

Scientific and Technical Environment for Enhancing the Effectiveness of Innovation Management

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Abstract

One of the most prominent features of entrepreneurial activity in modern times is the entrepreneur's activity in the field of innovation. In the broadest sense, the content of this function is that the entrepreneur creates such conditions and thus innovates his business activities, not expecting a favorable business environment in the economic environment surrounding him. Innovative activity in ensuring the overall dynamism and progress of the country's economy is indispensable. In this regard, the modern features of innovative management in Azerbaijan's economy, problems existing in this area and ways of their solution are the main subjects of the research. It is shown that the establishment and proper functioning of the national innovation system in the market relations in the Republic of Azerbaijan is impossible without the elimination of the various factors that adversely affect this process. The ability of the country to make a technical and economic progress, to reach the international market with competitive and high-tech products directly depends on the government's favorable environment and the benefits that it has created in the field of innovation to domestic and foreign firms.

Keywords

Azerbaijan's Economy, Economic Progress, Innovation Management, Innovation System, Innovation Activities, Economic Environment

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1. Introduction

One of the most prominent features of entrepreneurial activity in modern times is the entrepreneur's activity in the field of innovation. In the broadest sense, the content of this function is that the entrepreneur creates such a condition by not expecting a favorable business environment in the economic environment surrounding him, and hence innovation in his business activity. Thanks to this, the end result of innovation is production, commercial and so on. The emergence of new ideas related to them, the evaluation of their economic activity, the acquisition of additional profits; Discovery of new products (services) and new production methods; Application of new technologies and rationalization

proposals; Creation of new organizational forms of business enterprises; Seeking new funding sources for capital investment; Use of new forms and methods of realization of commodities (services), etc. performs.

Innovative activity is indispensable in ensuring the overall dynamism and progress of the country's economy. In this regard, modern features of innovative management in Azerbaijan's economy, problems existing in this field and ways of their solution are the main subject of the research. It is shown that the establishment and successful functioning of the adequate national innovation system in market relations in the Republic of Azerbaijan is impossible without the elimination of the various factors that adversely affect this process. The classification of factors that hinder innovation in

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the industrial enterprises of the Republic shows that they are distinguished by economic, production and other factors, and the specific weight of economic factors in this process is higher. The innovation activities of various oil companies in the Azerbaijani economy are investigated. What these companies have done in the development of the oil and gas industry of our republic and their innovations are especially emphasized. From here, one can draw from the fact that the country's technical and economic progress, its ability to compete internationally with competitive and high-tech products directly depends on the favorable environment created by the government for domestic and foreign firms in the field of innovation. All of this can be done in a more efficient and purposeful manner by using the experience of industrialized countries. It is important to take into account the peculiarities of the political and economic environment in the country.

2. Statement of the Problem

The revival and development of the national economy, and first of all, the adaptation of science-intensive and competitive industries to the adaptation of innovation activities to the market relations, is essential to establish a state regulation system for this activity. This, first of all, is conditioned by the fact that innovation activity is usually associated with a high risk. The regulatory mechanism of the state is one of the global issues covering the emergence of innovation business that can be adapted to the market economy, reconstruction of production and purposeful, adequate change in the activities of scientific organizations and the reorganization of the scientific-technical complex. This mechanism should envisage implementation of normative-legal and organizational-economic measures. These measures should be divided into the following areas

1. Creating favorable economic conditions:

- Conducting structural changes of privatized industrial enterprises using new techniques and technologies;
- Creating a sound financial market that will stimulate the involvement of financial funds in the reconstruction of production facilities;
- Establishing a state regulatory system that promotes competition and so on.

2. Creating a favorable scientific and technical environment:

- Creating a system for changing professional orientation of scientific personnel (including using the capabilities of the Russian Federation and other countries);
- Formation of public order system and application of targeted financing;

- Supporting the cooperation of industrial enterprises and scientific organizations;

- State support of small entrepreneurship in the scientific and technical sphere, etc.

3. Formation of an investment climate that creates conditions for innovation activities:

- stimulating innovation costs, establishing a tax system that promotes the expansion of exports of the machinery industry based on new technologies;

- Developing a mechanism for granting preferential loans to subjects of innovation business.

4. Creation of a network of scientific, scientific-technical and innovation activities:

- assessment of potential capacities of enterprises and selection of bankruptcy criteria;

- establishment of a state aid, assistance mechanism for the bankrupt enterprises;

- inventory, certification of scientific institutions, creation of state accreditation system, etc.

State regulation of innovation processes is one of the main conditions for the transition to the market economy of the existing economy.

To develop and develop the Azerbaijani industry from the crisis, it is necessary to develop a strategy for the maintenance and development of scientific and technical and innovative potential of the country. This strategy should include the following:

1. Restructuring of scientific and technical potential in various industries, taking into account the concentration of material, financial and intellectual resources;

2. Development of a leasing system as an effective market mechanism for innovation subjects engaged in production of science-intensive products using expensive equipment and equipment;

3. Improve the innovation activities and improve the system of bank loan attractiveness for the development of the capital market;

4. Separation and use of part of the profit from oil, oil products and gas to create an innovation fund;

5. Establishment of innovation projects development and management institute with the participation of scientific and technical staff, academics and specialists;

6. Implementation of the tax system, which will significantly increase the innovation efficiency.

Practice shows that developed countries form a "national

innovation system" in line with their national interests. At the same time, priority is given to the creation and application of new technologies that serve the development of the economy, to scientific associations aimed at the organization of new production processes, and the application of stimulating measures. Because innovation is a crucial factor in economic development, and with its application, serious changes in the economy and at the same time in the science sector - improvement of technological processes and the realization of scientific research results. Starting from the 80s of the last century, innovation business has gained momentum in Western countries. Here are some of the common risk ventures, research and development consortia, scientific-production associations, and so on. For example, currently in the US, there are about 60 scientific production consortia, where dozens of leading companies are involved in leading areas. Broad integration programs are widely used in Japan and Western Europe. In addition, in the United States, over the past decade in a number of other countries (UK, AFR, the Netherlands), new firms - leading universities, large research centers and corporations - incubators, innovation centers, "industrial technology centers". This is a new form of collective innovation business. In developed countries, the National Innovation System (NIS) is a set of different institutions (firms, scientific institutions, universities, etc.) involved in the creation and dissemination of new technologies. The National Innovation System is the main source of government innovation policy. Our republic is interested in the expansion of foreign economic relations, integration into the world states. Economic integration allows countries to utilize their scientific and technical potential and financial resources for joint activities, the development and production of new types of products, the application of new techniques and technologies, and the production of modern methods of production. Focusing on the implementation of large-scale projects accelerates the receipt of final results. According to the Statute of the National Fund for Entrepreneurship Support, loans from the Fund for the implementation of innovation processes are provided on preferential terms. However, more modern conditions should be created for the "modernization" policy - the development of new modern production areas, promotion of existing industries, and the realization of scientific and technical achievements by entrepreneurs. Throughout history, the development of small and medium-sized businesses has been stimulated and maintained by the state in many countries, including joint ventures based on government orders in the United States. The state controls the socio-economic processes taking place in the country, the activities of enterprises, thereby ensuring the purposeful development of the country's economy. Today, joint ventures based on state regulation in developed countries, especially in Japan, form

the basis of the economy. In Japan, businesses that are carrying out innovation-oriented projects based on licenses issued abroad are targeted by the government. Based on this experience, it is possible to develop the country's main production areas in a short time and to produce products that meet world standards. While only 20 per cent of inventions are used in Azerbaijan, this figure is more than 80 per cent in developed countries. Experience shows that in developed countries, 2/3 of the economy is the result of scientific and technical progress. Therefore, the efficient utilization of scientific and technical potential made it possible to create qualitatively new production areas.

According to the State Statistical Committee, 25 percent of enterprises in the country have been involved in innovation, which accounts for the largest enterprises (20 percent of small businesses are involved in innovation). However, in Japan, after the Second World War, the scientific and technical progress and the licenses received from other countries, which were hard to come from us economically, were largely implemented in small businesses and were sponsored by the state. World practice shows that smaller firms and businesses are more involved in scientific innovation. In the United States, small scientific businesses are stimulated by the state's participation in scientific and technical projects. Research conducted at small and medium-sized enterprises constitutes 50 per cent of the scientific and technical achievements and produces 4 times more new products than large enterprises. In most developed countries, small and medium-sized businesses are further improving their expenditure on science. 80.7 billion euros allocated for scientific research in Germany. The brand is dedicated to research carried out by private firms and enterprises that have also been interested in applying the final results. In such countries, the growth rate of economic development and the favorable investment environment are provided at the expense of state appropriations and make up about 30% of the investments. The most optimal structure of corporation-level appropriations is organizational-economic, technical-technological and social factors. It should be noted that each developed country of the West has its own characteristics in the implementation of innovation processes. For example, one of the main features distinguishing it in the United States is generally the availability of a favorable economic environment for free entrepreneurship. That is why, according to the number of new independent firms each year (more than 600,000), the US is far ahead of all developed Western countries, and one out of ten workers in the economy has an officially registered business status. As for the favorable economic environment in which entrepreneurial activities, including the innovation activity in this country, are its diverse features, the existence of a vast capital market

and the encouraging state policy in this area. In turn, this is the broad propaganda of entrepreneurship at the state level, state financial assistance and tax privileges to newly established firms, more flexible regulation of their activities, scientific and technological progress of large firms, large corporations, high technology results, etc. Allocation of state financial resources for such programs, etc. includes. For these and other reasons, innovation processes are one of the key factors of US economic development. If in the 50-60s half of this country's 2.5-3 per cent annual growth rate was due to changes in innovation processes and technology, today the share of this indicator has significantly increased.

In the recent years, the Japanese state has gone a long way from the United States to the development and implementation of innovation processes, and this process has gained momentum since the 1960s and 1970s. There are various opinions on the true cause of the rapid economic leap in the Japanese "miracle", ie the 60-70s. One of the most widely spread of these ideas is that the miracle is linked to radical changes in science and technology and innovation. Specifically, it shows itself in the widespread adoption of electronic computing techniques, information management systems, technology processes and automation of design from that time. Today, this list of innovation processes includes the use of biotechnology and highly robust synthetic substitutes, robotic conveyor lines, and so on. One of the other features of innovation in Japan is the fact that in economic activity, foreign discoveries, ideas, projects and are widely used. Over the past 30 years, the country has spent more than \$ 10 billion on acquisition of foreign technology. During this period, Japanese firms received about 42,000 licenses, about half of which fell to the share of the United States. One of the most diverse aspects of innovation in this country is to identify the country's technology goals nationwide, mobilize all the economic opportunities to achieve this goal, encourage private entrepreneurship in this area. For example, in the '70s, the Japanese government had the task of reducing imports of foreign technical and technological projects and providing economic growth mainly on the basis of Japanese science and technology achievements. It should be noted that this task has been fulfilled for the modern time and the Japanese Concern has created their own scientific and technical potential. Nevertheless, the practice of obtaining modern foreign licenses is still important. For example, during the fiscal year 1993-1994, 471 billion yen was used for foreign licenses. Compared with America and Japan, innovation in Western European countries has developed relatively little, and one of the main reasons for this is the vulnerability to risk-related operations. Great Britain and Italy's small innovation companies operate in a very solid and rigid subpodrative

relationship with large corporations and are largely dependent on them. In Western Europe, a relatively large market of venture capital is available in England and the Netherlands, and it has started to develop from the 80s. And about half of all capital here is directed to highly established high-tech companies, and the rest of the existing companies (including a significant portion of existing US companies). Despite the distinctive features of the innovation environment in different countries, there are many aspects that have to be summarized in this area. Today, the innovation environment and its processes in all developed Western countries are the basis for the future development of the scientific and technological progress and the transformation of the economic system, as a prerequisite for raising the competitiveness of the national economy and ensuring economic growth.

Finally, it should be pointed out that innovation processes are not only carried out at different levels. Today, a unified innovation policy is one of the key components of a coherent and coordinated economic policy implemented by a number of countries. From this point of view, the experience of the European Union countries is more admirable. The main trends of innovation policy implemented in the present time are as follows: introduction of favorable tax rates for scientific technical and technological innovations; Encouragement of small-scale science-intensive businesses; direct financing of firms engaged in the development of products and advanced technology; Promoting joint collaboration between companies involved in creating university and science-intensive products and so on. All these measures have ultimately focused on the creation of equal opportunities and the same economic environment for innovation in each of the EU countries.

At present, accelerated depreciation charges are applied in many countries, which serves to accelerate innovation activities. "Leasing business", which enhances the use of scientific and technical achievements in developed countries, plays a major role in investment processes. Thus, revenue generated by the lease of production equipment or fixed assets allows the enterprise to pay for other costs. It is advisable to use renovation costs in the development of entrepreneurship, since expenditures can ensure sustainability of production activities irrespective of the change in circumstances. It is essential to establish technology and innovation centers for entrepreneurship development, as these centers provide entrepreneurs with new technology innovations, relevant information and, if necessary, manpower management. In countries such as Germany and Japan, special stimulating amortization, tax, financial and credit policies are being implemented to accelerate the introduction of innovation processes, and the risk financing

processes of innovation-oriented enterprises are also protected by the state. As it is noted, the enterprises dealing with innovation processes in Azerbaijan make up 20%. Because such enterprises are taking the first steps, they are not sponsored by the state and, first of all, have not been provided with highly qualified personnel.

Based on the analysis, it was determined that high credit repayments, non-improvement of tax payments, low customer solvency, problems with raw material and materials, administrative interventions, lack of required state support etc. are factors that slow down innovation. Generally, government-sponsored businesses are required to apply innovation processes, and this is only possible through socio-economic development.

3. Solution of the Problem

The experience of countries operating in the market economy shows that investment and innovation activities play an important role in the development of material production. This is more important for our independent republic, because the level of technology production in our country is still significantly lower than in other developed countries. The result is that the quality of most industrial products (including chemical products) produced in our country does not meet the requirements of world standards. For the sake of justice, it should be noted that in the last ten years, 32 billion dollars have been invested in the country's economy. Now, Azerbaijan occupies one of the leading places in the CIS and East Europe, according to the volume of per capita investments. Most of the investments in the economy were spent on the acquisition, exploitation of new oil and gas fields and the construction of necessary infrastructure for oil transportation. According to the State Statistical Committee (SSC), during the period from 2000 to 2004, 60.9 bln. Manat was invested in the amount of 13.6 bln. or 22.3% of foreign investments, 47.3 bn. Or AZN 77.7 of which were domestic investments. As a result, the share of investment in this area was 0.78 percent in the total volume of investments directed to the industrial sector. In the 70-80s of the last century, 160 names of products were produced in the chemical industry of our republic and delivered to consumers according to the rules of the planned economic system. However, in the years of sovereignty, chemicals related to transition to a market economy lost their traditional raw material suppliers and finished product consumers, working low, and the number of product assortments that were previously produced decreased 4-5 times. At present more than 95% of chemical products are sold on the domestic market, mainly on the basis of corporations.

According to the State Statistical Committee and Azerkimya

State Company, in 2005, only 3.0 percent of the country's exported products and 4.4 percent of imports are chemical products. Hence, the chemical industry of our republic is now among import-oriented industries. However, the material and technical basis of the existing chemical enterprises in the country and the availability of highly qualified personnel can modernize the innovation process and produce the currently imported products. It is known that the innovation activity of the field is a complex organization-technical, economic and social system of measures covering the scientific and technical, intellectual potential, and the effectiveness of industrial production and other economic development. Innovative and technologically advanced technology can demonstrate the importance of innovation in industry in both directions. Field science status does not meet current research, design and construction requirements and innovation activities. Physical and moral wear of laboratory equipment does not allow modern scientific and technical research. In this regard, in recent years, industry has not undergone fundamental innovation in innovation, new radical productive innovation process, or dynamics in this area. The distinguishing feature of innovation activities is that it does not result in the comprehensive application of science and technology, the development of new types of products, the creation of advanced technology processes, improving the quality of existing products and modernizing labor, creative search and innovation, and economic growth. It is expedient to make the following suggestions and recommendations to expand investment-innovation activity in the development of chemical industry in our Republic:

1. Experience in the development of chemical and petrochemical industries of economically developing and emerging economies shows that those areas play an important role in securing the country's security. The development of this field can give a boost to the industry's development, not just mixed areas. Relevant industry or industry policy is needed to effectively develop the chemical and petrochemical industry in Azerbaijan. Part of this policy should be primarily for investment-innovation policy.
2. In addition to expanding production capacities to effectively utilize investments in the chemical and petrochemical industries, it is important for enterprises to establish and implement an innovation policy that meets their specific nature.
3. Taking into account that large chemical enterprises of our republic are in state ownership and they are in close contact with technology, play an important role in the logistics of each other, the role of the state in implementing the economic development strategy of the field is undeniable. In this regard, the following should be provided for a long-term period:

- the acquisition of progressive production technology for mastering new products and modernizing existing products;
- Application of technology that can meet the needs of the foreign market, prevent relative environmental pollution, require less expense, save energy and material resources;
- achieving the application of risky technologies that will ensure the development of production entrepreneurship, the expansion of the consumer market, and the creation of new jobs.

4. In the course of the development of the investment-innovation strategy of the field it is important to consider three important issues:

- A) Determining the proportion of various forms of investment involvement at different stages of the prospective period;
- B) defining the investment-innovation activity of the field;
- C) Determining regional directions of investment-innovation activity, taking into account geographical location of chemical and petrochemical enterprises in the territory of the republic.

It is impossible to imagine the level of modern development of the economy without scientific and technical progress. In order to achieve high productivity, first of all, the achievements of scientific and technical progress should be used. Scientific-technical progress reflects the fundamental change of productive forces. On its basis are the material elements of productive forces - contradictions in the development of labor and goods. The solution of these contradictions is the essence of scientific-technical progress. The role and importance of the application of new, more efficient techniques and technology to production in line with world-class standards in terms of their transition to market economy is increasing. Scientific and technical progress ensures the development of production and labor productivity, the more efficient use of material and labor resources, and the development of other industries.

The following methods of economic stimulation of ETS in the engineering industry, including petrochemical industry, are the following: rewarding from the material premium fund by the use of new techniques; Material prize on the basis of the creation of special funds for new techniques; Material stimulation through rational adjustment of salaries of enterprise employees; State budget, science and technology development fund and production development fund. One of the main funds used to accelerate the ETP is the formation of a fund for the development of production, science and technology. In the contemporary period, the development fund of production, science and technology in the amount of special funds of enterprises is 80-90%. It includes the

acquisition of new types of products, the increase in productivity and labor productivity, the reduction of product cost and quality, the introduction of new techniques aimed at raising productivity, automation, modernization of equipment, transportation, procurement, production. Implementation of economic stimulus of scientific and technical progress is one of the important sources of intensification of mechanical engineering. In industrial environments, workers are rewarded for various indicators. For example, improving the utilization of the equipment in operation, reducing the productivity of the product and increasing its specific weight in each workplace, and increasing the turnover ratio of the equipment characterize quantitative and qualitative outcomes of labor productivity. The key role in rewarding employees among these indicators is the level of use of time and power equipment.

Rewarding has been widespread for boosting the use of production capacities in petrochemical engineering. The basis of this system is the application of a complex management system for the use of production capacities, productivity, labor and quality of the output. In today's conditions, the application of scientific and technological progress to the production has a significant effect on the change of the foundations and production capacities in the institutions. Analysis of the current state of Azerbaijan's petrochemical complex shows that enterprises entering the industrial sector are almost 6-9% of their production capacity. At the same time, 13% of fixed assets in the petrochemical industry were physically and 12% were morally outdated and 10% of equipment was destroyed. It is necessary to accelerate the application of scientific and technological progress to production in order to eliminate this crisis from the economic agents. Economic stimulation of scientific and technical progress will improve the technique. The process of improving the technology differs from the complexity. In this case, the different parameters and indicators of the machines improve, and thus, the technique is more economical. Planned implementation of the modernization of equipment gives great economic results. Increasing the power of machines, first of all, of energy equipment, is a leading aspect of increasing economic efficiency in industrial areas. One of the leading enterprises of the Azneftkimyash Open Joint Stock Company, Sattarkhan machine-building plant, has a combined capacity of electrical equipment for more than 3 times over the past 10 years. New machines can reduce fuel consumption, and reduce the cost of construction and installation work. Increasing the combined capacity of the equipment and accessories for the mechanical engineering industry leads to a 5-15% reduction in leakage of the product, reducing the cost of equipment by 6 to 17%. Intensification of technological processes and provision of machines with

automatic control and regulatory systems are one of the prospective directions for improving the technique. Raising the accuracy of machines, equipment, apparatus and equipment is important as one aspect of scientific and technical progress. The positive results of raising machine accuracy are different. This could be the reduction of material, fuel and other resources, increasing the service life of the machinery, and the general need for machinery and equipment. Summarizing the above mentioned, it is possible to say that an important aspect of improving production utilization is the rapid development of EHC tempo.

4. Conclusions

In the context of stimulating innovation processes in the country it is necessary to use state budget funds to finance the costs of scientific, research and experimental-design works in the tax, credit and other areas of the organization involved in the development and implementation of innovations; effective investment in industrial enterprises - It is important to improve the existing management system and implement a more progressive management form to carry out innovation activities; using the experience of developed countries, it is important to cooperate with them in science and technology, exchange of new knowledge and technologies, purchase and sale of licenses, and training of personnel in foreign countries.

In the process of developing an innovation-investment strategy, the following issues need to be addressed: application of technologies that meet the needs of the external market, prevent relative environmental pollution,

require less expense, save energy and material resources; to achieve the introduction of risky new technologies that will ensure the development of production entrepreneurship, the expansion of the consumer market and the creation of new jobs; determining the ratio between various forms of investment involvement at different stages of the perspective period.

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