

Conceptual Framework of Benchmarking in Russian Oil and Gas Companies

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Abstract

In this paper we have reviewed the theoretical matters of possibility of applying of benchmarking on the enterprises of oil and gas sector. We have also reasoned the necessity of benchmarking realization in Russian practice for increase of efficiency of sector’s companies’ activities by means of internal reserves mobilization. Benchmarking is suggested as “breakthrough” instrument of transformation of internal potential of organization in accordance with requirements of external environment. There are main conditions predetermining such a necessity including: the regulation of oil and gas companies’ activity on the part of government, underdevelopment of national crude oil market, internal problems of functioning, etc. We have either stated the results of research of benchmarking concept evolution and the approaches to understanding of its nature and content. The literature review of benchmarking terms by local and foreign scientists was conducted. We have also suggested the scheme of generalization of existing definitions of benchmarking considering education, informational exchange and adaptation of the best experience for introduction of gradual changes into the work as main aspects, and pointed out the possibility of reviewing benchmarking in different ways in regard of different companies, depending on what stage of benchmarking evolution can be related to each of them. The features of benchmarking in the companies of oil and gas complex are specified and the structure of building of vertically-integrated oil and gas subjects is presented. We have also reviewed various approaches to typology of benchmarking and given the critical analysis of possibilities of applying of its separate types within oil and gas enterprises. There are as well the results of benchmarking targets, functions and principles systematization and the system of goals of oil and gas company. We have also proven the existence of confrontation between separate goals of different links of technological chain.

Keywords: benchmarking, oil and gas companies, company structure, principles and purposes of benchmarking, typology of benchmarking

1. Introduction

Recent conditions of oil and gas business development are characterized with accelerating changes and low degree of predictability of such changes in external environment. All these are exacerbated with limited possibilities of applying extensive reserves for increase of efficiency of oil and gas companies’ activity. The opportunities of increasing incomes are also limited and indirectly regulated by government by means of fiscal (taxation) policy.

Upon such conditions one of the main trends for increase of profitability (efficiency) of companies’ functioning is the mobilization of internal reserves and, particularly, the optimization of existing processes leading to quality changes in work of organizations. However, there is a problem of searching for new “breakthrough” means of transformation of internal potential of organization in accordance with requirements of external environment. In this regard many scientific publications today are dedicated to search for variants of companies’ innovation-based development realization designed in most cases to implement the intensive opportunities for development.

Besides, for the enterprises, the feature of functioning of which is represented with relatively short life cycles of products and trademarks, and production is designed for final consumption, the innovative running away from

competitors in the field of production and marketing technologies, management, etc. is to be considered as the necessary basis for creation and maintaining of competitive advantages. At the same time, in case of enterprises making products of technical and production destination, the life cycle of which is rather long and production is characterized with high capital intensity, development of innovations of any type can, as a rule, turn out to be very long-term and expensive affair. This also relates to oil and gas companies, one of the functioning features of which, except for above-mentioned ones, is absence in Russia of crude oil market and, subsequently, of severe competition between the present business entities.

Upon the conditions of absence of severe competition it is practical to form integration interactions between organizations in the field of sharing experiences. In this regard there is an actuality of feasibility of using organization and methodic tools of benchmarking that in general can be presented as "...the technology of research, analysis and implementation of the best methods of business dealing" (Shegortsov, 2004).

We should also note that the necessity of benchmarking tools adjusting to Russian features and conditions of oil and gas entities' functioning had appeared many years ago. The reason is integration and disintegration processes that recently take place in the sector. Thus, introducing new assets into structure, oil and gas companies often face difficulties of projecting own rules, regulations and culture on them. At the same time there is a possibility of that such newly-introduced structures contains some positive experience that can be adopted. The difficulty of realization of such benchmarking model is that there is no exact theoretical and methodic base that could help to identify and involve such opportunities.

2. Literature Review

2.1 Benchmarking Development Evolution

The detailed research of existing scientific publications concerning realization of benchmarking on national and foreign enterprises allows us to talk about ever-increasing popularity of this instrument. It is being quite spread in many Japanese, American, Western European and Scandinavian companies. Nevertheless, the opinions of scientist about history of benchmarking origination vary. Some of them consider the phenomenon had appeared in USA. Others, on the contrary, note the persistency of this term and refer to the famous treatise of Chinese general Sun Tsu "The art of war", in which he had written more than 2000 years ago: "When you know your enemy and know yourself, you have no need to have a dread of results of hundred of wars".

The third group of scientist takes the lead in using term of "benchmarking" to Japan and mentions to many facts in support. Mostly, they insist on the fact that in Japan benchmarking had always associated and proceeds to associated in its content with the word "dantotsu" that means "effort, urge, demand of the best one (leader) for becoming even better (leader)". In this regard the Japanese long before the origination of benchmarking in USA had learned how to perfectly copy the achievements of others. Thus, for example, they intimately examined European and American goods and services to identify their strengths and weaknesses and then produced something similar and sold it at lower price. Together with it they succeeded in transferring technology and know-how from one sphere of business to another.

However the origination of benchmarking as independent management instrument is linked in majority of cases to the Strategic Planning Institute of Cambridge (USA), where in 1972 it was established that one who wants to find the most effective solution in the area of competition should know the best experience of other enterprises succeeded upon similar conditions. Since then specialists started to apply the methods of benchmarking in many American companies (Xerox, HP, DuPont, Motorola, Chase, etc.) (Bagiev & Bogdanova, 2011).

Despite the fact that benchmarking is being quite "new" management instrument, it in the meantime has definite history. In its evolutionary development benchmarking has passed several stages:

- "reengineering or retrospective analysis of product" – up to the mid 1970s;
- "competitive benchmarking" - 1976-1981;
- "benchmarking of process" - 1982-1986;
- "strategic benchmarking" - 1987- mid 1990s;
- "global benchmarking" - mid 1990s – the present days (Ivanova & Razorvin, 2009).

Today all the above-mentioned concepts are realized in full or in part in various companies all over the world. To our mind, the present stage-by-stage approach to the development of benchmarking can be quite useful for specialists as there is a real possibility of its projecting on meso- and microlevel.

In such a way, the implementation of benchmarking on every enterprise, as a rule, starts with reengineering or internal benchmarking as the simplest form of its realization. Subsequently, as the results of research of experience of using benchmarking show, there is gradual transition to competitive benchmarking, best practice benchmarking etc. This can be explained with sophistication of each subsequent generation of benchmarking with simultaneous introduction of principles and methods of previous generation. However, there is a possibility of representing the major reason for failure of some benchmarking projects with the break in denoted sequence. Obviously, it is quite difficult to implement “strategic” or “global” benchmarking in company, if earlier the internal, competitive or best practice benchmarking had not been adapted to it.

2.2 The Term of Benchmarking

If we refer to the term of benchmarking, we should note there is a great range of its interpretations. And despite their apparent similarity the approaches of different authors are quite various. In many cases authors follow English origination of this term that can be translated into Russian as “stone bench” (Bjorn & Pettersen, 1996), “level, mark” (Adebanjo & Mann, 2011), “point of reference” (Berezin, 2005), etc. Rather interesting approach to the definition of “benchmarking” was elaborated by one of benchmarking founders Andersen Bjorn (Andersen Bjorn, 2003), who had supposed that “the term of benchmarking was, probably, taken from physical geography of surfaces studying the position of predetermined majority of points in their regard to some reference point. In geodesy such a reference point can be presented with some high or easily defining peak. Many experts consider benchmarking as the method of comparison of separate key indicators of organization (often – financial) with corresponding indicators of competitors or with average level in the branch for the purpose of its ranging...”.

The same author is also being one of few people who come up to the understanding of benchmarking from the philosophical point of view. He says: “To conduct benchmarking means to be quite clever to admit: there is always someone who is better than you; - to be quite wise to learn everything from him to reach his level and then leave him behind”. Sam Bookhart, the executive of benchmarking projects in DuPont company, has another significant interpretation of the term: “Benchmarking is a standard of supremacy or some achievement, in comparison with which similar phenomena can be measured and evaluated”.

Another famous expert of benchmarking Camp Robert C. offers the following interpretation: “Benchmarking is a permanent process of studying and evaluation of goods, services and experience of production of the most serious competitors or companies, which are being acknowledged leaders of their branches. Benchmarking is the search for the best techniques that lead to the highest performance” (Camp, 2006).

Further to the research we would like to note that some of scientists associate benchmarking with usual comparative analysis. Thus, Raider R. in his earliest works points out that benchmarking is “...the process of company’s activity for the purpose of identifying fields demanding positive changes...” (Raider, 2006). Later he highlighted the key points in other way and specified the term as “...the process of identification, understanding and adaptation of available examples of company’s effective functioning for the purpose of improvement of its work”.

The national scientist Berezin I. S. as judged to his interpretation of benchmarking is also being the follower of associating this term with reference comparison. In his works Berezin says: “Benchmarking is a comparative analysis of the results of company’s work with the results of work of more successful competitors or efficiently working enterprises of other branches. The result of benchmarking is the choice of optimal way of conduct of business. Sometimes benchmarking is called reference testing” (Berezin, 2005). The same point of view is held by Ivanova E. A. and Razorvin I. V. They define benchmarking as “...universal comparative analysis of enterprise’s efficiency for the purpose of increase of competitiveness in regard to master companies, based on the set of interdependent indicators” (Ivanova & Razorvin, 2009). However, in the further works of these authors there is a definite divergency, as benchmarking for them is “...the advanced strategically-oriented methodology of comparative and competitive analysis of organization of business-processes (production of goods and services) in some enterprise against similar processes (goods) in other, more successful, companies – the concept proposing the natural development of enterprise’s urge to steady improvement; the process of development based on constant search for new ideas, mastering of the best methods, techniques and forms of business conduct, their adaptation and subsequent using in own business-practice” (Ivanova & Razorvin, 2009).

Other scientist, such as, for instance, the chairman of international organization “Global Benchmarking Network” Robin Mann, insist on the fact that “benchmarking is much more than reference comparison. Benchmarking focuses on “drawing lessons from experience of others” and can be defined as “identification, adaptation and implementation of methods that take the best effect”. Benchmarking is being a powerful instrument (method) for initiation of breakthrough in mentality, innovative activity, improvement and provision of exclusive aggregate

results. New methods of benchmarking are aimed at benchmarking projects to bring results (financial and non-financial) in the majority of cases”.

Russian authors Bacheeva E. N. and Vorontsova A. V. also assert that benchmarking is not only “...the comparison of own indicators with indicators of other companies...”, but also “...the studying and applying of proven experience of others in own organization...” (Bacheeva & Vorontsova, 2009). And although we believe the present authors consider the category of benchmarking in quite a narrow context (limiting with indicators’ benchmarking and disregarding the opportunities of internal benchmarking), their vision of the present phenomenon does not only reduce to comparative analysis.

It is noteworthy that understanding of benchmarking as comparative analysis is peculiar to initial stages of its development. As its external and internal organizational environment becomes more sophisticated and the requirements to methods of management become more solicited, the term of benchmarking also transforms and its focuses shift to the goals and results of benchmarking. This postulate is zealously supported by such authors, as C. Toldmann, D. Randsley, Y. Ohinata: “Benchmarking means adopting of management methods of other efficiently working enterprises after the weaknesses of own company were identified by means of comparison with other branches of business activity or competitors” (Coer, 2002). The alike definition we can find in scientific works of Harry M. and Schroder R.: “Benchmarking is an analysis of particular techniques, borrowing of advantages taken on the basis of other companies’ experience and using in own company the best techniques introduced from outside” (Harry & Schroder, 2003).

Some of authors draw attention at separate sides of benchmarking. For example, T. R. Furey reveals the nature of benchmarking through set of instruments it uses for own realization: “Benchmarking is the total of management instruments, such as global quality control, measurement of customers’ satisfaction, which are being applied today by many companies” (Belokorovin, 2005). Pashutin S. reviews benchmarking through the prism of various research subjects, explaining that benchmarking “...is represented with systematic activity aimed at studying of the best technologies, production processes and methods of organization of production and distribution of goods” (Pashutin, 2011). In the meantime, W. Bruckhardt pays much attention to organizational aspect of benchmarking implementation saying that “... during conduct of benchmarking employees work in teams consisting of representatives of various enterprises. The most important elements in activities of employees and organization is being the planning oriented at value engineering and also the competence in the area of working with clients, technology and culture of business activity” (Belokorovin, 2006). A. R. Venetucci in his works reviews mainly the strategic benchmarking and says that: “Benchmarking is a way of evaluation of strategy and goals of work in comparison with first-class enterprises to guarantee the long-term position on the market” (Bagiev & Bogdanova, 2011).

However, many authors prefer to review the competitive benchmarking. Thus, for example, Dotun Adebajo says that “...competitors make constant impact on market. Any enterprise should know all the players of a field, timely gather information about them and compare it with the indicators of own activity. These actions are called benchmarking” (Adebajo & Mann, 2011). W. Krokowski has alike ideas: “Benchmarking serves for provision of competitiveness and creation of background for control check of company’s performance upon the conditions of internationalization of the process of purchase of raw material. In such a case we may talk about the comparison of results” (Belokorovin, 2006). The specialists of the Center of productivity and quality interpret the term of benchmarking as: “...the process of constant research of the best practices that define the highest characteristics of competitive ability” (Bagiev & Bogdanova, 2011).

The above-mentioned Berezin I. S. in one of his works dedicated to the practice of benchmarking realization on national enterprises gave the following definition of the present instrument: “Benchmarking is the process of search for new improved procedures in business that is performed by the means of comparison of own business-projects with the best examples from the practice of other market participators”. (Berezin, 2006). As we can see in this very case the attention is paid to benchmarking as it is and also to one of its types – benchmarking of processes. From the point of view of business-processes management benchmarking is also reviewed by Gregory Watson, the ex-chairman of American Society For Quality (ASQ) who define it as “the process of systematic and permanent change: the evaluation of enterprise’s processes and their comparison with the processes of world leading enterprises for the purpose of getting information that can be useful for improvement of own activity” (Bacheeva & Vorontsova, 2009).

Some national and foreign researchers consider benchmarking as the instrument for increase of company’s performance. For example, the specialists of consulting company “Kaiser Associates” insist on the fact that “benchmarking” is the process of proper evaluation of company’s productivity by means of comparison with the

best companies that is used for analysis of reaching and passing those best in the class” (Bagiev & Bogdanova, 2011). The Russian scientist Danilov I. P. interpret benchmarking as “...the systematic process of search for the best practice, innovative ideas and highly-efficient performance of procedures that lead to the higher productivity (Bagiev & Bogdanova, 2011).

Another one interesting approach to the definition of benchmarking was developed in the works of managing partner of *KPI International Management Consultants* company, the executive of the project of TACIS group, Kurtz A.G. He says that “...benchmarking is the process of identification, separation and using of knowledge and the best practical examples. It is aimed at the improvement of any business-process with help of research of the best approaches – not just evaluation of the best productivity, but determination, studying and performance of the best practices can provide great opportunities for achievement of strategic, operational and financial advantages” (Kurtz, 2007).

3. Methods

As we can see from above-stated definitions the approaches to interpretation of the term of “benchmarking” vary depending on author. Somebody considers it as the product of evolutionary development of competitiveness concept, others – as the program on improving quality; the third ones attach it to the exotic product of Japanese business-practice. However, if we summarize the existing definitions of benchmarking, we can say that in majority of cases it implies studying, informational exchange and adaptation of the best experience for introducing gradual changes to work. Thus, in general “benchmarking” means “improvement of oneself by means of studying experience of others”.

Along with this, we suppose that the term of benchmarking constantly evolves as far as it passes from one concept to other. That is why we think that it would be inappropriately to criticize different definitions as each of them can be actual and timely for definite period (“generation”) of benchmarking. And in case of those companies, in the framework of which the benchmarking is being in germ, to speak about it as about some philosophy or the complex of management instruments would be, to our mind, too early. In such cases the implementation of benchmarking into practice of organization’s activity should, probably, start in the form of comparative analysis with subsequent using of its results for making management decisions. Later, as far as the company obtains the skills in conduct of benchmarking procedures, there can be sophistication of organizational and methodic techniques and modification of conceptual grounds, including the selection of ultimate definition.

Further to our research we would like to note that owing to the majority of definitions one, at first sight, can consider benchmarking as the instrument that is being rather complex for its realization. However, in practice it usually includes:

- regular comparison of different aspects of a company (functions and processes) with those of leader in similar activity;
- identification of gaps in company’s activity;
- search for new approaches to introducing improvements to company’s work;
- monitoring of introducing improvements by the example of other companies;
- tracking the progress on enterprise and constant correction and review of results and profits (Ivaschenko, 2006).

At the same time we should be able to differ the present phenomenon from:

- pure competitive analysis (for benchmarking implies joint work of organizations on the basis of partner relationships);
- simple comparison of collective results (for benchmarking implies identification of circumstances and processes designed, on top of everything else, for improving work);
- non-recurrent fixed procedure performed only once (for the projects of benchmarking can last for several months and it is quite important to periodically repeat them not to remain short of current changes);
- copying of someone’s work or permanent race to the top (for in the rapidly changing circumstances the effective practice also renovates quite quickly. The fact that others make something in different way by no means should assume that they make it better);
- spying or espionage (for the main principles of successful benchmarking realization are exposure and fairness);
- industrial tourism (for, if there are site surveys, they should be a part of structured program leading to proper analysis) (Ivaschenko, 2006).

4. Results

4.1 Interrelation of Benchmarking and Targets of a Company

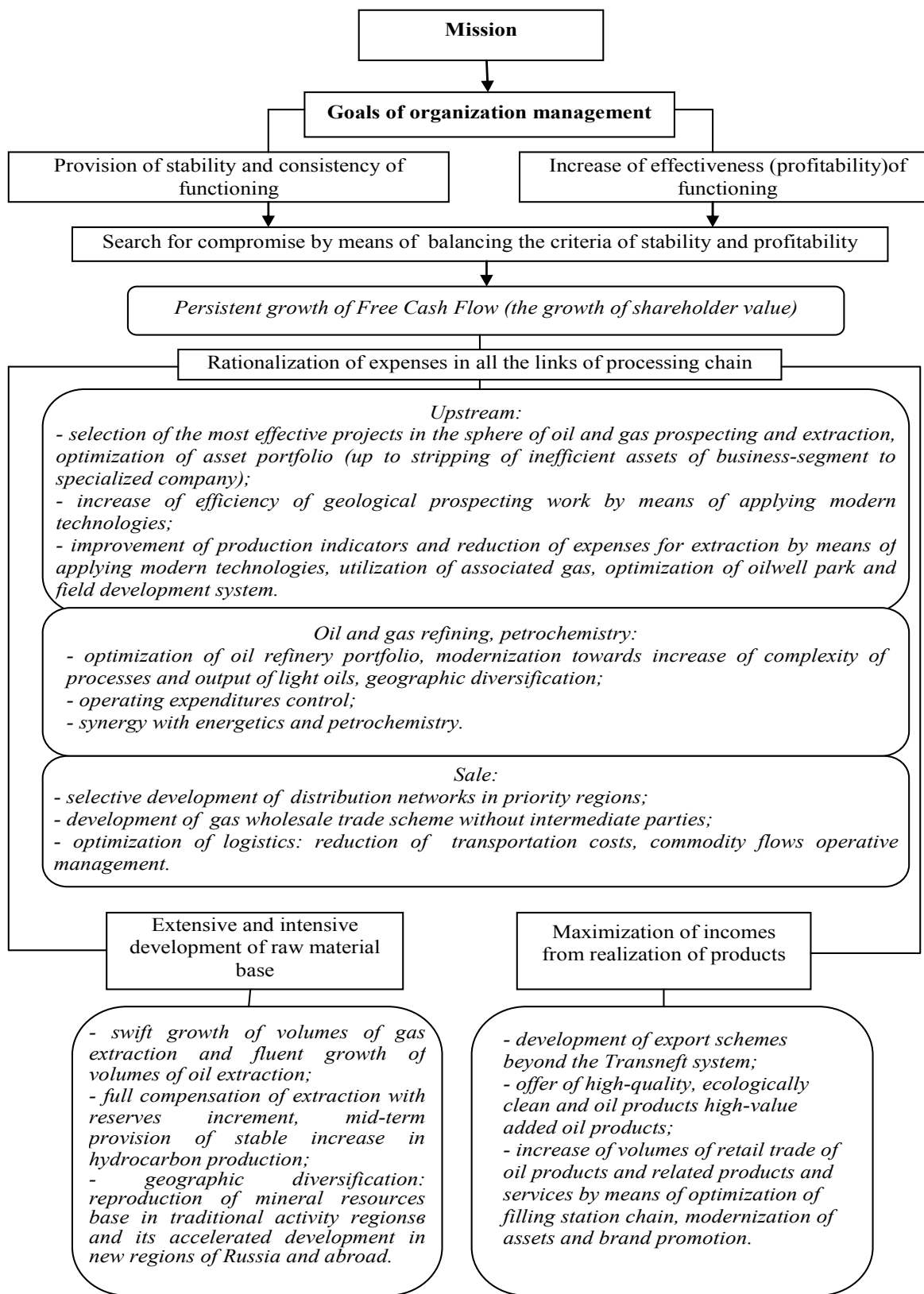


Figure 1. The goals of Russian vertically-integrated oil and gas company

The majority of organizations adjust the term of benchmarking in accordance with their strategies and goals emphasizing in its definition these or those aspects of its realization. However, the range of goals, for achievement of which benchmarking is realized within companies, is quite wide. The conducted systematization of those goals allows speaking about existence of the following key goals:

1. relatively fast and cheaper development of business-processes;
2. achievement (excess) of the level of efficiency of leading companies and their maintaining;
3. creation of own maximally effective business-models (processes), avoidance of the necessity of inventing the things that had already been invented and are used;
4. determination of the standards for efficiency of holding business-units' work, formation of basis for "standardization";
5. creation of basis for correction of system for evaluation of efficiency of working of company (subdivisions) executive;
6. objectivization of company development trends in terms of external evaluation of the company and its competitors;
7. realization of breakthrough in mentality of executives;
8. achievement of higher performance of company, mainly, by means of using intensive reserves;
9. timely identification of problems and "bottle necks" in company activity and their subsequent specification;
10. taking of competitive advantages by means of reproduction of the most successful management technologies or development of own methods;
11. increase of controllability of production and marketing functions of enterprise;
12. formation (correction) of development strategy on the basis of identification of own strengths and weaknesses, establishment of market niches, selection of necessary market tools for detection and search of factual and potential competitors, identification of possible partners in production cooperation, etc.;
13. assistance in forming and development of "culture of self-education" in all the divisions of organization;
14. prevention of passivity of organization and its staff by means of forming ambitious goals and stimulation for new ways of planning;
15. acceleration of the process of transformation and restructuring on the basis of using sound and proven methods, creation of absolute necessity for elimination of identified problems.

In the context of enterprises of oil and gas sector we would like to draw a parallel between the targets of benchmarking and the goals of a company. In general the goals of functioning and development of oil and gas structures can be presented in a certain way (Figure 1).

In particular, for realization of corporate goals in the sphere of extensive and intensive development of raw material base we can present the targets of benchmarking as research of practice of oil and gas companies' presence in traditional and new regions, adoption of experience of innovative development and expansion of material base, etc.

(Deberdieva & Lenkova, 2011) In the sphere of cost optimization in all the links of processing chain the goals of benchmarking are: analysis and estimated deviation in the value chain of the researched company in comparison with competitors or industry average values. In the area of maximization of incomes from sales of goods – the benchmarking of competitors' marketing policy in all the elements of marketing complex for the purpose of maximization of corresponding instruments involvement efficiency.

4.2 Principles of Benchmarking

The joint work for the benefit of a company, for the benefit of economy and the society as a whole has considerably bigger potential than the work based on conflict, ranging and competition. The ideas of benchmarking in the best way possible correspond to the principle "We are to win together", and therefore are in keeping with the paradigm of modern management. For another thing, the mechanism of benchmarking methods possesses the restricting elements that are regulated by the Code of Conduct of benchmarking. Thus, for instance, The European Benchmarking Code of Conduct includes the following principles:

1. Principle of preparation: prior to visiting partner one should conduct research and evaluation of strengths and weaknesses of his company and inform his partner about the aim of his visit.

2. Principle of contact: one can contact only with persons responsible for conducting of benchmarking; one can not disclose (without the permission of receiving party) the names of persons and participants of the research.
3. Principle of sharing: open communication; precision of research targets and expectation in respect of partner; impossibility of demanding from the other company the information and data, which one would not like to disclose himself.
4. Principle of confidentiality: not to publish any competitive information, patented and other data without permission of partner.
5. Principle of using: to use the received information only for the purpose of development of working process in own company.
6. Principle of legality: employ only legal methods of getting information.
7. Principle of completeness: the research is to be considered as competed only upon condition of satisfaction and mutual agreement of all the parties.
8. Principle of comprehension and consent: before conducting research one should find out all the features and rules of using information to be exchanged between partners.
9. Benchmarking with competitors: one should determine the frameworks of confidentiality at information exchange, never to ask for data and numbers out of frameworks set by agreement.

Thus, one can count on the mutual profit and joint progress only in case of respecting the rules of a game adopted by the participators – when the limits of disclosing information, procedures for data exchange and the logic of conducting research are fully coordinated.

4.3 Benchmarking Typology

Benchmarking uniqueness is its flexibility and diversity of types. Analysis of existing approaches to benchmarking typology makes it possible to distinguish the following main criteria of classification and corresponding benchmarking types.

Benchmarking typology according to geography of its conduct is especially popular (Shegortsov, 2004):

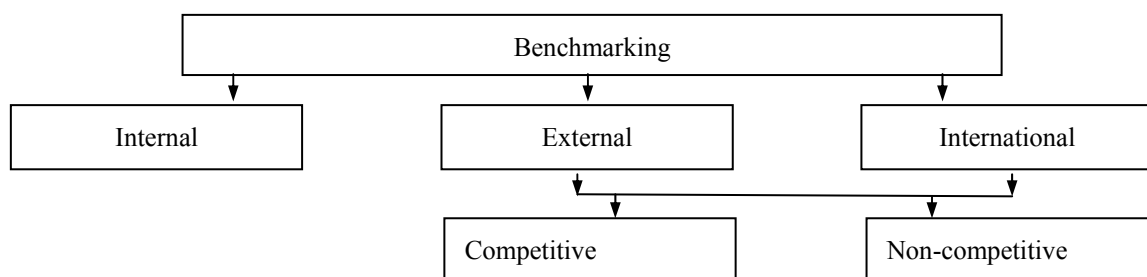


Figure 2. Benchmarking types according to geography

Internal benchmarking involves search for partners from the same organization, for example, from business unit from other scope of activity. The main advantage of inner benchmarking is easier access to information. As a rule, necessary data is available and one needs less time and resources to obtain it. Inner benchmarking also involves much less barriers during the introduction, as the practice will be sufficiently easy transferred within one company. However “stewing in one’s own juice” is not the best means for enhancement, it’s reasonable to seek for best practices by means of external benchmarking.

Regarding oil and gas companies we should take note of possibility of realization within specified structures of each of represented types. Internal benchmarking can be conducted by means of “reference unit” formation and carrying-out of comparative analysis of each specific element of a corporate structure with the reference. In this case it’s necessary to properly update methodic instruments since objective factors (for example, natural and geologic ones) have impact on processes and performance of specified branch objects. It’s possible to take into account such features when carrying out the following detailed factorial analysis.

External benchmarking involves search for external agencies, which are known as the best in their field. This benchmarking type provides possibility of learning at those who are at the frontier, but it’s important to

remember not each best experience can be applied everywhere. Added to everything else this type may take more time and resources to compare data and information, data verification, and drawing up of recommendations. External learning often advances slower because of not-invented-here syndrome.

External benchmarking also can be applied and partially implemented in oil and gas companies by means of organization and participation in joint exhibitions, presentations, conferences, round tables discussions, etc. Most companies also carry out competitive benchmarking, studying analytical reviews and data of rating agencies by branch economic entities. The matter of non-competitive benchmarking use is interesting and complicated. There are scant demonstrative examples of its realization in oil and gas sector. It can be caused by the absence of methodic base and difficulty to form it. Petroleum is particularly specific, that's why it seems impossible to match similar objects from other branches for benchmarking. In this respect one may only consider further R&D developments to form criteria base for such comparative analysis carrying out.

International benchmarking is used when partners are looked for in other countries. In this case more often than not best practices are somewhere in other country of the world, and there are too little potential benchmarking partners in one's country. Globalization and information technology progress enhance opportunities for international projects. However, it may take more time and resources, and results can require careful analysis due to mental distinctions.

We consider international benchmarking of oil and gas companies promising since foreign companies' performance is many times higher than national companies' performance, that is confirmed by international ratings. In addition, foreign corporations are more open in terms of informative transparency.

Classification of benchmarking types according to its status in organization is no less popular.

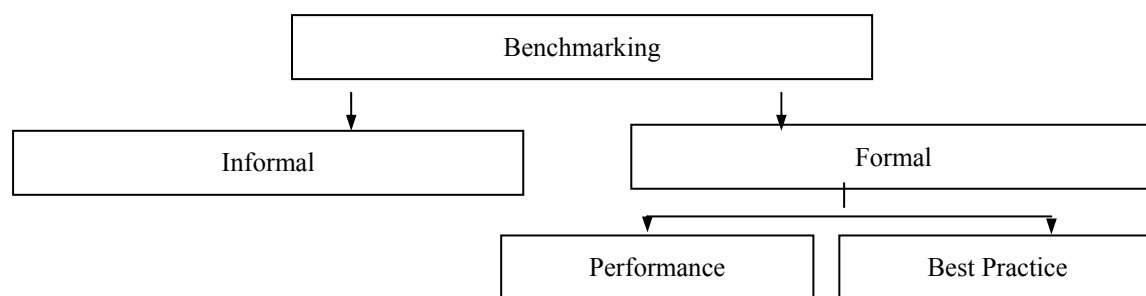


Figure 3. Benchmarking types according to its status

- Informal Benchmarking is a benchmarking type, which is used mostly unconsciously in the course of comparison one's behaviour and practice with behaviour and practice of other entities. The best part of knowledge gained from informal benchmarking is based on the following:
 - contact with co-workers and learning their lessons (coffee breaks and meetings play a big role in coordination of activity, cooperation, and acquiring of knowledge from others);
 - professional advice (business consultants, who have experience of specific process or activity implementation in many business environments);
 - interaction with other people from other organizations during conferences, seminars and in Internet forums.
 - on-line databases/websites and publications. which provide information on benchmarking and guarantee fast and easy way to get to know about advanced experience and reference points of comparison.

Studying of publications regarding petroleum structures management allows talking about fairly wide use of informal benchmarking. As practice shows, currently petroleum companies' heads often use rating agencies' data, analytical experts' views. There are processes of "enticement" of key personnel from enterprises-competitors, recruitment of foreign specialists. The trend of increase in training programs / extension programs proposal to education institutions for oil and gas sector is also observed.

Unquestionably, Formal Benchmarking is subject of scientific research to a greater extent. It is generally divided into two types: Performance and Best Practice.

Performance Benchmarking describes comparison of performance data obtained as a result of analogous processes or activity study. Performance comparison can be carried out between companies or within organization. It contributes to identification of strong points and opportunities for enhancement. Performance

benchmarking may include financial indicators' comparison (such as expenditures, cost of labour, value of building/equipment, power cost, maintenance of budget, cashflow, entries) or non-financial (for example, absenteeism, personnel turnover, percentage ratio of administrative workers to key personnel, etc.)

In the majority of cases benchmarking in itself is associated with performance benchmarking (reference comparison). It is false since performance benchmarking in itself is of limited usage. Data of performance benchmarking are collected (it often entails heavy expenditures), but further measures are too often not taken. However benchmarking allows identifying gaps in the production, it doesn't provide ideas, advanced experience or solutions how to improve performance and fill gaps.

Despite disadvantages that inherit performance benchmarking, it can lead to very important summary and conclusions. Thus, for example, oil and gas companies' activity basic indexes post-event analysis may allow estimating changes in their development strategies.

- Best Practice Benchmarking describes comparison of performance data obtained as a result of analogous processes or activity study, and identification, adaptation and ways to implement best practices, which showed best performance, as well. Best Practice Benchmarking is the most powerful type of benchmarking. It's used for "drawing lessons from others' experience" and breakthrough in performance improvement.

Best Practice Benchmarking put an emphasis on "action", i. e. on data comparison and discovering why other organizations achieve higher performance level. As a rule, Best Practice Benchmarking processes takes 2-4 months for best practice identification. This practice should be adopted and implemented. Time needed for this project varies depending on project scale, significance and capacities employed. As a rule, projects are resource-intensive (from viewpoint of project team's time) and that's why it's necessary to focus on matters of strategic importance, which will eventually provide the greatest profit.

In our opinion, Best Practice Benchmarking is more difficult to implement in oil and gas companies. Indicators for performance benchmarking carrying out can be obtained from mass media. Since legal form of all oil and gas companies is open joint-stock company, they are obliged to publish their operating results in resources available for stockholders (according to the Federal Law on Joint-Stock Companies). Internal processes, both production and management processes, are not subject to wide publicity that complicates Best Practice benchmarking carrying out.

Complex use of Performance and Best Practice approaches to reference comparison carrying out most effectively unlocks the potential of benchmarking as a tool for organization's competitive growth. Moreover, Performance benchmarking acts as initial (introductory) stage of Best Practice benchmarking. Measurement of organization's and competitors' performance allows one to determine fields of activities that require priority improvements, areas of most serious lagging behind competitors. Obtained information acts as "input" for Best Practice benchmarking. These data systematization in accordance with organization's processes and their reduction to a common denominator with reference company allow estimating possibility of outside processes implementation in their own organization's activity, identifying project realization constrains, fine-tune a process under reform, and provide its effective carrying out.

Best Practice benchmarking is implemented harder if the question is external benchmarking under conditions of information privacy of oil and gas companies. In addition, it yields positive results during conducting internal benchmarking, when studying, successful "tuning" of business processes in one unit provides the basis for business processes improvement in organization in general. It may allows decreasing losses in case of unsuccessful outcome, and also acts as a basis for motivational mechanism adjusting in order to improve each unit operation's performance.

Benchmarking structuring *according to comparison object* is worth special mention. Thus, it's possible to match organization's inner elements (structural subdivisions, business units, business departments and service divisions, etc.), determine the best of them and project its practice onto activities of the rest. Such benchmarking has also been above-mentioned as "internal" or as it also called "benchmarking within one's class". The best direct competitor (competitors) can be selected as an object for comparison, and in this case benchmarking will be named competitive or "benchmarking within parallel class". Carrying-out of comparative analysis with other enterprises, which are not competitors to evaluated organization, but carry out related wok in the same technologic area, is named "functional benchmarking" or "benchmarking with someone from other school of the same type". However, if company comparison is carried out with the best business representative regardless of market branch and type, it means "general benchmarking" or "benchmarking with totally new school".

This classification largely repeats the previous ones. The majority of represented types of benchmarking in respect to oil and gas companies was commented above.

In our opinion, the realization of general benchmarking in oil and gas companies is complicated because of specific character of oil and gas companies' operation and complexity of application. Although its partial application is possible in respect to general management, personnel policy, and similar aspects of organization's activity.

According to comparison subject three types of benchmarking is distinguished in specialist academic literature: benchmarking of indicators, benchmarking of processes and strategic benchmarking. This typology is largely related to benchmarking concept evolution.

Benchmarking of indicators suggests comparison of main indexes or other measured criteria. It is often used when rating market participants or their units. It appears one of the simplest types of benchmarking within the classification.

When realizing benchmarking of processes both comparison of separate indicators and analysis of business process progress are suggested. It is unquestionably more complicated type of benchmarking since internal information of comparison object is needed to conduct it. Moreover, in this case special skills on business processes identification are needed. It is used when emphasis is put on specific processes and operations enhancement. Benchmarking partners are selected from those who have the best indicators and carry out similar work or render similar types of service. Benchmarking of processes is consistently carried out by means of process mapping to make comparison and analysis illustrative and simple. Such type of benchmarking may have positive results in a relatively short time.

However, absolute leader by realization complicacy is strategic benchmarking, in the context of which it's suggested to carry out comparison of strategic decisions and conditions of their realizations at a higher level of management hierarchy. It's used when an organization wants to improve its general activity by means of long-term strategies and overall approaches study, which helped others leader companies to succeed. As a result of its conduct review of strategies, which became inconsistent with new requirements, takes place (for example, changes in technology are needed, or consumer requirements changed). It includes aspects of high level, such as key directions of development, development of new products and services, company operation's rebalancing. Changes of this type of benchmarking are hard to implement and profit of its applying becomes tangible after a considerable period of time. That's why this type of benchmarking, as most academics in this field claim, is used hardly ever.

Andersen Bjorn (Bjorn, 2003), being an author of benchmarking classification on object and subject of comparison, asserts that these types of benchmarking in each of two categories theoretically can be combined into one research of definite focus. However, in practice not all the possible types' combinations for different categories are equally applicable. Various researches showed that the best results are usually got in combination of general benchmarking, where there are enterprises from other fields, with benchmarking of process (Figure 4).

	Internal benchmarking	Competitive benchmarking	Functional benchmarking	General benchmarking
Indicator benchmarking	2	3	2	1
Benchmarking of process	2	1	3	3
Strategic benchmarking	1	3	1	1

Relevance/value: 3 – high; 2 – average; 1 – low.

Figure 4. Compatibility (combined realization) of separate types of benchmarking in practice

From the point of view of benchmarking conduct organization the classification of its types based on the feature of "**model of carrying out of comparison**" is of interest. In accordance with this typology an enterprise can conduct benchmarking together with one or several organizations. In such a case the comparison can be carried out separately with each of partner enterprises ("the comparison one to one". However, partners often do not even suspect that there are other participators of benchmarking except for them).

As experience shows, the best results for all the participators are yielded with so-called “comparison in group”. At its realization, as a rule, several partner organizations come together for conducting joint benchmarking and there is cross comparison of all the partners.

The third model of benchmarking within the present typology is “anonymous comparison with help of mediator”. The role of mediator is usually played by consultant who collects information, analyzes it and then delivers the results of the analysis to organizations offered their data. However in the case of such benchmarking there is no possibility of distinguishing the best technologies in operation and therefore it is often quite difficult to realize improvements based on such a type of research. The model is being best suited to benchmarking of indicators and considered as outdated.

In the national oil and gas companies benchmarking is yet underdeveloped and it is rather difficult to find striking examples of its realization in the form “one to one” or “in group”, and for today we can speak about acceptability of these models to such companies only in regard of internal benchmarking, at which there is a comparison of efficiency or processes of different structural subdivisions.

Another one approach to classification of benchmarking types was suggested by European Commission on the programs of benchmarking initiatives. According to this approach the structuring of benchmarking is performed ***depending on the level of benchmarking realization*** (Ivaschenko, 2006).

Thus, at conduct of benchmarking one’s attention can be paid to the improvement of external environment, where there are working companies. In this case we can speak about so-called “benchmarking of business conditions”. However if the bigger attention is paid to the improvement of internal environment concerning separate organizations and the purpose of benchmarking is its propaganda among small and medium-sized enterprises, we should refer it to “benchmarking of enterprises”. And if company puts an emphasis on the problems of competitiveness arising within the framework of one branch and if the possibility of working with partners from related branches is provided, we should speak about realization of “functional benchmarking”.

The last approach dramatically differs from above-stated ones due to the fact that it was developed on mesolevel, i. e. not on the level of organizations, but on the level of regional government authorities. In such a case the focus in typology is made on the features of functioning of small and medium-sized enterprises and that is why it practically can not be applied to such large corporations as oil and gas companies. However, to our mind, there always can be exceptions. For example, it can be partially realized in terms of development of new areas with underdeveloped infrastructure, for formation of which the part of task is being of political nature and can not be solved without attraction of government authorities. In this case the applying of benchmarking technologies can be feasible in regard of conditions for oil and gas business. Moreover, the functional benchmarking can be partially realized in terms of creation and development of markets of auxiliary and service production companies appeared as a result of performance of large-scale projects on outsourcing by some oil and gas companies, as well as in terms of emerging on such markets of foreign organizations.

In addition to the presented approaches to typology of benchmarking in some other researches one can find references to the following types (Bagiev & Bogdanova, 2011):

- global benchmarking - extension of strategic benchmarking that also includes associative benchmarking;
- associative benchmarking – benchmarking conducted by organizations being participators of some limited benchmarking alliance;
- expenditures benchmarking;
- benchmarking of characteristics;
- client benchmarking;
- operational benchmarking.

Besides, sometimes it can be rather difficult to explicitly identify benchmarking in companies with its definite type, for there are examples of complex using of different types of benchmarking.

The national oil and gas companies are in most cases presented with complex vertically-integrated structures with multilevel management system. Schematically the structure of such companies can be illustrated in the following way (Figure 5). The complexity of oil and gas companies’ structure is largely defined with the problem of clear choice of preferred type of benchmarking for its realization. Hypothetically the solution of this problem can be performed with due consideration of the present factor, the stage of benchmarking evolution in particular organization and the conditions for its realization. Thus, if benchmarking is being on formative stage (what is related to the majority of national oil and gas structures) and the conditions for its realization are quite

severe (for instance, the absence of informational transparency of similar companies), during selection of benchmarking type one should prefer internal benchmarking of indicators and/or benchmarking of processes. However, this should either leave open the possibility of realization of, for example, general benchmarking concerning general management functions. In some degree a company can use also the separate elements of strategic benchmarking, as the main strategic directions of companies' development are public information and, as a rule, can be found on their web-sites.

Taking into account all the above-stated data, in respect to Russian oil and gas companies we can suggest the following author's vision of possibility of using the general types of benchmarking on different levels of administrative hierarchy (Table 1).

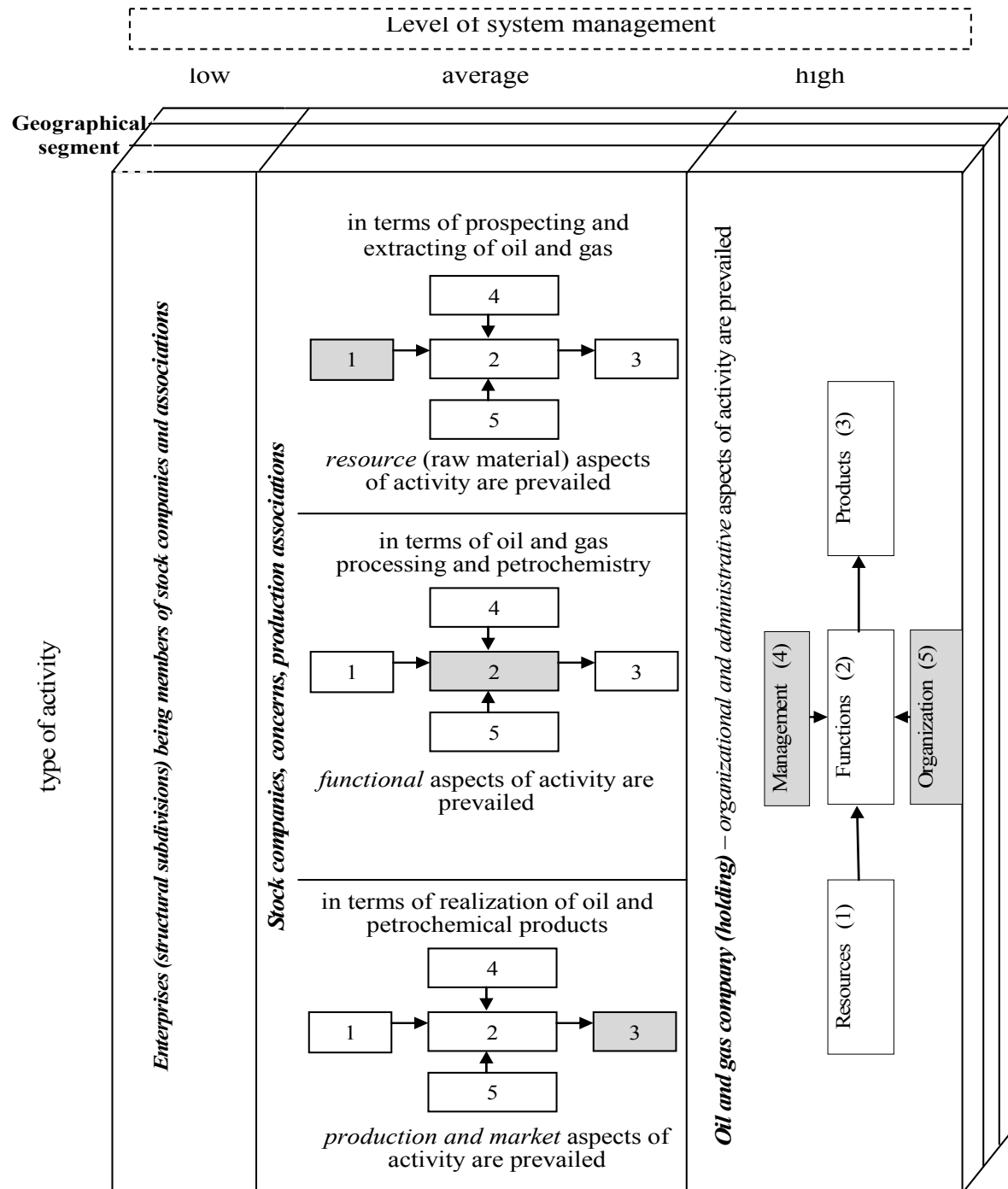


Figure 5. The structural diagram of oil and gas company

Table 1. The possibilities of realization of benchmarking depending on the level of administrative hierarchy of oil and gas company

Type of benchmarking	The level of administrative hierarchy of oil and gas company		
	Holding	JSC / LLC being members of holding	Management level
	1. Depending on geography		
Internal	+	+	+
External competitive	+	+	-
External non-competitive (functional)	+	+	-
International	+	-	-
	2. Depending on status		
“Informal”	+	+	+
“Formal performance”	+	+	+
“Formal best practice”	+	+	+
	3. Depending on comparison object		
Internal	+	+	+
Competitive	+	+	-
Functional	+	+	+
General	+	+	-
	4. Depending on comparison subject		
Benchmarking of indicators	+	+	+
Best practice benchmarking	+	+	+
Strategic benchmarking	+	+	-
	5. Depending on the model of carrying out of comparison		
“Comparison one to one”	+	+	+
“Comparison in group”	+	+	+
“Anonymous comparison with help of mediator”	+	+	+
	6. Depending on the level of benchmarking realization		
Benchmarking of conditions for business	+	-	-
Benchmarking of enterprises	+	+	-
Functional benchmarking	+	-	-

5. Discussion

Further to research it is practical to suggest author's approach to typification of benchmarking. Particularly, in case of the present structures it will be reasonably to talk about existence of corporate-wide benchmarking that should be the prerogative of top-level and can combine strategic, international and global types of benchmarking. At such an approach there is a possibility of conducting and further using of results of comparative analysis in both terms - of indicators and of processes. Along with this the general internal benchmarking can also be a part of corporate-wide benchmarking.

However, on the level of separate business-units or structural subdivisions the realization of mentioned types of benchmarking is quite difficult. In this case we should talk about “local” or (in particular cases) “applied” benchmarking. The realization of specified benchmarking can be performed in the form of industry, competitive or internal comparative analysis.

In addition, taking into account the data of Figure 5, it would be logical to suppose that there is a possibility of detailed elaboration of existing benchmarking typology depending on object of comparison, and specify it with due consideration of the role of structural subdivision in manufacturing chain. It's not fortuitous that in suggested structuring of oil and gas companies the basis is made with the approach to formalization of internal organizational environment. The presentation of a company in the form of block structure allows us to highlight the key points and transform categorial administrative staff machinery with consideration of many factors (field of activity, management levels, etc.).

6. Conclusions

Russian oil and gas companies are being complex objects, as in the majority of cases they are built on the principle of vertical integration. The specific conditions for functioning and they significance for Russian

economy prove the necessity and feasibility of using benchmarking. The suggestion of authors about integration of the present concept into general management of company offers the possibility of adaptation not only of theoretical, but also methodic, informational and organizational grounds to the specific features of functioning of branch subjects. In particular, there is a need for elaboration and realization of matters of benchmarking implementation program's mechanism of formation. Russian conditions for conduct of business complicate the carrying out of comparative procedures due to companies' informational privacy and high probability of misrepresentation of information received from different sources. The further author's researches will be dedicated to the search of solutions of these problems.

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