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## **FORSIGHT IN UKRAINE: PROBLEMS OF ORGANIZATION IN THE CONTEXT OF WORLD PRACTICE**

*The article presents the results of a research on world and European experience of foresight research. Attention is focused on the organization of foresight research and institutional support of foresight in EU countries. The authors substantiate the necessity of expanding the practice of foresight research in Ukraine in the conditions of those changes in the nature of the world economy that occur under the influence of the COVID-19 pandemic and on the verge of upcoming change in the Kondratiev long cycles.*

*Current trends in the world economy facilitate access to foreign markets, but at the same time create certain risks for national economies.*

*Increasing competition between domestic and foreign producers for many countries means the bankruptcy of domestic enterprises, especially medium- and high-tech ones, which are unable to compete with corporations that are more powerful. Domestic prices for almost all goods increasingly depend on prices in other markets, which can form imbalance between the cost and price of labor and destroy the labor market, increasing migration of the working population, especially those with high levels of human capital, which reduces the country's opportunities in education, science and production and even multiplicatively affects economic growth.*

*In these conditions, it becomes extremely important to determine the guidelines for future economic development and society, which actualizes the whole range of foresight research. For Ukraine, where foresight research is limited, the experience of those countries where foresight has become an integral part of strategic planning is vital. The article is devoted to the study of this experience, which identifies the basic organizational measures of foresight research, the main aspects*

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*of foresight institutionalization and the problems that hinder the development of foresight in Ukraine*<sup>3</sup>.

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Modern world development, characterized by the acceleration of scientific and technological progress on the verge of changing technological patterns, requires the formation of types of long-term policy that determine the guidelines for future scientific, technological, and social development. This is particularly relevant today, when the COVID-19 pandemic has already come as a shock to the world economy. Many analysts consider that the pandemic has led to the greatest crisis since the Second World War. The roots of this crisis lie in the pervasive globalization that was thoroughly implemented during recent decades, and even before the pandemic, had already linked national economies to each other with a multitude of production, logistics and consumption ties that became vital for their functioning. However, liberalization of a country's foreign economic relations with the outside world does not always lead to expansion of the national economy. The experience of many countries shows that due to large-scale liberalization, instead of being modernized, a significant part of the industrial sector practically disappears. And this applies primarily to high-tech industries. On the one hand, there is a certain degradation of the productive forces; on the other hand, there is a growing share of lower-value-added activities types of production.

These risks have been made particularly clear by the impact of the pandemic, as the measures that countries put in place to deal with the pandemic effectively disrupted supply chains, the entire logistics of international trade and migration. UNCTAD's analysts recognize that any post-pandemic recovery of the world economy will not rebuild what the coronavirus destroyed.

This means that there is a vital need to study possible ways of developing the world economy, creating inter-state relations, and determining those aspects of socio-economic development, which will ensure a country's worthy position on the world market in the current circumstances.

Foresight studies have been launched with the aim of identifying the country's development priorities and promising "points of growth" in science and technology that will improve the standard of living and quality of life.

The main difference between foresight and forecasting is that the former's goal is not to produce a set of forecast trends. Foresight is a mechanism for exploring alternative futures in order to develop the necessary measures and opportunities to match the authorities' decisions today with a long-term perspective.

The first countries to use foresight as a development policy tool were Japan and US. In 1970, the US Science and Technology Agency (STA) attempted a long-term, 30-year forecast of the science and technology future. During the same period, Japan

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applied the Delphi method for a foresight in science and technology and continued to repeat it every five years, creating a new paradigm called Technology Foresight. Similar studies, which mainly focused on science and technology (S&T), started in the late 1980s in France, the Netherlands, Germany, the UK and other EU countries. Since 2000, foresight studies also spread to developing countries: Hungary and the Czech Republic fully-fledged their national foresights, Slovakia, Malta, Cyprus, Estonia, Poland, Romania and Bulgaria have partial foresights, mainly consisting of priority setting and capacity building studies. Ukraine joined in 2004.

In developed countries, 50 to 90% of GDP growth is provided by innovation and technological progress, which makes it highly relevant to identify areas of scientific and technological development, activities, and technological areas and technologies that will provide the greatest socio-economic effect in the future. In this context, foresight is a tool that allows, under conditions of high uncertainty and complexity of the considered issues and rapid changes in technological paradigms, to identify those emerging markets and technological areas, from the perspective of national socio-economic interests and the creation, on this basis, of strategic and policy documents.

In the seminal European document "A Practical Guide to Regionally Foresight European Communities", foresight is defined as "the process of actively knowing the future and creating a vision for the medium and long term, aimed at taking relevant decisions and mobilizing joint efforts" [1].

That is, in essence, foresight is not a method, but a technology, and in terms of research organization, foresight is a complex step-by-step and multidimensional interaction between expert groups representing various fields, which should result in strategic priorities for development of the research object aimed at achieving the desired goal.

Given this, the organization of foresight studies must comply with certain features of this technology, in particular.

1. A characteristic feature of foresight studies is the self-activation of participants in the foresight project field. Foresight studies can be successfully formed only in countries where there are elements of a developed civil society, since predictions are not only the product of scientists' activities, but also the result of active participation of various social strata, active citizens, including businessmen, politicians, and consumers.

2. Foresight should reconcile the particular interests of various sections of civil society, and hence support not only the participation in shaping the picture of the future of multiple stakeholders such as experts, specialists, professionals, and representatives of different sections of society, but also their involvement in taking active action to implement their own anticipated changes.

3. Foresight as a technology is not only a set of methods and tools for predicting future problems and influencing them by aligning the interests of government, business and society, but also a special organizational technology, expressed in a much more comprehensive approach than traditional forecasting.



4. A specific feature of foresight is its focus on the development of practical measures to approximate the selected strategic benchmarks. In doing so, special attention is paid to achieving consensus among the main "players" on the most important strategic development guidelines by organizing their ongoing dialogue.

For this purpose, within the foresight framework, special platforms, networks and panels of highly qualified and interested in their implementation expert participants, working groups, seminars and conferences are created. It is these networks of experts, consisting of representatives of government, business, public institutions and scientists, who are capable of formulating an adequate response to political, economic, and social and other topical challenges.

Foresight is based on different methodological and organizational principles in different countries, but the common concept is the involvement of the public in discussing long-term forecasts, developmental strategies and the development of a common vision of the future and how to achieve it.

Foresight technology is not canonically defined; it rather develops according to the requirements of the time and in the context of creation of new methods and prediction tools.

In fact, foresight is a system of methods for expert evaluation of strategic guidelines of socio-economic and innovative development, and identification of technological breakthroughs that can affect the development of society in the medium and long-term perspective [2].

The methodology of each particular foresight is always determined based on the project's objective and scope. The set of methods and tools used in foresight studies is constantly expanding. Today, there are several dozen items on the list. They include mainly qualitative methods: interviews, literature reviews, morphological analysis, correspondence trees, scenarios, role-plays, and also such quantitative methods like cross-impact analysis, extrapolation, modelling, and indicator method. In addition, an important component is synthetic methods such as the Delphi method, roadmap, method of critical technologies, multiple-criteria decision analysis, and game modelling.

The most common methods used in foresight studies are the Delphi method, method of critical technologies, scenario development, expert panels, and roadmaps. According to these methods, foresight studies are organized.

Other methods used include mathematical modelling, brainstorming, regression analysis, extrapolative forecasting, etc. The choice of methods for conducting foresight studies depends on the scope, field and project horizon [3].

The implementation of the foresight requires certain organizational measures:

1. Identification of a foresight study operator and establishment of the Project Management Committee whose functions include approval of the objective, scope, research horizon and expected results, methodology of foresight studies, and formulation and approval of the regulations, research plan, and the amount and sources of project funding. The Management Committee also determines the tools for communication of the results and reviews the results of the main stages of the foresight study and agrees on the composition of the Work Group.



2. Establishment of the Work Group of the foresight project, which directly organizes and coordinates work on the foresight study: the Work Group forms expert work groups and creates expert panels on research areas, coordinates the work of expert groups, conducts expert surveys and processing of their results, and organizes discussion of interim and final results of the project with a wide range of stakeholders.

3. Creation of a special platform and formation of an information pool that includes futurological, analytical, programmatic, forecasting, reporting and other materials from various sources necessary for high-quality foresight research.

4. Forming a group of promoters to popularize the project's main ideas and provisions within society and the business community, providing them with the necessary information and facilitating their activities. For this purpose, it is necessary to form a bank of constantly renewable data on the challenges and threats that can be overcome as a result of the foresight project.

5. Carrying out organizational measures to ensure interaction between state structures that coordinate and manage scientific, technical and innovation activities in the process of conducting foresight research and implementing its results.

6. Conducting organizational measures that stimulate interaction between representatives of the scientific community, education, real economy sector and public administration bodies in the process of foresight research development and implementation of its results.

7. The creation of mechanisms for monitoring the implementation and further development of the project.

It has already been noted that in Europe foresight studies of technological development were established in the 1980s. In the early 1990s, first of all, Great Britain and Germany, and then other EU countries started to actively use Foresights at the national level. Nowadays, European countries mainly carry out foresight studies in selected areas and activities that are most promising for a particular country. However, since the 2000s, EU countries have intensified their S&T foresight activities at the supranational level as well. Thus, in particular, in the early 2000s, five projects were developed at the EU level for transnational regions of the member states: ARGIBLUE, FORRIS, TEXTRANCE, TRANCVISION, UPGRADE [4].

Today, foresight studies are widespread in the EU. Foresight studies are developed by governments, research centers, universities, and NGOs. More and more European countries and regions are now turning to foresight to inform and support decision-making on science and innovation policies. There is a growing interest in foresight studies in the corporate sector as well.

The spread of foresight research is taking place along with the institutionalization of foresight. In the late 1980s, the European Commission first established a special department for foresight, and later the Institute of Technology Foresight in Seville as an Institute of the European Economic Community, which deals with methodological support for foresight.

The EU R&D Framework Programme concentrates on the development of projects following the foresight methodology. Thus, in 1998 Foresight on Information Society Technologies in the European Research Area (FISTERA) was established



within the Fifth EU R&D Framework Programme to bring together researchers and developers of foresight practices in information technology in EU countries. FISTERA's main objectives include comparing national foresight practices and sharing visions of the future development of information and communication technologies (ICTs), providing a platform for processing common positions regarding the future of ICTs, and disseminating best practices. To achieve these objectives, FISTERA reviews and analyses reports from EU countries, develops roadmaps for the development of new key technologies and 'major player maps' of the EU, and develops scenarios for the use of ICT.

In the sixth R&D Framework, foresight is included in a large number of tools, notably 'integrated projects' and 'networks of benefits'. In the Seventh Framework Programme, foresight became an integral part of the Social and Human Sciences Programme.

In March 2000, the EU adopted the so-called Lisbon Strategy, where EU countries were invited to make greater use of the innovation tool Foresight. A Technology Foresight unit within the United Nations Industrial Development Organization (UNIDO) was established.

UNIDO organizes annual foresight training programmes since 2001. Targeted training is provided for foresight organizers, corporations (representatives of enterprises responsible for using foresight as a tool for strategic decision-making in the field of technological development), trainers, practitioners, as well as decision makers in technological foresight: officials, company managers, etc. After the approval of the Lisbon Strategy, organizational centers for foresight development started to be formed in various EU countries.

In Europe, foresight technology is considered as a natural element of multilateral research structures, in particular the European Organization for Nuclear Research (CERN) and the European Molecular Biology Laboratory (EMBL). Foresight is actively used in the interests of institutions such as the European Parliament and its structures, the European Commission and the European Science Foundation [6]. A wide range of research, expert and advisory organizations are involved in the development of foresight projects in Western Europe. The Institute for Prospective Technological Studies (IPTS) [7], one of the seven institutes of the Joint Research Centre, is engaged in this work within the EU, whose tasks include supporting the EU decision-making in the socio-economic, scientific and technological fields, in particular, in the fields of high technology.

Since 2005, The European Foresight Monitoring Network (EFMN) [8] has been continuously monitoring foresight practices in the EU and providing information on these activities to policy makers, innovation policy researchers and participants in foresight projects. In 2009, the programme was transformed into the European Foresight Platform (EFP) [9]. The programme is funded by the EU and is part of the European Knowledge Exchange Platform. Each year, EFR publishes on its website about 40 short versions of national and international foresight projects, reports on the main S&T foresight areas for the EU and analysis of foresight projects.



This platform lays down "the rules of the game", concepts, methods, approaches, etc., which are used by European countries and many other countries around the world that borrowed EU experience in conducting foresight studies.

Foresight is also widely used in post-Soviet countries: practically all countries that are trying to access the EU or have already joined the EU are developing national Foresights. In 2006, UNIDO in cooperation with the Hungarian and Czech Governments established the Regional Virtual Centre (RVC) for Central and Eastern Europe (CEE/NIS), which covers Albania, Azerbaijan, Belarus, Croatia, Czech Republic, Hungary, Kazakhstan, Poland, Romania, Russia, Slovakia, Turkey and Ukraine.

There are a number of institutions across Europe that conduct applied foresight research as well as train relevant professionals and trainers internationally. An example of such institutions is the Manchester Institute for Innovation Research in the United Kingdom (MioIR) [10]. This institute conducts research and consultancy on national, international and sub-national policy issues, and conducts basic research on the dynamics of science, technology and innovation in today's knowledge-based economy. MioIR has an ambitious programme of activities, looking at the prospects for science and technology in their economic, social, and political and governance contexts, including predictions for the long term.

Similar structures operate in almost all regions of the world.

The main sponsor of foresight studies in Europe is the state. This is primarily practiced in the UK, Germany, Hungary, France and Spain. Sometimes, especially for countries with limited budget financing, these studies are funded by a pool of investors. Among EU countries, this is typical of Sweden, Italy and Portugal. Forming a pool of investors has both positive and negative aspects. On the positive side (in addition to securing the necessary funding), the culture of the future is spreading and cooperation is developing between the members of the investor alliance. However, there are also negative aspects: the possibility of loss of research "focus" due to the need to cover a wide range of results for all investors, as well as the need to address the problem of ownership of the research results.

Thus, the experience of countries with a long practice of foresight studies reveals the following main aspects of the institutionalization of foresight:

1. It has been mentioned above that foresight is ***a complex step-by-step and multidimensional interaction of expert groups representing different fields of activity***, which should result in strategic priorities for the development of the research object aimed at achieving the desired goal. This means that successful foresight studies are impossible without an open dialogue between the participants, coordination and focus of their efforts, as well as monitoring the implementation of the foresight. The EU experience has shown that this *requires organization at the highest governmental level*.

2. Unlike forecasting projects, foresight involves not only scientists and specialists in certain areas of science and technology, but also, which is the defining difference, various social strata of the population, in particular, active citizens, including businessmen, politicians, and consumers. This means that the implementation of foresight projects is *impossible without a developed and structured civil society*.



3. Foresight should ensure consensus among the main "players" on the most important strategic directions of development by organizing their continuous dialogue. To this end, foresight creates *special platforms, networks and panels* of highly qualified and interested in its implementation expert participants, work groups, seminars and conferences.

4. Foresight studies are based not only on the results of scientific developments, but also on a wide range of specific information not usually used in scientific research. It is necessary to create an information pool that includes futurological, analytical, programmatic, forecasting, reporting and other materials from various sources necessary for quality foresight studies, as well as data on challenges and threats that can be addressed by the results of the foresight project. In other words, a *bank of constantly updated information for the foresight project should be created*, which would ensure free access to information for all participants in the research.

5. The specific nature of foresight studies *requires the establishment of a separate institution or department* which would conduct applied research on foresight methodology and technology, advise stakeholders on these issues, and train relevant specialists and trainers.

Every year, the use of foresight studies spreads both in strategic forecasting and in planning the development of individual sectors or spheres of socio-economic development at different levels: global, regional, individual countries or even individual territories. Today, humanity is facing a very serious challenge, which is the environmental pollution from human activities that has become a threat to the survival of the entire ecosystem of the planet. And this makes global foresight studies of this problem very relevant. However, while the problem is global, the implementation of such a foresight project concerns every country, including Ukraine. And Ukraine should take part in these studies.

In addition, Ukraine has already formed challenges that can be adequately addressed by foresight studies. First of all, it is a full-fledged technological foresight that would determine the country's place in the new technological paradigm and become the basis for foresight projects on human capital, medicine, ecology, education, other spheres of activity and the general socio-economic foresight of Ukraine.

Ukrainian science has extensive experience in using methods and techniques of foresight studies, but primarily in the form of individual research projects and developments. Foresight studies have been limited so far in this country.

At the national level, the first foresight study in Ukraine ("Ukrainian STI 2025") [11] was conducted in 2004-2006 in accordance with the National Programme "Ukrainian Science, Technology and Innovation 2025". During its implementation, a foresight study was conducted, which resulted in the selection of 14 critical energy saving technological projects. But funding for the programme was almost halved and its implementation was suspended in 2006.

However, in 2007, the Cabinet of Ministers approved a new State Programme for Foresight of Scientific and Technological Development "Ukrainian Science, Technology and Innovation 2025". As a result of the foresight studies, a few priority areas were recognized: "Life sciences, new technologies for prevention and treatment of



the most common diseases", "Energy and energy efficiency"; "Biotechnology"; "New substances and materials", "Rational use of natural resources", "Information and communications technology", and for the first time in Ukraine a List of critical technologies for each priority guideline was formulated [12].

In 2008, the Institute for Applied System Analysis of the National Academy of Sciences of Ukraine and a Ukrainian branch of the World Data Centre presented their foresight "Global modelling of sustainable development processes in the context of quality and safety of life", which identified the most feasible areas of economic development of Ukraine for the medium term [13].

Unfortunately, the National Programme "Ukrainian Science, Technology and Innovation 2025" was also closed by the Cabinet of Ministers of Ukraine (Decree No 704 of 22 June 2011) in the absence of necessary funding. At the same time, the practice of developing sectoral foresights rapidly narrowed and was replaced by numerous marketing studies.

However, the need for foresight studies has not diminished and they have moved to another level. In particular, in June 2011 the National Foresight Centre (Foresight Centre) [14] was established at the NTU "KPI", which is part of the World Data System of the International Science Council (ISC) and whose main objective is to organize a set of activities in Ukraine to develop and implement technologies of scientific foresight of Ukraine's economic development, its individual sectors and enterprises.

In 2012 WikiCityNomica, the organizing committee of the Human Capital Forum and Kyiv Business School presented the results of the joint foresight study "Human Capital of Ukraine 2025". It identified the main invariant development trends that form an inevitable future, which is implemented regardless of the actions of managerial entities, as well as the main strategic idea of human capital development in Ukraine and the settings for its implementation [15].

In 2015 the International Council for Science (ICSU), Committee for Systems Analysis at Presidium of National Academy of Sciences of Ukraine, National Technical University of Ukraine "Igor Sikorsky Kyiv Polytechnic Institute", the Institute for Applied System Analysis (IASA) of the National Academy of Sciences of Ukraine and the Ministry of Education and Science of Ukraine, and World Data Center for Geoinformatics and Sustainable Development presented the "Foresight of the Ukrainian economy: medium-term (2015-2020) and long-term (2020-2030) time horizons". It identified the main drivers that can put the national economy on the path to development and formed the sequence of actions of the authorities and society required to prevent the realization of negative scenarios [16].

In 2018, a group led by the Friedrich Ebert Foundation with the participation of Ukrainian scientists presented the foresight "Ukraine 2027. Four scenarios for Ukraine's development". Its main message is that Ukraine should find other spheres of the economy where it has geographical, resource, human and other advantages. This country has no alternative but to reorient itself towards the high-tech path of further development. At the same time, the state should rely exclusively on quality human capital, and include competitive science, advanced education and high-tech business in the main drivers of its economy. The benchmarks for Ukraine's high-tech



development on the selected time horizons and the main clusters of the new Ukrainian economy that can ensure the country's successful integration into international labor cooperation have also been identified [17].

In 2020, as a response to the challenges posed by pandemic COVID 19, the World Data Center for Geoinformatics and Sustainable Development developed two Foresights: 'COVID-19 Foresight' and 'COVID-19: aggravation during adaptive quarantine', which assess prospects for the duration of the pandemic and patterns of coronavirus concentration by region [18]. This study may provide some basis for developing effective short-term measures to bring the Ukrainian economy out of crisis.

As we can see, the practice of foresight studies in Ukraine is rather limited, primarily due to the fact that foresight is costly and rather time-consuming, which for Ukraine with its limited financial resources becomes a significant obstacle to the dissemination of such studies.

The main shortcoming of the foresight studies conducted in Ukraine is that, due to the lack of funds and the closure of the National Programme "Ukrainian Science, Technology and Innovation 2025", no full-fledged technological foresight for the long-term time horizon has been created. Such a research is especially important and relevant in the current conditions, when the world economic system is moving to the new, the sixth technological mode<sup>4</sup>. None of the technology foresight studies conducted in Ukraine "cross" the year 2025, in other words, technology-oriented studies are a thing of the past. This makes it extremely difficult to predict the timing and characteristics of the transition to higher technological paradigms, the development of individual industries and sectors, the shape and structure of the labor market, the need for professionals and specialists to ensure Ukraine's innovation breakthrough, and hence the prediction of those areas of human capital development necessary for Ukraine's transition to the innovation path.

Another obstacle to the development of foresight studies in Ukraine is the lack of an established expert community, and it is the expert assessment that is a weighty component of foresights.

Moreover, Ukraine has virtually no culture of analyzing and researching possible guidelines of business and territorial development in the long-term perspective. In other words, a whole stratum of "players" interested in foresight development in European and other countries is virtually absent in Ukraine, which prevents a comprehensive, interest-balanced study and makes it extremely difficult to implement foresight results.

Despite the relevance and the need to disseminate foresight studies in modern conditions of high uncertainty, and rapid change in technological paradigms, and to form on their basis strategic and policy documents from the standpoint of national socio-economic interests, the development of foresight in Ukraine is hampered by a number of serious problems.

Firstly, the high cost of foresight studies makes it practically impossible to conduct a high-quality, full-fledged foresight in the context of Ukraine's extremely limited financial resources. Therefore, it would be advisable for Ukraine to participate

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<sup>4</sup> A new Kondratieff cycle starts in 2025.



in global and international foresight projects, including European ones, as widely as possible. This would not only ensure access to relevant information, but also become a training platform for Ukrainian specialists. In addition, attention should be paid to the experience of countries with the formation of a pool of investors. For Ukraine, this experience is particularly interesting, as it not only allows accumulating the necessary funds for foresight studies, but also promotes a culture of future research, development of cooperation between members of the investor alliance and encourages them to implement foresight results.

Secondly, the lack of institutional support for foresight research in Ukraine makes it difficult and sometimes impossible to ensure the necessary coordination of research, the adaptation of European foresight technology to Ukraine's goals and challenges, the creation of necessary data bank and ensuring full and rapid exchange of information. Besides, which is extremely important, this hinders the interaction of representatives of the scientific community, education, the real sector of the economy and public administration bodies in the process of implementing the results of the foresight.

Thirdly, Ukraine's underdeveloped and structured civil society does not allow for broad public participation in foresight studies and, therefore, for reaching a consensus between all major "players" on the most important strategic guidelines of socio-economic development.

Another obstacle to the development of foresight studies in Ukraine is the lack of an established expert community, as mentioned earlier, while expert assessment is an important component of foresight.

In other words, we can conclude that the development of foresight in Ukraine primarily lies in the creation of institutions that would ensure the organization of all stages of foresight studies and the implementation of their results at different levels:

- *it is necessary to establish an institution at the highest state level;*
- *the conduct of foresight studies is not possible without a developed and structured civil society;*
- *it is necessary to create special platforms, networks and panels to organize an ongoing dialogue not only between scientists and specialists in specific areas of science and technology, but also (which is a necessary and defining distinction) between different social classes, businessmen, politicians and consumers;*
- *creation of a permanently renewable information bank that would include futurological, analytical, programmatic, forecasting, reporting and other materials from various sources necessary for high-quality foresight studies as well as data on challenges and threats that could be overcome as a result of the foresight project and that would provide free access to information to all participants of the study;*
- *and the establishment of institutions and mechanisms for monitoring the implementation and further development of the foresight project.*

### Conclusions

In Ukraine, there is no comprehensive system of foresight research that would cover all sectors of the economy, as well as social problems; the existing system of



institutions does not provide a platform for a structured dialogue between the main participants in foresight projects; ministries and local governments have no experience in using foresight as a consensus-building tool; the institutionalization of international cooperation in the field of foresight research has not been completed, including the exchange of specialists, training in leading centers, and connection to international research projects. There have not been practically any institutionalization of the process of formation and evaluation of resources for the implementation of foresight projects, nor for evaluation of their effectiveness; the system of evaluation of the results of foresight research has not developed, the identification and dissemination of best practices is unsystematic; the range of institutes involved in the organization and conduct of foresight research, evaluation of their effectiveness, and the use of results is not clearly defined.

In order to institutionalize the process of foresight studies in Ukraine, it would be advisable to amend the text of a number of legislative acts:

– to supplement the Law of Ukraine "On Scientific and Scientific-Technical Activity" (Articles 39, 40, 41, 42, 43, 44), concerning the powers of the Verkhovna Rada of Ukraine, the President of Ukraine, the Cabinet of Ministers of Ukraine, other central executive authorities, local councils, and local executive authorities in the organization of strategic foresight studies;

– to supplement the Law of Ukraine "On Scientific and Scientific-Technical Activity" (Articles 45, 49) concerning the goals and directions of state policy in the field of strategic foresight studies and the tasks of the National Research Fund of Ukraine;

– to supplement the Law of Ukraine "On Priority Guidelines for the Development of Science and Technology" (Articles 4, 5) concerning the formation and implementation of priority directions for the development of science and technology;

– to supplement the Law of Ukraine "On Scientific and Scientific-Technological Expertise" (Articles 5, 6) concerning the objects of scientific and scientific-technological expertise and the grounds for its conduct;

– to supplement the "Regulations on the National Council of Ukraine for Science and Technology Development" (paragraph 3) concerning the main functions of the National Council;

– and to supplement the "Regulations on the National Research Foundation of Ukraine" (sub-paragraph 6) regarding the main tasks of the Foundation.

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## **ФОРСАЙТ В УКРАЇНІ: ПРОБЛЕМИ ОРГАНІЗАЦІЇ В КОНТЕКСТІ СВІТОВОЇ ПРАКТИКИ**

*Представлено результати вивчення світового та європейського досвіду проведення форсайт-досліджень. Увагу акцентовано на організації форсайт-досліджень та інституційному супроводі фор-*

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сайту у країнах ЄС. Обґрунтовано необхідність розширення практики проведення форсайт-досліджень в Україні в умовах тих змін характеру розвитку світової економіки, що відбуваються під впливом пандемії COVID-19 та на межі зміни чергових довгих циклів Кондрат'єва.

Сучасні тренди розвитку світової економіки полегшують вихід на зовнішні ринки, проте водночас формують і певні ризики для національних економік. Посилення конкуренції між національними та закордонними виробниками для багатьох країн означає банкрутство вітчизняних підприємств, насамперед, середньо- та високотехнологічних, які не здатні витримати конкуренцію з могутнішими корпораціями, ціни внутрішнього ринку практично на всі товари дедалі більше залежать від цін на інших ринках, що може формувати дисбаланс між вартістю та ціною робочої сили і руйнувати ринок праці, збільшуються масштаби міграції працездатного населення, перш за все осіб з високим рівнем людського капіталу, що скорочує можливості країни у сферах освіти, науки і виробництва і навіть мультиплікативним чином впливає на темпи зростання економіки.

У цих умовах надзвичайно важливим стає визначення орієнтирів майбутнього розвитку економіки та соціуму, що актуалізує весь спектр форсайт-досліджень. Для України, де форсайт-дослідження мають обмежений характер, досвід тих країн, де форсайт став невід'ємною складовою стратегічного планування, є життєво необхідним. Саме на основі дослідження цього досвіду і визначено базові організаційні заходи форсайт-досліджень, основні аспекти інституалізації форсайту та ті проблеми, що гальмують розвиток форсайту в Україні<sup>7</sup>.

**Ключові слова:** технологія форсайт, форсайт-дослідження, політика розвитку, науково-технічні орієнтири, інституалізація форсайт-досліджень

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