effectiveness of innovation projects;
- ✓ formation of staff potential with professional skills for the development, management and use of new inventions, development of intellectual potential and creative activity of the population;
- ✓ enrichment of the share of expenditure on science and innovation within GDP both from the State budget and private capital;
- ✓ endowing the transition to an innovation method of development and activities of SMEs with the status of general national priorities;
- ✓ enhancement of the investment climate, endowing investments with innovation trends. In the opinion of the founder of the economic theory of innovations, J. Schumpeter, only investment in innovation is the true engine of progress. To prove this statement he says that you can increase the number of stagecoaches as much as you like but this does not help to produce a railway.

3.2. Priorities of State policy for guaranteeing the transition to an innovation method of development and support for innovation activities of SMEs

The objective reasons for the active involvement of the State in innovation policy are the limited innovation receptability of the market mechanism, the high risks connected with the low level of predictability of technological changes, and also the social effects generated by the use of innovations, which appear in the social and economic progress of society.

In its most general form, the role of the State in innovation development consists in creating favorable organizational, economic, social and other conditions for the functioning of enterprises developing and using the latest technologies. The main trends of State influence on the innovation process are the indirect regulation of the corresponding processes, direct participation in financing and implementing innovation projects, the formation of innovation infrastructure, coordination of intersectoral and interregional cooperation, and the deepening of integration into the global scientific innovation and information area.

In CIS countries there exist in objective terms much greater grounds for the active interference of the State in the innovation process than in the west. This is governed by the preservation of the leading positions of the State in the scientific research sphere, the need to enhance the low level of innovation receptability of private capital, which is mainly oriented in its activity towards obtaining profit in the short and medium-term, and also the demand for accelerated innovation development in order to overcome the technological backwardness in relation to developed countries. Thus, in the light of the forthcoming transition of CIS countries to an innovation method of economic development, the strengthening of State influence on this process is virtually unavoidable.

The results of the research conducted pointed to the absence of a systemic approach to the organization of the innovation process in CIS countries, which is manifested in the dissociation of interests and activities of different links in the innovation cycle: from research and development to commercial production. The instability and incomplete nature of the tax, banking, customs and other sectors of legislation lead entrepreneurs to try to achieve short-term aims, which in the final analysis significantly restrains innovation development.

In these conditions, the **priority tasks of the State in guaranteeing the transition to an innovation method of development and support for the innovation development of SMEs in CIS countries are as follows:**

- ✓ creation of an effective system of stimulation for innovation activities, including for SMEs, based on the choice of an optimum innovation strategy, with broad application of the whole variety of the arsenal of mechanisms and levers of economic policy using a flexible combination bringing development into line with the strategy for technological breakthroughs, in order to guarantee gradual structural transformations in the economy, using the latest technologies and for the purposes of obtaining new competitive advantages;
- ✓ a choice of priorities for the development of science, strengthening its innovation orientation and reform, primarily its sectoral component which above all is of an applied nature, by means of a gradual transition to self-financing, and also the creation on that basis of the elements of an innovation infrastructure;
- ✓ identification of the priority sectors of innovation activities, aimed at radical innovations in the field of nanotechnologies, information and energy-saving technologies, development of alternative energy sources, resolution of ecological problems, etc.;
- ✓ entrustment of responsibility for the conduct and coordination of actions in the sphere of innovation activity for a specific State body, the status of which must be sufficiently high, and also correspond to the importance and complexity of the tasks to be resolved. Such a body must be granted broad powers and operational freedom of action, in order to form an effective intersectoral and inter-regional form of cooperation in the field of innovation activity and adaptation to dynamic conditions of operation;
- ✓ creation and improvement of adequate institutional, financial, educational, market, information etc. components of the innovation infrastructure;
- ✓ expansion of the stimulation functions of the fiscal system, endowing those functions with the innovations expressed;
- ✓ optimum combination of the activity of State innovation bodies, aimed primarily at implementing non-profit but socially significant projects, and of the private sector involved in the use of commercial innovations, as well as devising mechanisms to deepen cooperation between scientific education and the entrepreneurial sector in the sphere of science and innovations;
- ✓ creation of a system of effective management, accountancy, valuation, audit and monitoring of the use of intellectual resources at the level of society, region, sector and enterprise;
- ✓ division of powers and agreement of the activities of central, regional and local authorities in relation to the formation of innovation policy, creation of the corresponding infrastructure for financing innovation projects etc.;
- ✓ coordination of international integration into the world scientific, innovation and information area;
- ✓ enhancement of statistical reporting for innovation and inventive activity, including at the level of SMEs, and its adaptation to EC standards for the purposes of monitoring innovation activity, faithfully determining international ratings for innovation activities and providing international comparability for corresponding processes. For these purposes, it is appropriate to carry out random sampling on a broader basis, which, as shown by international practice, gives sufficiently reliable results;

In many respects the pace of the transition to an innovation method of development, creation of competitive advantages, and also, in the final analysis, rates of economic growth in the long term will depend on the successful resolution of the aforementioned tasks.

The most important instruments of State regulation recommended for use for the purposes of promoting the transition to an innovation method of economic development and activation of the innovation activities of SMEs are:

- ✓ social-economic and scientific-technical forecasting of the trends of science and innovation activities for the purposes of substantiating optimum methods of the technological development of society and concentration of organizational, material and financial resources on the development of priorities for

scientific and innovation activities;

- ✓ development and implementation of federal, regional and sectoral strategies for innovation development as a whole and SMEs in particular;
- ✓ use of innovation projects as a mechanism based on partnership between the State and private capital in the creation of leading companies for the practical implementation of new inventions. In this regard, a leading company as a legal entity becomes responsible to the initiators for the implementation of a project, effective use of resources, return on resources, receipt of profit etc.
- ✓ competitive selection of innovation projects for the purposes of providing support from the State, based on the competitive distribution of resources, using clear and transparent criteria. In this regard, preference must be given, other circumstances being equal, to projects based on technological innovations in comparison with product-related innovations, and among technological innovations priority should be given to high-technology and science-intensive innovations;
- ✓ transfer of technologies from the scientific research sector to enterprise structures based on flexible procedures for granting rights to State science and education organizations to make use of the results of their activities. A transition of this kind may be made above all by establishing small innovation enterprises with the possibility of introducing rights in intellectual property subject matter as contributions to the statutory capital of such enterprises, provided that the State retains the right to grant non-exclusive licenses. This is original investment by the State, made for the good of society and pursuing the aim of enhancing the competitive advantages of enterprises. Its use is appropriate primarily in relation to spin-off companies and SMEs;
- ✓ reforming State innovation enterprises (institutions) into structures functioning on the basis of the principles of State-private partnership;
- ✓ providing assistance for stimulation and support, including from sub-regional State bodies, for cluster initiatives and creating collegiate bodies for the management of cluster projects;
- ✓ a flexible combination of fiscal, financial, customs and other mechanisms for motivating innovation development with gradual enhancement of the role of credit levers, which correspond as closely as possible to market relations. In this regard, the accessibility of special loans shall always be significantly greater than all forms of non-returnable financing for innovation activities;
- ✓ a reduction in tax rates for innovation SMEs with simplification of taxation itself, the creation of tax privileges for capital flows, including from abroad, to the science and technology sector;
- ✓ a reduction or introduction for small businesses, and start-up and spin-off companies, of a zero profit tax rate (capital growth achieved), aimed at investments and innovations, and also at creating new jobs, reducing the consumption of energy resources etc.;
- ✓ providing support for SMEs on matters relating to the protection of intellectual property, including use of special patent fees, creation of special funds for promoting patenting abroad, extending the consultation and information services provided etc.;
- ✓ formation of State orders for R&D and high-technology products, using the principles of share quotas, intended exclusively for SMEs, the burdening of State orders, including defense, obtained by large companies, requirements for the participation of SMEs as suppliers and joint participants;
- ✓ reduction of administrative barriers to the registration and functioning of SMEs: introduction of procedures for their registration using "single window" and "tacit agreement" principles, and also the electronic procedure for the filing of documents, reduction of minimum capital stakes for founding enterprises, simplification of requirements for reporting and receipt of various authorizations, reduction and regulation of inspections and audits;
- ✓ introduction of European technical standards (sanitation, ecological, quality, safety etc.), able to prevent the use of obsolete technologies;
- ✓ monitoring of innovation processes and activities of SMEs for the purposes of providing conditions for adopting adequate decisions and flexibility of management of innovation development.

Use of the above mechanisms in combination with the measures put forward in the following sections for the formation of an innovation infrastructure, a market for new inventions, provide, in schematic form, the most general trends for the creation of favorable conditions for the innovation development of SMEs. The use of each of the mechanisms cited may be effective only provided that they are carefully adapted to specific conditions and characteristics of economic and legal mechanisms, the level of scientific and technical progress achieved, maturity of market relations, staff economic potential etc.

3.3. Recommendations on the formation and improvement of infrastructure for the innovation activities of small and medium-sized enterprises

The innovation infrastructure is essential above all for SMEs which, as they do not possess the necessary resources for development, need different kinds of organizational, financial, technical and other services to support their operations. In this regard, as shown by the experience of developed countries, the more developed an infrastructure is, the greater the possibilities created for innovation development of SMEs. An infrastructure appropriate to specific conditions of economic development becomes, in the opinion of specialists, the catalyst for the long-term generation of the innovation growth of SMEs.

The most important elements of innovation infrastructure are its institutional, educational, financing, information and other components.

The main trends in the formation and expansion of the **institutional infrastructure** in the context of the transition of CIS countries to an innovation method of development are:

- ✓ expansion of the territorial network of science and technology parks, innovation business-incubators, technology transfer centers, innovation-technology centers, patent information centers etc. with adequate property, technical and financial provision;
- ✓ provision of support for the process of incubation of small innovation enterprises functioning within the framework of innovation incubators or created with the participation of research and university organizations;
- ✓ support for the creation by scientific institutions and university centers of branch establishments (spin-off companies) for the purposes of promoting the results of scientific research activities on the market;
- ✓ strengthening of the consultancy infrastructure as a whole and consultancy component of technoparks and their activities to support and accompany the innovation process, since, in the opinion of leading specialists, in some cases they are more concentrated directly on the problems of innovation production, and ignore marketing, engineering, consulting, patent-licensing and other services⁸;
- ✓ formation of an expert component for infrastructure, the demand for which will grow in accordance with the transition to competitive financing of innovation activities and involvement of private capital in the implementation of innovation projects;
- ✓ strengthening of commercial activities for the functioning of infrastructure, including through the mechanism of State-private partnership, as a general condition for enhancing its effectiveness, improving the services provided and reducing the level of potential for corruption.

The basic function of the **education infrastructure**, as the most important component of the innovation process, consists in training staff resources which are the direct generator of the innovation product. The main tasks in enhancing the education system in the context of a transition to an innovation method of development are:

- ✓ adaptation of the content of the educational process to the requirements of innovation development by bringing the names of specializations closer to the realities of innovation activities;
- ✓ integration into study plans of all university specializations for new disciplines linked with the management of innovation activity, development, protection and commercialization of intellectual property, copyright, technology transfer, marketing of new products etc.;
- ✓ enhancing the creative component of university and, especially, of technical education by deepening the integration of the educational and scientific-research processes, and also the broad use in the study process of principles of contemporary methodology for generating creative activities;
- ✓ expanding distance and continuous learning as the most appropriate forms for the retraining and further training of staff in the context of a dynamically developing society and as the main condition for providing an uninterrupted process for the generation of knowledge and its effective use;

⁸ B.V. Grinev, V.A. Gusev and P.E. Stadnik. The Question of Innovation Potential. National Academy of Sciences of Ukraine, Materials of the Twelfth International Scientific and Practical Conference, *Problems of and Prospects for Innovation Development of the Economy*, September 10-15, 2007, Kiev – Kherson – Simferopol', 2007, p. 96.

- ✓ devising and adopting standards for higher, general and vocational education, and reflecting the needs of innovation development in those standards;
- ✓ enhancing the receptability of employees to training;
- ✓ the search for ways to motivate firms to train their workers, including in the context of foreign study visits;
- ✓ organization of training for managers and staff of SMEs in the foundations of technology transfer, intellectual property, innovation management, marketing of new products etc.;
- ✓ cooperation of university centers with technology transfer agencies, study-information centers, national patent offices etc. in bringing the education system closer of the needs of innovation development.

The above measures are designed to promote the enhancement of the role of human capital in accelerating the innovation process, and overcoming a low level of innovation culture and qualifications among managers, especially of SMEs, which hampers the adoption of innovation-related decisions, aimed at the long-term creation of long-lasting competitive advantages.

The financial infrastructure is designed to create favorable conditions for financing innovation activities through the broad involvement, together with State financial resources, of other sources: investments, credits, loans, share participation and property rights. The main methods of its formation are:

- ✓ facilitating access to financial resources by forming appropriate methods for financing innovation activities for all stages of the innovation cycle, beginning from the initiation stage, in order to guarantee its uninterrupted nature or create a complex mechanism for wholesale financing throughout the innovation cycle;
- ✓ creating and supporting venture funds, which must become one of the priorities for financing innovation activities of SMEs. The creation of particular benefits for the activities of venture capital must be combined with its harmonious integration into the traditional institutions of capital markets: stock market funds, pension and insurance funds. In this regard, it is very important to choose a model for the regulation and participation of the State in venture financing, appropriate to the possibilities of the State budget, level of innovation activities of enterprises and degree of maturity of market relations, quality of State management and ability to take correct investment decisions;
- ✓ provide State support for the activities of other funds, involved in the innovation process: "start-up capital" fund, share investment funds in the field of innovations, deposit-loan funds specialized in the financing of low-profit capital investments in the investment and innovation sphere etc.;
- ✓ the transfer of emphasis from subsidizing small innovation enterprises and projects to their special loan arrangements, which, as a rule, increases the responsibility and effectiveness of the participants. It is appropriate to enhance the conditions for the grant of bank loans by using special forms of investment long-term credit arrangements on preferential conditions, providing guarantees from the State or special funds, in particular at the competitive stage of the innovation process and the emergence on the market of innovation products;
- ✓ the transition from the specific-purpose distribution of budgetary resources used for innovation development to the provision of State support on a competitive basis;
- ✓ expanding the sources of financing for innovation activities by attracting extrabudgetary resources, foreign investments, private capital, pension funds and the population;
- ✓ directing financial support for SMEs to activities in high-technology and science-intensive sectors;
- ✓ expanding the system of microfinancing for SMEs as an alternative to the banking sector;
- ✓ expanding the possibilities of licensing schemes for financing modernization of production through the subsidized reduction of interest rates.

The information infrastructure for the innovation process is a combination of all information bases and resources, access to which is an essential condition for effective scientific research, R&D, patent and innovation-related activities. Its modernization presupposes:

- ✓ the formation of mechanisms for the regular exchange of information between small, medium-sized and large innovation enterprises, scientific and university centers, organizations for the infrastructure and support of SMEs, and the authorities;

- ✓ creation when assisting State authorities of a network of information bases and resources, appropriate to the optimum functioning of the innovation economy;
- ✓ the free provision to SMEs of access to information resources of patent offices, State centers and agencies for technology transfer etc.

An important position in the formation of innovation infrastructure belongs to business-communities and public self-regulated organizations, created according to professional and other principles, which must become active subjects in the process of creating a mature competitive environment, a civilized innovation market, and a developed innovation culture by forming traditions and unwritten rules for business ethics, based on fair competition, observance of intellectual property rights and prevention of the production of counterfeit goods.

3.4. Development of the innovations market and capitalization of the results of intellectual activity

The effective involvement of innovations in the economy is possible, above all based on the use of market mechanisms. Moreover, in most cases it is actual market categories which become a measure of the effectiveness of innovation activities. Only within the process of commercialization are real competitive advantages, obtained by an enterprise from the innovations used in production, manifested and materialized. As shown by advanced practice, the more mature the innovations market, the smaller the number of State forms of support and means are needed to support active innovation activities.

The economic growth obtained in the past decade in CIS countries did not unfortunately bring with it increased demand for R&D and innovations. This is the result of the absence of a favorable business and innovation climate, a mature competitive environment, an effective system of stimulation for innovation development, the undeveloped nature of the market infrastructure and a simplified approach to the innovation market, based on the expectations of natural involvement of innovations in the expanding sphere of market relations. The main flaw in this approach lies in that the process of devising new technologies is detached from actual production requirements and the services sphere. Innovations are, more often than not, unfortunately created for an anonymous user, and in the last resort are not part of the demands of the real economy and market sector.

The main task in the formation of an effective market for innovation developments lies in transforming the recurrences of the pseudo-market correlation between supply and demand, characteristic of an administrative-command economy, in which supply prevailed, into a formula natural for a market economy, in which demand dominates.

The main problems in forming an innovations market stem from the excessively specific nature of technologies as goods. The specific nature lies in the non-material character of technology, and the combination of a monopoly position on the part of sellers, resulting from the unique nature of each new invention and its legal enforceability as intellectual property subject matter, with a simultaneously low level of liquidity (according to statistics from all production inventions patented in the world not more than six or seven per cent are used), and limited marketability (in countries in transition innovation activities of enterprises are directed primarily to their own needs). The other particular feature of technology lies in the fact that it is not a good of mass demand and, in the final analysis, its price in market economy conditions depends more on the purchaser than on the seller.

On the whole, the state of the innovations market and the pace of its growth characterize the degree of use of the intellectual potential of society in economic activity, and the curves in the development of this market largely correspond to the curves in economic growth.

In most CIS countries the innovations market is absent, and in some it is at the initial stage of its development. For its formation, a number of measures should be taken to broaden the capacity of the given market segment by activating demand for innovations, especially among SMEs, conducting serious research into its structure, and also through the creation of appropriate legislative and organizational measures. The most urgent of these include:

- ✓ the expansion of the innovation market by involving in market relations the results of intellectual activity and, above all, patents created using budgetary resources;
- ✓ the involvement in the commercialization process of know-how which in international licensing trade practice occupies a significant position. Thus, in the West, of all the licensing agreements in existence more than 80 per cent contain know-how and around 30 per cent are agreements exclusively relating to know-how;

✓ a reduction in or cancellation of taxes for operations with intellectual property subject matter, which is currently taxed in most CIS countries on a general basis. In these conditions, enterprises carrying out technology transfer characterized by a high level of risk, are forced to bear the same fiscal burden as other enterprises operating in general conditions, which significantly hampers the commercialization of innovations;

✓ the formation of the institution of intellectual property assessors, as a necessary condition for the functioning of the innovation market. The evaluation of intellectual property is an excessively complex and costly process, the methodology of which is far from being complete. The approaches and methods of evaluation used currently, as a result of the undefined nature of the subsequent use of new inventions, do not give sufficiently precise ideas concerning their real market value. There are insufficient grounds to suppose that in the near future more complete methods may be devised. As an alternative to labor-intensive and completely undefined individual assessment of the market value of each innovation development, many western companies are resorting to more simplified methods of identifying a certain share of the sum total of market capitalization, which is taken as an expression of the value of their intellectual property;

✓ creation of conditions for capitalization of results of R&D and, above all, patented inventions, through the inclusion of their cost in enterprises' long-term assets. For SMEs, the valuation and inclusion of intellectual property subject matter in the accounts are especially important, since they may serve as grounds to increase the balance sheet value of enterprises, attract investments, and corresponding rights, as part of the property of an enterprise, and may be used as security to attract loan resources.

CONCLUSION

The problems of a transition to an innovation method, and also stimulation of the activities of SMEs have lain at the centre of the attention of scientists and practitioners in CIS countries, beginning from the middle of the 1990s. Nevertheless, in the opinion of most experts, the creation of an effective innovation model of economic development is thus far only in the initial stage.

The strengthening of the role of small and medium-sized innovation enterprises in the economic development of modern society is a component of the transition to an innovation model of growth, which places excessively important tasks before all participants in the reproduction cycle, beginning with macroeconomic and ending with microeconomic processes.

The measures proposed in this work are only the most generalized series of levers to activate the innovation activities of SMEs. Taking into account the fact that SMEs do not function in isolation from other forms of organization of economic activity, these recommendations propose mechanisms for the formation of an innovation-oriented economy as a whole. At the same time, a number of current problems related to innovation development, which to a large extent concern the problems of major corporations (cluster networks, technopolises, legality and the direction of integration into the world scientific and innovation space etc.), have remained beyond the scope of this work as a result of its limited nature.

In the modern context of global economic crisis, the topical nature of the transition to an innovation method of development is increasing significantly. This is confirmed by the history of the development of the market economy and is manifested as follows:

1. enterprises using the latest technologies and promoting new goods have more chances of overcoming the crisis with fewer losses and emerging from the crisis on top;
2. overcoming the consequences of the crisis fully is of course linked to a greater or lesser extent with the technological development and will signify a transition to a new technical and technological level;
3. the financial and economic crisis is a technological test of its own kind, the specific purpose of which is to exclude from economic activity those enterprises which are unable to modernize technological processes and use innovations;
4. in conditions where production and receptability to innovation of large-scale production units are falling, the role of SMEs which are able to implement innovation projects within tighter deadlines and with fewer expenses is increasing in importance.

Thus, however serious the conditions of the crisis, it is the crisis which provides an effective stimulus for innovation development and rearming production on the basis of new technology. In conditions of stable economic development not a single entrepreneur will be bold enough to suspend production of goods in demand on the market, in order to modernize the production. The most appropriate time for this is the period of decline, i.e. crisis.

The protracted nature of the current crisis determines the need to devise within the shortest possible time a complex anti-crisis and post-crisis innovation strategy. Its topical nature is linked to the fact that the scientific perception of the reasons, the multi-faceted and unpredictable influence and effects of the crisis have not as yet been fully formed. This leads to fragmentation in the choice of anti-crisis and, moreover, post-crisis measures. Anti-crisis measures in the scientific, technological and innovations spheres are considered secondary. However, the measures used everywhere to combat the crisis in terms of readjustment and crediting are an attempt to save the old economy, while an innovation model of development is aimed at creating a new economy.

In these conditions, it is necessary to place a stake on innovations, the development of the SMEs sector and stimulation of market demand for innovations, and thereby unify the most important anti-crisis and post-crisis measures. Such an approach is closely linked to the idea that during the current crisis there may be a leap in innovations, which may be assisted by the development of the sector of highly scientific small and medium-sized enterprises.

In order to promote this process, it is necessary to create a special State-private anti-crisis reserve scientific innovation fund, able to provide support for State and private scientific research, laboratories, R&D, small and medium-sized highly scientific enterprises, which have qualified staff and operate in the sphere of R&D and innovations.

In all probability, the need has now emerged to take stock of the anti-crisis potential of innovation development within the process of devising an inter-State special-purpose program for innovation cooperation among Member States of the CIS for the period up to 2020, a decision on which was taken at the meeting of the Council of Heads of CIS Governments, on November 14, 2008, in Chişinău.

Bibliography

- Becker R. & Hellman T. 2003. The genesis of venture capital – lessons from the German experience. CESIFO Working Paper No. 883. www.CESifo.de.
- Blinnikov V.I., Dubrovskaya V.V., Sergiyevsky V.V., Patent: *From Idea to Profit*, Moscow: Mir, 2002.
- Branscomb L.M. and Philip E.A. 2002. *Between Invention and Innovation: An Analysis of Funding for Early Stage Technology Development*. Prepared for the Economic Assessment Office. Advanced Technology Program. National Institute of Standards and Technology. <http://www-15.nist.gov/eao/ger02-841.pdf>
- Bukhval'd D., Vilenkin A., *Russian Model of Mutual Cooperation between Small and Medium-Sized Enterprises//Economics Issues*, 2002, No.12.
- Bunchuk M., *National Innovation Systems: Main Concepts and Applications* (based on materials of foreign authors) mb1709@hotmail.com
- Collection of Materials of the Twelfth International Scientific and Practical Conference *Problems of and Prospects for Innovation Development of the Economy* – Kiev: SPD Tsudzinovich T.I., 2007.
- Compendium of Good Practices in Promoting Knowledge-Based Development*, New York and Geneva: United Nations Publications, 2008.
- Creating a conducive environment for higher competitiveness and effective national innovation systems. Lessons learned from the experiences of UNECE countries, 2007.
- Dezhina I.G., Saltykov B.G., *Formation of the Russian National Innovation System and Development of Small Business//Problems of Forecasting*, 2005, No.2, pp.118 – 128.
- Financing Innovative Development. Comparative Review of the Experience of UNECE Countries in Early-Stage Financings*, New York and Geneva: UN Publications, 2007.
- Golichenko O.G. *National Innovation System of Russia: State and Method of Development* / Russian Academy of Sciences Department of Public Sciences, Russian Scientific Research Institute of Economics, Politics and Law in the Scientific and Technical Sphere. Moscow: Science, 2006.
- Idris K., *Intellectual Property – A Power Tool for Economic Growth*, Translated from English, Moscow: Rospatent, 2004.
- Innovations and Economic Growth*, Moscow: Science, 2002.
- Innovations, Specialization and Networks* // <http://www.innosys.spb.ru/?id=508>
- Introduction to Intellectual Property*, Geneva: WIPO, 1997.
- Ivanova N.I., *National Innovation Systems as a Self-Development Mechanism in the Global Economy*, <http://www.ptechnology.ru/Innovac/24.html>
- Karzhau A.T., Folom'yeu A.N., *National System of Venture Financing*, Moscow: Economics, 2005.
- Kozlov K., Sokolov D., Yudaev K., *Innovation Activities of Russian Enterprises*. Moscow: Moscow Carnegie Center, Working Materials, No. 5, 2004.
- Leont'yeu B., *Basic Model of National Innovation System//Intellectual Property*, 2009, No. 8, pp. 4-14.
- Nelson R., ed., *National Innovation Systems: A Comparative Analysis*, N.Y.: Oxford University Press, 1993.
- Odretch D., *Importance of Small Enterprises in Making the US Economy Dynamic* // www.nisse.ru
- Olekhovich G.I., *Intellectual Property and the Problems of its Commercialization*, Minsk: "Amalfeya" Publishing House, 2003.
- Policy Options and Instruments for Financing Innovation: A Practical Guide to Early-Stage Financing*. UNITED NATIONS, New York and Geneva, 2009.
- Porter E.M., *Competitive Advantage: Creating and Sustaining Superior Advantage*/Translated from English, Moscow: Alpina Business Books, 2005.
- Problems of and Prospects for Innovation Development of the Economy*. Materials of the First Innovation Forum of the Commonwealth of Independent States "International Innovation Development and Innovation Cooperation: Condition, Problems and Prospects", and Eleventh International Scientific and Practical Conference, *Problems of and Prospects for Innovation Development of the Economy* Moscow-Kiev-Simferopol'-Alushta, 2006.
- Problems of and Prospects for Innovation Development of the Economy*. Materials of the Thirteenth International Scientific and Practical Conference on Innovation Activities. Kiev-Simferopol'-Sevastopol', 2008.
- Problems of and Prospects for Innovation Development of the Economy in the Context of Overcoming the Global Financial Crisis*. Materials of the Fourteenth International Scientific and Practical Conference on Innovation Activities. Kiev-Simferopol'-Alushta, 2009.
- Schumpeter J.A., *Theory of Economic Development*. Moscow: Progress, 1982.
- Solovyev V.P., *Competition in Conditions of the Innovation Model of Development of the Economy*. Kiev: Feniks, 2006.
- Sorokin A.V., *Effectiveness of the Functioning of Small Innovation Enterprises*, Moscow, Logos, 2000.
- State of and Prospects for Development of Science in the Republic of Belarus, based on the Results for 2007: Analytical Report* / A.N. Korshunov et al., Minsk: "Bel ISA" State University, 2008.
- Transfer of Technologies*. V.V. Titov. – <http://civt-213a.ksu.ru/coment/faq>
- Transfer of Technologies as an Economic Category* G.D. Laptev. – <http://eng.iptt.demosite.ru>

- Vlasenko S.N., Golovatyuk V.M., Yegorov S.A., Solovyev V.P., *Examination and Monitoring of Innovation Processes, Method-Related and Legal Aspects*: Ukrainian Vidavinci Center, Kiev, 2006.
- Vorontsov V.A., Ivina L.V., *Main Concepts and Terms of Venture Financing*, Moscow: Stupeni, 2002.
- World Economic Forum, (www.weforum.org).
- Yegorov I.Yu., *Science and Innovations in the Processes of Social and Economic Development*, Kiev, 2006.
- Zaslavskaya T.I., *Modern Russian Society: Social Mechanism of Transformation*. Moscow: Delo, 2004.
- Zinov V.G., *Intellectual Property Management*, Moscow: "Delo" Publishing House, 2003.