

Forms and Methods of Supply Chain Management of the Oil Industry in the 1920-ies. Activity of Oil Industry Council

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Abstract— On the basis of archival materials first introduced into scientific circulation, they studied the problem of the oil industry evolution in the 1920-ies, the specifics of the forms and methods of party-state management. The results of the activity and the role of the most prominent specialists who were the members of the Petroleum Industry Council at that time based on the supply chain management. During this period, the oil industry had great centralization of management, private capital was almost not allowed, self-financing was implemented to a minimum. Only oil trusts were to transfer all products to the industry syndicate. At the same time, archival documents allow not only to evaluate the colossal efforts of experts to restore and re-equip the industry, but also its importance for the development of the entire national economy in the context of the new economic policy implementation, make it possible to formulate the conclusion that by the end of the 1920-ies own research and development for the oil industry has become a fairly voluminous list.

Keywords— oil industry, new economic policy, supply chain management, Oil Industry Council.

1. Introduction

Companies must choose suppliers to provide the goods and services needed to create their product. The search for the most optimal development strategy for Russia at present, the severity of discussions regarding our past, present and future, the study of a number of previously unpublished archival documents, the appearance of publications that contain various assessments of the economic policy of the Soviet period of Russian history and the role of the so-called oil and gas factor in it [1], make the problem of finding mechanisms for the technical re-equipment of the oil industry of the USSR extremely urgent, in particular, during the 1920-ies and 1930-ies and the post-war years. A number of researchers associate the high rates of Soviet reconstruction, forced industrialization and the post-war restoration of the national economy with the borrowing of Western scientific and

technological achievements, and the massive supply of foreign equipment [2].

The historical experience of oil industry reconstruction, the involvement of leading scientists and experts in the search for optimal mechanisms of its management, in the development of the conceptual foundations of socio-economic policy is extremely valuable for modern Russia, as it allows you to learn lessons, accumulate everything that is effective and fully understand the specifics of the Russian modernization model [3,4].

2. Materials and Methods

Over the last twenty years, the supply chains of manufacturers and retailers have become ever more tightly linked. In many industries, retail sales trigger replenishment orders to manufacturers. Manufacturers with a well-tuned, just-in-time supply chain can automatically restock retail shelves as products are sold. As collaboration has increased, additional data from supply chain partners has allowed companies to use advanced analytic tool to further improve results. The problem of organizational and legal foundation of state management development in the industrial sphere during the 1917-1930-ies was not comprehensively studied in the Soviet historical and legal science. The works [5] were devoted to the implementation of the economic functions of the state, and the main tasks of NEP [3]. The works [4] analyzed the prerequisites for the emergence of trusts, syndicates, joint-stock companies, their role in the structure of industrial organization was evaluated quite objectively. Of the later publications, the work “State and legal regulation of private capital in the national economy of the USSR during the early years of the NEP (1921-1925)” was of particular interest for our study [5], in which, in particular, they considered various aspects of state influence on private capital.

The current stage of the problem domestic historiography is characterized by the author's attempt to make broader analytical generalizations and use various theoretical and methodological approaches. A number of works appeared in which issues that previously did not attract the attention of researchers were considered. So, some authors, analyzing the problem of administrative-command or adaptive-democratic methods of economic system management effectiveness, admit that during certain periods the former provided very good results in economic, scientific and cultural development [6].

A significant part of modern historical and legal works confirms the conclusion that the problem of conceptual and organizational and legal foundation establishment concerning the implementation of the new economic policy and forced industrialization, the legal regulation of party-state management of industry is underdeveloped [7]. The works of authors involved in the history of the oil industry are of no less interest [8].

The article adopted the modernization theory as a base. The specifics of the Russian model of modernization lies in its catch-up, military-political, and largely "borrowing" character, which determined the special role of the state in its acceleration, progressive centralization, and mobilization management methods.

3. Result

During the post-revolutionary period, the establishment of state control over the production, distribution and consumption of petroleum products, as well as the profit of enterprises, was a prerequisite for the nationalization of the oil industry. On March 2, 1918, the Oil Commissariat was established, but in May of this year it was abolished and the Main Oil Committee (Glavkoneft) was created, which was called upon to control and regulate the entire (private) oil industry and trade in oil products; to develop and implement the measures related to the transfer of the industry and manufactured product trade into state ownership [9]. On June 20, 1918, the Council of People's Commissars immediately approved the "Decree on the Nationalization of the Oil Industry" [10]. There was no foreclosure to the previous owners.

However, due to the civil war and intervention, oil was not sent from Baku to Soviet Russia during the whole 1919. The Sovnarkom disposed of the small oil reserves. In 1920, the nationalization of the industry was carried out again in the Baku region, but it was difficult to establish the proper operation of wells and drilling facilities in 1920-1921 [11]. In 1920, authorities appeared managing oil production in the field: in Grozny, - the Central Oil Administration, and in Baku, - the Azerbaijan Oil Committee.

According to the Decree of February 23, 1920, military discipline was introduced at industrial enterprises, the violation of which threatened the concentration camp in the worst case, factory committees were abolished, management was entrusted to the director alone [12]. However, in 1920 the Decree was not respected, the crafts were united in 9, then in 6 district administrations, each of them was headed by a board of 3 members. Separate crafts were also headed by the head and 2 assistants. Unity was not introduced until August 1921 [13]. The new business units did not have any economic independence, oil and oil products were supplied free of charge, workers were given rations, and the material and technical and food supplies were very poor [14]. The commission specially directed there at the end of 1920 called the labor shortage, above all, qualified; decline in discipline, labor productivity; poor logistics and food supplies; perverse tariff policy as the reasons for the catastrophic situation with oil production [15].

The fuel and food crisis led to the rejection of "war communism" policy. On February 14, 1921, the Politburo of the Central Committee of the RCP (B) discussed the situation of the oil industry and decided on the measures for its restoration. However, in 1921, it was possible to produce only 3.8 million tons of oil, that is, as much as in 1890 [16]. The staff shortage remained one of the most serious problems. The state of oil field development after their nationalization was such that the most important task was the fight against technologically unjustified mass flooding of oil wells and reservoirs [17].

On October 20, 1921, everything was abolished, including Glavneft and the fuel heads [18]. The Board of the Oil and Shale Industry was created as the part of the General Directorate of Fuel (GDF). However, GDF did not exist for long either, and in

the summer of 1923 it was merged with the General Directorate of Mining. The General Directorate of Fuel was allowed to sell 25% of oil or oil products independently. For oil enterprises, the supply of petroleum products to the state was extremely ruinous, however, since the end of 1921, they began to record oil production growth [19].

During the 1920-ies there were three largest all-Union trusts in the oil industry - Azneft, Grozneft and Embanefit, each of which had considerable independence in resolution of many issues. Each of the trusts united oil producing, refining, engineering and service enterprises, but they did not have the right to sell their products on their own, they did not become independent market entities. Mining and processing was detached from transportation. Neftesindikat concluded contracts for the transportation of oil cargo with shipping companies and railways, and tariffs turned out to be very high [20].

At the Supreme Economic Council, the activity of oil trusts was regulated by the central administrative board, and its name changed repeatedly. In 1926–1929 it was the Main Mining and Fuel and Geological and Geodetic Directorate of the Supreme Economic Council of the USSR, in which the Directorate of the Oil Industry existed. The department regulated the activity of oil trusts, being one of the central administrative boards of the Supreme Economic Council. Neftesindikat was engaged in the sale of oil at domestic and foreign markets. The directives of these departments, as well as the directives of the highest governing bodies, were subject to mandatory enforcement. The pace of the oil industry development, the ratio of oil and coal production were subject to strict regulation. Economic considerations were not a priority. For a long time, there was an imbalance in payment for manufactured products, often unprofitable for oil enterprises, but not for Neftesindikat [21]. Prices were set by the State Planning Commission for planned consumers at the level below production cost [22]. These problems were repeatedly pointed out by the most prominent expert and organizer of the industry, I.M. Gubkin, and the leaders of the oil trusts [23].

Due to the tremendous importance of oil export for the country, as the documents we have studied demonstrate, during the first years of the new economic policy implementation, oil experts were given a certain independence in order to restore the

industry and perform its reconstruction quickly. So, in 1922 the Council of the Oil Industry (COI) was created, the chairman of the Presidium of which was I.M. Gubkin. The COI was engaged in coordination of oil issues between trusts, studying the state of affairs in the oil industry, developing the prospects for its development, and in introduction of mineral exploration geophysical methods. Such a body did not exist in any branch of Soviet industry.

It is of interest that in October 1923 the COI decided to believe that the oil industry was embarking on new paths, changing the old, "fuel oil" nature of production [24]. At the same time, the council members referred to America, where it was considered an economic crime to burn oil under boilers. The Council emphasized that the change of milestones does not come from the offices, but from the crafts themselves. The conclusion of the Council after discussing the report of the famous scientist, the oilman V.I. Frolov, was the following one: "Pessimism should be set aside". They decided to publish the report, but contrast the conclusions of the Council of the Oil Industry as a preface to its work, motivating it with digital data and economic conclusions [25]. The conclusion was signed by I.M. Gubkin, who was people's commissar indeed, an amazing organizer who knows how to get carried away and to carry along with him.

The Scientific and Technical Bureau of the Council of the Petroleum Industry played a huge role in the technical re-equipment of the industry, which has actually functioned since October 1923, although its Regulation was approved by the Council on November 14, 1923. They determined 2 directions in its activity: research of various aspects of oil field development; Ongoing work consisting in the consideration of various issues submitted to the Technical Bureau.

The nature of the Bureau activities can be represented by its report study. So, during the operational year 1923/24 at the meeting of the Bureau, which was chaired by I.I. Davydov at that time, they considered the issues related to the studies of falling production in the Grozny district and on Bibi-Heybat Square in the Baku region, the clarification of flooding effect on the debit of wells. In particular, tables were compiled for the drop of production rates on Bibi Heybat and the chronological curves for production rate drop in the

Novo-Groznensky and Staro-Groznensky districts [26]. In addition, the members of the Bureau were involved in the examination of the inventions related to petroleum engineering or related to the oil industry. So, for example, the invention by V.K. Borisevich - the chisel "fish tail", adapted for drilling columns, passable rocks, in combination with a device for rock column extraction without lifting the rod pipes. According to the conclusion of the Technical Commission of the Bureau, the invention was of undoubted technical interest, but its verification was required in [27].

Mostly, manufacturers' focus on several projects for supply chain visibility is to equipping more accurate, precise, faithful, and rigorous real-time portrait of demand, quality, and price indications or information about supplier's inventory levels [28].

The Technical Bureau developed a list of scientific topics in five departments of oil business: geology, drilling, oil and gas production, oil refining, oil depots and oil transportation. The list included 73 relevant topics, the SNR were published in a circular letter and sent to oil districts, educational institutions, etc. The work performed on a particular topic and adopted by the expert Commission was subject to payment depending on the assessment of work. The 1st category of work was estimated by 80 rubles., the 2nd - by 50 rubles and the 3rd - by 35 rubles per printed sheet [29].

On September 18, 1924 during the meeting of the Oil Industry Council Gubkin made a proposal to establish a research petroleum institute at the Moscow Mining Academy. The Council supported his idea [30]. In 1925, within the framework of the Scientific and Technical Department (STD) of the Supreme Economic Council the State Oil Research Institute (SORI), headed by I. Gubkin, was established as the leading branch in the industry. There were three departments in SORI: Geological exploration, Production-Mechanical, Chemistry and Petroleum Technology. Archival documents allow us to judge the results of SORI during the first years of its existence. Thus, in the resolution of the Scientific and Technical Council of the Oil Industry on the verification of the institute work by a specially created commission, the development of "the basic principles of the rational formulation of the Union oil business through the collective work of scientific and technical forces" was defined as one of the institute main tasks. SORI was designed to combine the research work of district institutes

and laboratories and to solve practical issues. The Presidium of the STC emphasized the absolute need for the existence of SORI in Moscow. Assessing its work as a whole positively, the Council noted that the number of research papers of practical importance for the oil industry of the USSR was not enough. Among the promising projects were the works which started to study the water of oil fields, without which it was impossible to develop oil fields and combat the flooding of productive formation properly [31].

In the field of improving the methods for oil industry waste processing and utilization, the attempts have been made to solve the difficult task of acid tar utilization and oil refining. The method developed by SORI was tested at a semi-factory installation of Embaneft plants. In addition, it was of interest to work in the field of the cracking process at a semi-factory installation of the Shukhov-Borton type, which allow us to hope for a successful resolution of the cracking problem on the devices constructed exclusively from domestic materials. At the same time, it was noted that the work in this trend was delayed due to the lack of funds. One of the promising projects was the use of liquid sulphurous acid to refine petroleum products using the Edelean method [32].

The documents also testify to a number of shortcomings in the activity of SORI, which were pointed out by the experts of the Scientific and Technical Council: insufficient coordination of SORI activities with the local research work; the lack of awareness of trusts and a wide range of practitioners of the oil industry in respect of SORI work; the discrepancy between the volume of work being carried out at SORI and the needs of the oil industry in research work [33].

At the same time, the STC could not fail to note "extremely abnormal working conditions" of employees: lack of equipment, extremely cramped and uncomfortable rooms. A significant number of installations (airlift, the equipment for testing the operation of pressure transmission valves in the sand, studying the recovery of oil reservoirs) were located in the cold stairwell of the Mining Academy. Oil pumping and grouting cement studies were carried out in a cold, dark, damp basement, which affected the health of working employees. The shortage of precision measuring instruments and equipment made research extremely difficult; time was spent on invention of

surrogates for these devices. The mechanical workshop at SORI did not satisfy the need for their manufacture. Meanwhile, the building for SORI was built, but the completion of construction was difficult due to the lack of funds. In addition, other NTU institutes encroached on it.

The scientific and technical department insisted on the need to provide the SORI with such a room that would ensure the full development of the Institute work, as well as equip it with the necessary equipment and staff. At Mechanical-Industrial department of STC, such particularly urgent works were represented by the studies related to deep pumps, metal fatigue used in the oil industry, casing resistance to external pressure, as well as the work on the use of stainless iron for oil industry equipment and this equipment standardization [34].

On October 28, 1924, an experimental station was created at the Research Institute of the Oil Industry Council, designed to study the movement of oil through pipes in order to derive scientifically based formulas for oil pipeline calculation for various types of Russian oil [35].

One of the most important areas of the Council work, which was of keen interest for the central governing bodies, was the analysis of the oil industry state in the United States and the organization of research work there. The Council had to propose a number of topics for their development by the members of the Society of Russian Engineers in the USA, so that it would be possible to publish these materials in the form of monographs. In 1925, the Council proposed to publish American Technology magazine, which was to be funded by interested institutions. The members of the SNP were called to become the authors of these publications.

The Council developed safety rules, and the rules adopted by the Mining Department in 1915 were adopted as the basis. The fact that the problems of developing compliance with safety procedures and the protection of the subsoil were more than relevant is proved by the organization of a special Conference on the Protection and Rational Use of Oil Subsoil, which the Presidium of the Supreme Economic Council of the USSR decided to convene in November 1925. The representatives of the exploration and production departments, oil trusts, STC, the Scientific and Technical Department of the Supreme Economic Council, the Geological

Committee, the Mining Directorate of the Central Administration of State Industry of the Supreme Economic Council, the heads of the Mountainous Districts, and other oil business experts on the protection and rational use of oil-bearing subsoil by the following program were invited to this meeting. They discussed the reports from the field, and the plan, and the principles of rational development of exploited promising areas. They demanded consideration of measures to combat the flooding of oil fields, the issues of basic provision development to protect oil fields from flooding, the measures for the protection and use of gases, and the program for geological exploration in oil-bearing areas. One of the most urgent issues was the issue of setting up state-wide experiments on the use of geo- and radiophysical methods of oil field exploration.

To consider the measures relating to the protection of oil field subsoil from flooding and rational development of the latter, the Central Geological and Technical Commission for the Protection of Oil Fields, as well as the regional fishing commissions - Balakhanskaya, Sabunchanskaya, Romaninskaya, Surakhanskaya, Bibi-Heybatskaya and Binagadi, - were approved in Baku. The Central Geological and Technical Commission with a decisive vote included the representatives of the Mining Supervision, the Geological Exploration Bureau of Azneft, the Central Department of Crafts, the Technical Bureau of Azneft, the Union of Miners and regional geologists.

The Council of the Petroleum Industry actively opposed the attempts to concentrate the personnel of the geological exploration departments of enterprises in a certain central body and argued that the experts in geology at oil trusts are the same industrial and technical staff needed for production as other experts: chemists, mechanics, electrical engineers, heating engineers, surveyors etc.: "If the management of each of these experts were taken from Neftetrest and transferred to some central organizations - oil trusts as industrial enterprises should have stopped working". At that, it was proposed to submit draft programs of all the works of the exploration departments to the Supreme Economic Council for coordination, and send copies to the Geological Committee and at the same time to its local departments. The Geological Committee should send representatives to the meetings of the Supreme Economic Council at which these programs would be considered. The

Council categorically stated that only the head of the oil trust could appoint geologists, but not the Geological Committee. The Council, insisting on a certain independence of the oil trusts, while simultaneously demonstrating the nature of the relationship with the Geological Committee, believed that “even if the Geological Committee has a desire to influence the life of the oil trusts, it can fulfill this desire through its representatives in the Geological and Technical Commissions, whose representatives have a decisive vote in the regulations on these commissions”.

The leadership of the Petroleum Industry Council considered it is necessary to emphasize, strengthening the argument of the thesis in favor of the independence of the geological departments of the oil trusts, that their work was not scientific, but purely practical, industrial in nature, and this significantly differed from the tasks of their activities and initiative differed from the work and tasks of the Geological Committee and its local branches. Therefore, the Geological Committee could not be a competent body, from the point of view of the Council, as well as in the issues of persons capable of administrative leading of these departments, performing important production, technical and, at the same time, narrowly practical work.

The significance of the Council for the oil industry, the results and plans for the development of the industry are evidenced by the data presented in the report “The Situation and Immediate Prospects of Oil Business in the USSR”, which was recorded by I.M. Gubkin at a meeting of the SNP on January 19, 1927. The report is a serious, complete analysis of the general state of the oil industry during the years of the new economic policy, carried out by a leading industry expert and addressed to specialists, and therefore is an invaluable source. In particular, it contained data on oil production volumes (1925/26), which throughout the Union amounted to 90.5% of the production of 1913, and it almost doubled separately for Grozny. The role of fountain production in two main areas - Baku and Grozny - also increased significantly. According to I.M. Gubkin, another feature of oil production in recent years is its increase with deep pumps due to borehole production decrease. The introduction of old wells into production, the so-called “renewed” wells, was named as one of the factors determining the “unprecedented production growth”. But, mainly, the rise was nevertheless, from the

speaker’s point of view, due to increased drilling: in 1925/26, the penetration in the Baku region exceeded the penetration of 1913 by 11.0%, and by 29% in Grozny. But the drilling efficiency decreased every year. The figures voiced in the report testified to a significant and progressive depletion of production lands, the need for immediate implementation of industrial oil exploration on a large scale. I.M. Gubkin especially insisted on this conclusion.

The author of the report dwelled separately on the achievements and problems associated with oil refining, which grew in parallel with production increase, but the capital costs of production lagged significantly behind industrial costs, which brought refining to critical condition along with the pre-revolutionary technical backwardness of factories: the enterprises operating at that time did not meet the requirements of that time. They needed fast reconstruction and the construction of new ones. Otherwise, the use of increasing oil production would be impossible. I.M. Gubkin argued that “a correct and quick resolution of the oil refining issue as would be required on the merits” and “a significant revision of the basic view of the oil industry” was necessary. The point was that the historically formed view of the oil industry as a fuel industry should have been recognized as obsolete and untrue. Indeed, even in pre-revolutionary Russia, there was “oil imbalance” in the energy sector. Due to the low percentage of kerosene extraction from oil and oil residue burning under steam boilers I.A. Dyakonova rightly characterized the type of energetics that prevailed at that time in Russia as energy waste.

In 1927, I.M. Gubkin argued that the industry would remain the supplier of oil fuel for a long time, but this was only because it took a long time to restructure it fundamentally: “The supply of oil is not the goal of the oil industry, its goal is to supply the market (internal and external) with light, high-grade oil products; oil should not be considered a by-product”. So as the capacity of the domestic market in relation to light petroleum products was limited in the 1920-ies, the importance of petroleum product export was highlighted, according to the speaker. At that time, oil export was determined to be the main task of the oil industry, or at least equivalent to oil product supply to the domestic market. In his opinion, awareness of this task would determine the final and unconditional solution of the “long-term” issue

of the pipeline construction from Baku-Grozny to the Black Sea coast. In turn, this decision would accelerate the construction of refineries.

The speaker planned that a certain amount (up to 30-40 million pounds) of oil fuel produced at the Black Sea refineries will be exported abroad, despite the fact that there will be a need for fuel inside the country. However, the exported oil could be replaced profitably, if necessary, with foreign coal imported through northern ports.

Considering the evolution of oil export in Soviet Russia, I.M. Gubkin cited the following data: in 1924/25, oil export exceeded the figure of 1913 (948.3 thousand tons) by 43.6%. The oil export results of 1925/26 exceeded those of 1913 by 69.5%. In addition to volume, the oil export of the mid-1920-ies began to differ significantly from the prewar one also by composition. Instead of kerosene, gasoline became the main export commodity; export value of lubricating and solar oils more than doubled. The export of kerosene and lubricating oils decreased not only relatively, but also absolutely.

The analysis of oil exports carried out by I.M. Gubkin is extremely interesting in the context of the current foreign policy situation: "The growth of our oil export took place, as is well known, in an extremely unfavorable political situation, and if it nevertheless took place, moreover, at the above-described pace, then this undoubtedly indicates that the foreign market is extremely needed our petroleum products and this is true. Two circumstances that outweigh all political considerations and combinations will solve the issue in favor of our oil export development: the growth of industry, and especially the growth of motorism and aviation, on the one hand, and the depletion of oil reserves in the United States. There is no need to draw exaggeratedly bleak prospects for American oil reserves, but, without a doubt, the increase of oil consumption in America and the depletion of the well-known oil fields of North America, put the dominant position of American oil export into question. Thus, it is impossible, of course, to think that fate gives oil export to our hands without any efforts on our part in this regard, but without a doubt our respective measures open up the wide possibility of a very cost-effective oil export for an uncertain future".

Among the main events that can determine the success of Soviet oil export, I.M. Gubkin named the following: improvement of the trade apparatus abroad; provision of oil exports with the necessary volumes of oil products; lowering the cost of oil products, also through the construction of oil pipelines and the Black Sea plants.

Thus, archival documents confirm that the Council of the Oil Industry discussed the most pressing problems of the industry: results, plans, carried out their adjustment, and searched for the most effective implementation mechanisms. The issues of industry management optimization were also discussed. So, on January 20, 1927, at the meeting of the Council's Scientific and Economic Bureau, the head of the Scientific and Economic Bureau of the Council of the Oil Industry V.I. Frolov proposed to change the forms of oil industry management. Among the necessary measures "in the interests of labor division principle implementation, in the interests of an extremely complex oil economy" he named the creation of a "demarcation line" between the governing bodies (VSNH) and the economic ones (trust, syndicate): "The governing body gives the task, general directives, has the right and duty to monitor the implementation of these tasks and directives, the right to conduct an audit, but not interfere in operational business activities in any way. The economic body (trust, syndicate) conducts the economic activity as an authorized owner with appropriate responsibility for his actions". In his report, he emphasized that the oil industry is not only the extractive industry, but also the manufacturing one, not only mining, fuel and chemical, but mainly export one. And in terms of the value of its products, and the amount of capital costs, and most importantly - in terms of task volume and significance that it was called upon to fulfill, in its economic and political importance, it should be allocated to a special body, directly subordinate to the Presidium of the Supreme Economic Council. Therefore, he offered the creation of a special body of the Supreme Economic Council - the Main Oil Directorate, which would solve the following tasks: development of a common development strategy for the oil industry; consideration and approval of economic plans submitted by oil trusts and Nefteesindikat; consideration and approval of estimates and reports of oil trusts; appointment of the board of oil trusts and Nefteesindikat; determination and submission of capital

expenditures, production, processing, export, prices, taxes, wages to the highest state bodies; ongoing monitoring of program performance by oil trusts without the right to intervene in operational activities, with the exception of cases of detected crimes; subsequent revisions.

The report suggested that the observance of oil trusts would be exercised by reviewing the oil trust reports, as well as by the visits of the relevant representatives of the Office. From the point of view of the speaker, it would be advisable to create an Office for the import supply of oil industry with materials and equipment by the representatives of the oil trusts. It was proposed that Nefitetrest Office would be headed by colleges (boards), and the principle of one-man management would be introduced in the Office of individual industrial units that make up the trust.

According to V.I. Frolov, the organization of Neftesindikats was supposed to be changed "in the direction of strengthening the influence of oil trusts and a greater linkage of trade and production." The Oil Industry Council, which had the task of representing the common interests of the oil industry and the scientific development of technical and economic issues of the oil business, was planned to be left in its existing form with the actual strengthening of its representative functions, in accordance with the Charter of the Council approved by the Supreme Economic Council.

These messages formed the basis of the report of the Scientific and Economic Bureau addressed to the deputy chairman of the Supreme Economic Council of the USSR M.L. Rukhimovich signed by I.M. Gubkin and V.I. Frolov. But substantial additions were introduced into it, in particular, the comparative analysis of oil production in the Baku and Grozny regions. The situation of the oil industry was described as follows: "Achievements are different in two most important oil districts, the Baku and Grozny: the production of 1925/26 in Grozny is 2 times greater than in 1913, the Baku production is still far from the pre-war level (74.9 %)".

In the conclusion of a very lengthy report, a brief description of the situation of the oil industry for that period was given, its significance for industrialization was determined, and the main problems were listed. It was emphasized that the Soviet oil industry had a dangerous defect in the

development disproportionality of some of its most important parts: while oil production and production drilling unfolded widely, the necessary industrial exploration of new oil lands, the construction and reconstruction of oil refineries and, in particular, the transportation of oil products were in a state far from modern requirements. They emphasized the need to eliminate these blocking factors "in the most decisive and quickest way".

Referring to the performed calculations, the members of the Bureau of the Council argued that the oil industry would not be able to manage its own resources carrying out the abovementioned tasks, it needed to attract capital from outside. The only source of this attraction was government funding.

The reason for such an "abnormal phenomenon" was also indicated, when a profitable oil industry found itself in the position of state funding need. From the point of view of experts, this was the result of "the incorrect application of cost accounting principle": due to incorrect calculation of the cost of oil, the profits of the oil industry were transferred to other industries. Thus, the unprofitability of the latter was masked. This was done through the appointment of low oil prices, the collection of high deductions in favor of the People's Commissariat of Finance. They proposed to eliminate this design defect, according to I.M. Gubkin and V.I. Frolov, and for the next 2-3 years, the oil industry would receive financial assistance from the state in one way or another. At the same time, the authors noted that the costs in the oil industry were "the most advantageous costs from the point of view of the entire national economy interests".

Insisting on the need for oil industry reconstruction, the Scientific and Economic Bureau of the Oil Industry Council drew attention to the need to ensure close ties between the practical goals of the oil industry and science. The attenuation of experts' attention to research on the oil industry, which was recorded by experts (the activity of SORI was meant) was called upon to be assessed as "a negative and harmful phenomenon". Likewise, the difficulties that oil refiners faced when traveling abroad were assessed negatively: "The case of studying the success of foreign technology in the oil industry cannot be considered as the fact that several people have had short-term business trips over the past 2 years".

At the same time, the authors of the report insisted that the following measures should be taken to streamline the supply of petroleum industry materials and equipment and its financial situation: to ensure the acceleration of application passage for import trusts, timely processing of import contingents of trusts; in order to simplify the implementation of licenses, the fast organization of special departments at Trade Representatives was required if a more radical resolution of the issue would not have been possible for the leadership of the Supreme Economic Council.

Thus, the Council of the Oil Industry not only carried out the analysis of the industry, outlined the prospects for its development at its meetings, but also made independent and very ambiguous decisions. It is not surprising that the fate of the Council was not simple. I.M. Gubkin had to speak out in his defense more than once. On June 30, 1927, the Presidium of the Supreme Economic Council of the USSR decided to recognize the expediency of the SNP elimination, to transfer its publishing activities to the Scientific Research Petroleum Institute.

However, the oil experts and Nefteesindikat "remained unconvinced" and categorically objected to such a decision by sending a corresponding letter to the Chairman of the Supreme Economic Council of the USSR V.V. Kuibyshev.

On September 16, 1927, the Decree of the Presidium of the Supreme Economic Council on the liquidation of the Council of the Oil Industry was canceled, but the oil trusts and Nefteesindikat were offered to join the Council of Congresses of Industry and Trade as members and organize an Oil Section named the Council of the Oil Industry.

But the Council continued to demonstrate a certain independence, which was impossible during the early 1930-ies. On June 29, 1933, the Ordinance was issued on the Main Directorate of the Oil Industry which referred to the liquidation of the Scientific and Technical Council of the oil industry by the order of the NKTP № 564 on 06/19/1933. In the future, oil trusts and design organizations were invited to send projects for examination to the relevant sectors: the projects of refineries and oil storage facilities to the Plant sector, the projects of the Fisheries and oil pipelines to the Crafts sector.

4. Discussion

focuses on the significant role of imported equipment and supply chain strategy in the technical re-equipment of the oil industry during the 1920-ies: pipes were imported from Germany, welding equipment was purchased in the United States, and some motors for pumping stations were bought in England and Germany. However, the archival documents that we studied allow us to state that there was import share decrease, which was caused by the rapid release of special equipment by the Soviet industry, and the introduction of own developments. Technical re-equipment of the oil industry was the first and fastest in the industry of the USSR. The economic efficiency of the industry reconstruction was high, the pace was explained by the relative independence of its leadership, as well as by export orientation, significant funds obtained from the export of oil and oil products. In 1923, heat treatment of bits was introduced. In 1924, the engineer M.A. Kapelyushnikov invented and tested a single-stage gear turbo-drill. At the initiative of scientists and expert's tremendous work was carried out in 1923-1924 to turn to mechanized methods of oil production - deep pump and compressor. In October 1925, the production of domestic deep-well sucker-rod pumps began at the plant named after F.E. Dzerzhinsky in Baku. In 1924/25, their mass production started at the plant named after Lieutenant Schmidt. The Izhora plant also became the manufacturer of deep pumps, which had launched mass production of deep pumps by August 1925 for the needs of the oil industry. 100-120 units were produced for Azneft per month. During the fall of 1925, the works were carried out to expand the production of pumps, with the goal of bringing their output to 800-850 units per month. By 1927, Soviet industry was able to satisfy the demands of the oil industry in such pumps fully. This was a kind of technological revolution in oil production, which occurred very quickly and had significant consequences - first of all, cost was reduced. Another component of the coup in oil production during the 1920-ies is represented by the radical changes in the technique and technology of drilling: the rotational method of drilling was replaced by the shock method. The import of drilling rigs decreased every year: 1925/26 - 178 pcs., 1926/27 - 73 pcs., 1927/28 - 28 pcs. This dynamics demonstrates the results of the course taken for import substitution, however, carried out then at a relatively slow pace.

5. Conclusions

The categorization of several types for uncertainties in the supply chain such as demand, quality, broader variety, time, and customization of a product are related to the decision-maker. Management of uncertainties applicable with the help of sharing the information creates visibility among supply chain partners. Thus, the studied archival materials allow a deeper study of the oil industry evolution problem in the 1920-ies, the forms and methods of its management, to evaluate the results of the activity and the role of the most prominent specialists who were the members of the Petroleum Industry Council at that time.

In the context of the crisis, isolation of the country, its political and economic fragmentation, almost complete loss of control levers, low competence of new managers, a way out of the catastrophic situation in the economy was seen in the organization of powerful economic enterprises - production and purchasing trusts and syndicates. In the 1920-ies the system of party-state management of industry and branch science was formed and constantly reorganized. The factors that caused the restructuring of this system were new tasks related to the liberalization and decentralization of economic life within the framework of the NEP, which required the presence of a larger number of competent employees, clear functional distinctions. At the same time these reorganizations demonstrated not only a certain vector of economic development, but were also the consequence of limited financial resources and the need for speedy recovery and reconstruction of the oil industry, which was largely export-oriented. During this period, greater centralization of management was observed in the oil industry, private capital was practically not allowed, cost accounting was implemented to a minimum extent. Only oil trusts were to transfer all products to the industry syndicate.

The documents of the Council of the Oil Industry, which has a certain independence, allow not only to evaluate the colossal efforts to restore and re-equip the industry, but also its importance for the development of the entire national economy in the context of the new economic policy implementation. The Council of the Oil Industry discussed the most pressing problems: results, plans, their adjustment was carried out, the search for the most effective implementation mechanism

was performed. The issues of industry management optimization were also discussed. However, his proposed projects on greater independence of trusts during the late 1920-ies did not correspond to the course for forced industrialization any longer.

Archival documents also make it possible to formulate the conclusion that by the end of the 1920-ies own research and development for the oil industry was represented by a fairly voluminous list.

References

- [1] Bodrova E.V., Krasivskaya V.N. *To the issue of fuel crisis causes in the Russian Empire at the beginning of the twentieth century // Modern chemical technologies*. V. XII. No. 6. pp. 97-107, 2017.
- [2] Kalinov V.V. *Achievements and miscalculations of the state scientific and technical policy of the USSR during the post-war period // Russian Technology Journal*. No.6. V.1. p. 75, 2018.
- [3] Waxberg M.A. *The political system of the USSR*. M., Pashukanis E.B. Economics and legal regulation // *Revolution of law*. No. 5. pp. 20-37; Sarabyanov V.N. *New economic policy*. M-L., 1925.
- [4] Svyatitsky N.V. *Organization of Russian state industry*. M. 52 p.; Kantorovich V.Ya. *Planned start in the industry*. M. 108 p, 1925.
- [5] Isaev I.A. *State and legal regulation of private capital in the national economy of the USSR during the early years of the NEP (1921-1925)*. Abstract from the dis. for the degree of PhD in Law. M., 20 p, 1972.
- [6] Labzunov P.P. *The cost management methodology of an industrial enterprise in modern society // Russian Technology Journal*. Vol. 5. No. 2. pp. 70-87, 2017.
- [7] Kolesnyak E.V. *The legal system of the Soviet state during the NEP: historical and legal research: the dissertation by PhD in Law*. Volgograd, 220 p, 2009.
- [8] Igolkin A.A. *The oil policy of the USSR during 1928-1940 M., 2005*. 261 p.; Sokolov A.K. *Soviet oil industry. 1921-1945 M., 279 p, 2013*.
- [9] *Decrees of the Soviet government*. M.: Gospolitizdat, V.II. pp. 282-283, 1959.
- [10] *Decrees of the Soviet government ...* V. II. pp. 459-460.
- [11] Igolkin A.A. *Oil industry in Russia-USSR during 1917-1928*. Diss. by Doctor in History, p. 126, 2000.
- [12] Pestrzhetsky D. *Russian industry after the revolution*. Berlin, p. 10, 1921.
- [13] Kantorovich V.Ya. *Planned start in the industry*. M. p. 84, 1925.

- [14] Dubner A. *Baku proletariat during the years of the revolution* (1917-1920). Baku, p. 136, 140, 1931.
- [15] *Russian State Archive of Economics* (RSAE). F. 5740. Inv. 1. C. 206. Sh. 270.
- [16] *Oil of the USSR (1917-1987)* / Yu.G. Apanovich, N.M. Bankov, M.A. Berlin and others. Ed. by V.A. Dinkov. M., pp. 7-12, 1987.
- [17] *The history of management development and the history of oil field development in the USSR and Russia*. M., pp. 8-9, 1998.
- [18] Bakulev G.D. *The fuel industry of the USSR and the economic efficiency of investments in its development*. M. p. 6, 1961.
- [19] Igolkin A.A. *Oil industry in Russia-USSR during 1917-1928*. Diss. by the Doctor in History. M. p. 165, 2000.
- [20] *Financial problems of industry*. / Collection of articles. Ed. by A.M. Ginzburg. M.-L., p. 157, 1925.
- [21] See: Bogdanovsky S. *The main problems of the economy of Soviet oil*. M.-L.; pp. 23, 24, 119, 1929.
- [22] Ramzin L.K. *Energy resources of the USSR*. M.; p. 529, 1925.
- [23] Segal A.I. *Conversations on the mining economy*. M.-L.; pp. 149-141, 1927.
- [24] Read for details: Bodrova E.V., Krasivskaya V.N. *On the causes of the fuel crisis in the Russian Empire at the beginning of the twentieth century // Modern Chemical Technologies*. V. XII. No. 6. pp. 97-107, 2017.
- [25] RSAE. F. 3987. Inv.1. C. 7. Sh. 60-61.
- [26] RSAE. F. 3981. Inv. 1. C. 117. Sh. 32-32 rev.
- [27] RSAE. F. 3981. Inv. 1. C. 117. Sh.32 rev.
- [28] RSAE. F. 3981. Inv. 1. C. 117. Sh.33.
- [29] RSAE. F. 3981. Inv. 1. C. 117. Sh.33.
- [30] RSAE. F. 3987. Inv.1. C. 7. Sh. 152.
- [31] RSAE. F. 3987. Inv.1. C. 58. Sh. 16-18.
- [32] RSAE. F. 3987. Inv.1. C. 58. Sh.18.
- [33] RSAE. F. 3987. Inv.1. C. 58. Sh.18.
- [34] RSAE. F. 3987. Inv.1. C. 58. Sh.19.
- [35] RSAE. F. 3987. Inv.1. C. 7. Sh. 158 rev.