

## Strategy techniques for the times of high uncertainty\*

Igor Gurkov\*\*

*This paper sets out to propose the techniques that enable corporations to develop and to implement robust strategies under conditions of severe uncertainty. Through the correction of the traditional definition of stakeholders I found the general algorithm for achieving robustness in corporate strategies. This algorithm includes: (1) the clear definition of a limited set of the types of stakeholders, (2) the simplification of the sets of stakeholders' claims and discovery of intrinsic benefits common for all stakeholders of a particular type, (3) defining the space of acceptance of corporate performance for each type of stakeholders, (4) finding a non-empty intersection of such spaces for all types of stakeholders. The use of these techniques is illustrated by the new strategy of LUKOIL – one of the major publicly traded oil companies.*

*Der Artikel beginnt mit dem Vorschlag der Methoden, die die Kooperation bei der Entwicklung und der Implementierung von stabilen Strategien unter der Bedingung der hohen Unsicherheit ermöglichen. Durch die Verbesserung der traditionellen Definition von Interessengruppen fand ich den allgemeinen Algorithmus, um die Stabilität in kooperativen Strategien zu erreichen. (1) Die klare Definition einer begrenzten Reihe von Typen der Interessengruppen. (2) die Vereinfachung der Anspruchsgruppen der Interessengruppen und die Entdeckung der intrinsischen Gleichheit der Nutzungen für alle Interessengruppen eines bestimmten Typs, (3) Definition des Raums der Akzeptanz von der gemeinsamen Arbeitsleistung für jeden Typ der Interessengruppen, (4) die Suche nach einer nicht leeren Intersektion vom Raum für alle Typen der Interessengruppen. Die Verwendung der Techniken wird anhand der neuen Strategie von LUKOIL, einem der größten Erdöl-Unternehmen in öffentlicher Hand, dargestellt.*

*Keywords: corporate strategies, uncertainty, robustness, strategic planning*

---

\* Manuscript received: 29.01.10, accepted: 25.02.10 (1 revision)

\*\* Igor Gurkov, Prof., Department of Strategy and Organization, State University – Higher School of Economics, Russia. Main research areas: Competitive and corporate, strategies organization design. Corresponding address: igor.gurkov@yahoo.com.

## 1. Introduction

The aftermath of the financial crisis is characterized by high uncertainty in local and, especially, international markets. Some large corporations frankly acknowledge this situation in their strategy statements. For example, LUKOIL – a large non-state publicly listed oil company with 1.1% of global oil reserves and 2.3% of global oil production – recently stated as the major reasons for the revision of its strategic program:

- Volatility and growth in risks,
- High levels of uncertainty in the world hydrocarbon markets,
- Lack of clear view concerning demand and supply under current market conditions,
- Significant changes in gas (dynamic development of unconventional gas source market segment) and in oil market development prospects (LUKOIL 2009a:3).

However, such statements are rare, as most companies are simply unable to formulate the definite list of factors that affects the business – corporate analysts develop separate lists of important factors while intersection of such lists can be characterized as the empty set. We may call such situations as situations of “high equivocality” of the environment (Burton/Obel 2003) and see in this case that the companies are under severe uncertainty.

In such conditions many “traditional” strategy techniques used in designing competitive and, especially, corporate strategies, are losing both methodological rigor and practical usefulness. Thus, the goal of this paper is to critically evaluate the applicability of “traditional” strategy techniques for conditions of severe uncertainty and to propose the methodological foundations for development of the techniques suitable to assist corporations to escape situations of high equivocality.

## 2. “Classical” strategy techniques and their applicability in situations of severe uncertainty

Strategy is about making decisions. Classic decision theory (French 1988) distinguishes between three sets of problems:

- Decision-making under certainty – situations in which the decision-maker has complete knowledge of the direct consequences of the decision selected by the decision maker.
- Decision-making under risk – situations in which it is assumed that the consequences of the decisions may vary, but they follow some kind of probability distribution and that the decision maker has full knowledge of this distribution.

- Decision-making under uncertainty – situations in which the decision maker has an idea of which types of consequences the decision will cause, but has no idea about the probability of foreseen consequences occurring.

I should introduce here the fourth class of problems – decision-making under severe uncertainty – a situation in which the decision maker has incomplete knowledge on the types of consequences the decision will have, but suspects that some consequences may lay far beyond the conceptualization of the decision-maker.

Existing strategy techniques may be applicable for the first three types of situations. For example, corporate portfolio models, either standard or tailored (Segev 1995) are based on the historical data of several known and carefully measured parameters (market growth rates, market positioning etc.). The usual suggestions of portfolio models (invest, hold, harvest) assume that the consequences of such decisions are completely known to the decision-maker.

Decision-making under risk is incorporated in strategy techniques by various single or multi-stage game models. In such models the possible reactions of the parties, affected by the decision (especially the reaction of competitors), are presented as either single states (for example, strong negative reaction, weak reaction, no reaction) or as a continuum of reactions with a known distribution (usually normal distribution). More importantly, the end points of such continuum are assumed to be known (for competitors the end points may be, for example, “going out of business” or “merger with a more powerful ally”).

Finally, situations of uncertainty are incorporated into strategy techniques by different forms of scenario planning. Technically, scenario planning is built on two “classical” principles of dealing with uncertainty. First, under Laplace’s principle of insufficient reason all created scenarios are accepted as equally likely. Next, under Wild’s maximin principle (Wild 1945) within each scenario the strategists are trying to identify actions (strategies) which minimize the possible damage to the company. Finally, the most common strategies that are present in each scenario are labeled as “robust strategies.” However, scenario planning, although it acknowledges the uncertainty (Lindgren/Bandhold 2009), it again deals with a defined sets of parameters. Even if the distribution of such parameters may be unknown, the parameters themselves should prove to have a clear impact on the company future, and the sets of such parameters should also be limited in order to create an acceptable number of scenarios. We may see that under conditions of severe uncertainty the scenario planning simply cannot be applied by technical reasons – it produces an infinite number of scenarios in which robust strategies cannot be recognized.

So far I demonstrated that existing strategy techniques are irrelevant in conditions of severe uncertainty (an undefined number of factors that affect the company’s future and an unknown distribution of such factors). Thus, the very

existence of the strategy process in the firm is put at stake. At the same time, in conditions of severe uncertainty there are great external and internal demands for acceptable types of corporate actions. Thus, we should go deeper into the structure of strategy process in order to identify the methods that will assist corporate decision makers in keeping the strategy process running and in producing acceptable types of corporate actions.

### **3. Strategy process under severe uncertainty – steps towards achieving corporate robustness**

It has been demonstrated that the whole strategy process may be viewed as a formulation and realization of a set of corporate goals (Gurkov 2009). The initial point in the strategy process is setting the objective of a corporation. It has been proposed that under severe uncertainty, when the uninterrupted creation of shareholder value cannot be assured, the objective of a corporation is robustness (Dorward/Weideman 1981). The technical definition of robustness is described as “the degree to which a component or system can function correctly in the presence of invalid inputs or stressful environmental conditions” (IEEE 1991). It is possible to say that a system, organism or design may be considered to be “robust” if it is capable of coping well unpredictable variations in its operating environment with minimal damage. Over time the term and the concept have moved far beyond their application in natural sciences (mathematics, biology) and started to be productively used in social sciences (Flueler 2006; Hansen/Sargent, 2008)

What may make the corporation robust? The solution comes from a partial revision of stakeholder theory. In my view, R. Edward Freeman, the godfather of the stakeholder theory in strategic management, made a clear error by keeping for twenty years the definition of a stakeholder as “any group or individual who may influence or is under influence of firm’s actions” (Freeman et al. 2004:65). This situation changes if we define the stakeholder as not merely the “person affected by company’s actions,” but an investor of a particular resource into the firm.

Presenting stakeholders as investors has two visible advantages. First, we may clear delineate stakeholders from actors of strategy process. For example, competitors cannot claim to be the stakeholders as they do not bring any resources for the corporation – they are actors of strategy process, who are trying to deprive the firm of a particular resource. Thus we may talk about competitors in the markets for goods and services, competitors in the labor market, competitors in financial markets and, finally, competitors for political patronage or public admiration.

Secondly, we are able to identify the four major classes of stakeholders – shareholders, employees, customers, governmental authorities. Shareholders

bring into the company the “initial” capital that helps to start the operations and latter this capital investment should be reproduced and expanded by distribution of dividends and retained profits. Employees bring the “human capital.” Customers who routinely exchange money into goods and services of the firm bring in working capital. Finally, in regulated industries the very existence of the firm is impossible without regular injections of “administrative resources”. For example, the very access to pharmaceutical markets is totally built on permissions of special governmental authorities, access to capital markets requires compliance with requirements of financial reporting and transparency of business, access to natural resources is not only essential for mining, but also for telecommunication companies (through the licensing to use of the public airwaves), and finally the business cycle of major American engineering companies coincides with the change of the winning party in presidential elections, along with other examples. When a private company competes with a state-owned company political patronage becomes a vital part of the strategic resources. Thus, the corporation may be robust only if it continuously ensures the interrupted supply of the listed resources – initial capital, working capital, human capital, and patronage.

The interrupted supply of resources is ensured as long as stakeholders receive satisfactory “rate of return on their specific investments”. Shareholders routinely evaluate the ratio between total return and total risks, employees evaluate the ratio between their remuneration and their efforts, customers assess the relationship between the quality (perceived use value) and the price of goods and services of the firm. Finally, authorities look into the relationship of social benefits and social costs resulting from company’s operations.

In “normal” circumstances the company is inclined towards the minimization of stakeholders’ claims by using various manipulative techniques (Frooman, 1999). It may also use “stakeholders mapping” (Scholes 1998) in order to identify the most powerful stakeholders whose claims should be satisfied at the expenses of other, less powerful stakeholders (the power of a particular stakeholder may be viewed as a relationship between the quasi-rent of the firm and the quasi-rent of a stakeholder). However, I cannot recommend either of these techniques for the times of severe uncertainty. Manipulative techniques are not only time-consuming, but may be dangerous as we cannot be sure that stakeholders will maintain their previous “level of tolerance” for manipulations during times of uncertainty. Stakeholders mapping may also lead to serious mistakes as relative power of different types of stakeholders can change practically overnight. For example, an unexpected labor strike against the firm may bring more public attention to claims of employees and, in many cases, may trigger cancellations or complete revision of corporate restructuring plans already approved by shareholders. Thus, to ensure the uninterrupted supply of key resources from stakeholders a firm should give up the technique of minimization of

stakeholders' claims. Instead, it should try to maximize some claims of all types of stakeholders.

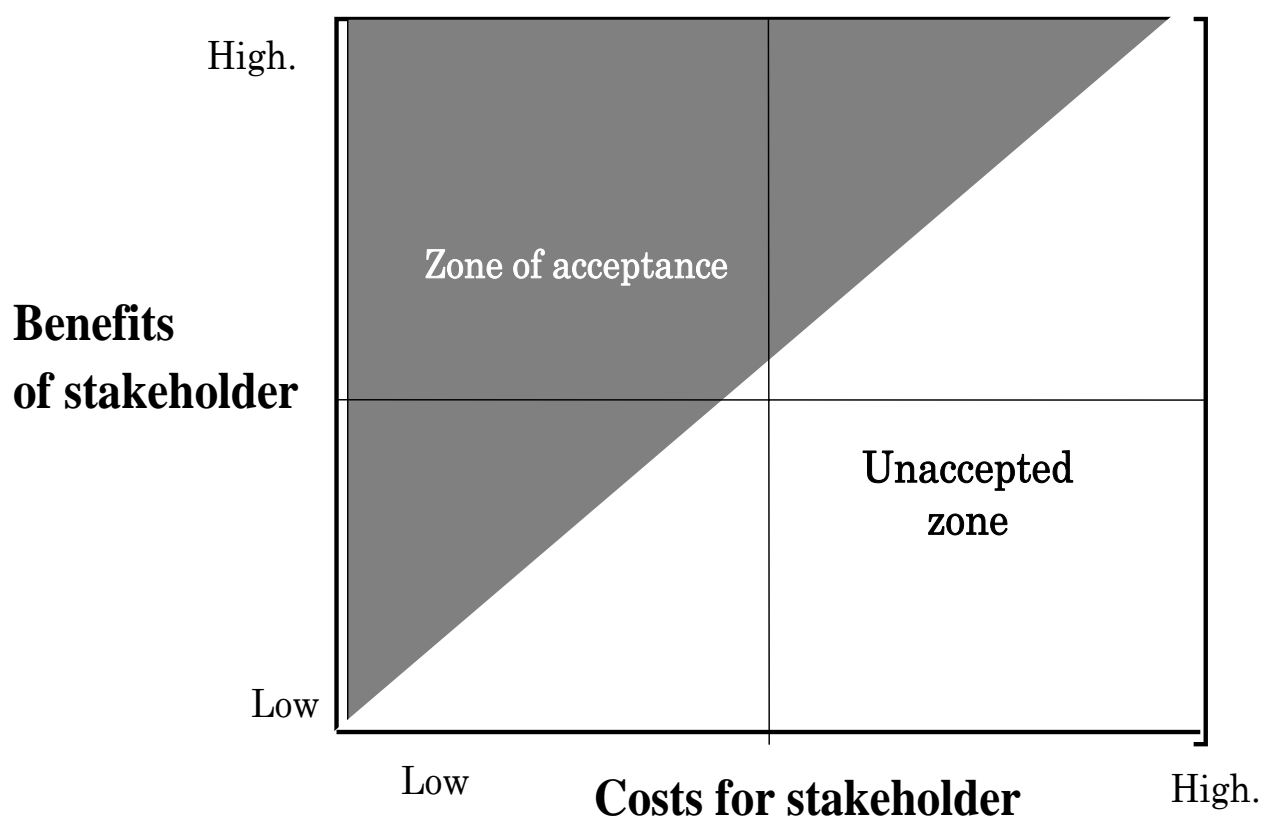
Pursuing simultaneous maximization of heterogeneous and often contradictory parameters may be a tricky problem. However, companies may simplify this problem in two ways. First way is the simplification of the sets of stakeholders' claims. Systematically, the claims of each type of stakeholders can be presented by an exhaustive list of "costs" and "benefits". For example, costs of company's ownership may be viewed as

- risks of fall in assets' value,
- risks of loosing control over assets without proper compensation,
- risks for personal reputation resulting from owning particular assets etc.,

while benefits from ownership may be presented as

- dividends,
- liquidity of assets,
- interest received on assets held in depositary operations,
- reputation benefits etc.

*Figure 1. "Acceptance zone" for corporate strategies aspiring towards robustness*





Similarly, benefits of customers, employees and government (public) authorities are also traditionally taken into account in their most detailed form. By contrary, under severe uncertainty the company should address the most fundamental, intrinsic benefits for each type of stakeholders.

Understanding which benefit is intrinsic comes from “evaluation of the needs of lead users” – the routine techniques in new product development that has not yet been applied in stakeholder management and strategic planning. Thus, ideally the sets of mutually pursued claims is decreased into dimension of four – one intrinsic benefit for each of the four types of stakeholders. Again, for each type of stakeholders we may identify the “acceptance zone” (see Figure 1).

Finding the intrinsic benefits of stakeholders and identifying the acceptance zone may be viewed as the first step in achieving corporate robustness. The second step in achieving corporate robustness may be called as “de-computation” of the solution. Under severe uncertainty we cannot expect to build an optimization model that gives us a single solution. Instead, we may talk about the vaguely defined spaces of infinite number of acceptable solutions for each type of stakeholders. The art of management is to find a non-empty intersection of those four spaces.

#### **4. Intuitive use of the new strategic techniques – an example of LUKOIL**

Let us return to our initial example of LUKOIL. Since October 2008, the company has faced several challenges that worsen its position against some of its stakeholders:

- The fall of world prices for oil led to the fall in net income per share by 51.4% that obviously worsened the listed company’s relations with shareholders. Taking into account the dominance of minority shareholders in the corporate ownership structure this decline created the additional risk of a hostile takeover.
- The fall of net profits resulted in decline of taxes paid (by 50% over 9 months of 2009). Being the largest taxpayer in Russia in 2008 (the total amount of taxes and charges was in 2008 about US\$ 38 billion) the fall in taxes paid obviously worsened the relations between the corporation and the federal government. This resulted in higher pressure from the governmental anti-trust authority, lost contracts with the state gas monopoly “Gazprom” and in other unpleasant consequences for the company.
- At the same time, the company increased the refining (by 11.3%) and improved sales of oil products in local markets. It also avoided massive personnel lay offs (LUKOIL 2009b).

In December 2009, LUKOIL announced its new strategy for 2010-2019. The cornerstones of the strategy will be:

- Complete revision of the previously announced plans for expansion of extraction capacities. Instead of increase by 30% the volume of oil production will be stabilized.
- The overall investment budget in 2010-2019 will be lower by 20% than in the previous plans.
- Investments in extraction will be oriented towards new projects, in refining - towards modernization of existing production sites in Russia.
- The volume of accumulated free cash flow should grow by four times (LUKOIL 2009a).

Additional unofficial announcements promised an increase of the share of dividends paid from net profit from current 15% to 30% by the mid-2010s. At the same time, LUKOIL continued to seize various opportunities in foreign markets. Just in December 2009 LUKOIL succeeded in two large deals:

- the purchase from BP plc for US\$1.6 billion the remaining part (46%) of a joint-stock company LUKARCO, involved in Kazakhstan pipeline system;
- together with Norwegian Statoil, LUKOIL won the competition for the exploration of the Iraqi oil field “Western Qurna-2”. In that competition LUKOIL and its partner beat out the consortium Petronas made up of BP, Chinese CNPC and French Total.

We may see that LUKOIL used (albeit partially and intuitively) the proposed techniques of achieving robustness under extreme uncertainty. Indeed, it tried to overlap in its new strategy the intrinsic benefits of shareholders (dividends), governmental authorities (higher taxes), employees (perspective stability of workplaces) and local customers (stability of supply from existing sites).

## 5. Conclusions and suggestions for further research

The proposed sequence of actions (identifying the stakeholders, definition of their intrinsic benefits, and designing the strategies that simultaneously increase the identified benefits) cannot be called as fully elaborated strategy techniques, but rather as a proposal for further research into the strategy process. The weakest point in the proposed actions is the definition which benefits of each type of the stakeholders are viewed by those stakeholders as intrinsic. Under severe uncertainty usually there is neither sufficient time nor resources to perform in-depth studies of relative importance of stakeholders' claims and aspirations.

However, even in its present form, the proposed methods have several visible advantages. First, the execution of the proposed analytical steps necessarily



leads to a reduction of equivocality of the environment – corporate strategists decrease the number of unknown factors and put in concordance their view of the current situation and the nearest future. Second, corporate strategists are able to identify the “subjectively acceptable zone of operations” – actions that will receive positive responses from the stakeholders. This consequently leads to the third advantage – higher chances of “selling” the planned actions to stakeholders. As the planned actions are properly “sold” and approved, we may expect that the corporate executive will demonstrate higher persistence in implementation of such actions. Such persistence, rooted in the “hidden understanding of the situation” is a better remedy against strategic disarray in the times of severe uncertainty.

Strict plans and continuous teamwork facilitated the realization of synergies. In this process the main difficulty was quantifying synergy potentials and the realized synergies to ease the control process. The functional task forces were formed by specialists from specific areas, who produced many new ideas. This acquisition illustrated well the process of a symbiotic integration: the demand for strategic dependence was as much important as the need for organizational autonomy. The parties aimed at exploiting not only the reciprocal benefits but also to promote a mutual learning process. The interactions between the two companies have gradually increased as the objective was to stimulate knowledge transfer and integration of the results in the new operation.

The next stage of our research should be to formalize the proposed principles of corporate strategy development under extreme uncertainty into ready-to-use instruments for corporate analysts and decision-makers.

## Note

This work was implemented with support of the research grant of the State University – Higher School of Economics No. 09-01-0011.

## References:

- Dorward, N./Weidemann, P. (1981): Robustness as corporate objective function under uncertainty, in: *Managerial and Decision Economics*, 2, 3, 186-191.
- Flueler, T. (2006): Decision making for complex socio-technical systems: robustness from lessons learned in long-term radioactive waste governance (environment & policy). Dordrecht: Springer.
- Freeman, R.E./Wicks, A.C./Parmar, B. (2004): Stakeholder theory and “corporate objective revised”, in: *Organization Science*, 15, 3, 364-369.
- French, S.D. (1988): *Decision theory, an introduction to the mathematics of rationality*. New York: Ellis Horwood and John Wiley.
- Frooman, J. (1999): Stakeholder influence strategy, in: *Academy of Management Review*, 24, 2, 191-205.

- Gurkov, I. (2009): Strategy Process as formulation and realization of corporate goals: the synthesis of surveys in Russian firms: in *Journal for East European Management Studies*, 14, 1, 48-64.
- Hansen, L.P./Sargent T.J. (2008): *Robustness*. Princeton, NJ: Princeton University Press.
- IEEE (1991): *IEEE Computer Dictionary - Compilation of IEEE Standard Computer Glossaries*, 610-1990 Institute of Electrical and Electronics Engineers Staff; 01-Jan-1991.
- Lindgren, M./Bandhold. H. (2003/2009): *Scenario planning: the link between future and strategy*. New York: Palgrave MacMillan, 2003; revised and updated edition, 2009.
- LUKOIL (2009a): *LUKOIL Development Strategy: Focus on Value Growth*. December 2009. <http://www.lukoil.com/df.asp?id=43>
- LUKOIL (2009b). *OA O LUKOIL. Interim Consolidated Financial Statement* (prepared with accordance with US GAAP. As of for three and nine months periods ended September 30, 2009 (Unaudited). [http://www.lukoil.com/fa\\_6\\_.html](http://www.lukoil.com/fa_6_.html)
- Scholes K. (1998): Stakeholders mapping: a practical tool for managers, in: Ambrosini, V. (ed.) *Exploring techniques for analysis and evaluation of strategic management*. London: Prentice Hall Europe.
- Segev, E. (1995): *Corporate strategies and portfolio models*. Cincinnati: South-Western Pub.
- Wild, A. (1945): Statistical decision functions which minimize the maximum risk, in: *The Annals of Mathematics*, 46, 2, 265-280.