

Presentation No: UC1852

MONITORING OF LUKOIL ACTIVITY IN RUSSIAN NORTH-WEST

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Abstract

We have spent the analysis of oil market in Timan-Pechora oil-bearing province. The Leading part in an oil production in the province belongs to oil company Lukoil, begun with 1997 to form upstream activities in region. Lukoil has borrowed the lead position by absorption of the basic enterprises operated here and the further structural transformations inside of the company. We study process of consolidation of the company by the analysis of upstream activities dynamics for the period 1997 – 2007. The activities are displayed in license spatial data. Creation of these and transportation network data in a time series format and use cartographical animation has allowed to show spatial structure of upstream development. Thus Lukoil activity in the various production centers within the province and network development is analyzed.

Introduction

Our company “Gecon” is an expert at the office of the plenipotentiary of the President of the Russian Federation in North-West Federal district in area of the fuel-energy complex development. Being at this position during several years we participate in elaboration and monitoring of the social and economic development Policy in this region in petroleum industry section. Within the framework of this project we have analyzed the oil market player’s activities in Timan-Pechora oil-bearing province that is located in Russian North-West. We have put an emphasis on the history of player’s upstream activities during the period of 10 years - from 1997 to 2007 - using spatial licensing blocks data and additional no spatial public information. Thus the corporation Lukoil was determined as a key player in oil industry in the Russian North-West.

Brief description of Petroleum Industry in Russian North-West

The petroleum industry development in Russian North-West is caused by the significant potential of the Timan-Pechora oil-bearing province and Barents continental shelf. The largest Russian northwestern oil and gas fields are located at this territory. They contain of 14 % oil and of 28 % gas in Russian petroleum resources.

The Timan-Pechora oil-bearing province (TPP) includes the territories of two constituent entities of the Russian Federation (Komi Republic, Nenets autonomous district) and Barents continental shelf (Fig.1 below). TPP has very profitable geographical position, which can be counted by following features:

1. TPP is situated close to the most developed regions in the country. In this cause the key factors are the export-oriented sea terminals at Primorsk on Baltic shore and at Murmansk on Barents shore.
2. The comparative proximity of crude oil and its consumers.
3. There is the developed transportation network, which reduces the transportation tariffs in case of long-distance supplies.
4. The favorable position regarding to foreign markets that allows the cross-boundary pipeline installation.

5. The presence of oil terminals at Varandey, Kolguev on Pechora shore directly close to production licenses, allowing to carry out year-round oil shipment and to deliver oil to international markets, in particular to the USA.
6. And also the presence of refinery facilities, which make it possible to refine crude petroleum just at the TPP territory.



Fig.1. The Timan-Pechora oil-bearing province (A) and its overview location (B). The province – the green dotted area; the Nenets and the Komi constituent entities of the Russian Federation – the light green area; the main pipeline and refinery utilities – the various colored circles at the land; the sea ports and terminals – the onshore light blue and green circles.

All mentioned above features make TPP as a very attractive area to investments in petroleum industry. The significant values into this region have been sent through a number of the large corporations, such as Lukoil, Rosneft and Gazprom for the last several years. According to the Russian statistical bulletin «Oil Trade», over than 30 companies have produced crude oil at the territory of TPP in 2006. In total, they mined of 24,5 million tons. Between the companies there are these that have vast interests in petroleum industry (up-, mid- and downstream activities), so-called Vertically Integrated Oil Companies (VIOC), and the number of independent (not affiliated to the vast interests groups) developers.

It is evident that the main players in the industry are the VIOC. But that kind of interest's arrangement occurred after the time when there were only hardy dissociated companies. The state of dissociation, that lasted here till the end of 1997, caused poor investment activities. But the state changed after Lukoil became as a new player in TPP in 1998 and started the dissociated interests accumulation. The accumulation was conducted on the ground of the Decree №1403 of the President of the Russian Federation enactment in 1992, which provided the creation of vertically integrated oil companies by privatization and corporatization of the petroleum industry enterprises. The interest's accumulation that is carried out by Lukoil resulted in Lukoil's leading position in petroleum industry in Russian North-West.

Data processing

How has Lukoil obtained the leading position? - The answer was given after we had studied the spatial licensing blocks data, which indicates the exploration activities, and additional public information that reports the operator's properties.

We have conducted an annual analysis of licenses by displaying spatial data reported to period from 1997 to 2007 on the base map with the infrastructure utilities. The first data set (1997) displays the much diversity in terms of block's operators (Fig. 2).

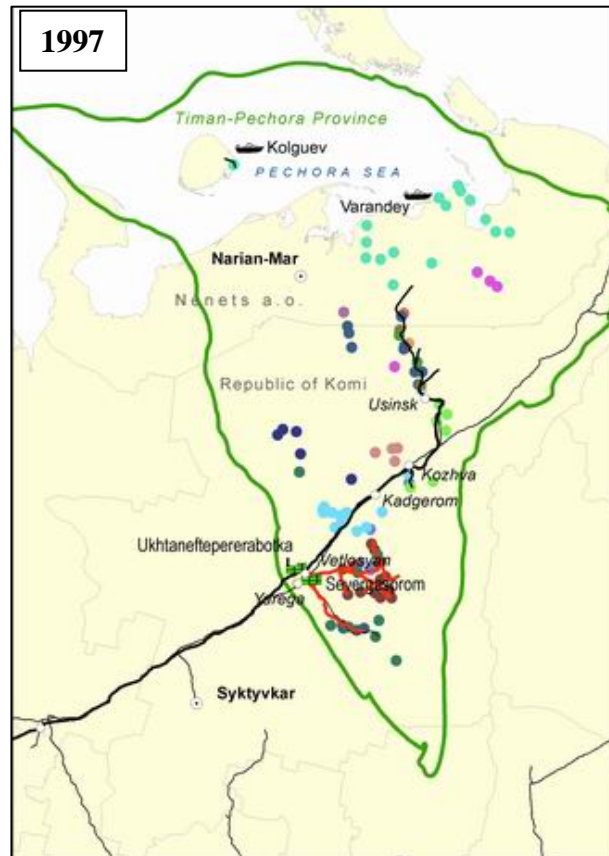


Fig.2. Licensing blocks location in 1997. The dots colored according to operators.

In framework of this type of processing the specific features of some blocks was founded out. Many blocks had the same geographical location for their year-to-year reports. And the key differences of these blocks time-series data were the blocks operators. So we realized that the number of properties fall outside of the spatial data and accepted the additional data to fill gap in the knowledge about exploration activities development.

Additional non-spatial data was sourced from official corporation's portals, press releases and etc. The data reported the names of operators who were involved or absorbed to the vertically integrated companies. Using this data led us to define the list of operators with identifying of types of interest changes during the analyzed period. These types are following:

- zero – no changes;
- cancelled licenses;
- new licenses
- sold and acquired licenses
- affiliated licenses.

We have developed the special tool to process the unification and identifying to VIOC the operator names. The tool is the Modulus "Master of Identification" that was realized using MS Access functionalities (Fig.3).

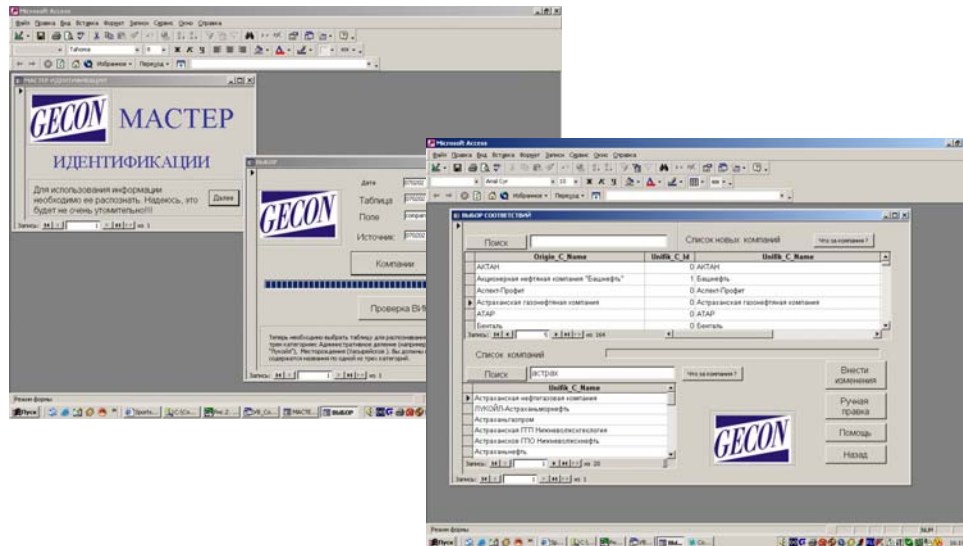


Fig.3. Data processing using the Modulus “Master of identification”

The last two types of above enumeration of license changes are just these that indicate the consolidation scenario conducted by a corporation. We have joined the list of VIOC or their interest group names to license operator name list in attributive tables of spatial data. So it was displayed the result of our analyses in a set of 11 maps (one for the annual data), which was designed to demonstrate the absorption or involving of former independent operators to VIOC and production value ranges at production licenses. The map set review showed that Lukoil had achieved the most activities in the consolidation scenario (Fig. 4).

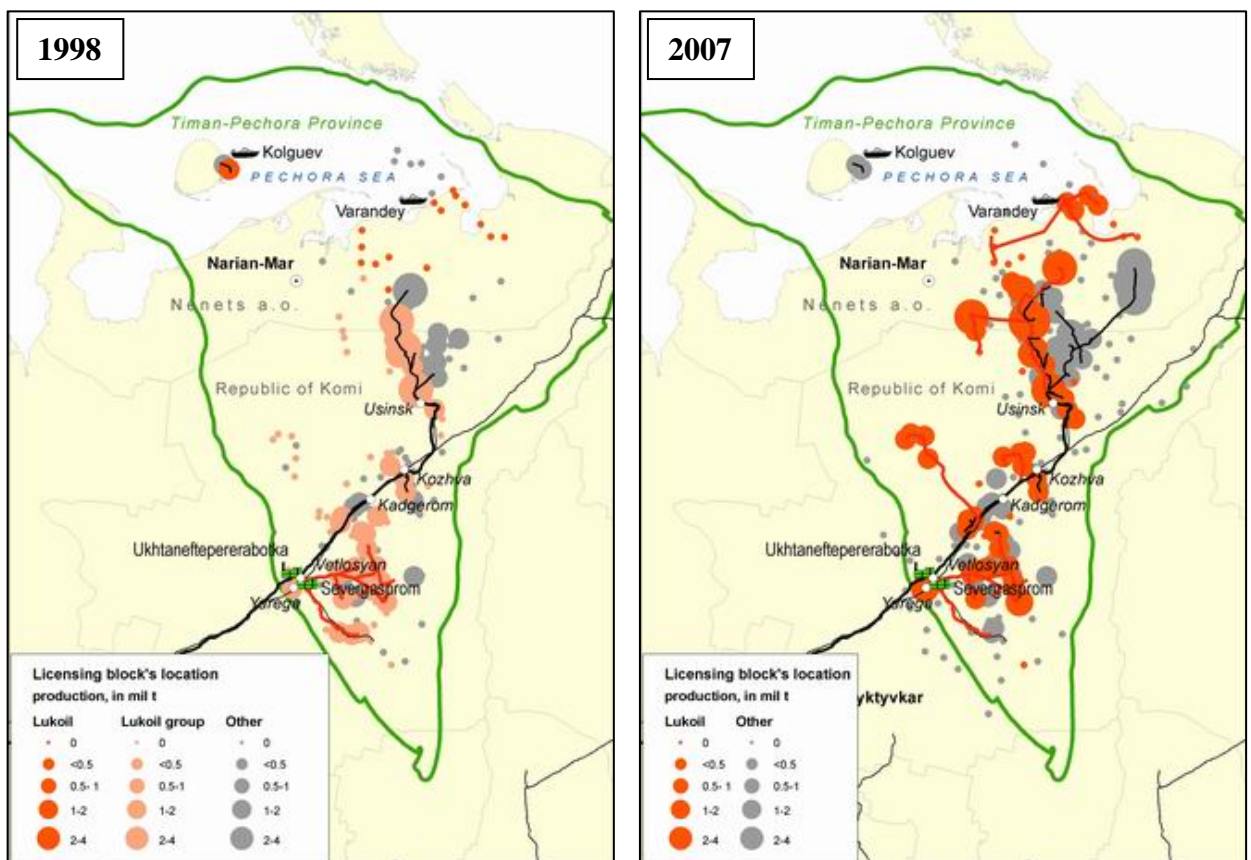


Fig.4. The examples of an annual map set showing Lukoil activities in the consolidation scenario.

At the same time Lukoil developed transportation infrastructure by pipeline and terminals installation. So we updated the infrastructure spatial data by attributes of utility operators and time of installation.

Thematic Results

After review of all the analyses results we can determine Lukoil upstream activities as following features.

The consolidation scenario conducted by Lukoil VIOC is divided into three stages (Fig.5).

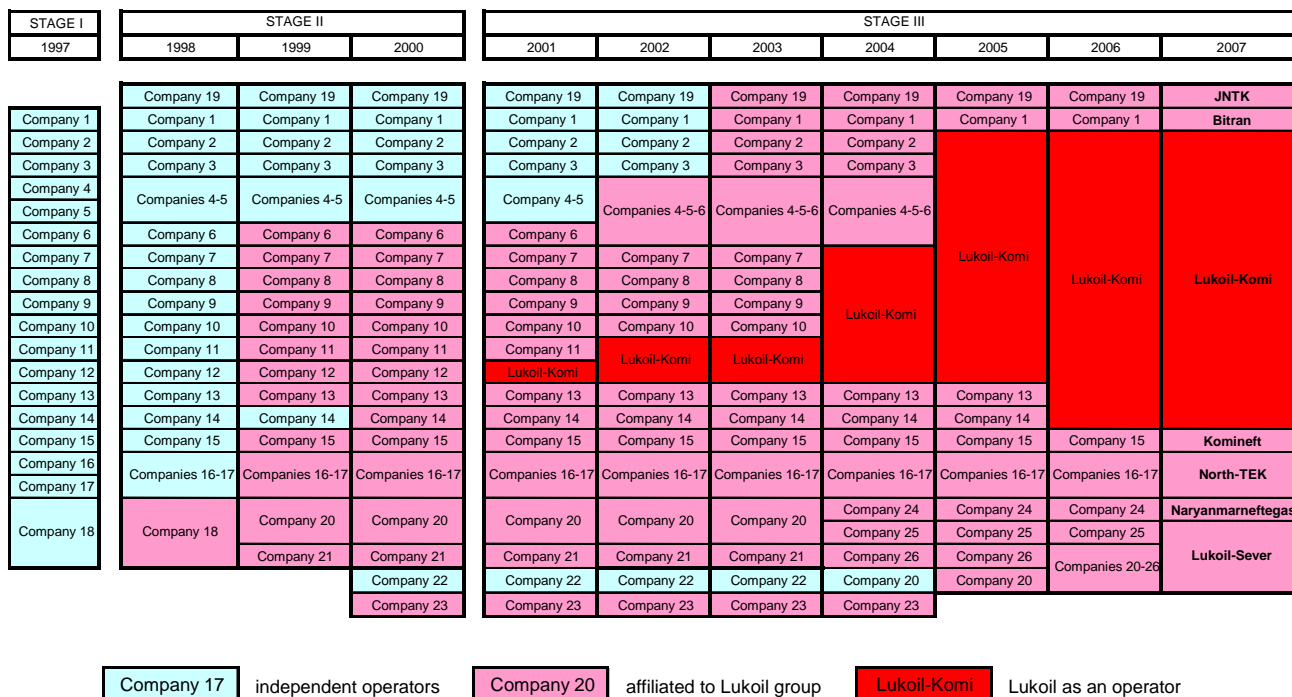


Fig.5. Lukoil consolidation scenario scheme.

Stage I - till 1997 year inclusive. There were 18 from 44 operators that were independent before Timan-Pechora province became as an attractive region to Lukoil interest. All the 44 operators were arisen during the 1990-es years as a result of the crashing and privatization former state enterprises. These operators have been formed with involved both foreign, and the Russian investments. Crude oil production of the companies with foreign investment was increased approximately in 6 times from 1992 to 1997 whereas quite Russian companies slashed their production values in 2 times. The end of the stage completed the independent period in petroleum industry in TPP.

Stage II - 1998 – 2000. Lukoil became as a new player and begun with an own group by acquisition and affiliating of the independent companies. More than a half of 28 companies have lost the independence. Thus Lukoil has got the leading position by the 1999 and the production growth has been estimated since this year. The leading position in regional petroleum industry has been provided with the fact that Lukoil has occupied the key places within the transportation network. The acquired and affiliated production licenses were located close to main trunk pipeline hubs and onshore terminals. These hubs and terminals are the key points in the production centers (PC), which include the developed fields, services and transportation network. In this stage Lukoil started the installation of its own transportation network, both stand-alone and connected to the previous existed infrastructure, thereby the main production centers in the province (Varandey PC, Khariaga and Usa PC, Tebuk PC, Yarega PC) were developed according to the Lukoil interests.

Stage III - 2001 – 2007. The stage is designated as a completed formally; in fact it goes on. In this stage Lukoil has continued the strategy of the most perspective operators absorption. The strategy was realized as friendly (in a tender format) as well as aggressive (hostile takeover) actions. The most important event was the Lukoil appearance as an operator, called Lukoil-Komi, by means of structural transformation inside the Lukoil itself. Lukoil has been upgraded more and more including due to absorption of the earlier designated assets. There were no independent companies by the 2006, which were designated by Lukoil in 1997. Lukoil has reamed the concerns up to be the most influential operator and as a result Lukoil has reached the production value of 13,6 million tons and proved oil reserves value of 0,48 billion tons and gas reserves of 0,7 bln. cube. meters by the end of 2006.

Lukoil has two interests groups new – Lukoil-Komi and Lukoil-Sever. In the near future it is expected that Lukoil-Sever will be converted to Lukoil-Komi structure. It will be the high level consolidation conducted by Lukoil.

Results demonstration using ArcGIS tools

We have arranged processed licensing blocks data and transportation network data in a time series format and have created the cartographic animation of the “Features in the time” type to display the spatial propagating of Lukoil interests in Russian North-West during the 10 years from 1997 to 2007 with symbols, which are ranged according to production values.

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