

Adaptive Enterprise Management Strategy in Terms of Crisis

Sergey V. Novikov, Gennady V. Tikhonov

Abstract: *This article shows systematization of the adaptive strategic management principles, the connection among essential elements of enterprise management's adaptive approach. A great place in the article is taken to possible approaches and methods of adaptive enterprise management in terms of crisis, due to which changes in the internal and external environment are seen, which can be both expected and random and make current operational decisions that contribute to the achievement of before made goals, based on the correction of certain tasks. The systematic approach to assessing the adaptation of industrial enterprises of small and medium-sized businesses to crisis conditions is investigated. The necessity of adapting enterprises of "small forms" of all sectors to the external environment to solve the strategic tasks of the country's economy as a whole, which must go through the reform stage and become a powerful lever to support and help large industrial enterprises, is substantiated.*

Keywords: *Adaptive strategy, monitoring, anti-crisis measure, management decision, import substitution, indicator systems, reengineering.*

I. INTRODUCTION

In terms of necessity of reforming Russian economy and restructuring, separate industries of production, an importance of the adaptive management strategy development problem in terms of crisis increases.

It is connected with the severance of economic ties, active import substitution of goods in separate industries, and the necessity of a real breakthrough in the defense industrial complex.

The instability of the environment with a high level of risk is made worse by the challenges that Russian industry has in the face of large-scale sanctions.

Due to this the role of small and medium businesses is getting bigger, the importance of which nowadays, both in developed and still developing countries, is steadily increasing.

Small and medium businesses in countries with stable market economy are considered as leaders of the world economy, setting the temps of economic growth, the structure, and the quality of gross national product.

Among the subjects of small and medium businesses, a special place is occupied by enterprises that operate in the

industrial sector. For this type of enterprise, the term "small and medium industrial business" is used.

The industrial business of small enterprises has a special place in economic system of the Russian Federation, however the influence of small and medium industrial business on economic system of Russia and rather big industry gets behind the leading counties' indicators.

One of the main problems of Russian economy is the increased risk of doing business, which is due to the wide range of risks, which is typical for Russian economy as a whole.

The current situation shows the necessity to make adaptation to external environment of the industry segment under consideration as a promising reverse for its development, while anti-crisis measures of the Russian Federation's Government involve the mobilization of all enterprises and all industries to solve the strategic tasks of the economy of the country as a whole.

II. THEORETICAL PART

In the formation process of the counties' domestic market in the machine-building sphere every enterprise has to really estimate its positions and abilities in real time mode, with the aim to save industry image and development intersectoral economic ties, and developing an adaptive management strategy for the future.

The modern word "adaptation" comes from Late Latin adaptation, which means that in ancient times, adaptation was understood as the process of adapting the system to real conditions. Subsequently, scientists and practitioners working in various fields of human life significantly expanded the understanding of adaption.

In general, theoretical plan the mechanism of adaptive management of enterprises in crisis suggests the development of:

1. system of principles;
2. methods for collecting, summarizing and systematizing the essential information about the needs of the industry, related industries and parts of industry;
3. possible approaches and adaptation methods;
4. main (alternative) directions of adaptation of the enterprise to changes in the external environment;
5. enterprise crisis management plan;
6. system for reconciling the goals and objectives of enterprise development with the goals and objectives of the industry and related enterprises;

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7. indicator systems for assessing the level of enterprise adaptation to crisis conditions;
8. adaptive management strategy;
9. systems for monitoring the level;
10. analysis of goals and objectives.

Now we are going to consider more detailed each shown elements of the adaptive enterprise management.

1. System of principles of adaptive management is most fully reflected in such important principles:

- prospects;
- progressiveness;
- difficulty;
- useful actions;
- rationality (optimality) of management decisions;
- economic feasibility.

Each of these principles has a significant meaning and together they reflect a complex approach to adaptive enterprise management.

2. Methods of collection, generalization, and systematization of essential information.

The collection of the needed information includes:

- the study of nowadays needs of related enterprises, connected with the plan of cooperative supply;
- the analysis of the production market of appropriate company specialization;
- the analysis of industry and intersectoral programs in which the company would be able to participate;
- the participation in tenders for state and municipal orders;
- the research in marketing sphere on the development of the market for industrial products;
- the analysis of the production state facilities of the enterprise;
- the identification of the market needs and opportunities for updating technical and technological production base;
- the analysis of the possibilities of the modernization of products;
- the study of modern product samples, including previously imported ones, in order to promise production and many others.

For this we use the data of the financial-economic reports of the studied enterprise, official programs of the machine-building sphere development and other spheres of industry, domestic and foreign magazines, the conjuncture of the market of separate ones and manufacturers research development and many other sources.

3. Possible approaches and methods of adaptation include:

- methods of modernization of the products (design and technological);
- methods of the enterprise costs' optimizing in order to obtain competitive advantages in the market;
- expansion of economic relations with consumers of finished products of the enterprise and the identification of the most promising economic relations for new equipment models;
- improvement of the organizational structure of the society;
- training and retraining of the staff;

- identification of their opportunities for import substitution of products, etc.

4. Development of the main (alternative) directions of the enterprise adaptation comes from firstly from criterion, which has defined the enterprise.

For example, in case of perspective enterprise adaptation we can consider:

- expansion of markets for their products in relation to the development of new product samples;
- development of new technologies in connection to the development of organizational and technical measures, costs of the enterprise, and many other indicators that allow assessing the causes and consequences of the changes.

5. Plan of the anti-crisis enterprise management supposes that definite strategic directions of enterprises anti-crisis stabilization are already set up:

- goals and tasks of enterprise stabilization;
- strategic alternatives of the further development (on goods, markets, cooperation, technologies, etc.) and the enterprise starts its realization.

The main goal of adaptive management in these conditions is looking after changes in inner and outer sphere, which may be expected or not, make working operational decisions, which have impact on before set up goals based on the correction of defined tasks.

6. System of coordination of goals and tasks of enterprise stabilization with goals and tasks of the industry development is the most important element of adaptive enterprise management, because it solves the strategic task of its strategic activity perspective. If the industry or related enterprises have the development orients changed, the enterprise needs to correct its plans and business line. When new economic connections and partners arise, it is essential to make corrections of decisions made before.

7. Indicators' systems for estimating the enterprise adaptation level to crisis conditions.

For estimating the enterprise adaptation level there can be used different indicators' systems. It is more rational to use the following indicators' system on the following directions:

- a. From the point of changing economic potential of the enterprise and effectiveness of its usage [1].
- b. From the position of the achieved economic and financial indicators of the economic activity.
- c. From the point of activity and effectiveness of anti-crisis measures.

The chosen indicators' systems and separate indicators have to be considered in dynamics, which is appropriate to the crisis period. The quantity assessment of indicator's changes earnestly characterizes the direction, in which the company makes adaptation and what perspectives it has.

8. Strategy of adaptive enterprise management depends on its position and the development level in before-crisis period. It can be set up to:

- systematic increase in the adaptation level due to certain factors of production;
- stabilization of the level of adaptation due to certain resource constraints and production difficulties;

- forced reduction in the level of adaptation due to objective reasons (violation of the terms of goods' delivery, breaking economic ties, increased losses and debts, etc.).

9. Monitoring system of adaptation level of separate enterprises to changes and needs of the industry and industry in terms of crisis has to contribute to the choice of the strategically important partners, production partners, etc. Enterprises with high level of adaptation to crisis conditions must be included into long-term industrial plans of productive cooperation during preparation and realization of the most important types of production for the industry.

10. Analysis of the goals and tasks is made by comparing planned (projected) indicators and events with actual one. Therein there is made not only analysis of changes of separate indicators, but also the impact of them on the adaptation level of enterprises in nowadays-competitive environment. There is also the factor analysis of changes.

III. METHODOLOGY

Every crisis is characterized by the following:

- some companies can protest it and even develop, filling in the formed niches in the economy;
- the second can keep on working, somehow saving and holding the results of their activity based on anti-crisis and adjustment measures;
- the last do not withstand crisis changes and have to either sell their business or to consistently reduce its appearance on the market or to go through the bankruptcy.

Taking into consideration individual specialties of separate enterprises, the adaptation level to crisis terms can be the following:

- high, defining the high level of business activity and market demand on the companies' production;
- rather normal, when the company demonstrates the stability of its economic activity;
- low, when the economic potential has a tendency to lowering and the results of economic activity is lowering too;
- critical, which defines the situation, when the company practically cannot resist the crisis and consistently loses its positions.

System of indicators, defining the enterprises adaptation level to crisis conditions in economy, can be considered through the following directions:

1. In terms of changing the economic potential of the enterprise and the effectiveness of its usage.
2. From the position of the obtained economic and financial indicators of economic activity.
3. In terms of activity and effectiveness of anti-crisis measures.

All shown indicators should be considered in dynamics, because they set up:

- relative stability of the company;
- its ability to develop in crisis conditions;
- consistent deepening of the crisis in the enterprise.

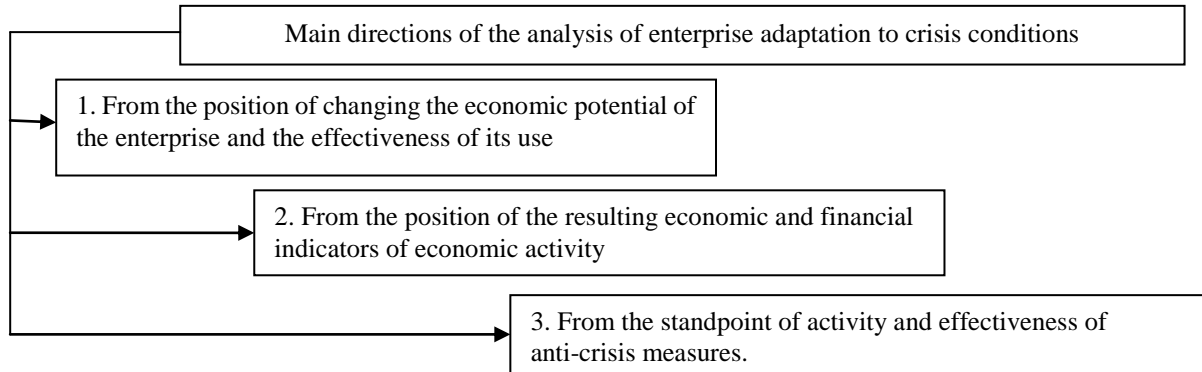


Fig. - I: Main directions of the analysis of enterprise adaptation to crisis conditions

For estimating the enterprise adaptation level from the point of changing of economic potential and the effectiveness of its usage it is better to use the following indicator: growth rate of fixed production capital of the enterprise (T_{main}^K), which must be corrected on the inflation level of the according period (T_{infl}) and is defined by the formula [2]:

$$T_{main}^K = \frac{K_{main}^{pl}}{K_{main}^{base} T_{infl}} * 100\%, \quad (1)$$

Where K_{main}^{pl} , K_{main}^{base} is the cost of fixed assets at the end of the period respectively, in the planning and base years (rubles);

T_{infl} is inflation of the corresponding period of time (dimensionless quantity).

The growth paces of the main production capital of the enterprise as a whole show its investment activity, the pace of

modernization of the materially-technique production base, and the opportunity of invading innovative technologies, using new means of labor.

However, in crisis conditions this indicator can have either negative stability or lowering of self-cost, considering inflation processes, or even show the growth, if the company is rather stable in terms of crisis.

IV. RESULTS

The main components of the adaptive mechanism of reaching competitive advantages in strategic management of small and medium manufacturing enterprises are the following elements:

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1. Creating and developing of the monitoring system of the inner and outer sphere in conditions of small and medium industrial business.

Monitoring is an unstoppable monitoring of some indicators changes, which were defined before. Nowadays the monitoring system is prerogative of the big business, because it demands definite financial and organizational investments, which small and businesses do not have. However, when a small enterprise adopted the adaptive management development strategy as a guide to action, the creation of such system becomes a necessity, despite the fact that the formation of such structure requires financial investments from a small and medium industrial enterprise [3].

Monitoring of business-processes in small and medium industrial business allows providing an approach to leading business in real time from the point of control of business operations, tracking such situations like delays of business processes, lost profit, etc.

Modern methods of monitoring allow presenting business processes in clear and understandable form, combine business processes among themselves, and look after its realization and impact on the enterprise. These methods allow tracking the main effectiveness indicators of business processes (key performance indicator (KPI)), define the level of availability and work quality (service level agreement (SLA)), fix the delays, downtimes, lost profit, and visualize business processes according to organizing roles [4].

Permanent monitoring of changing parameters will allow finding appearing threats and then make efforts in order to withstand them.

Measures for monitoring threats that arise from small and medium industrial enterprises' activity require the creation of a different unit within the enterprise that carry out such activity. If it is possible to create such organizational unit, controlling functions should be transferred to the head of the enterprise or his trustworthy deputy.

2. Direction of significant financial resources on adaptive management needs.

Small and medium industrial enterprises are usually more limited in "free" financial resources than big enterprises. Managers of small and medium industrial business waste their profit on nowadays needs realization, not on the needs of strategical development. However, the development of enterprise is impossible without middle- and long-term investments.

Owners of Russian small and medium industrial businesses usually cannot overcome the psychological barrier, which does not let them save their money for future. This is because Russian economic situation is characterized as unstable, when any long-term planning does not seem reliable even to business owners.

Overcoming of this psychological barrier is essential for practical realization of adaptive mechanism, because any adaptation requires making financial "airbags", which allows making effective efforts as in force majeure situations that require immediate reaction, as in the case of unexpected short-term changes, which cannot be considered as force majeure conditions.

Of course, making an "airbag" does not mean that reserve funds must not be working at all, but the company always has

to have an opportunity to get resources on adaptation activities.

3. Increasing of the variable costs' share in structure of production costs.

As we know, fixed costs are costs, which do not change in short-term perspective with increasing or decreasing of the production volume. Fixed costs in small business include the same costs, as in other types of businesses, i.e. costs connected with the usage of buildings and facilities, machines and production equipment, rent, overhaul, and administrative costs.

Variable costs are costs, whose size changed while increasing or decreasing the size of production. Variable costs include raw materials, electricity, auxiliary materials, and labor costs.

In industrial enterprises of "small forms", the connection of variable and fixed costs in all production costs usually varies depending from specifics of the pointed activity of the enterprise.

The structure cost among other factors illustrates the flexibility of the policy of the product of small and medium industrial businesses. A high level of fixed costs does not allow reducing the product quality, while reducing its cost and cost, while products with high proportion of variable price allow making such operation. For example, manufacturers of homogeneous furniture (bolts or nuts) in the event of unfavorable market conditions will not be able to really reduce the price of their products due to the technology change, because the material and manufacturing technology of the fittings are practically does not change. From the other side, manufacturers of power sensors will be able to reduce costs and prices through actions such as replacing metal elements by other plastic ones [5].

4. Achieving of the ability to effectively reengineer business processes in short periods.

According to a known definition of business process reengineering (BRP), it is defined as "fundamental rethinking and radical re-projecting of business processes (BP) in order to achieve principal growth of the main indicators of the enterprise activity" [6].

The goal if engineering of business processes is holistic and systematic modeling and reorganization of material, financial, and information flows, which have to make organizational structure easier, redistribution and minimization of using different resources, realization terms of clients' needs shortening, and making higher the quality of their service [7].

Business processes reengineering allows lowering costs due to the optimization of the amount of stuff, making organizational enterprise structure better, management upgrading, lowering of the lasting of resources' flows and time for making operations. Reengineering enterprise structure has a higher adaptation level, then before starting this process.

Small and medium industrial businesses, which regularly reengineers its activity (for example, every five years), can more logically and less costly react on inner and outer environment changes.

In terms of adaptive management strategy development there suggested regular making reengineering of business processes, which becomes a competitive advantage of the enterprise.

In reality, Russian small and medium industrial business usually does not pay a lot of attention to reengineering processes referring to the loss of financial resources. However, the effective reengineering of business processes, as it was said before, can give special competitive advantages, which are unavailable for the same enterprises, which are more conservative in projecting business processes.

5. Development of the ability to quickly change the character and conditions of labor of supervisors and specialists of the company.

V. DISCUSSION

Reengineering of the staff is the process, which usually takes up from one year to a few years. In conditions of unstable market conjuncture often comes up the necessity in much faster reaction, when the managing decision must be made in a few days or hours. In this case, supervisors of small and medium industrial enterprise have to make important decision quickly, and the enterprise's staff has to know how to do it.

A lot of modern economists think that the speed of making decisions depends on the communication form inside the company. Linear and functional systems do not affect the fast making the decision in terms of small and medium industrial business.

If we consider a linear organizational structure, the mid-level manager will always waste his time on coordination of his activity with the supervisors, and the higher is the importance of the made decision and responsibility for them, the more time there will be wasted on coordination of made decisions.

In terms of functional structure, the necessary speed of making the decision also does not always achieved, because every functional manager answers only for his activity field, without having the full image of earnings of other company and without having effective fast leverage on other functional spheres of the enterprise. In result at a certain scale of the solution, inconsistency and red tape come up [8].

Due to problems for small and medium industrial enterprises, mentioned before, which tool the adaptation mechanism, the matrix system of enterprises' organization is better, where not only vertical connections are highly developed, but horizontal ones, where many workers of different hierarchical levels communicate while making the decision. Taking into consideration a rather small number of small and medium industrial businesses' workers, such production organization seems to be quite real.

Having described the main features of the adaptive mechanism for achieving competitive advantages, it is necessary to consider it in line with the strategies generally accepted in the scientific and practical environment, divided into several groups. This fact will make it possible to identify the place of the adaptation mechanism in each strategy, focusing on the specifics of the considered adaptation mechanism in relation to each strategy [9].

The first of these groups combines concentrated growth strategies. These strategies are related to changes in the product and / or market and do not affect the other three elements.

Subject to these strategies, enterprises carry out one of two types of production activities:

- improving product quality;
- developing the production of new products without changing industry affiliation.

The concept of concentrated growth seeks additional market opportunities to go beyond the existing framework. Their source is the strengthening of positions in the occupied market (in particular, by increasing competitive advantages by improving the quality of products) or entering a new market, the capacity of which allows for the implementation of strategic plans.

The group of concentrated growth strategies includes the following areas [10]:

1) strategy to strengthen market positions, which requires the intensive use of marketing mechanisms for successful implementation. This strategy requires the following actions:

- active promotion of improved products;
- establishment of formal and informal relations with competing business entities and decrease in the level of competition on this basis;
- application of the principles of social and ethical marketing, taking into account the communicative component of the positioning process.

As a part of this strategy, the adaptation mechanism should be focused primarily on the analysis of the competitive environment in order to respond to changes in their market behavior. In addition, the adaptive management mechanism must analyze the consumer market so that the business entity can respond to changes in consumer preferences.

2) market development strategy, which is based on the increment of market opportunities by acquiring new markets for which goods can be presented, or new market segments in the already developed territorial market.

The activity of the adaptation mechanism as a part of the market development strategy involves a reaction to the difficulties of entering new market segments, usually caused by errors in the analysis of the specifics of the markets the company is trying to enter. A new market segment for an economic entity trying to cover it is always associated with uncertainty, because there is no necessary experience accumulated over time. The main objective of the adaptive management mechanism is the quality monitoring of foreign markets, as well as the prompt identification and elimination of negative consequences when covering a new market segment.

3) product development strategy, which consists in radical improvement of the product, consideration of its nomenclature by introducing a number of modifications or launching new products that meets the needs of the target segment.

VI. CONCLUSIONS

In the context of the need to reform the Russian economy and restructure individual industries, the importance of the problem of developing adaptive enterprise management in times of crisis is growing.

This is due to the rupture of many economic ties, active import substitution of goods in certain sectors, and need for a significant breakthrough in the military-industrial complex.

In this regard, the role of small and medium-sized businesses is growing, whose importance in the modern world, both in developed and developing countries, is steadily increasing.

In the process of reforming the Russian market in the field of engineering, each company should really evaluate its positions and capabilities in real time in order to maintain the

image of the industry and develop intersectoral economic relations, as well as develop an adaptive management strategy for the future.

A system for monitoring the level of adaptation of individual enterprises to crisis conditions is an important element of anti-crisis policy, since it should help in choosing strategically important business partners, production partners, etc. Enterprises with a high level of adaptation to crisis conditions should be included in long-term sectoral plans for production cooperation in the preparation and implementation of the most important types of products for the industry.

The methodology for implementing an integrated approach to assessing the level of adaptation of industrial enterprises to crisis conditions has the following main stages:

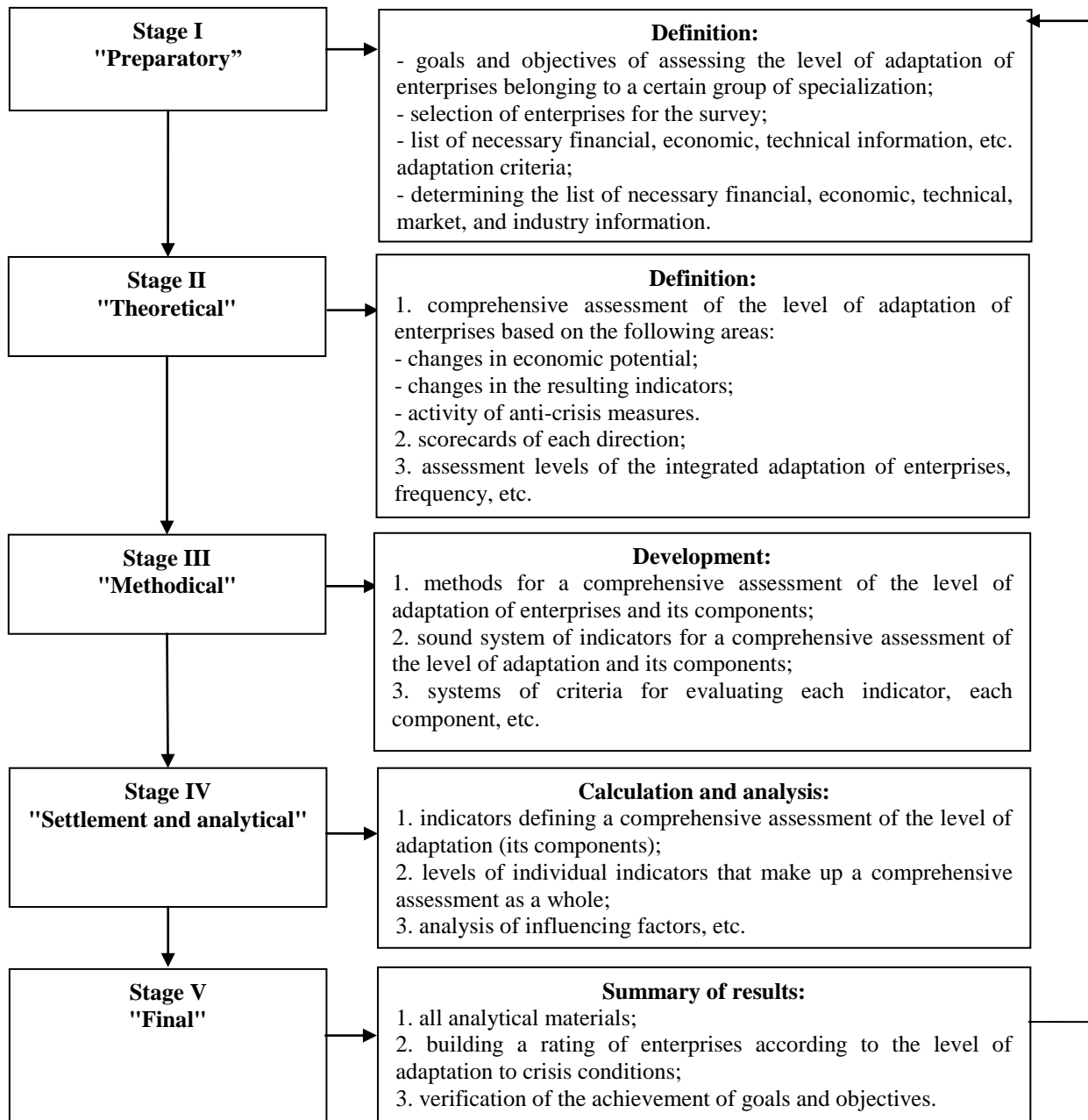


Fig. - II: Sequence of the main stages of the methodology for assessing the level of adaptation of enterprises to crisis conditions

It is worth noting that adaptation as a reaction to changes in the external and internal environment is applicable only on a limited scale, since a new product (or an improved old one) is only indirectly related to the reaction of the market environment, since it provokes a reaction rather than responding to past signals.

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