CRITERIA BASIS FOR CHOOSING THE PREFERRED STRATEGY OF THE ENTERPRISE DEVELOPMENT

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ABSTRACT

The goal of this article is to develop methodological tools that would allow to choose the most acceptable option of the strategic development of the company from several alternatives guided by formalized criteria. For this purpose, the following tasks have been set and solved successively in the paper: a review of existing general theoretical tools for choosing from the strategic alternatives has been provided, the need for formalization of the selection procedure has been proved, the possibility of correlation between the company's targets and criteria for choosing the strategy has been shown, the set of criteria for choosing the corporate strategies has been proposed, the calculations based on the data of a specific petrochemical holding have been presented. The possibility of using multicriteria optimization methods for solving the indicated problem is shown in this paper. For this purpose, a target model has been formed, the choice of the model form and the criteria for inclusion in it has been justified, and it has been tested.

Key words: multicriteria, choice, strategy, option

INTRODUCTION

There is a fairly wide range of tools that allow justifying the preferred vector of the strategic development of the company at various levels of the management hierarchy at the moment. In most cases, a detailed strategic analysis of the internal and external environment precedes the solution of such provisional issues; the selection of the preferred option of the basic corporate strategy of the enterprise (SWOT analysis, SPASE matrix, Thompson-Strickland matrix, etc.) is being usually based on its results. A portfolio strategy is also being developed at the corporate level; there are many methods of portfolio analysis for its development in the theory of strategic management (BCG, McKinsey, ADL, etc.). These portfolio tools can be easily transformed taking into account the specifics of the activity of the economic entity under analysis, its place in the general management hierarchy, etc. A synopsis of the existing methodological possibilities of justifying an option of the competitive strategy (M. Porter matrix, building a competitive profile, SPASE matrix, etc.) can be implemented in a similar manner. However, these tools are of general theoretical (methodological) nature and are intended primarily for the implementation of the analytical function of strategic management, while the decisions on the choice of the vector of the further development of the company are normally taken by expertise at strategic sessions. At the same time, despite their ease of use and high decision-making speed, expert evaluations have a significant drawback which is a high degree of subjectivity. Formalization of separate stages of strategic choice can be recommended to reduce it, which will be discussed in this paper.

METHODS

As already mentioned, the methodological approaches specified in the introduction allow forming a set of options (alternatives) of the strategy of the company development, where the choice of preferred one is a rather difficult task. From the position of the authors' logic, the solution to this problem should initially be based on the general concept of strategic management, with one of the fundamental postulates of which being proposed to consider the understanding of the definition of the "strategy" as "... a means of achieving the targets of the firm...". In this regard, it is feasible to determine the preferableness of a particular option from the standpoint of its greatest contribution to achieving the targets set at the initial stages of the strategy development. At the same time, it should be noted that the company can have a large number of strategic targets. Confrontation between some of them can be often observed. Besides, different targets may have different significance for the company at a particular stage (in particular market conditions) of its development. It is proposed to consider the structuring of targets in terms of the levels of decision-making in the organization – substantial, corporate, competitive and functional in order to solve this task.

In this case, as follows from one of the SMART principles, each goal must be specific, be largely described in quantitative figures. Qualitative targets are the exceptions. However, as the practice of target setting shows, most qualitative targets can be quantified, i.e. they can be described by a set of quantitative parameters through competent decomposition.

Regarding the strategic targets, the following multipurpose hierarchy of targets for commercial organizations can be proposed. It is recommended to set a master target to maximize the company's market value at the general corporate level. Alternatively, there can be an indicator reflecting the difference between the book value and the market (efficient) value of the business. This choice is determined by the fact that the cost indicators of the enterprise, unlike the traditional profitability indicators (profit, cash flow, etc.), allow to provide for a necessary time horizon of planning to be formulated in the development of the strategy and are more complex. Moreover, as practice shows, the use of such indicators in the target setting can help owners to solve the agency conflict by using them as key indicators for the formation of a motivation system for hired managers.

If the company under study is multiprofile or multimarket, it is also necessary to ensure the balance of the product-market portfolio at the corporate level, along with ensuring the growth (maintaining) of the value of the organization. There is a lot of information about the need to ensure the balance of the corporate portfolio in various sources, but it is difficult to find a formalized approach that would allow to evaluate it using specific parameters. If, according to the authors' logic, understanding of the balance is approached from the standpoint of filling the portfolio with strategic business units (SBU) located at different stages of their life cycle, then it is proposed to measure the degree of balance of the corporate portfolio (BCP) as follows:

$$\tilde{N}_{\text{ÏÏ}} = R_{\text{â}}^{\text{ÏÐ}} * q * d, \qquad (1)$$

where is profitability of SBU in the corporate portfolio;
q is market growth rate;
d is share of SBU in the corporate portfolio

This indicator is calculated based on the concept of the life cycle of the product/company, which is fundamental in the construction of almost any portfolio matrix – in particular, in this case, the balance was calculated based on the basic portfolio tool – the matrix of the Boston Consulting Group (BCG). The indicator can be complicated if more sophisticated portfolio tools are considered as a methodological basis for its definition. However, the subject matter of the proposed approach to the formalization of this qualitative "balance" criterion will not change in this case.

The key competitive target of the company can be formulated in a general way as the need to increase the level of competitiveness or the status of the organization in comparison with competitors. This complex indicator can also be calculated using various methods. In particular, in case of relying on building a competitive profile of the company, the technology for determining the specified indicator will include several computational and analytical steps. For example, it is initially recommended to carry out a comparative evaluation of the company with the strongest (closest) competitors by a certain set of indicators, which may include the following:

1. Sales volumes for target products (market share).
2. Prices for main products.
3. Level of the service provided to the buyer.
4. Number of assortment groups.
5. Company image.
6. Other

The resulting estimates that have different units of measurement should be subjected to the normalization procedure, and then the value of the resulting competitiveness indicator should be found, either by simple summation of the obtained data, or by weighing these estimates.

Regarding the functional targets, it must be noted that the specifics of their formulation are largely determined by the role of the functional level in the strategic planning system, and in particular by the fact that it is a transitional link in the sequence "strategy development – strategy implementation". Taking into account that the strategy is normally developed "downwards", it is indisputable that the weight of the targets of this level in the general management model by targets will be relatively small. At the same time, in the context of a large number of functional areas within a single company, and hence a significant number of corresponding targets, only the most important ones should be included in the general model of choosing the options of the organization development in order to avoid its excessive overload.

The significance of functional targets can be determined at the stage of strategic analysis of the internal environment, in particular at the stage of constructing a diagnostic model and determining the weight of the parameters of a functional unit. For example, for organizations whose production process is described by high labor intensity, the productivity (efficiency) of labor can serve as the key indicator for formulating the functional target. It is always important for nearly all the organizations to set financial targets, which at the functional level are usually formulated in terms of sufficiency of proprietary financial resources. The indicators of the prime cost of the target products can also be included in the model, which describe the efficiency of the functional departments and units from the standpoint of the resource approach. However, this indicator should be included in such models very carefully, since the issue of its level in the

general administrative hierarchy is controversial. Reducing costs can be a general corporate target, reducing costs relative to competitors can be a competitive target, and cost optimization in terms of functional areas can be a functional target, respectively.

Following the study, it makes sense to suggest that the issue of choosing a strategy based on the comparison of alternatives on the principle of the best contribution to the implementation of the above multilevel targets can be solved through the use of multicriteria optimization tools. In this case, it is feasible to form the list of criteria from the indicators used in target setting. In the implementation of this approach in order to choose the most preferable option of the strategy, it is expedient to set the objective function F, which can present the following correspondence:

$$\mathrm{F}(\mathrm{V}_b, B_{pp}, C, N_f, PC) \rightarrow \max, \quad (2)$$

where *Vb* is the value of the business;
Bpp is the balance of the product portfolio;
C is the comprehensive indicator of the competitiveness of the organization;
Nf is the need for additional funding;
PC is the prime cost of the target products.

According to the theory of managerial decision-making, two types of models can be used to build an objective function: additive and multiplicative. From the author's point of view, the choice of the form of dependence of the target indicator on the complex of the parameters, which describe it, does not have fundamental importance for this study. Besides, it seems that the choice of the model should not have any impact on the final result. An example of building an additive model using the target criteria justified above is given below:

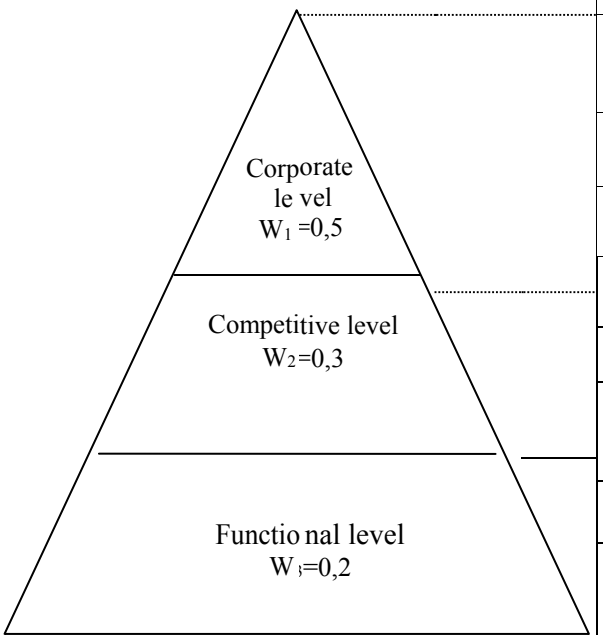
$$F = W_1 \left[w_{vb} * v_b + w_{B_{PP}} * B_{pp} \right] + W_2 \left[w_c * C \right] + W_3 \left[-w_{N_f} * N_f - w_{pc} * PC \right]$$

where w are specific weights of the relevant criteria,
W_1, W_2, W_3 is weight (importance) of the relevant level of strategic decisions.

The advantage of using the additive model is that it allows not only to operate with quantitative and qualitative indicators, but also to take into account their direction. The indicators (criteria), which must grow (tend to maximum) to ensure the achievement of the target, are put into the model with a "plus" sign, while the ones that tend to minimum are put in the model with a "minus" sign. For example, in our case, model 3 with a negative sign will include criteria such as "need for additional funding" and "prime cost of the target products", while the remaining criteria will be put in the calculation with a "plus" sign.

It is noteworthy that in this situation, the model allows to take into consideration not only the nature of the influence of the parameter on the objective function (positive or negative), but also the weight (significance) of each indicator for achievement of the target. At the same time, the specific weight of each criterion in the model can be found in different ways – for example, by their ranking depending on the level of their corresponding goals in the corporate managerial hierarchy (Figure 1)

Figure 1
EXAMPLE OF DETERMINING THE SIGNIFICANCE (WEIGHT) OF THE CRITERIA



Criterion	*Rank*	*Weight*
Market value of the business	2	2/3 = **0.67**
Balance of the corporate portfolio	1	1/3 = **0.33**
Sum of the ranks	3	
Company competitiveness	1	1/1 = 1
Sum of the ranks	1	
Need for additional funding	2	2/3 = **0.67**
Prime cost of the target products	1	1/3 = **0.33**
Sum of the ranks	3	

RESULTS

The proposed approach was tested by the example of the data of a petrochemical holding company that is part of a large Russian vertical oil and gas corporation. The key direction of the company's further development – growth – was identified after conducting a detailed strategic analysis of the internal and external environment of this holding. A more detailed study of the options of development allowed to focus on three key alternatives:

1. Increasing the depth of natural gas liquids (NGL) processing through introduction of a new gas separation technology (strategy of intensivegrowth);
2. Increasing volumes of NGL processing through the increase in production capacity (strategy of extensive growth);
3. Direct integration as creation of an alliance with Polymer LLC (strategy of vertical integration).

It is obvious that it is quite difficult to choose one of the presented options. Each of the options assumes significant funding, a long implementation time and a high risk of loss in case of the wrong choice. The criteria listed above were calculated in order to make a choice (Table 1). It must be noted that the use of the forecast data in calculations is the most valuable part of this method; their receipt is also of a probabilistic nature and requires significant preliminary analytical work.

As these tables show, following the results of application of the above model, the most preferred option of the development of a petrochemical enterprise is the one that assumes increasing the volumes of processing of NGL through increase in the production capacity. At the

same time, it must be noted that this alternative was found the best without taking into consideration the significance of the criteria included in the model. The choice could radically change with a serious difference in the criteria weights.

Table 1
RESULTS OF MULTICRITERIA OPTIMIZATION

Basic strategy option	Criterion					F
	Value of the business ↑	Balance of the product portfolio ↑	Competitiveness of the enterprise ↑ C	Need for additional funding ↓	Prime cost of the target products ↓ PC	
1	2	3	4	5	6	7
Increasing the depth of NGL processing through introduction of a new gas separation technology (strategy of intensive growth)	Score - 1 Normalized value = 1/1=1	-1	0.14	-1;	-1	0.41
Increasing the volumes of NGL processing through the increase in production capacity (strategy of extensive growth)	Score – 0.4 Normalized value = 0.4/1=0.4	0	1	-0.2	-0.1	0.47
Direct integration as creation of an alliance with Polymer LLC (strategy of vertical integration)	Score – 0,1 Normalized value = 0.1/1 = 0.1	-0.25	0	+1	0	0.16

It must also be noted that this approach does not exclude the possibility of forming a combined strategy, because the compared options do not contradict but rather complement each other, to some extent. In this case, the model can be useful for determining the sequence and timing of the start of implementation of each option within a comprehensive strategy.

DISCUSSION

There are several schools of strategic management at the present stage of development of the theory of strategic management, where various approaches to the formation and selection of preferred alternatives of the implementation of strategic decisions are specified. Classical theoretical and methodological tools of strategic analysis and management are taken as a basis in the development of scientific thought in this paper (Ackoff, 1981; Albert, 1983; Ansoff, 1979; Drucker, 1974; Thompson, 1998). Assumed that the choice of the preferred strategic alternative is a managerial decision implemented at the top level of management in companies, various methods of developing and making decisions are considered (Plenkina, 2009; Kuzin, 2001; Zak, 2013; Nogin, 2008; Keeney, 1981). Application of multi-criteria optimization methods was substantiated as a basic approach (Marler, 2004; Mustakerov, 2012; Reznichenko, 1991; Steuer, 1992; Lyaskovsky, 2007; Biryukov, 2001; Zak, 2014; Lotov; 2008; Yarygin, 2013; Berezovsky, 1986). A comprehensive approach to the solution of the above problem was proposed, based on the consolidation of approaches from strategic management and the theory of managerial

decision-making. This approach will contribute to increasing the degree of objectivity in the choice of strategic alternatives. In this case, use of expert evaluations cannot be ruled out, which are very popular in conducting strategic sessions in organizations. However, the efficiency of decision-making is expected to increase with the preliminary preparation and use of this approach.

CONCLUSION

It must be noted in the conclusion that the goal of the study outlined in the introduction has been achieved. The paper offers the author's approach to selecting the most preferred option of strategic development of the company taking into consideration various targets. A methodical approach is identified in this study, based on the conceptual vision of the process of strategic planning and providing for the formation of a set of evaluation criteria of choosing a strategy based on the results of the target setting. It must be noted that the suggested set of criteria is multipurpose in nature, since the consideration of the level of making the relevant strategic decisions is proposed as the basis for its formation. However, it can be easily transformed, just like the procedure for calculating individual criteria in its composition. For example, in the continuation of the study, it seems reasonable to consider not only the product segment of the corporate portfolio, but also the market one, in order to evaluate its balance. It is also feasible not to take a simplified BCG model as a basis, but rather the improved ones, providing for the complex criteria built on the basis of the analysis of the stage of the product life cycle, the market, the industry, and the prospects for their further development, etc. It is also proposed to adapt the approach presented in the article to strategic decision-making at the level of development of the competitive (business) strategy. In particular, an adjustment of the set of evaluation criteria will be required.

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