SCIENTIFIC-TECHNOLOGICAL PROGRESS OF UZBEKISTAN: PROBLEMS AND PROSPECTS

ABROR AZIMOV, Ph.D.

World Economy and International Economic Relations Department,
Tashkent State University of Economics, Uzbekistan

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Abstract: The article considers aspects concerning effective coordination of scientific-technological development in Uzbekistan. In the conditions of new economy, insufficient development and use of innovations in the domestic economy will contain the rate of economic growth for any country. Government policies should enhance cooperation among R&D structures and businesses to induce competitive innovations into the national economy.

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Social, economical, and cultural activities of any society have always been linked with scientific-technological progress. The developed countries of the world have already started investing significant funds into scientific research and innovation, understanding that solid returns and market gains can only be accomplished through implementation the most sophisticated achievements of the science and technologies. However, the contemporary science must provide not only significant economic benefits, but also deliver sustainable development for the society.

In this context, studies in organization of research and innovation activities in countries with transition economies have become extremely important. Apparently, achieving significant progress in development of science and technologies, innovation entrepreneurship in CIS countries is rather difficult at the moment. This problem originates from period when the scientific research institutions in the former Soviet Union were assigned to carry out military-industrial orders with limited opportunities for independent introduction of new products into the market. It was one of the major disadvantages of the centrally planned system in the area of scientific development. Socialistic model of production did not maintain a well-formed back-up infrastructure of horizontal links between industrial enterprises, scientific and financial organizations.

Nowadays, public institutions in countries with transition economies are facing challenges concerning coordination, management of the research activities, and identification of priorities of the science development in market competitive environment. Authorities face difficulties in establishing criteria, forms and methods of financing the science. The science seeks to count complexity and specifics of the short-term and long-term tasks to be resolved to ensure sustainable development. And this fact makes the governments of the countries, in particular, countries with the transition economies, take a special efforts to develop own scientific-technological policy as well as to formulate the strategy of the development and methods of efficient management of the science.

In Uzbekistan, like in many other countries, the science development is financed mainly by the state. In 1992 the presidential decree "About the state support of a science and development of innovative activity" set important role of state in coordination of national science and technology policy. To make the management efficient, there was established under the Government the Committee on Coordination of Science and Technology Development (CCSTD). This Committee is chaired by the Prime-Minister. The executive bodies of CCSTD are the Center on the Science and Technology and the Council on the appraisal and expertise of the scientific and innovation projects. About 803 innovative projects were conducted during 1998 -2008 by different industry agencies and ministries (Table 1).

TABLE 1. INNOVATION PROJECTS EXECUTED IN UZBEKISTAN DURING 1998 -2008

Ministries and departments	% from total	Quantities of projects
Academy of sciences	17.6%	141
Ministry of the higher and secondary education	21.0%	169
Ministry of rural and a water management	19.3%	155
Ministry of health	9.3%	75
scientific organizations of other ministries and departments	32.8%	263
Total	100	100

Source: Statistical data of the Committee on coordination of science and technologies development under the Cabinet of the Ministers of the Republic of Uzbekistan, 2009.

Through programs intended to finance and support a science every state anticipates the return of the investments, strengthening a country position on international market, development of national technological market. Therefore, the state investing in science requires a comprehensive analysis of the results of the promoted scientific studies and projects.

Taking into consideration the importance of this problem the Government of the Uzbekistan assigned the CCSTD to

solve the range of responsibilities in the sphere of scientific and technical policy, particularly:

- setting short-, mid- and long-term tasks of the fundamental and applied studies, in coordination with the strategy of the economic and social development;
- promoting large scientific programs and technological projects corresponding to the strategic development priorities;
- ensuring effective utilizing of delivered public funds to finance scientific and technological activities.

It is well known, new goods or technologies introduced to the market by enterprises, especially in countries with transitional economies, run the high risk. Many companies and enterprises often have to solve the question, whether it is reasonable to enter the local market with a completely new product? The risk level varies greatly and is directly related to the degree of the novelty of the product or technology. It's not a secret that the new and innovative products have the higher level of uncertainty how the market will react.

The main omissions while introducing new products to the market stem from the following specific sources: inadequate analysis of the external factors of the environment the businesses operate, including proper understanding the market trends, competitors' behavior; inadequate analysis of the internal innovation, production, financial and other potentialities; ineffective marketing and insufficient (or unprofessional) support to the new product introduced to the market.

Thus, activity of CCSTD in analysis in approving fundamental and applied research and innovation programs provides the additional marketing capacity to national science potential. The benefit of these state programs is that they mirror priorities of the economical development of the country, approach to science and technology tasks through prism of main indexes and indicators of sustainable development, including ones of education development, health protection, water, geo-, and bio-resources conservation, recycling of dangerous industrial and domestic wastes, control of soil desertification and others. Such state scientific programs are associated with the industrial and economic activity of enterprises, firms and companies.

The main challenge for Uzbekistan is to establish comprehensive state-support system which could play the guiding and leading role for domestic science and innovative business structures. Such system appears to cover all dimensions of research and technology development policy - fundamental and applied research, public and private research, science-business integration, international cooperation and evolvement, sustaining national competitiveness and security. Accordingly, the Government should develop effective policy tools covering grants, loans and tax incentives, information and marketing services, legal advising, infrastructure development, investing in education in education and technology.

It seems that one of decisive factors promoting advancement of technology in social and economic development is bridging between science and business. The more adequate and developed links and channels are built between academic and business sectors, the more holistic and sustainable the innovation generating cycle.

It is recognized that governments in developing countries can contribute essentially to promote business activities in science, technology, and innovation (UN, 2005). The government of Uzbekistan seeks ways to bring innovative prospects into national business development. Particular attention is given to the development of small and medium businesses. Though the small business sector has lack of high technology, it keeps significant potential to absorb supply of inventions and novelties from research and development.

Considering this fact the Government successively develops annual innovation fairs where national and international project providers and investors have opportunity to meet and discuss commercialization of applied novelties offered by universities and research institutes.

Companies in Uzbekistan started creating specialized innovation divisions which are dealing with manufacturing of production pieces of new equipment. Such tendency makes links between research and business closer, gives incentives to science institutions to focus on practical needs of manufacturers. Leading innovative enterprises can attract the talented researchers and develop their own corporate science infrastructures, thereby providing effective integration of science-business processes. Supportive role of state is crucial for such emerging national companies, sufficient and well-timed support can ensure the growth path of companies on competitive market. As experience shows, establishing of interaction between government and small innovation companies contributes to mitigation of contradiction between the huge available scientific potential and the necessity to reform cardinally the technical basis of all sectors of national economy.

The established mechanism of government support of research and innovation activity has already given certain results. Small scale enterprises begin to produce new, high-quality products, and compete with large-scale enterprises and importers. However, there is a lot work to do and only first steps have been done on the way of national science and technology development. Regardless of of achieved positive results, CCSTD recognizes depressed level of demand to innovations on side of national business. Well thought and good designed science and technology policy should mobilize national community resources - universities, institutes, associations, companies, etc. - and consolidate their efforts, coordinate their science and innovation programs. International historical and contemporary experience offers a wide set of tools, methods and policies that proved their efficiency in practice.

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