The Formation of a Supply Chain Strategy for the Scientific and Technological Development of the Russian Federation Regions

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Abstract- **There has been a substantial lag in the scientific and technological development of Russia. Supply chain strategy has become an increasingly important management tool to help organizations improve their business operations. Economic sanctions imposed by a number of countries concerning, first of all, the ban on modern technology transfer dictated the need for a fundamental revision of Russia's model of economic development and brought the development of science and the creation of advanced technologies to the fore. The purpose of the article is to consider supply chain strategy for the scientific and technological development of Russian regions. The examples of Germany, Great Britain, the USA, and China are analyzed to summarize the advanced foreign experience and identify the features of the state management of scientific and technological development. Proposals for the formation of a strategic planning system for the scientific and technological development of Russian regions are formulated.**

Keywords- *Supply chain strategy, scientific and technological development, technology, region, strategic planning.*

1. Introduction

Increasingly, the effects of supply chains on development and technologies issues have been a focal point in discussions involving stakeholders, authorities, and customers. The unevenness of the scientific, technological, and economic development of the Russian regions; the interest of the regional authorities in the modernization of industrial enterprises; and the increasing economic autonomy of the regions dictate the need to create strategic planning and management systems for the scientific and technological development of the regions. The relevance of the study is determined by the need to conduct basic scientific research to formulate theoretical and methodological bases for the strategic planning and management of the scientific and technological development of the regions. The President of the Russian Federation approved the strategy of the scientific and technological development of the Russian Federation in December 2016. The strategy requires the active involvement of regions in its implementation with the application of strategic planning and management mechanisms. Expansion of authorities of the Russian Federation subjects in the field of science and innovations, formation of industrial policy and improvement of subjects' organizational structure and management methods can influence the technological development of the region by creating a demand for advanced technologies, supporting the researches to create new technologies and their commercialization, and stimulating technological development of enterprises. The strategic planning system serves as an organizational and economic mechanism to address these issues, and assesses the level of scientific and technological development of the region, development of scientific and technological forecasts, identification of priority areas of technological development for the region, preparation of technology roadmaps, formation of a strategy for scientific and technological development, and preparation of strategic plans and programs. The Federal Law of the Russian Federation on Strategic Planning, adopted in 2014, has formed the legal basis for building and operating an integrated state strategic planning system and established the authority of state governments in the Russian Federation. The strategic planning of scientific and technological development should hold an important place in this complex system. However, due to the unpreparedness of the existing government system for the implementation of strategic planning in the national economy, and insufficient methodological elaboration of a number of fundamental provisions, the deadlines for developing strategic planning documents have been postponed to 2019. The issues associated with the strategic planning of scientific and technological development of the regions are under-studied from a methodological perspective.

2. Literature Review

Supply chain management (SCM) has been noted as an increasingly important management field to help enterprises improve supply chain operations

[1]. SCM involves the flows of material, information, and finance in a network consisting of suppliers, manufacturers, distributors, and customers. Strategic planning and management as a scientific direction emerged relatively recently, namely in the 1980s[2-4]. Most scientists consider American economist Igor Ansoff to be the founder of strategic planning. Initially, scientists focused on the corporate management level, which is connected to new conditions for corporate activities and requires consideration of the influence of scientific and technological progress, as well as globalization and increased competition. Significant contributions to the development of the theory of strategic planning and management were made by such foreign scientists as A. Thompson and A. Strickland, G. Johnson, K. Scobs, J. Pierce, G. Mintzberg, and others. The list of Russian scientists includes O.S. Vikhansky, V.A. Goremykina, A.I. Gretchenko, V.A. Markova, S.A. Popov, and others. At present, strategic planning and management has a sufficiently developed theoretical base and practical experience in its implementation at the corporate level (micro level). In recent years, Russian scientists have focused their attention on the development of theories of strategic planning and management at the meso-level (regional and municipal level), which is associated with the expansion of strategic planning and management when applied in the regions and municipalities of the Russian Federation. It should be noted that practice in the Russian regions is ahead of theory, as evidenced by the fact that many subjects of the Russian Federation have enacted strategies for innovation and social and economic development, as well as various strategic plans and programs. Many regions have begun to pay particular attention to scientific and technological development issues. This implies the establishment of gubernatorial councils for scientific and technological development, which leads to gaining experience in forecasting scientific and technological development of the region, support of the technological development of enterprises, and appearance of private-public partnership in the scientific and technological sphere. A certain contribution to the development of the theory of strategic management of regional economic systems was made by the following scientists: I.G. Sangadiyeva (Sangadiyeva I.G. Theory and Methodology of Strategic Management of Regional Social and Economic Systems: D.Sc. in Economics, thesis. - Krasnoyarsk, Siberian State Aerospace University, 2005), A.A. Chernikova (Chernikova A.A. Methodology for the Strategic Development of Regional Territorial-Industrial Complexes and the Mechanisms for the Activation of Investment Support: D.Sc. in Economics thesis. - Orel, 2008), E.N. Evdokimova, L.S. Shekhovtseva, N.V. Nedosvity; Bezpalov et al. 2019; Pavolová et al. 2019; Batkovskiy et al. 2019; Gaffar et al. 2019 and others [5-9]. The analyses of existing researches and publications acknowledges the fact that the holistic theory of strategic planning and management of the region is still in its infancy. It is necessary to underline the issues associated with the strategic planning and management of the scientific and technological development of the region. Currently, there are very few studies devoted to this problem. Among them is the monograph by Z.A. Ermakova, who considers the problem of regional technological modernization of industry (Yermakova Z.A. Technological Modernization of Russian Industry: Strategy and Organizational and Economic Factors (Regional Aspect): Monograph / Z.A. Yermakova. - Yekaterinburg: Institute of Economics, Ural Branch of the Russian Academy of Sciences, 2007. - 360 p.), A monograph of a team of scientists from the Institute of Economics, Ural Branch of the Russian Academy of Sciences, dedicated to the formation of the institutional environment of the scientific and technological development of the industrial complex of the region (Formation of the institutional environment of the scientific and technological development of the industrial complex of the region, Monograph of the Institute of Socio-Economic Development of Territories of the Russian Academy of Sciences. The monograph explores the development of scientific and technological potential of the territories (Problems and directions of development of the scientific and technological potential of the territories. The analysis of the published scientific works revealed that no comprehensive researches have been conducted to study the strategic planning of the scientific and technological development of the region.

3. Materials and Methods

Given the multidimensional nature of the problem being investigated, the solution requires the application of a whole range of approaches and methods used in economics. The study involved a systematic approach, monographic, descriptive, statistical methods, as well as the method of grouping. The main research methods employ the system analysis (at the stage of identification of the components of the strategic planning system by the scientific and technological development of the region) and the case study (at the stage of consideration of features of public administration system of scientific and technological development in the developed countries). The authors of this study applied the statistical grouping method to analyze the innovative activity and the level of R&D expenditures in the leading world countries. The research was based on data obtained from the Analytical Center for the Government of the Russian Federation, the Center for Strategic Development Foundation, the National Research University Higher School of Economics, the RVC,

the North-West Center for Strategic Research, the information from federal and the regional information resources, materials of the Organization for Economic Cooperation and Development and United Nations Industrial Development Organization.

4. Results

The problems of improving management of the scientific and technological development of Russia have recently become very acute. The strategy of the scientific and technological development of the Russian Federation till 2035 was approved in December 2016 and raised the important issue of improving the efficiency of public administration and state regulation of scientific and technological development. Vladimir Putin, the President of the Russian Federation instructed the Government of the Russian Federation to prepare relevant proposals and emphasized the necessity to build a modern system for managing scientific and technological development. The complexity in solving this problem lies in the fact that Russia has got through a long period of a directive planned economy in the 1990s. The subsequent transition to a market economy resulted in the destruction of the previous system of the state planning and management and hindered accumulation of proper experience in managing science, technology and innovation in the framework of the market economy. It should be added that due to the adoption of the Federal Law No. 172-FZ on Strategic Planning in the Russian Federation dated June 28, 2014, new proposals should consider the need to combine strategic planning and market mechanisms in management of scientific and technological development. Currently, management of the scientific and technological development is becoming one of the most important functions of the governments of the leading industrialized countries due to the increasing influence of technological changes in the social and economic development and enhancing global competition for technological leadership. So, according to Bloomberg agency [1], South Korea, Germany and Finland became the leading countries in innovative economy in 2019 (table 1). It should be noted that in comparison with 2018, such countries as Germany, Finland, Israel, the United States and China have significantly improved their positions in the rankings.

Table1. Ranking of world countries in terms of innovative activity in supply chain.

Rank		Country	Total value	Rank		Country	Total value
2019	2018			2019	2018		
1	1	South Korea	87.38	16	19	China	78.35
2	4	Germany	87.30	17	15	Norway	77.79
3	7	Finland	85,57	18	17	Great Britain	75.87
4	5	Switzerland	85.49	19	18	Australia	75.38
5	10	Israel	84.78	20	22	Canada	73.65
6	3	Singapore	84.49	21	20	Italy	72.85
7	2	Sweden	84.15	22	21	Poland	69,10
8	11	USA	83.21	23	24	Iceland	68.41
9	6	Japan	81.96	24	23	New Zealand	68.12
10	9	France	81.67	25	28	Czech Republic	68.09
11	8	Denmark	81.66	26	26	Malaysia	67.61
12	12	Austria	80.98	27	25	Russia	66,81
13	14	Belgium	80.43	28	32	Luxembourg	66.37
14	13	Ireland	80.08	29	35	Romania	64.78
15	16	Netherlands	79.54	30	29	Spain	64,52

A special system of government bodies has been established, a state science and technology policy are developed, priority directions of the scientific and technological development are identified, and measures of state support in the field of science, technology and innovations are implemented to realize the technological leadership. In different countries, the formation of such system considers the state structure specifics, national traditions, accumulated scientific and technological potential. The experience in the formation of the state management system of the scientific and technological development is considered below on the example of Germany, Great Britain, the USA and China. Germany has been demonstrating a high level of scientific and technological development and seeking to maintain its leadership in the future for many decades. Germany consistently builds a modern system for managing scientific and technological development to achieve this goal. At the legislative level, a permanent committee on education, research and technology assessment has been established in the Lower Chamber. At the level of the Federal Government, the main responsibility for science and technology policy lies with the Federal Ministry of Education and Research. The German Scientific

Council (Wissenschaftsrat) was created to advise government agencies and assist in decision-making. The main objective of the Council is to prepare proposals to ensure management and development of science and higher education. In addition, an expert commission on science and innovations which also performs the functions of an advisory body, has been established within the Federal Government. Its main purposes include preparation of an annual report on science, technology and innovation development [2, 3]. In 2014, the Federal Government adopted a new high-tech development strategy "Innovations for Germany" [4], which highlighted five main areas:

1. Identification of key challenges in the field of science and technology.
2. Establishing links between stakeholders in the scientific and technological sphere and support of technologies transfer.
3. Enhancing the innovative potential of an industry, including support for innovative small and medium enterprises.
4. Creation of favorable conditions for innovations (infrastructure, human potential, improvement of the personnel training system for technological and innovative production, etc.)
5. Supporting dialogue and a culture of participation in the scientific and technological sphere (popularization of science, development of the "science for society" concept, transparency in the implemented science and technology policy, strengthening of the strategic component in preparation of the science and technology agenda).

The basis for new technology development strategy is the Industry 4.0 program [5] aimed at solving the following tasks: optimization of the integrated production systems and their management, creation of a full-fledged infrastructure communications system for production, professional training and personnel development, reduction of costs and consumption of raw materials. The tools for implementing the strategy involve the thematic research and development programs to facilitate public and private research activity in certain technologically advanced areas that are considered particularly important for maintaining the competitiveness of the German economy. A distinctive feature of the German scientific and technological development management system is the presence of independent project management agencies which are responsible for managing the government programs and have relevant competencies in a technology area [6, 7]. Modern science and technology policy in the UK is focused on solving three key objectives [8]:

- work on priority areas of scientific and technological development agenda;
- enhancing the international position of the state and development of international cooperation in the field of science and technology;
- stimulating the innovation potential of private companies, supporting innovative small and medium-sized enterprises.

To date, a developed system for managing scientific and technological development has been established in the UK, the main elements of which are [6, 8]:

- Science and Innovations Office in the structure of the Department of Trade and Industry;
- Science and Technology Council;
- Parliamentary Committee on interaction with the scientific community, and others.

Science and Innovation Office is the main government body responsible for the formation and implementation of science and innovation policy. Fundamental researches are financed through the Office system. The distribution of the research budget is ensured by the research councils. Currently, there are eight research councils in the UK: central, physicotechnical, biology and biotechnology, economics and social problems, medicine, ecology, molecular physics and astronomy, art and the humanities.

To date, a list of key breakthrough technologies has been prepared. The main efforts in the field of research and development should be focused on such technologies: information technologies, sensors, advanced and functional materials, biotechnologies, green technologies, big data processing, Internet of things, advanced and autonomous robotics, additive manufacturing, cloud computing, mobile internet.

Experts from the Organization for Economic Cooperation and Development (OECD) specified three key characteristics of the UK science and technology strategy at this stage [9]:

1. Support of priority industries. The criteria for selecting priority industries are comprised of two components: the technological leadership of the state in the sphere (or the potential to become a world leader) and the ability of this sphere to stimulate the growth of the entire national economy.
2. Improving the competitiveness of the industrial sector at the global level and the development of international cooperation in the field of scientific and technological progress.
3. Development of the innovation potential of enterprises, especially small and medium businesses.

The experience in forming a system of state support for scientific and technological activities in the United States of America (USA) is very instructive for modern Russia, considering many problems in

scientific and technological development arising from the country's transition to a market economy. For a relatively short historical period, the United States has won the leading scientific and technological position in the world, and now, according to experts, possesses a dynamic and highly efficient system of state support for scientific and technological activities. In 1993, Executive Office of the President of the USA Bill Clinton launched a long-term reform program approved by Congress, which decisive objective was to ensure the country's global scientific and technological leadership. The program provides for the consistent implementation of the doctrine of "US global technological competitiveness in the context of global competition." The essence of the new doctrine lies in the fact that the US Congress, business, public and political classes officially refuse to declare the role of the private sector as the main stimulator of scientific and technological progress and technological innovation in a market economy, because the private sector is unable to maintain competitiveness and overcome the economic growth slowdown and industrial production performance degradation. The block of anti-market laws adopted during that period has made the state responsible for the development of science and technology, the promotion of scientific and technological progress, the implementation of new technological and industrial policies. At present, an efficient system of state management of the scientific and technological development has formed in the USA. Scientific and Technological Policy Department has been established within the Executive Office of the President. Its main functions include: advising the President of the United States and his Executive Office on the impact of science and technology, on the situation inside the country and on the international situation in the United States; coordinating the efforts of federal agencies to develop efficient scientific and technological policies and effective methods for financing research and development sector to increase the return of federal investment in science and technology in terms of economic development; environmental safety and US national security; evaluation of the efficiency of state science and technological policy [10]. National Science Foundation plays a prominent role in the structure of executive authorities. The main objectives of the Foundation include the support for fundamental researches of all directions in the country (except for fundamental research in medicine) and the preparation of statistical information on science and technology. In general, the management system of the scientific and technological development of the USA is considered decentralized. Unlike most other developed countries, there is no specialized agency responsible for the science and technology in the United States. This task is performed by a number of departments, especially by the Ministry of Defense, the Ministry of Energy and the National Aeronautics and Space Administration (NASA). Each federal agency implements a research and development program within the framework of its duties and functions and in compliance with the relevant federal law and the budget. Federal departmental R&D programs are coordinated by the Congress and the White House. Each state scientific and technological program in the United States shall be drawn up in the form of a law, the so-called "law-program". The law-program specifies the objectives of the scientific and technological program; indicates the activities to be performed; assigns bodies responsible for the implementation of the program and gives them the respective authorities; solves issues associated with the interdepartmental coordination; specifies the sources of financing and the order funds allocation. All law-programs, as well as laws on the functions of federal departments and their science and technology policy, are subject to annual revision. In accordance with US law, every six month the President shall submit a detailed report on Government activities in the field of science and technology and the implementation of law-programs to the Congress [10]. Given the decentralized nature of the scientific and technological development management, the role of strategic planning has recently increased in the United States. In 2009, the Presidential Executive Office developed the US Innovation Development Strategy, which was updated in 2011 and 2015 [11]. In February 2012, the National Strategic Plan for the Development of Advanced Industrial Technologies was developed by the National Science and Technology Council [12]. The strategic plan provides for developing a permanent mechanism to coordinate researches in the field of advanced technological production, creation of a sustainable model of interaction between the government and the public, and establishment of a special center to coordinate private and federal investments aimed at implementation of advanced production technologies [8]. Russia considers experience of the People’s Republic of China (PRC) particularly interesting in terms of improvement of strategic planning system and scientific and technological development management. The Chinese system of arrangement of scientific and technological development under conditions of market economy has three important features associated with its formation and improvement:

– economic reforms were carried out and are being implemented in a country where the Communist Party holds power and where the state officially proclaims a course towards socialism;
– China has preserved state planning when introducing the economic mechanisms of a market economy;
– To solve the problems of scientific and technological development, China chose an export-oriented model, which had been previously successfully implemented in Japan and South Korea, unlike Russia, Brazil, and India, which policies were based on the import substitution.

At present, China has established and successfully operates a comprehensive system of state planning and management of scientific and technological development, including the formation of state policy of scientific and technological development, identification of its priority directions, development of state programs and five-year plans, state coordination and support at all stages of the innovation cycle of the creation and application of advanced technologies. The main structures of the public administration shall be described first.

The Chinese system for supply chain managing scientific and technological development has the following properties [13, 14]:

– a clear definition of the priority directions of scientific and technological development, the concentration of efforts on a limited number of areas of development of science and technology that are important for improving the competitiveness of the national economy;
– planning of scientific and technological development, which includes the achievement of long-term and short-term objectives, the development and implementation of long-term R&D integrated programs and innovative development;
– state coordination and stimulation of efficient cooperation of science, education and business in ensuring the entire innovation cycle starting from the fundamental research to the implementation of the R&D products into production for the development of high-tech sectors.
– attraction of a significant part of the currency export earnings to purchase modern equipment and technologies;
– rigorous control of foreign investments to direct them to the sectors of new and high technologies;
– harmonious combination of planned start and market methods of management in the development of small innovative business.

National Plan for the Development of Science and Technology for the Medium- and Long-Term Perspective (2006-2020) is the main strategic document specifying the current scientific and technological development in China. The main objective of the plan is to turn China into a technologically developed state by 2020, and into a leading global technological power by 2050. The plan covers 68 key areas in which China intends to make a technological breakthrough. The plan includes 27 breakthrough technologies in ICT, new materials, biotechnologies, energy, laser, aerospace and marine technologies and advanced industries.

The following priority activities are scheduled to achieve the scientific and technological excellence and become one of the leading states in the world [15]:

1. Increase research and development costs by 2020 to 2.5% GDP. Revise the structure of R&D expenditures so that the share of expenditures on fundamental research makes 10% by 2020, and expenditures on applied research reach 20-25% of total expenditures on research and development.
2. Improve the quality of training of scientific and technological specialists in higher education establishments. Improve the scientific and technological base of higher educational establishments.
3. Development of scientific and technological infrastructure, expansion of the network of independent research organizations, research centers in industrial companies, technology parks and special high-tech production zones.
4. Creation of favorable conditions for scientists, engineers, technical personnel and others.

Since 2015, the program “Made in China - 2025” has also been implemented in China. The objective of the program is to turn China from the “global factory” into a global generator of innovative technologies.
This Chinese program is an analogue of Industry 4.0 program developed in Germany, but it has a larger impact on the country's industrial sector. The study showed that the developed countries pay special attention to the issues associated with strategic management of scientific and technological development. As it was noted above, issues related to the strategic planning and management of the scientific and technological development in Russia are among the least studied ones. Yet, despite

heightened research attention to the issues of strategic planning and management at the regional level and the emergence of a fairly large number of publications, the work on developing a holistic theory pertaining to the strategic management of regional development as an innovation process is still in its infancy. On the practical side, regional authorities focus mainly on the development of regional strategies, which are often presented as formal documents that lack empirical support and often do not outline efficient implementation mechanisms. Considering that the strategic planning and management of various regional processes is usually context-specific, development of the conceptual framework for the strategic planning focusing specifically on scientific and technological development in the region is relevant, as it would contribute to the elaboration of the theory of regional development and strategic management. The essence of the strategic planning of scientific and technological development lies in the strategic foresight related to the technological changes in the industrial base of the production enterprises, the identification of technological development priorities, the formulation of targets and constraints, the development of strategies for scientific and technological development, and the creation of conditions and the consolidation of efforts by regional authorities with those of the scientific and business community within its implementation. When developing such a system at a regional level, it is necessary to consider the pertinent targets and tasks addressed at the state level, as well as the additional features that are specific to certain territories, and the possibilities of interregional innovation cooperation. Focus must also be given to the functions of the main system components. Thus, one of the objectives of the present study was to identify the main components of the strategic planning system aimed at the scientific and technological development of the region (Figure 1), which are discussed in more detail below.

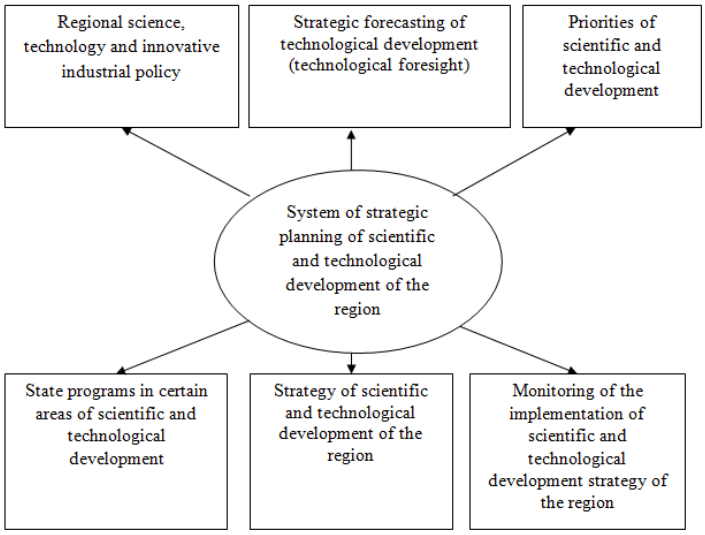

Figure1. Components of the system of supply chain strategy of scientific and technological development of the region

Within the framework of the adopted Federal Law On Industrial Policy in the Russian Federation—which specifies the goals and objectives of industrial policy under modern conditions, including those at the regional level (the level of constituent entities of the Russian Federation and the municipal level) —each region is recommended to adopt a law on regional industrial policy for the subject of the Russian Federation. This law will form a legal base regulating the development of the industrial complex of the region. In addition, the present study findings indicate that the regional industrial policy should become the basis for strategic planning and management of the industrial complex development in each region, including the scientific, technological, and innovative aspects. Considering that the Federal Law and the currently adopted regional laws on industrial policy do not duly describe the issues associated with the scientific, technological, and innovative development, respective revisions (amendments) are urgently required. The main provisions for building a strategic management system for scientific, technological, and innovative development of the industrial complex should be identified in the course of development a regional science, technology, and innovative industrial policy. These provisions should be used as regulatory basis and should be included in the industrial policy. Forecasting is the most important element and the starting point of regional strategic planning and

management of scientific and technological development. Federal Law No. 172-FZ On Strategic Planning in the Russian Federation implies such a scientific and technological development forecast for the Russian Federation. This forecast shall be prepared at 6-year intervals for a minimum of 12 years, and should contain a forecast for technological development of the key industries (sectors) for the country's economy, including those relevant to the different regions of the Russian Federation. According to the rules of development and revision of the forecast of scientific and technological development of the Russian Federation approved by the RF Government Decree No. 699, dated July 13th, 2015, the executive authorities of the Russian Federation are the key participants in the forecast preparation (revision). Thus, the forecast of the technological development of the region becomes a mandatory strategic planning document, which describes a system of scientifically validated ideas on the directions and expected results for the long-term perspective. The forecast results serve as the basis for identification of scientific and technological development priorities and preparation of technological roadmaps. The need to prioritize the technological development of the industry at the regional level stems from the existing features of the industrial and technological structure and the specific conditions under which industry development in a region should be considered. In accordance with the legislation, the national priorities of the technological development of the country are approved by the Decree of the President of the Russian Federation as "the priority areas for the development of science and technologies in the Russian Federation" and "a list of critical technologies" [16]. These priorities, in turn, guide the technological development of the country's industry. The technological level and development prospects of enterprises in different industries are specified and elaborated at the regional level with the consideration of their current status. In the decision-making process related to prioritizing the scientific and technological development, highly qualified specialists in the field of science, education, business, and public administration should be actively involved. Any decisions reached should consider the global trends in technological development of relevant industries, national priorities for technological development, the social and economic needs of the region, and the existing scientific and technological potential [17,18]. After the identification and approval of the priority directions for the scientific and technological development at the regional level, it is advisable to prepare technological roadmaps that would allow a detailed study of the development of identified technological areas. At the same time, it is necessary to prepare strategic research plans for technological areas and specify the prospects for technology transfer in areas lacking required scientific potential. The strategy of scientific and technological development of the region should act as the key document for strategic planning. It should be noted that the Federal Law On Strategic Planning in the Russian Federation does not provide for the development of strategies for scientific and technological development of the industry in the region, although it requires preparation of forecasts of the technological development of economic sectors and industry by regions of the Russian Federation [19-22]. The strategic planning documents developed on the basis of the strategies of scientific and technological development of the Russian Federation provide for the preparation of sectoral strategic planning documents in the field of scientific and technological development (according to our understanding, these will be strategies of scientific and technological development, for example, oil and gas, forestry etc.), and development of state programs at the level of the Russian Federation subjects. In our opinion, it is advisable to develop the following chain of documents to preserve the integrity of approaches and the continuity of strategic management documents at the federal and regional levels (Figure 2).

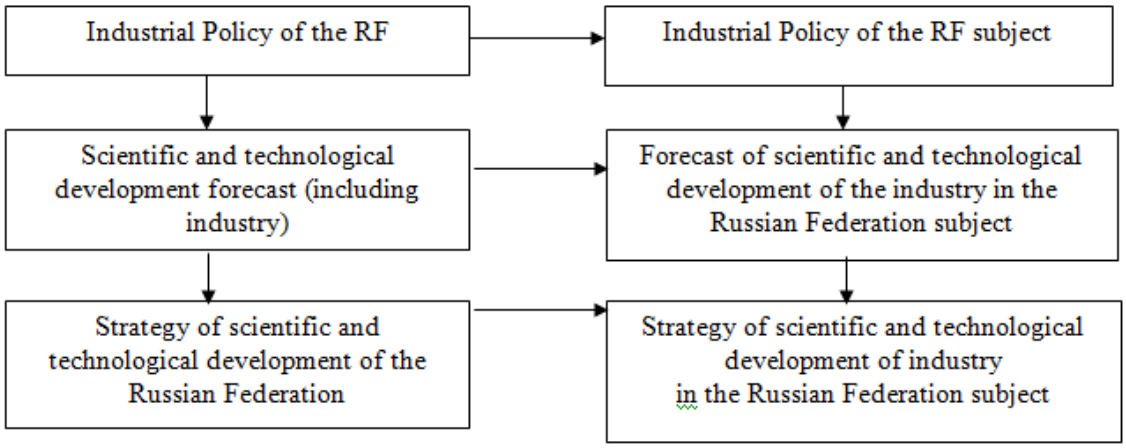

Figure2. The chain of developed documents of strategic management on federal and regional levels

Thus, the development of a regional strategy of scientific and technological development at the level of the Russian Federation subjects seems quite reasonable. The constant monitoring of the strategy is arranged to control the process of its implementation.

5. Conclusion

A more sustainable supply chain performance is indicated by a company's capacity to reduce the use of materials, energy, or water and to find solutions that are more eco-efficient by improving the management of their supply chains. Scientific and technological development strategic planning system has been developed. It will allow to improve efficiency of the scientific and technological potential in the region, make the most of the competitive advantages of the region; increase the innovative activity and susceptibility of industrial complex enterprises; improve the ecological situation in the region; increase the level and quality of life; improve the investment attractiveness of the region.

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