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TECHNOLOGY OF TEACHING SPECIALISTS IN MANAGEMENT EDUCATION BASED ON FORSITE TECHNOLOGY

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ANNOTATION

One of the most urgent issues of today is predicting the future. The world is developing at an unprecedented speed before our eyes. Also, considering that socio-economic development is accelerating, planning for the future is the basis of sustainable development. In the current era of globalization, the use of Foresight methods is the most effective and acceptable option in the development of strategic plans, road maps and concepts related to the solution of major problems (ecological, socio-economic, technological, political, etc.) on the scale of the world, region, state or economy.

Key words: enterprise, strategic plan, roadmaps, foresight methods, perspective of science, technology, economy, society, socio-economic.

A long-term (from 5 to 30 years) development program or concept based on a foresight is created on the basis of short-term concrete evidence-based information, that is, the future strategy is planned on the basis of clear, high-level evidence [1]. In developed countries, foresight is widely used within a separate organization or enterprise, with the help of foresight methods, the future strategic plan of the enterprise is developed, which technologies need to be improved, and roadmaps for achieving the goal are developed.

Foresight was considered a relatively new term. Therefore, its perfect definition has not yet been developed [2].

What is a foresight? Let's look at some definitions given to the question:

Foresight is a technology aimed at determining the strategic directions of new technologies and research aimed at bringing high socio-economic benefits based on a systematic assessment of the long-term perspective of science, technology, economy and society.

Foresight means to actively predict the future, to create a reasonable strategy for the future development of the economy, science, business and other fields through foresight.

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The purpose of foresight is to identify strategic research and innovative technologies aimed at bringing high profits, that is, to determine a highly profitable future and to create a strategy to achieve it [3].

Foresight and its implementation "Foresighting" is the concept and practice of expert forecasting technology in a broad sense [4] . Foresight is used at different levels in different fields of activity [5]. V. Martin gave a classic definition of foresight as "a systematic attempt to assess the long-term perspective of science, technology, economy and society, which determines the strategic directions of research and new technologies aimed at bringing great socio-economic benefits [6]. Y. Kishita and R. Popper have shown in their scientific work that foresight is a possible instrument of prediction in the creation of scenarios and road maps [7].

Foresight technology was first used 50 years ago in the US RAND Corporation in the process of determining the future tasks of military technologies. By the 1950s, RAND experts had developed the Delphi method when they realized the shortcomings of traditional methods of identifying technologies. Especially on the basis of this technology, large-scale and systematic research was carried out in the US Air Force. This method is now widely used in foresight research in all fields. Since the 1970s, foresight technologies have also been used in the development of national-level strategies. In the socio-economic field, foresight technology was first used in the late 60s and early 70s to identify the most promising areas of science.

By the end of the 1960s, technological forecasting was perceived as a potentially useful political mechanism in Japan, and the US experience in this regard was closely studied by Japanese experts. In 1970, the Japan Science and Technology Agency (STA) developed a 30-year long-term forecasting strategy for the development of science and technology and ways to achieve it.

On the basis of technology foresight, global (international cooperation) problems are identified, including which areas should be further developed and which technologies should be improved based on cooperation, and a strategy for achieving the goal is developed.

Since the 1990s, several economically developed countries in the USA, Europe, Asia, and Latin America have begun to widely use foresight technologies in determining the long-term perspective. Based on the results of the Foresight projects, large-scale international research programs have been developed, including the budget costs of the Sixth and Seventh scientific research and technology development programs of the European Union of 17.5 and 54 billion. established the euro. The last foresight project in Sweden cost 3.6 million euros, and in Turkey, about 2 million euros.

EFMN (The European Foresight Monitoring Network) - European foresight research monitoring system, FISTERA - system of projects in the field of information

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society can be examples. EFMN is funded by the European Union and is part of the European Knowledge Exchange Platform. It includes ARC-SA, VDI, PREST, TNO, CKA, Atlantis, Fhg-ISI Organizations such as Dialogik, Louis Lengand & Associates, and Technology Center Prague are included. As of 2006, the EFMN monitoring portfolio contained information on about 1,000 foresight studies conducted in the EU member states, as well as in Japan, the United States, Canada, China, the Republic of Korea, and Brazil.

Today, long-term forecasting of technological trends and development scenarios is the main task of any organization, enterprise or corporation that wants to introduce this technology. The foresight is based on the integration of research and development in this field with the problems of production development at the enterprise. Therefore, rapid changes in the world's technological, economic, and social environment require abandoning traditional methods of strategic management and switching to foresight integration and strategies such as future management techniques. An innovation strategy based on scientific research usually leads to technological breakthroughs, regardless of the future of the consumer market. The research conducted by the research and forecasting groups in Europe, the USA, and Southeast Asia is aimed at creating technological systems and methodologies that allow monitoring technological trends, creating opportunities for new research and research. Therefore, in the USA, this activity has historically been carried out by RAND Corporation (see Research and Development) and other multinational corporations.

Theoretical and practical issues of socio-economic forecasting in the field of state innovation policy formation foreign scientists Gordon (Gordon T.), Linston (Linston H.), B. Martin (Martin Ben R.), I. Miles (Miles E.), R. It is reflected in the scientific works of Popper (Popper R.), M. Turoff (M. Turoff), O. Helmer (Helmer O.).

Forecasting based on foresight technology is a more complex approach than traditional forecasting. Foresight methodology includes dozens of traditional and completely new methods. The main trend in foresight projects is to move from technology-oriented projects to projects that include three components: technology areas, market and social consequences. But for the competent use of forecasting technologies in long-term projects, it is necessary to study and analyze the functions, principles and methodologies of foresight. Formation of foresight knowledge and practical skills in future managers is the basis of "Foresight competence". "Idea development team" and "Decision making team" are considered as one system in foresight research and are a fundamental condition and means of solving the problems of enterprises and companies.

Foresight projects are divided into the following types according to the scope, scope and problems of the project:

In terms of problem coverage:

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international; at the level of a country; within the framework of economic sectors or ministries, on specific organization or enterprise problems.

2. On the problems of the field where the foresight is applied:

field of education; social sphere; economic sphere, political sphere, technological sphere, etc.

3. According to the type of different problems in the field of research

The following stages are used in the implementation of prospective projects based on foresight technologies:

Stage 1 - technological foresight:

- a systematic tool of scientific and technological assessment that has a real impact on the development of the economic and social sphere through long-term forecasting.

Stage 2 - market-oriented foresight:

- full prediction of the development of business and market economy. The result of such foresight projects is the basis for developing a business development strategy.

3rd stage - socio-economic forecast:

- used for various socio-economic purposes.

When conducting foresight research, there are specific principles of foresight, which are described as follows:

1. Shaping the future. Predicting how the future will develop and what it might be based on the actions and decisions of leaders or public institutions based on the strategies and tactics of existing organizations.

Forsite participants (participation) are considered to be the main element of the institutional activity of the forsite, bringing together people working in different fields (experts: scientists, production workers, public representatives, political parties, neighborhood representatives, etc.) into one team with different worldviews and opinions. the process of collective thinking about one object (problem).

Involving representatives of various interested organizations in the foresight process is based on 4 principles of participation:

Moderation is a democratic ethic, that is, equal participation of all participants and provision of equal voting rights is one of the main conditions for the successful completion of the research.

Independence is the use of additional knowledge and creative potential by involving interested parties in order to solve a problem.

Functionality - to increase the confidence of interested parties in foresight studies in order to enable effective dissemination of results.

Social (reciprocal) learning is a process that occurs as a result of the exchange of opinions, experiences and ideas between interested parties, and is evaluated by the acceptance of the opinion of other experts and the ethics of participation in the project.

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3. Reasonableness. The basis for forming a future hypothesis on the basis of a foresight is the interpretation (general interpretation) of experts' knowledge and the factors of creative thinking. However, the scenario of the future based only on the opinions of experts cannot be a complete basis for making the right decision and evaluating it qualitatively. Therefore, it is necessary to use and strengthen the existing development traditions, mathematical forecasting, bibliometrics, official statistics and other sources.

4. Interdisciplinarity. Forecasting on the basis of foresight cannot be carried out within the framework of one discipline and based on knowledge. Due to the fact that the results of foresight are multidimensional, research requires the use of a set of knowledge from several disciplines.

5. Coordination. The foresight process is based on the participation of many experts from various fields in the formation of a future hypothesis in order to effectively use human and information resources.

6. Pragmatism. Foresight is not limited to predicting and analyzing the future, but also includes the issues of active action in the direction of shaping the future, and the implementation of the obtained results.

In conclusion, it can be noted that the analysis of foresight methods revealed their extensive advantages and disadvantages. It has been shown that the use of one method in foresight research is not effective, it is necessary to use combined methods, but the methodology of their selection has not been improved, and it is justified that this problem is one of the main problems in the field of foresight research.

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