PARAMETRIC STRATEGIC MANAGEMENT: GENESIS & PRAXIS

ABSTRACT

The author's concept of parametric strategic management is correlated with well-established notions of strategic management. At the same time, attempts are made in the article to justify the use of qualitative comparative analysis as a relevant method of empirical verification and to build a one-dimensional model for ensuring the employee's labor participation as a practical application of the author's concept.

KEYWORDS

PARAMETRIC STRATEGIC MANAGEMENT, SIMPLE RULES, MANAGED SELF-ORGANIZATION, CONTROL OF CONDITION OF THE CONTROLLED

COMPARATIVE ANALYSIS

Targeting (purposiveness)

The essence of parametric strategic management is to achieve target attractors – stable conditions and modes of functioning of economic systems, in particular, economic organizations [Obydenov A. Yu., 2014a]. Targeting and attainment of attractors are provided through formal institutions. Strategic management as a form of management must inherit its genetic attributes. In particular, such a sign is the desire to achieve certain objectives; organizational objectives are the central aspect of the management theory [Lindblom C., 1969].

"The strategy is the establishment of main long-term objectives and tactics of an enterprise and a development of an action program and allocation of resources necessary to achieve these objectives" [Chandler A. D. Jr., 1962, p. 16]. Strategic management can have different objectives, in particular, different from objective of maximizing company's profit (for example, creating a sustainable competitive advantage or maximizing utility of stakeholders). T.P. economic efficiency of the organization (the ratio of costs and results) and effectiveness of achieving these objectives was shared by Barney J. and others [1986].

If we talk about parametric strategic management, which is an essential aspect of strategic management and, in general, strategic processes (Barry D., 1987; R. L. Ackoff defines strategic planning as a "long-term complex planning focused on final results" [Ackoff R. L., 1970]. As empirical studies have shown, purposeful activities and objective-setting (in the form of setting strategic objectives) were an essential aspect of activities and development of Russian enterprises already in 2000s [Gurkov I. B., 2007]. Let's pay attention to the fact that purposefulness and motivation are inherent in complex systems as a whole [Bertalanffy L., 1962; Mesarskov M. D., 1969; Ackoff, R. L., Emery F. E., 1972]. In particular, in "live" systems, among which are economic ones, objectives are set and development proceeds in accordance with these objectives, i. e., expedient [Chernavskiy D. S., Chernavskaya N. M., 2009].

Targeting an attractor is one of key elements of parametric strategic management. For targeting, attractor is chosen from a set among attractors peculiar to the system corresponding to interests of management. In contrast to usual targeting of any long-term objective, targeting an attractor involves the desire to achieve a steady condition. In connection with this, the issue of ensuring sustainability of an economic organization in management deserves special attention. The approach closest to the concept of parametric strategic management determines stability as "the ability of the system to preserve a certain condition (or some set of permissible conditions) under influence of external influences" [Chistyakov V. V., 2015]. At same time, sustainable development, which is also the result of strategic management, occurs through transitions between these permissible conditions.

The ratio of attractors to equilibria in the game theory is also interesting to note. For an "asymptotically stable conditions" correspond to Nash rigorous equilibria in evolutionary game within framework of replication dynamics [Cressman R., 2003].

Duration

The long-term horizon of taken decisions as an essential feature of strategic management is common to different models and approaches to strategic management (see, for example, [Chandler A. D. Jr., 1962; Ansoff H. L., 1979]). In addition, it can be regarded as one of signs that distinguish between strategic and operational management. The planning horizon of a long-term objective is approximately equal to five years, for technologically advanced companies – more, [Steiner G. A., 1969]. In most cases, a short-term objective is one of organization's plans, which should be performed within a year. For medium-term objectives, the planning horizon makes from one to five years.

If we look parametric strategic management, which in essence is the self-organization management, then durability is required in order to establish its stable condition or mode of operation in managed system. In general, slowly released degrees of freedom respond to self-organization and stabilization, which ensure evolution of the system to a new stable condition [Blumenfeld L. A., 1977].

Inverse orientation

The inverse orientation from the future to the present [Ansoff H. L., 1965] accompanies formation of image of the future condition of the control object (for example, in "Growth Strategy for Russia" [Titov B., Sharov A., 2017]) and its projection into the present. As an option, orientation from the future to the present is an assessment of today's actions in terms of achieving future objectives. If we talk about effectiveness of management within this mode, then the inverse orientation is inherent to our brain as a whole. The brain "can predict which sequence of commands sent to muscles will produce movement that we want to perform. This prediction is based on the fact that muscle brain must reason in opposite direction, starting from what should be the result of motor system of our body to what must be at the beginning of the command sent to muscles. "To act in present, it is necessary to "jump ahead a little into the future"" [Kryuchkov V. N., 2015, p. 94].

Inverse orientation is inherent in various models within the variety of management techniques. Thus, within the framework of the concept of parametric management, the technique of "glance from the future" is applied, in which the orientation from the future to the present is also realized. The actor creates an image of himself in the future and recognizes the current situation relying on it, looks for ways and means of getting out of it.

Similarly, within the framework of parametric strategic management approach, the structure of future stable conditions, attractors, appears as a result of building a model of a managed organization. The target attractors are selected from the set of potential future targets and recognized by a manager indicates through an analytical model, which game rules should be set today.

Uncertainty

Uncertainty characterizes not only external environment, but also internal nature (of various systems), it can be attributed to the systems concept. There are classical studies on classification of types of uncertainty:

- risk situations (a certain probability can be assigned to each expected event);
- parametric uncertainty (future events are so unique that they can not be attributed any probability);
- structural, or radical, uncertainty (multiple future events are open) [Knight F. H., 1921; Longhurst, R. N., 1998; van der Heijden K., 1996].

In the context of risk, it is advisable to use risk management: use of scenario planning is appropriate within the framework of parametric uncertainty [Ringland G., 1996], and use of inverse under conditions of uncertainty (radical uncertainty) is possible. Note that scenario planning relies on identification of pre-determined elements in the environment already [Schwartz P., 1991].

Predicted elements are either invariant in their nature, or can fulfill their role. For example, the maximum number of teenagers in 10 years (in general, this may be upper limit of number of persons of a certain age category at a certain point in time), as an invariant, allows estimating capacity of demand, particularly, for children's books. These estimates can be very important, because at certain moment, system can be in a state of birth or deaths, as a result of which there are recessions and rising consumption, which should be taken into account.

Invariant strategic measures in conditions of uncertainty can be "safe steps" (practically suitable for any variant of develop- ment of events [Courteney H., Kirkland J., Viguier P., 1997]. Particular examples of such steps are measures to reduce costs or to collect information about cost competitors. In framework of parametric strategic management, invariance takes place under structural stability of phase portrait of a controlled system with respect to changes, particularly in external environment [Ansoff V. I., 2002]. A phase portrait of a controlled system is said to be structurally stable if attractors attracting stable invariant manifolds do not disappear and do not appear, but position of attractors can vary on the same portrait of system remain topologically equivalent to themselves [Pitsoul G. Z., Roedendorl E. R., Trolmzon V. V., 1997].

Thus, changes can occur in the external environment. However, if the phase portrait of a managed economic system remains topologically equivalent to the original one, then decisions on effective management of economic system remain in force as they are decisions on means of achievement of the exact value. In fact, we are talking about transition to desired stable conditions and modes of operation, exact characteristics of which are not of fundamental importance. So, for example, you can consider the task of managing as a natural start as a transition from position of zero production to a condition with production volume different from zero [Udosenov A. Yu., 2017]. For a better in-
The strategic principle

Traditional approaches to strategic management

Example

Parametric strategic management

Task

Table 1

Comparative characteristics of traditional approaches to strategic management and parametric strategic management

| Characteristics of strategic management | Traditional approaches to strategic management | Parametric strategic management |
|----------------------------------------|-----------------------------------------------|--------------------------------|
| Tagunyuk (steady condition or mode of operation) | The attractiveness of the company's image | The definition of a rule based on the structure of future actions |
| Duration | The attraction of steady condition or mode of operation | The definition of a rule based on the structure of future actions |
| Inverse orientation from the future to the present | The relaxation time to new attractor | The definition of a rule based on the structure of future actions |
| Management in conditions of uncertainty | Risk management, scenario approach, safe steps | Irregular, structural stability of phase portrait |

"saving customers' time" was chosen as a condition for ensuring a competitive advantage [A. Baevman, V. Tsvetkov, 2002].

Theories of complexity

Some representatives of leading business schools go further and propose to formalize strategy in the form of a set of simple rules of five types:

- "how" rules;
- rules of limits;
- priority rules;
- rules of timing;
- exit rules [Eisenhardt K. M., Sull. D., 2001].

The most striking example of application of simple rules is the company Yahoo!, which entirely used the strategy as a set of simple rules. "Since its founding in 1994, Yahoo! turned into one of "blue chips" (companies with high-yielding shares) of new economy. As the leading internet portal of Yahoo! demonstrated amazing results of more than 100 million visits per day, annual sales growth rates approaching 200%, and market capitalization that exceeded that of the Walt Disney Company [Eisenhardt K. M., Sull. D., 2001].

It is believed that the company's success cannot be attributed to favorable structure of strategy. It is also impossible to link the success of four systems of Yahoo! with uniqueness or value of resources.

Yahoo! Managers were guided by rules:

- to know priority of each product under development;
- to ensure possibility of each engineer working on each product;
- to maintain a company-specific user interface;
- to launch products without attracting everyone's attention.

By observing these rules, employees could generally do anything: to come to work at any time, wear any clothes, bring their dogs with them, etc. [Eisenhardt K. M., Sull. D., 2001].

Within the theory of complexity it is considered that the optimal number of rules is from 2 to 7. In a predictable environment there are more rules, in unpredictable environments there are fewer rules to ensure flexibility. Often rules exist generally in a company's case. The company can serve to formalize the rules (model) of behavior or special reception (maneuver) in competition, which are also types of strategies [Mintzberg G., Alstrend B., 2003].

Institutions as rules are the embodiment of previous experience accumulated within the company develop; within the company; at other steps of organizational hierarchy. For example, the strategic principle of Bain & Company can be given:

- "The product of a consulting company should not be a report, but results of a customer."

Other examples of strategic principles of companies are given in Table 2.

Table 2

The Code of simple rules [Eisenhardt K. M., Sull., D., 2001]

| Type | Task | Example |
|------|------|---------|
| "How" rules | Define the specifics and main ways of implementing strategic processes | Akamai rules for the customer service process: staff must include technical specialists, any questions should be answered by first call or e-mail; rotation of specialists for services of various types should be insured |
| Rules of limits | Serve as a guide for assessing and selecting opportunities within and outside acceptable limits | The Coca-Cola Company: there should be no more than 7% employees in acquired companies, and among them - 75% of engineering and technical specialists |
| Priority rules | Help to rank opportunities accepted as objectives | Intel's rule for allocating resources: capacities are distributed according to the criterion of gross profit |
| Timing Rules | Synchronize actions of managers and various divisions of the company with dynamics of opportunities | Nortel's rules regarding product development policies: design teams must know deadlines for delivery of product to the main consumer; product development period should not exceed 18 months |
| Exit rules | Help to take decisions about rejecting to use outdated features | Citizen's rule of closing projects: The project closes if the leading developer transfers to another project |

Table 3

All in one phrase [Gadish O., Gilbert J., 2007]

| The Company | The strategic principle |
|-------------|------------------------|
| America online | Providing communication with the customer first (at any time and place) |
| Dell | Direct sales to final consumers |
| eBay | Buy on trust trade communities |
| General Electric | To be a company number one or number two in every industry in which we compete, or leave it |
| Southwest Airlines | To satisfy need of customers for flights over short distances at rates that can compete with cost of automobile trip |
| Vanguard | Incomparable benefits for an investor-owner |
| Wal-Mart | Low prices every day |

The relaxation time to new attractor

1 If necessary, these discrete qualitative indicators can be quantified [Eilms E. N., 2017]
making this theory meaningful from a practical point of view [Hai P., Jian-dong, H. 2011].

As an example of a self-organizing company, Visa can be tak-
en as an example. When Di Hawk created Visa, he offered small
banks a set of simple rules. Visa was founded in 1970 and since
then has grown by 10,000%, operates in 200 countries and has
more than half a billion consumers. Visa is a decentralized, no-struc-
tured bank that self-organizes with its members.

In context of self-organization, the concept of holocentricity was
proclaimed – organization's management system based on self-or-
ganization. Absence of rules, rule sets, algorithms and parameters
of work set forth in constituent documents play a certain impor-
tant role in management of the company [Denning S., 2014].

Self-organization is what parametric strategic management
relies on. As a part of our approach, self-organization occurs
within the framework of this concept, management of an econom-
omy's activity: sustainable competitive advantage, stable positive
cost-benefit analysis. One way to implement self-organiza-
tion is to create temporary teams [Shadid W. K., 2018].

A "bridge" to the concept of dynamic capabilities of an organi-
zation deserves attention, one of dimensions of which are pro-
cessed aimed at coordinating and integrating available resources,
as well as their reconfiguration [Teece J. D., 2007]. It is believed
that new combinations of resources should be continuously cre-
ated within the company [Dyer G. H., Singh H., 2009]. Directive
redistribution of resources involves simultaneous study of many
possible options for action, the alternative one is the concept
of managed self-organization. These redistribution options are co-
directed by a small set of simple rules, which makes the concept
dynamic abilities related to the concept of parametric strategic
management [Shadid W. K., 2018]. An experiment within the
framework of parametric strategic management, the result
will not depend on intuition of those who take decisions, both
with regard to defining rules and leading the desired
wish of one possible stable conditions and modes of
functioning of the organization. Rudiments of this concept are
laid into the original approach to managing large-scale projects.
It is assumed that the possibility to implement on self-
or-organization, for management of which meta-rules are introduced
(general rules for projects of different nature and in different con-
texts). A new approach to evaluation of resources is carried out on the ba-
sis of sustainable competitive advantage, stable positive
cost-benefit analysis. One way to implement self-organiza-
tion is to create temporary teams [Shadid W. K., 2018].

So, previously there was no approach, justifying application
of self organization in the form of project participants. Such a rationale can be useful in case if something
went wrong to answer questions: where exactly is the error? Why
did rules stop working as efficiently as they did before? In addi-
tion, the approach can be useful for autonomous, distributed
and remote organizations, and, in general, for organizations where
use of directive and manual control is inefficient.

One way to conceptualize parametric strategic management,
established rules ensure evolution of a managed economic organiza-
tion to a target actor through self-organization in the company
to exchange of powers between members of the organization.

CHALLENGES TO FURTHER STUDIES

An empirical test

The development of the proposed approach to strategic man-
gerament necessitates an empirical test of effectiveness of ap-
proach. Within the qualitative analysis of competitive advantages,
an approach was used, which is based upon the assumption that
first best result in this case is unattainable. An obstacle
to achieving an effective result may also be difficulty in sepa-
rating contribution of this employee from contributions of other
members of the organization to overall result. If you try to control in regard of individual work (for example, by paying
on labor), then inevitably arises a problem of controlling a
controller, prerequisites for fundamental solution of which are
possible only within the framework of the institute of self-regu-
lating management. In this way, the idea of self-regulating
(government) scheme involves use of a certain set of rules
and the goal in this case is a particular case of the concept
called "Monte Carlo," which is a method for self-organiza-
tion scheme is not suitable for all tasks of economic activ-
ity within the framework of functioning of economic organizations.

Existing needs theories [Maslow A. H., 1943; Alderfer C. P.,
1969; McClelland D. H., 1973] indicate that effective labor participa-
tion of an employee significantly stimulates intangible incentives
aimed at satisfying his needs at various levels. The intangible part
of incentive also requires knowledge of characteristics of an
employee, definition of which can be associated with (or even
prohibitively high) costs.

It is possible to create complex models of staff management, for
example, a rational model of labor relations, allegedly designed
specifically for Russian business practices [Bovykin V. I., 2004],
which regulates labor relations through a set of rules and thereby
solves staff motivation issue within the framework of com-
panying organizational culture. This model, in fact, is also a form
of implementation of the concept of parametric strategic management.
It is difficult to predict accurately how many workers should be
paid for the results of their work. Therefore, self-organization
modeling various managed systems suggest, most likely there will
be two attractions. The first attraction corresponds to zero employee
within the framework of the institute of self-regulating
amount of participation. And in this sense, it is possible to use con-
tactual approach of Sh. Sander within the framework of the concept
of parametric strategic management: The condition (reduction) of
becoming a manager in the specification of a contract is made
with the labor participation over corresponding alternative costs (res-
ev wages) [Shander Sh., 2004], is a condition for non-zero labor partic-
ipation of employees.

Accordingly, the task is transformed into the task of ensuring a
stable involvement of ab employee in the work process from target
match of a specific value of temporary labor costs of an employ-
ee, the answer to the analysis mentioned above, precisely a match
under uncertainty conditions is devoid of a methodological
and theoretical basis and is practically difficult to implement (with
empirical factors such as choice employee's manager or character-
istics).

Management efforts should be aimed at reducing costs of ob-
taining data on characteristics of an employee: alternative costs of
labor within the framework of the concept of parametric strategic
management, the importance of free time for an employee, his unmet
needs, degree of risk aversion, etc. Such a management model is called
"Context Management" [Roberts M. J., 1999], it is used if it is dif-
ferent character of employee's work, which is different from an employee.

The role of rules in management is also noted in the frame-
work of local government tools in Australia developed by the
Australian Institute of Local Government (toolkit.agi.com.au).

The result of self-organization is to create temporary teams
[Shadid W. K., 2018]. As a part of our approach, self-organization occurs
through exchange of power between members of the organization.
The author has previously considered the solution of various stra-
tegic management tasks within the framework of the concept
of parametric strategic management, such as adjustment of strategic
management tasks within the framework of the concept
of parametric strategic management, such as adjustment of strategic
management tasks within the framework of the concept
dynamic abilities related to the concept of parametric strategic
management [Shadid W. K., 2018] within the framework of the concept
of parametric strategic management, such as adjustment of strategic
management tasks within the framework of the concept
dynamic abilities related to the concept of parametric strategic
management [Shadid W. K., 2018].
mentation of this approach is assessment and selection of staff, promotion and development of employees, creation of organizational mechanisms for resolving conflicts within the company, and all the matters connected with a relatively autonomous.

Models mentioned above (concepts of simple rules and controlled self-organization, models for managing behavior of a contractor and rational labor relations), preceding the formation of the concept of parameteric strategic management, presuppose or allow the use of rules of the game as control actions on economic entities. The rules of the game are the key management tool also within the framework of concept of parameteric strategic management. It is significant that earlier data of a model and concepts allow the use of rules of the game as control actions on economic self-regulation//Economic Issues. No. 11 P. 88-98.

Obydenov A. - Mitin I. (2000) Schools of

Minzberg G., Alstrand B., Lampel G. (2007) Strategy into Action//Advanced approaches to businessManagement T. 90, No. 3. P. 90-97.

Dyer G. H., Singh H. (2017) Parametric control of behavior of an economic system//Fundamental and applied mathematics. V. 3, No. 2. P. 319-349.

Simon S. (1993) Rationality as a process and a product of thinking//THESES. V. 1, No. 3. P. 16-38.

Sibirj D. (2015) To see the solution: Visual methods of business management. M.: Alpina Publisher. 256 p.

Comparative sociology (2015)/Ed. by A. V. Rezaev. SPb. Press. 490 p.

Bovykin V . I. (1997) Problems of Biological Physics. M.

Rosman B. R. (2003) the role of micro-strategies in the engineering of form evolution//Journal of Management Studies. Vol. 40, No. 1. P. 83–108.

Eisenhardt K. M., Martin J. (2000) Dynamic capabilities: the need to balance TQM and managing chaos in organizations//International journal of Management Reviews. Vol. 7, No. 1. P. 139-150.

Ragin C. C. (1996) Scenarios: the Art of Strategic Planning Processes to organizational Performance: Ph. D. Dissertation/University of Maryland.

Ragin C. C. (1996) Artificial life//The Philosophy of Artificial Life//Ed. M. A. Boden. Oxford: Oxford University Press. P. 223-255.

Lindblom C. (1951) the Practice of Management. Harper Business School Press. 361-376.

Rahbar S. (2002) the work of strategizing and organizing/multiple performance/Strategic management journal. Vol. 28, No. 13. P. 1319-1350.

van Heijenoort K. (2006) the Art of Strategic conversation. New York: Wiley. 382 p.

Whittington R. (2002) the work of strategizing and organizing: for practice perspective/Strategic Organization. Vol. 1, No. 3. P. 255-273.

Inwari H. P. Harms Th. (2004) Self-organized production based on agent theory. Production Planning & Control: the management of operations. Vol. 15, No. 2. P. 213-224.

Furnes J. (2002) Geometric methods in the theory of ordinary differential equations. Moscow: MNICR. 384 p.

Baverman A., Tsvetkov V . Moscow: MNIRC. 384 p.

(1977) Problems of Biological Physics. M.

Rabin R. (1996) Scenarios: the Art of Strategic

Planning Processes to organizational Performance: Ph. D. Dissertation/University of Maryland.

Bosworth M. (1991) the Leading Edge: a case study of the management of operations. Vol. 15, No. 2. P. 726-735.

Navare C., Schaun J. L. (1988) techniques and méthodes spécifiques de la gestion de projets (Specific techniques and methods of project management) Rèvue française de gestion. No. 68. P. 36-47.

Ragin C. C. (1987) the comparative method: moving beyond qualitative and quantitative strategies. London: SAGE Publications. 376 p.

Raymond C. (1989) Flocks, herds and schools: a distributist behavioral model//Computer graphics. Vol. 21, No. 4. SIGGRAPH proceedings. P. 140-146.

4. Management T. 90, No. 3. P. 90-97.

Strategic Vision: Forming a New Vision. N. y.: wiley. 241 p.

The British Journal for the Philosophy of Science. V ol. 1, № 2. P. 370-396.

Hollander M. (1997) Risk, Uncertainty and Profit. Boston, Oxford University Press. 395 p.

McClelland D. (1951) A theory of human motivation//Psychological Review. Vol. 50, No. 4. P. 370-396.

Friedman M. (1994) The Quark and the Jaguar. New York: Freeman. 392 p.

Pai H., Jianjunhong H. (2011) A study on architecture of chain collaborative model based on self-organization theory// International conference on business management and electronic information. Guangzhou. P. 435-438.

Complementary sociology (2015)/Ed. by A. V. Rezaev. SPb. Press. 490 p.

M: Progress, P. 165-180.

Bovykin V . I. (1997) Problems of Biological Physics. M.

Rosman B. R. (2003) the role of micro-strategies in the engineering of form evolution//Journal of Management Studies. Vol. 40, No. 1. P. 83–108.

Eisenhardt K. M., Martin J. (2000) Dynamic capabilities: the need to balance TQM and managing chaos in organizations//International journal of Management Reviews. Vol. 7, No. 1. P. 139-150.

Lindblom C. (1951) the Practice of Management. Harper Business School Press. 361-376.

Rahbar S. (2002) the work of strategizing and organizing/multiple performance/Strategic management journal. Vol. 28, No. 13. P. 1319-1350.

van Heijenoort K. (2006) the Art of Strategic conversation. New York: Wiley. 382 p.

Whittington R. (2002) the work of strategizing and organizing: for practice perspective/Strategic Organization. Vol. 1, No. 3. P. 255-273.

Inwari H. P. Harms Th. (2004) Self-organized production based on agent theory. Production Planning & Control: the management of operations. Vol. 15, No. 2. P. 213-224.

Furnes J. (2002) Geometric methods in the theory of ordinary differential equations. Moscow: MNICR. 384 p.

Baverman A., Tsvetkov V . Moscow: MNIRC. 384 p.

(1977) Problems of Biological Physics. M.

Rabin R. (1996) Scenarios: the Art of Strategic

Planning Processes to organizational Performance: Ph. D. Dissertation/University of Maryland.

Bosworth M. (1991) the Leading Edge: a case study of the management of operations. Vol. 15, No. 2. P. 726-735.

Navare C., Schaun J. L. (1988) techniques and méthodes spécifiques de la gestion de projets (Specific techniques and methods of project management) Rèvue française de gestion. No. 68. P. 36-47.

Ragin C. C. (1987) the comparative method: moving beyond qualitative and quantitative strategies. London: SAGE Publications. 376 p.

Raymond C. (1989) Flocks, herds and schools: a distributist behavioral model//Computer graphics. Vol. 21, No. 4. SIGGRAPH proceedings. P. 140-146.

4. Management T. 90, No. 3. P. 90-97.