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Development of methodological bases for the foresight model of youth entrepreneurship development

Annotation

Objective: development of methodological bases for the foresight model of youth entrepreneurship development.

Methods: methods of system based, structural and functional analysis.

Findings: specification of the specifics of the foresight method in the development of long-term development strategies with perspective extrapolation to modeling the development of youth entrepreneurship.

Conclusions: The foresight analysis of youth entrepreneurship does not have an independent character, but is a factor element of technological foresight, cluster foresight, and sociological foresight. This approach is also productive, since it allows you to use additional in-depth analysis materials and contribute to the formation of additional scenario opportunities. Therefore, the combination of a separate youth foresight and youth entrepreneurship in the framework of other foresight projects allows you to differentiate factor analysis and use all the methods of foresight research more effectively.

Keywords: foresight, youth, business, youth entrepreneurship, foresight methodology, research, potential growth.

Introduction

Epistemologically, the spread of the foresight methodology grows out of new challenges in the world economy: diversified competition; barriers to public financing; the growth and gradual dominance of scientific and technological competencies. Because the reasons of the foresight methodology has become a system generating the pressing needs of society: a strategic need for authentic forecasting perspective in conjunction with the interests of the participants in the process; subject the need to build a network of active subjects of future development of the economic system; futurological need to create an alternative map for future development; transformational need to activate the existing reserves of an economic entity, motivate changes, etc.

Literature Review

For the first time, foresight parameters began to appear at the beginning of the 20th century, when it became possible to extrapolate trends and social indicators were already formulated. The term “foresight” was first used By G. Wells in the lecture “Opening the future” (Wells, 1913). The main thesis of interest to us was the statement about the knowability of the future using scientific methods. By the middle of the 20th century, methods of system expert analysis were formed and the first simulation studies were performed. Thus, the practical need for foresight was associated with the post-industrial revolution with its tree of social and technological changes that led to a growing rational interest in the future. That is why there is a new content in decision-making, emphasizing the foresight of trends, long-term consequences of choices made in the present. In this regard, the latent definitions of this method are formed (table 1).

Table 1. General parameters of foresight as a specific method

Author	Characteristics of foresight	Dominant factor in the definition	The result of the foresight
1	2	3	4
Martin B.	“Systematic attempts to look into the long-term future of the development of science, technology, economy and society in order to anticipate strategic areas of research and the emergence of basic technologies, the use of which can bring very significant economic and social benefits”	Strategic technological foresight	Increasing economic and social benefits

Continuation of Table 1

1	2	3	4
Georgio L.	“A tool for systematic assessment of those areas of science and technology development that can have a strong impact on the competitiveness of companies, wealth creation and quality of life”	Target assessment of scientific and technological development	The growth of competitiveness, leading to an increase in wealth
Becker P.	“The process of actively learning about the future and creating a vision of medium-and long-term prospects; systematic research of the future of science, economy and society in order to support the adoption of relevant decisions and mobilize joint efforts for their implementation” (Becker, 2003)	Activation of forecast prospects	Rational strategic management
Tretyak V.P.	“Foresight is a creative technology for influencing the emerging future by coordinating the particular interests of various segments of civil society and by stimulating their activity in the use of key technologies” (Tretyak, 2007)	Consistency in the future effective use of technological innovations	Effective communication of the maximum number of subjects regarding future technological dynamics

Note — compiled by the author

The classic definition of foresight was formulated by the American scientist Ben Martin, in which the main emphasis is on strategic technological foresight. The characteristic given by P. Becker is dominated by two accents: knowledge of the future and its system regulation for updating adequate solutions (Becker, 2003). The basic basis of this approach is rational strategic management. V.P. Tretyak believes that the main thing in foresight is the creative influence on the future of consolidated entities (Tretyak, 2007).

The applied trajectory of foresight development was built as follows. Initially, methods of understanding the future were tested and the first practical trends were formulated, in particular, in the United States — an analysis of transport development in connection with growing urbanization. Since the middle of the 30th century, a period of complex organization of research into the future technological development of the military industry and the functioning of large industrial corporations has begun. This period is marked by the formation of those methodological tools that underlie the modern applied nature of foresight. This is an effective research organization focused on the possibility of implementing the desired changes in the future. The core of this is the analysis of the probabilities of development options by extrapolating past phenomena and events, i.e. forecasting. It was during this period that stable methods of foresight were formed: the method of scenarios, the method of Delphi, the method of expert panels, the method of brainstorming. It was during this period that the landmark works on the dissemination of foresight methodology were published — “The Art of speculation” by B. Jouvenel (Jouvenel, 1967) and “The Invention of the future” by D. Gabor (Gabor, 1963).

Thus, in the essential characteristics of foresight, we can distinguish the communication relations of the following concepts: “future”, “foresight”, “forecasting”, “planning”, “competitive technologies”. At the primary, visible level, we can assume that foresight is based on the foresight of the future systematization of its forecasts and the construction of strategic planning of dynamic competitive technologies. However, this is only an external view. After all, foresight is not identical to forecasting. It is not identical to forecasting or strategic planning, it is a fundamentally different phenomenon (Semikov, 2009). First, foresight projects involve diverse experts from various sectors of civil society. These are politicians, scientists, and market participants, both businessmen and consumers. Secondly, the primary pattern in the expert community of a foresight project is the formation of an identical picture of the future. Third, it is on this basis that we can project a long-term vector of effective technological breakthroughs.

These differences differentiate a number of main features inherent in foresight technology: foresight is designed to justify future trends, potential opportunities and risks; foresight is aimed at developing strategic acts of analysis of future development prospects by a qualified expert community; foresight is aimed at “action”, i.e. it is an active process that distinguishes it from forecasting and for this it implements specific measures today; foresight is based on interactive methods and models of future research, so it limits possible losses in forecasts based on the future size of the market and the forecast of replacement of technologies (Gaponenko, 2009).

Methods

The main difference between foresight technologies and planning and forecasting is the transition from predictive orienting information to reverse normative planning information: the picture of the future is outlined, it is analyzed, and then the plan for achieving the future world picture is rationalized in the actual space.

Thus, the parameters of convergence of foresight and forecasting can be distinguished. So, of course, there are two common features. First, an analysis of the future state of the object, based on the variability of development. Second, the use of similar research methods (scenario planning, Delphi method, expert discussions, brainstorming, focus groups, expert panels). The core of the methods are critical technologies (Seregina, 2008).

Along with this, foresight has parameters that are different from forecasting. First, in the framework of foresight, expert groups include a wide range of development actors: the state, the business community, the scientific and technological segment, and civil society, while forecasting is carried out exclusively by scientists. Secondly, this subjective feature of foresight implementation leads to the formation of the following effects: activation of cooperative relations within the main catalysts of development, generation of a culture of foresight, ensuring the choice of implementation options based on the “vision” of the future. Third, the effectiveness of foresight is based on the readiness of society as a whole to assess the long-term prospects of the country's development, distracting from short-term market conditions.

The basic condition for successful implementation of foresight is the use of those methods that ensure the effective work of the experts involved. Any foresight program requires defining a combination of methods and sources of information to be used. The problem of choosing the most effective group of foresight methods is always relevant. The choice of methods for foresight research is influenced by a number of factors. These are the availability of resources, the final goals (results to be obtained), the nature of the subject areas under consideration, and target groups (Keenan, 2008).

The entire tree of foresight methods is diverse and differentiated by three main criteria. These are quantitative methods, qualitative methods, and synthetic methods. The most common and effective approaches in the quantitative aspect include: the method of modeling, the method of extrapolation, the method of forecasting indicators. Qualitative methods include a diversified analytical platform consisting of interviews, morphological analysis, literature reviews, a “goal tree”, and a scenario method. Synthetic methods include road mapping, the Delphi method, critical technologies, game modeling, and patent analysis. The most effective methods of foresight are highlighted in table 2.

Table 2. Characteristics of foresight research methods

Methods	Usage model	Advantages	Disadvantages
1	2	3	4
The method of expert panels	Formation of a group of experts to identify the possible range of the future for a given goal, by analyzing new information and applied developments during the allocated time lag	– interdisciplinary communication that consolidates the subjects of various fields of activity in a single and continuous workflow; – justification of a strong evidence base; – highlighting the advantages and risks of possible innovations	– possible errors by experts; – lack of effective results due to a sub-optimal number of experts; – high resource cost
Delphi method	Independent survey of each expert independently to identify trends and parameters of factor dependence phenomena. The effectiveness of communication is revealed by reviewing the responses of experts anonymously for a General review of opinions, clarifying the positions of each.	– getting open expanded results; – involvement of various experts on this issue to identify various aspects of the project; – accumulation and diversification of knowledge on the project object, taking into account innovations	– disagreements of experts on fundamental points; – suboptimality of expert group selection; – high financial costs
Scenario method	Formation of alternative development options relative to the selected target dominant, a Set of scenarios involves combining forecast variations with the design of future changes	– formation of a general algorithm for solving real problems; – formation of invariance of economic entity development; – formation of strategic thinking	– risks of subjectivism; – degree of expertise of experts; – high labor costs

Continuation of Table 2

1	2	3	4
Brainstorming method	Formation of the largest possible number of solutions to the problem to stimulate rational creative channeling of elements of project promotion. The method of achieving this is joint discussion	<ul style="list-style-type: none"> – justification of alternative strategies for choosing the most effective idea; – speed of identifying project opportunities and risks; – motivation of professional competencies; – proven predictive technology 	<ul style="list-style-type: none"> – impossibility of Autonomous implementation, effective only in conjunction with other methods; – blurring of expert data parameters
Method of technology road map	Creating a scenario plan for the development of technologies with fixing possible plots and critical points	<ul style="list-style-type: none"> – assessment of risks, opportunities and priorities; – identification of “bottlenecks” for specifying and analyzing the sequence of development; – factor Association for the implementation of the strategic plan 	<ul style="list-style-type: none"> – high resource requirement; – need for special experts in the field of road mapping

Note — compiled by the author

Thus, it can be stated that the most common and authentic method is the expert panel method (Sokolov, 2007). From it grow various modifications that allow you to dynamize the analytical process as a method of brainstorming, which has an additional character. On the same basis, the technology of prediction and competitive examination — the Delphi method — is growing (Higgins, 1994). The scenario method, being a traditional technology, already puts forward new requirements for the expert community — the transition to the formation of an array of real options for the development of the future under existing conditions (Volkova, 2006). The method of the technological roadmap assumes the implementation of the advantages identified in the future for a technological breakthrough (Clayton, 2005).

Thus, the initial element in foresight research is the relationship between context, content, and the approaches used. Initially, future scientific and technological results and their overall impact on certain aspects of development are highlighted.

Thus, the initial element in foresight research is the relationship between context, content, and the approaches used. Initially, future scientific and technological results and their overall impact on certain aspects of development are highlighted.

In its evolution, the foresight methodology has passed several regular stages: technological movement or expert analysis of the internal dynamics of technological evolution; innovation-market movement or a broad expert analysis of the interaction of innovative technologies and markets; social-market movement or subject analysis of the relationship of markets and social groups with the dominance of consumer interests; distributed movement, which includes the analysis of elements of a research system of coordinated special research of social and economic challenges.

Based on this, it should be noted that foresight research is based on two ideological attitudes. The first ideologue is optimization and modernization of the existing order, the second is the possibility and motivation for fundamental changes in the existing paradigm. Hence, there are two modes of conducting foresight research. They are implemented using the basic principles of foresight. These include: future orientation, involvement of a wide range of stakeholders, coordination and interdisciplinarity, action orientation based on a combination of fact and expert assessment. In any mode, the specification of foresight research becomes a problem of “futurological literacy”, i.e. the assessment of future development. This, in turn, involves the use of uncertainty and uncertainty as motivators. In this connection, a chain of parametric connections grows between the possible, probable, desirable, realistic and restructured future (Miller, 2011). All these system representations form the focus of foresight. To do this, you need to specify the following system parameters for the foresight. First, the constant study of a changing system involves the systematization of factors of internal development (analysis “from the inside in”), the output of internal modifications to the external environment and a set of transformations (analysis “from the inside out”), and, on the contrary, the external impact on the system that encourages it to transform (analysis “from the outside in”). And, secondly, in addition to this changing but known structure, the analysis of the unknown system (analysis “from outside to outside”) is also necessary in foresight research, since this going beyond the boundaries of the known leads to the identification of the possibilities being born.

Thus, the formation and development of foresight technologies are not just predictive measures, but also a system of diversification analysis of the future with a return to the present program-defined range of transformational steps and creative resource parameters. Foresight as a modern technology for predicting future development, taking into account the steps and activities carried out in the present, is the most authentic way of modern strategic planning and forecasting, social dynamics and structuring public needs. Its use in the practice of modern management is a progressive reflection of the relationship between the technological level and technological pressure, the consensus of actors, the real involvement of scientific and technological personnel in the system of socio-economic needs, the state strategy in determining the horizons of prospects and the consequences of technological dynamics.

When predicting such a non-linear segment of the business environment as youth entrepreneurship, the following points should be kept in mind. First, it is a more sensitive response of youth entrepreneurship to the impulses of innovations that arise in the established system. Secondly, the variability of youth entrepreneurship, its wide sectoral and structural range. Third, the probabilistic level of both income and sustainability of this type of business. Fourth, a kind of resource matrix, in which the most important element is the quality of human capital at a low capital intensity.

Results

In this regard, the foresight project of youth entrepreneurship is quite problematic. Moreover, the problems are built on various analytical and applied levels. At the same time, the peculiarity of youth entrepreneurship conceals a large cartoon potential in modern conditions, which can be the object of predictive research. At the initial stage of forming a foresight project, its purpose and selection of methods are determined. The purpose of foresight research of youth entrepreneurship is to forecast its performance, change the configuration of this type of business, based on the changing social and technological system. This involves initially conducting brainstorming, in-depth analysis of texts, and using a comparative methodology. Moreover, there are various essential approaches to determining the goal. Thus, youth entrepreneurship can be an independent object of foresight research, with the definition of the planning horizon, possible potential models of development in a particular environment, with the selection of compression factors and expansion factors. The advantages of this approach are undeniable, as an exceptional emphasis is placed on the very nature of youth entrepreneurship. At the same time, in other foresight projects, most often in the context of technological foresight, youth entrepreneurship is used as a megatrend in the factor structure of analysis. With such an approach, youth entrepreneurship is seen as an element of technological potential growth, since it is responsible for multiplying the information business, startup growth, and so on. Both approaches have the right to exist, taking into account the difficulties of forecasting and the overall volume of work.

But for any choice of foresight for successful results it is necessary the use of authentic methods. In particular, the problem of scanning the horizon during analysis.

Horizon scanning is used at the initial stage of strategic planning. The essence of this method is expressed in the system analysis of external processes in the environment (not only current, but also potentially expected), as well as in the identification of factors, both direct action and possible in the future.

The purpose of scanning is to identify a new approach to the situation by analyzing already obvious circumstances, specifying changes, new trends and early signals of change.

Thus, the time parameters of scanning and its granularity lead to long-term diversified views of the external developing environment. For maximum results, horizon scanning should be a continuous business process based on the speed of change and direction of Megatrends. The practice of developing the economic environment demonstrates an unexpected change in strategies and the need to quickly adjust decisions.

Therefore, in the process of forming the parameters of the future, identifying strategies within the framework of horizon scanning, the following urgent tasks are solved: trends and drivers are studied; different points of view on the nature of trends and their possible implementation are compared; alternative scenarios are formed; strategy options are postulated; priorities are selected.

Youth entrepreneurship in this context can be scanned from the perspective of three clear trends. This is the inclusion of youth entrepreneurship in the socio-humanitarian component of the development of society. The more business-centric society becomes, the more youth business becomes socially oriented (it should be recognized that this is a trend in highly developed countries). The second megatrend is the convergence of country-based youth entrepreneurship into global business. This is due to the formation of a single algorithm — the information economy, in which business processes become more unified and open. The developed system of youth freelancing, which supplies not only high-quality human resources, but also new “dispersed” forms

of business, creates new risks and uncertainty — where, in what country, under what conditions, in what configuration such a business will be implemented. Finally, the sustainable spread and scaling of entrepreneurship within the framework of institutional promotion of start-ups is more widespread. In the case of a foresight study of youth start-ups, the most problematic issue is the promotion infrastructure. Business accelerators have become the most relevant institution. But difficulties with accumulating startups and their investment options make it more difficult for them to operate as part of business accelerators. This is why business catalysts are starting to function in the foresight project along with business accelerators. The advantage of a business catalyst in the future development model is expressed in two points: generating innovative start-UPS of youth entrepreneurship and getting out of the “valley of death” by effective investment at the stages of “seed” and “pre-seed” financing. The activity of the business catalyst for growing innovative projects of youth entrepreneurship consists of the following stages:

- actual formation of the project, through the selection of ideas and developments;
- analysis and expert evaluation of projects based on the principles of innovation, market competition and the adequacy of the external and internal environment;
- primary implementation of the main product of a youth startup, identification of market reaction and analysis of its prospects;
- formation of business model variants based on system analysis: marketing forecasting of potential market capacity for these products, resource limitations and overall economic efficiency;
- formation of a mechanism for searching for investors based on differentiated support of legal, accounting and expert channels;
- transfer of a part of the company to an interested investor by using its “seed” fund.

When analyzing megatrend data, the Delphi method is given key importance. In particular, the professional compilation of survey problems: the potential structure of youth business, the degree of dominance of the innovative part of youth entrepreneurship, the degree of active participation in modern infrastructure — business accelerators and business catalysts. Sometimes it is possible to conduct a Delphi survey.

The complexity of foresight analysis of youth entrepreneurship is not only in the “brainstorming” of identified megatrends. The fact is that the foresight analysis of youth entrepreneurship does not have an independent character, but is a factor element of technological foresight, cluster foresight, and sociological foresight. This approach is also productive, since it allows you to use additional in-depth analysis materials and contribute to the formation of additional scenario opportunities. Therefore, the combination of a separate youth foresight and youth entrepreneurship in the framework of other foresight projects allows you to differentiate factor analysis and use all methods of foresight research more effectively. In our opinion, when conducting an independent foresight project for youth entrepreneurship, the main focus is on the methods of “brainstorming”, expert panels and the Delphi method. And when using youth entrepreneurship in broader foresight projects, the dominant models include deep text analysis, scenario analysis, horizon scanning, and the Delphi method.

References

- Wells, H.G. (1913). *The Discovery of the Future*. New York: B.W. Huebsch. Retrieved from URL: <https://onlinebooks.library.upenn.edu/webbin/book/lookupid?key=olbp51646>
- Unido Technology Foresight Manual. United Nations Industrial Development Organization* (2005). (Vol. 1). Vienna. Retrieved from URL: http://www.foresight.pl/assets/downloads/publications/UNIDO-Technology-Foresight-Manual_vol2.pdf
- Becker, P. (2003). *Corporate Foresight in Europe: A First Overview*. Luxembourg. Retrieved from URL: <https://studylib.net/doc/18403386/corporate-foresight-in-europe--a-first-overview---cordis>
- Tretyak, V.P. (2007). Structure of foresight. *Industry markets, 1–2 (13)*, 28–37. Retrieved from URL: <http://www.virtass.ru/ru/>
- Jouvenel, B. (1967). *The Art of Conjecture* (Translated from the French by Nikita Lary). New York: Basic Books. Retrieved from URL: <https://philpapers.org/rec/DEJTAO>
- Gabor, D. (1963). *Inventing the future*. London: Secker & Warburg. Retrieved from URL: <https://www.goodreads.com/book/show/5055134-inventing-the-future>
- Semikov, V.L., & Ushakov, V.D. (2009). Internal environment of the organization. *Technosphere safety Technologies, 5*. Retrieved from URL: <http://ipb.mos.ru/ttb>
- Gaponenko, N. (2008). *Foresight. Theory. Methodology. Experience*. Moscow: UNITY-DANA.
- Seregina, S.F., & Baryshev, I.A. (2008). Is the appearance of foresight natural? *Foresight, 2(6)*, 4–12.

- Keenan, M., Miles, I. (2008). Scoping and Planning Foresight. *The Handbook of Technology Foresight*. Cheltenham: Edward Elgar. Retrieved from URL: https://www.e-elgar.com/shop/the-handbook-of-technology-foresight?__web-site=uk_warehouse
- Sokolov, A.V. (2007). Foresight: a look into the future. *Foresight, 1*, 8–15.
- Higgins, J.M. (1994). *Creative Problem Solving Techniques: The Handbook of New Ideas for Business*. Florida: New-Management Publishing Company, Winter Park. Retrieved from URL: <http://en.bookfi.net/book/699593>
- Volkova, V.N. (2006). *System Theory*. Moscow: Higher school.
- Clayton, A. (2005). *Technology Roadmapping for Developing Countries*. Vienna: UNIDO // Retrieved from URL: <http://www.research.gov.ro> (date of request: 15.07.2019)
- Miller, R. (2011). Being without Existing: The Futures Community at a Turning Point? A Comment on Jay Ogilvy's "Facing the Fold". *Foresight, 13–4*, 24–34. Retrieved from URL: <https://doi.org/10.1108/14636681111153940>

Ж.С. Хусайнова, Ж.М. Жартай

Жастар кәсіпкерлігін дамытудың форсайт-моделінің әдіснамалық негіздерін әзірлеу

Аңдатпа

Мақсаты: жастар кәсіпкерлігін дамытудың форсайт-моделінің әдіснамалық негіздерін әзірлеу.

Әдістер: жүйелік, құрылымдық-функционалды талдау әдістері.

Нәтижелер: жастар кәсіпкерлігін дамытуды моделдеуге перспективалы экстраполяциямен ұзақ мерзімді даму стратегиясын әзірлеудегі форсайт-әдістің ерекшелігін нақтылау.

Қорытынды: жастар кәсіпкерлігінің форсайт-талдауы дербес сипатқа ие емес, ол технологиялық форсайт, кластерлік форсайт, әлеуметтік форсайттардың факторлық элементі болып табылады. Бұл тәсіл өнімді болып табылады, өйткені ол терең талдаудың қосымша материалдарын пайдалануға және қосымша сценарий мүмкіндіктерін қалыптастыруға мүмкіндік береді. Сондықтан басқа форсайт-жобалар шеңберінде жеке жастар форсайты мен жастар кәсіпкерлігін біріктіру факторлық талдауды саралауға және форсайт-зерттеулердің барлық әдістерін барынша нәтижелі пайдалануға мүмкіндік береді.

Кілт сөздер: форсайт, жастар, бизнес, жастар кәсіпкерлігі, формаит әдіснамасы, зерттеу, болашақ өсу.

Ж.С. Хусайнова, Ж.М. Жартай

Разработка методологических основ форсайт-модели развития молодежного предпринимательства

Аннотация

Цель: разработка методологических основ форсайт-модели развития молодежного предпринимательства.

Методы: методы системного, структурно-функционального анализа.

Результаты: конкретизация специфики форсайт-метода в разработке долгосрочных стратегий развития с перспективной экстраполяцией к моделированию развития молодежного предпринимательства.

Выводы: форсайт-анализ молодежного предпринимательства не носит самостоятельного характера, а является факторным элементом технологического форсайта, кластерного форсайта, социологического форсайта. Данный подход является также продуктивным, поскольку он позволяет использовать дополнительные материалы глубинного анализа и способствовать формированию дополнительных сценарных возможностей. Потому соединение отдельного молодежного форсайта и молодежного предпринимательства в рамках других форсайт-проектов позволяет дифференцировать факторный анализ и более результативно использовать все методы форсайт-исследований.

Ключевые слова: форсайт, молодежь, бизнес, молодежное предпринимательство, форсайт-методология, исследование, потенциальный рост.

References

- Wells H.G. The Discovery of the Future / H.G. Wells. — New York: B.W. Huebsch, 1913. — Access mode: <https://online-books.library.upenn.edu/webbin/book/lookupid?key=olbp51646>.
- Unido Technology Foresight Manual. United Nations Industrial Development Organization. — Vienna, 2005. — Vol. I. — P. 8. — Access mode: http://www.foresight.pl/assets/downloads/publications/UNIDO-Technology-Foresight-Manual_vol2.pdf
- Becker P. Corporate Foresight in Europe: A First Overview / P. Becker. — Luxembourg, 2003. — Access mode: <https://studylib.net/doc/18403386/corporate-foresight-in-europe--a-first-overview---cordis>.

- Tretyak V.P. Structure of foresight / V.P. Tretyak // *Industry markets*. — 2007. — № 1–2(13). — P. 28–37. — Access mode: <http://www.virtass.ru/ru/>.
- Jouvenel B. *The Art of Conjecture* / B. Jouvenel; translated from the French by Nikita Lary. — New York, Basic Books, 1967. — Access mode: <https://philpapers.org/rec/DEJTAO>
- Gabor D. *Inventing the future* / D. Gabor. — London: Secker & Warburg, 1963. — Access mode: <https://www.goodreads.com/book/show/5055134-inventing-the-future>.
- Semikov V.L. Internal environment of the organization / V.L. Semikov, V.D. Ushakov // *Technosphere safety Technologies*. — 2009. — № 5. — Access mode: <http://ipb.mos.ru/ttb>.
- Gaponenko N. *Foresight. Theory. Methodology. Experience* / N. Gaponenko. — M.: UNITY-DANA, 2008. — 239 p.
- Seregina S.F. Is the appearance of foresight natural? / S.F. Seregina, I.A. Baryshev // *Foresight*. — 2008. — № 2(6). — P. 4–12.
- Keenan M. *Scoping and Planning Foresight* / M. Keenan, I. Miles // *The Handbook of Technology Foresight*. — Cheltenham: Edward Elgar, 2008. — Access mode: https://www.e-elgar.com/shop/the-handbook-of-technology-foresight?__website=uk_warehouse.
- Sokolov A.V. *Foresight: a look into the future* / A.V. Sokolov // *Foresight*. — 2007. — № 1. — P. 8–15.
- Higgins J.M. *Creative Problem Solving Techniques: The Handbook of New Ideas for Business* / J.M. Higgins. — Florida: New Management Publishing Company, Winter Park, 1994. — Access mode: <http://en.bookfi.net/book/699593>.
- Volkova V.N. *System Theory* / V.N. Volkova. — Moscow: Higher school, 2006. — 511 p.
- Clayton A. *Technology Roadmapping for Developing Countries* / A. Clayton. — Vienna: UNIDO, 2005. — Access mode: <http://www.research.gov.ro>.
- Miller R. Being without Existing: The Futures Community at a Turning Point? A Comment on Jay Ogilvy's "Facing the Fold" / R. Miller // *Foresight*. — 2011. — Vol. 13, № 4. — P. 24–34. — Access mode: <https://doi.org/10.1108/14636681111153940>.