THE SPECIFIC FEATURES OF FORMING THE INNOVATIVE STRATEGY OF OIL AND GAS COMPANY

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The formation and development of innovation for Oil and Gas Company is a great and multilevel challenge. And the overcoming of this challenge increases its interest, especially, in terms of investment limitations and competitive environment.

The present economic status is characterized by high level of instability and uncertainty, which are mainly the results of situational global crisis developments. Actually, in such economic conditions, oil and gas companies have to conduct their business. Therefore, further sustainable development of the companies depends on their ability to predict and respond flexibly to the changes of external environment and on the ability to hold and acquire new competitive advantages in the markets.

At the moment, the global economy is on the verge of growth after a deep recession and that is defined by its progressive revival. Hence, it is obvious that the struggle for investment resources will be developed with a new strength and on a qualitatively new scale. On the one hand, there is a global amount of financial funds that the holders are willing to invest to pursuit their capital growth. On the other hand, there are company owners seeking for capital gains by the increase of the value judgment of their own business. Thus, company management is faced with the problem of finding the best ways to attract investments into company's assets and to achieve this in the shortest possible period of time. In a lagging revival of oil demand, the problem of raising the investment appeal for oil and gas business comes to elaboration and implementation of innovative strategies for this business development. And that is very much relevant for the oil and gas companies of Russian Federation.

According to management science, the process of strategy formation is generally based on portfolio analysis. Using portfolio analysis as a tool, the entire business activity of the company can be estimated and the investments can be distributed in a following way:

♦ investment in the most profitable and prospective lines of development;

♦ disinvestment into inefficient projects.

As a result of portfolio analysis, the company estimates the competitiveness of its main areas of activity and defines the amount of capital investment in each area of its business.

The choice of one investment strategy or another is determined by external conditions, whereas the implementation of strategy depends on the internal organization of the company and the accomplishment of its business activity. New challenges require the establishment of a new system, which can connect both different levels of management and entities or subdivisions.

In recent years innovations have become the main source of implementation the competitive advantage in the "up-stream" sector, which is permanently dominating among the other sectors in domestic business of oil and gas. However, the introduction of innovations is continuing to be, in fact, the only option for oil and gas business development in achieving the limit of extensive growth. Especially, it matters when new field exploration and its development is either impossible due to deep study of oil and gas provinces or requires extremely high level of costs to enter such hard-to reach regions as the shelf zones are. The area of research and development is a real potential for the company, which can be used to retain and create new competitive advantages.

The specificity of Russian oil and gas companies is that they mainly focus on production and sale of crude oil rather than on its refinery products and this fact implies a special attention to mined deposits. Nowadays the majority of Russian oil and gas reservoirs are at the stage IV of reservoir development according to Russian criterion of evaluation and they are characterized by the decline in crude oil production. At the same time, the current and final Oil Re-

* Evgeniy V. Astafiev, lecturer of Ufa State Petroleum Technology University. E-mail: astafiev82@mail.ru.

covery factors for domestic companies at the level of 0.35-0.45 are far behind the world standards at 0.55-0.65. This means that there is a significant underused production potential, which can be estimated at 1.5-2 billions of tones on a nationwide scale and that corresponds to four or five annual production volumes. Involvement of hard-to recover reserves into the oil and gas development becomes possible only by the introduction of the latest innovative technology concepts and solutions.

The growing competition for Arctic resources can be won only on the basis of innovations as well. The companies that haven't created and developed innovative technologies will not physically be able to access the wealth of promising Arctic stocks and that will greatly predetermine the loss of competitive edge together with the loss of market power among crude oil suppliers.

The experience of foreign oil and gas companies, in particular Western companies, shows that the largest volume of receipts is formed on the market of final fuel and petroleum consumers. This fact draws attention to the "downstream" sector. Most of Russian oil and gas companies work in a format of Vertically Integrated oil and gas Company (oil and gas VIC) having the refinery capacity, but their level of technology, which is expressed by processing depth of 70%, is 15-25 per cent points behind the global level. In particular, Russian factories do not generally produce high-octane helicopter petroleum and, therefore, it needs to be imported from neighbouring Finland. In prospect of global stiffening the environmental requirements to fuel and lubricants, the domestic oil refining may be non-competitive not only on the domestic consumer market of petroleum products but may not also fit to stiffed EU standards.

Thus, there is more than just a demand for introduction of modern innovative technologies in Russian oil and gas industry. There is an urgent need in these innovative technologies introduction. Such growth potential, when implementation of innovations is consistent, can be a major factor of investment appeal increase of the companies.

The majority of innovations in oil and gas sector are quite simple and small and then they are based more on accumulation and accomplishment of minor improvements rather than on one large technological breakthrough. Innovations can emerge in a new technique, production technology and in a new approach to manage the business processes.

Companies constantly need to monitor the development of global science and technology to be able to introduce the latest achievements in these areas into their production process and to refuse from the use of obsolete production technologies in time.

Working with innovations in Oil and Gas Company, it is necessary to be aimed at company's demand in technological development to meet current and future challenges. The most important tasks, in this case, are to develop and implement specific innovative strategy and to accomplish scientific and research innovation management.

The process of forming the general corporate strategy and innovative strategy of the company depends on the changes of external and internal operation conditions (see fig. 1).

In case the companies are ready to implement innovative changes the efficiency of the implementation is going to be rather high. The strategy should be something more than just an officially signed statement. It should be a huge driving force that influences company processes.

When innovation strategy is on the way to its definition, there is a need for scientific and research analysis of company's potential and the possible ways of such potential development among the other competing companies and industry research organizations both foreign and domestic ones. There is also a need to identify the strengths and weaknesses of these competing companies and to estimate the possibility of new competitor's entry to the market of oil and gas and to the market of scientific and technical support, from other industries.

"Social expectations" are considered to be the external factors among the others in a broad sense. They include state policy, public relations, social significance, etc. Furthermore, prediction of external factors makes it possible to perform the analysis of future threats and opportunities for the company, to reduce the amount of different kinds of unforeseen situations and to identify and predict the entry of new competing technologies to business environment.

The ability of each company to respond adequately to the changes of external environ-

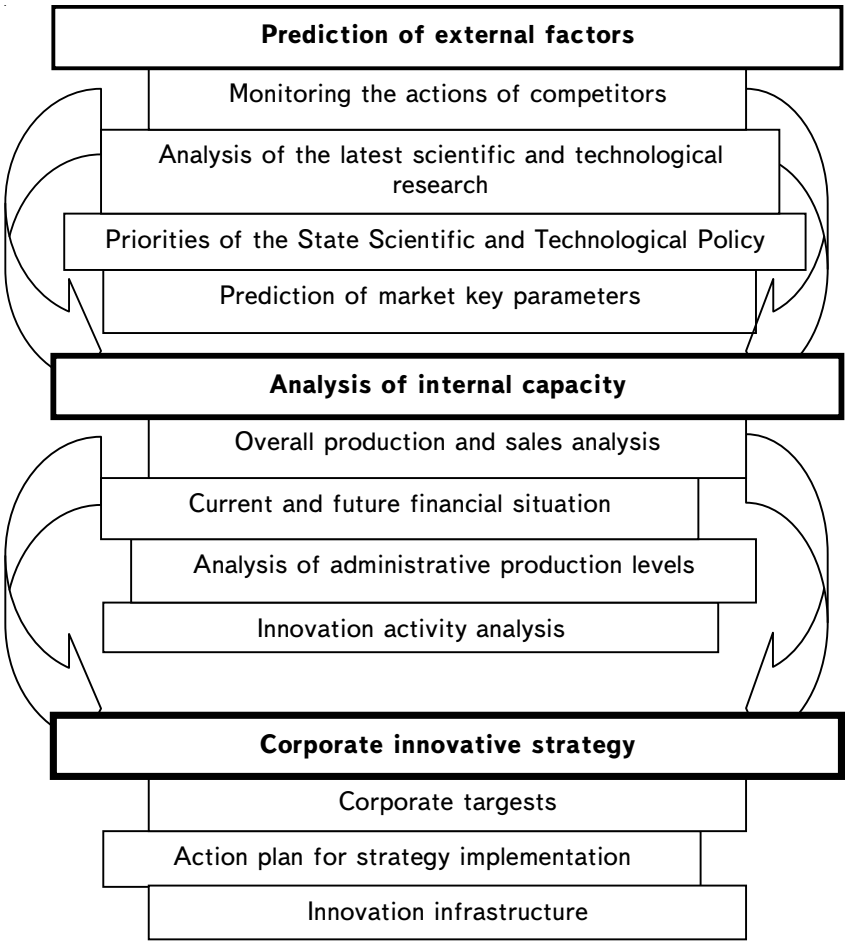

Fig. 1. **The formation of corporate innovative strategy**

ment depends on company's individual characteristics, which determine company's position on the market. These characteristics can usually be identified by the assessment of internal potential of the company that is an identification of its strengths and weaknesses within business activity and technological capabilities.

To be able to determine the company's position on the market there is a necessity to take into consideration such parameters as the overall production and sales output of its staple products, its financial situation, its presence on international and regional markets, its operating equipment characteristics, technological capabilities, etc. The assessment of company's internal potential is based on the assessment of company's management and administration. Other parameters are also be estimated, such as scientific and technological potential of the company and the availability of innovations, discoveries and inventions. These parameters define the margin of company's victory in different aspects, such as technological aspect, key patents duration, know-how techniques presence, human resources, the state of material and technical facilities for scientific research, etc.

The possibility to obtain the realistic assessment of company's internal potential consists of the system development of corresponding figures. Moreover, this system of corresponding figures should be transparent both for operational applications, use of source data, and for creation a large basis for analysis and development of recommendations for decision making.

To implement innovations efficiently there is a need to create the appropriate infrastructure, where the administrative level is also considered, to make possible the implementation of scientific and technological developments from concept creation to its commercialization. To solve this problem it is necessary to analyze whether the existing organizational pattern meets the requirements of innovation implementation and it is also necessary to redistribute the rights and responsibilities through the coordination of information and financial flows.

The stage of forming the innovative infrastructure can be considered as a final stage of

forming the company's corporate innovative strategy. Innovative infrastructure is a complex of research and technology functional units of the companies, such as engineering, technological and experimental departments, the companies' technological, financial and management potential and their human resources together with communications among other subjects of innovative activity. The purpose of performing the innovative activity in the company is to create conditions for innovation implementation that are focused on competitive growth of company's output and its production, increase production efficiency through innovation implementation.

A key role in performing innovative activity is played by scientific, technological and marketing divisions (see fig. 2).

specific exploitation target. Nevertheless, turning back to marketing divisions, the information collected by them can stimulate the innovative activity of the company and, especially, the innovative activity of company's scientific and technological units of special purpose.

Depending on the level of scientific and technological potential, the company may create innovative services and divisions or go without them. It may also distribute the innovative roles among the employees having various key competencies or may develop the projects with the help of outside specialized organizations.

Modern Russian companies are following three main ways of business development:

1) To be outside development oriented at obtaining licence, technologies and complete engineering or technological solutions from out-

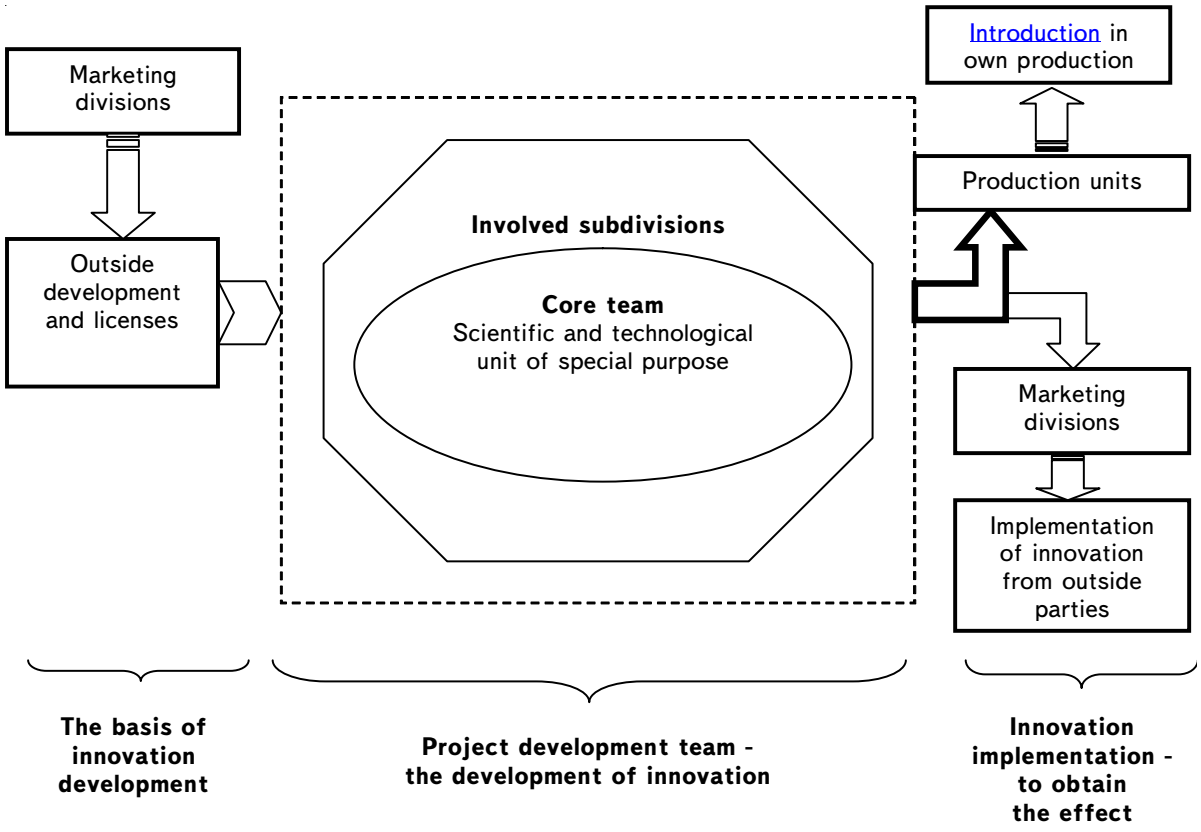

Fig. 2. **The designed pattern of innovation development, based on efforts combining**

Marketing experts study the market demand and determine market needs for innovations this way. However, in the context of innovative activity arrangement at oil and gas companies, marketing divisions do not face the biggest challenges. The innovations, implemented at oil and gas companies, are usually aimed at improving company's own production management and already operating equipment or the recovery of

side with their further adjustment to own working conditions;

2) To carry out research and development independently by involving the professionals of Chief Engineer's office, the Head of Technology department, professionals at production and specialized units as Research and Development workshops, advisory and analytical groups, technology development centres, quality support

centres, economists, environmental engineers, etc.;

3) To liaise with the Research Institute of advanced academic and field research and with universities to have a possibility to make development contracts with them or to involve their professionals in technical documents preparation for own innovative project development.

In accordance with global experience, the most efficient is the second way of business development. Many companies from industrially developed countries have their own innovative services and divisions. Therefore, they are able to carry out both applied and basic research together with efficient introduction of the results to their own production process and to production process of outside companies. It promotes the growth of their scientific potential and develops their own innovative infrastructure.

Types of innovative services and divisions vary significantly. They differ in their areas of activity (research, engineering, technological, etc.), in terms of operation (permanent or temporary), in degree of self-sufficiency (dependent or self-contained), in source of their business financing (based on the company's budget or special purpose funds), in a way of introduction the developments into production process (non-commercial or commercial), etc.

In accordance with global experience, the highest efficiency management was proved to be an innovative management with the system of organizational and economic relations that is based on project approach. This project approach, in turn, is based on formation of multidisciplinary teams (autonomous innovative divisions, which are internal ventures and entrepreneurships) to implement the innovations.

However, there is a possibility of symbiotic connections among all three ways of business development mentioned above.

The choice of organizational plan for innovative divisions, perhaps, should be made on a basis of the specificity of the oil and gas company business processes. As mentioned earlier, oil and gas companies work in a format of VIC, which means that they combine their member enterprises by introducing the system of planning, financing and coordination mechanisms, while their production and operating self-sufficiency remains the same. The VIC format is usually based on consolidation of shares or parts of capital stocks of various business entities, following the condition that member enterprises include oil and gas production enterprises, oil and gas refinery enterprises and oil product sales enterprises.

The vertical integration should be seen as the method for the VIC to form or integrate its own input to manufacturing chain or output to it, as sale channels. The schematic picture of manufacturing chain of the oil and gas VIC is represented in fig. 3.

Thus, the technological and manufacturing processes at the oil and gas company can completely differ from one another. However, at the same time, each process can be linearly linked to the others and form the general continuous process. Hence, there is a need for strong interrelation of all technological processes and innovations within one single concept, the formation of which becomes the target of general corporate strategy. The mechanisms of general corporate strategy should be reflected in the innovation policy. Nevertheless, the innovations in conventional business, particularly in oil and

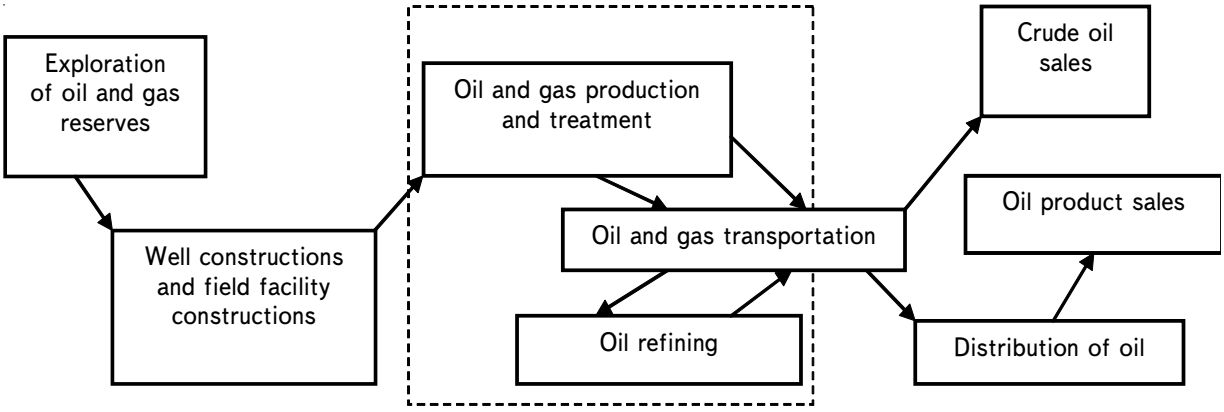

Fig. 3. **The stages of manufacturing chain and the path of vertical integration, demonstrated as a block diagram**

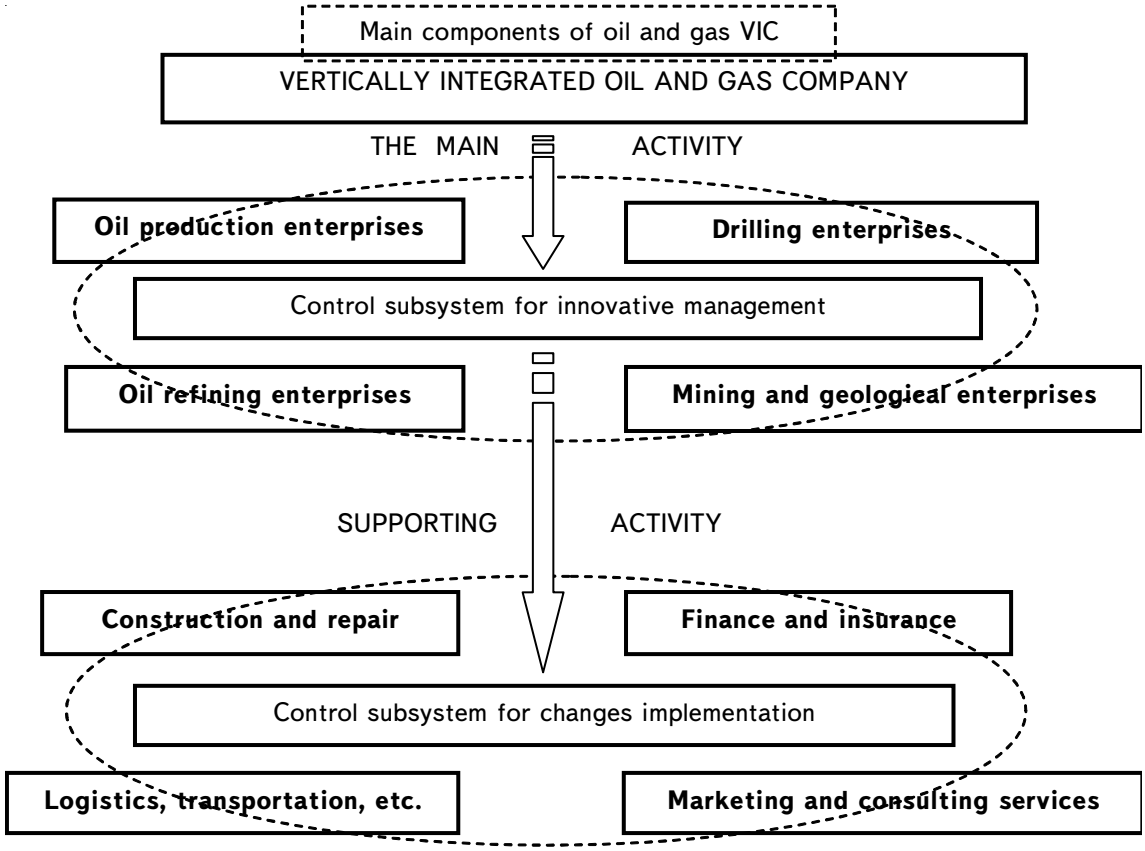

Fig. 4. **Block diagram of oil and gas VIC organization**

gas production, do not usually become the subject of the main business development path and, therefore, their activity level in such business change periodically. Hence, there is a necessity to create a flexible tool that is able to support innovative ideas at different stages of manufacturing chain and turn them into complete solutions within one development concept.

The specificity of oil and gas companies is that they need to implement exactly aggregated scheme of innovative development. Classification and harmonization of innovative solutions, which are ready to implement and can significantly improve the business processes of any oil and gas company, is a big challenge that strongly depends on different factors. These factors are mining and geological conditions, distinction of field development projects, different level of their implementation, lack of system changes (additional development program), individual differences of applied industrial equipment, climate conditions and diversity of organisational and production systems.

Vertical integration can go up and down over the main block of oil and gas VIC. The scheme of oil and gas VIC organization is presented in fig. 4.

Innovative activity is no longer the private functional task of one production unit of the company. Innovative management subsystems should take on the job of internal management company to be able to set the goals for main production unit clearly, to mobilize all resources and to reorganise the supporting units in order to achieve these goals.

The vertical integration, however, creates a challenge to introduce integrated management units to the business process and let them use the potential of integrated subdivisions to the full extent. Therefore, such integrated units should be based on the concept of innovative policy within the general corporate strategy. In other words, the ambition for innovative development is a very basis of forming the oil and gas VIC control system that determines the strategic outlook of this system's survival.

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