

ЕКОНОМІКА ТА УПРАВЛІННЯ НАЦІОНАЛЬНИМ ГОСПОДАРСТВОМ

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CONCEPTUAL MODELING OF AGRI-FOOD MARKET DEVELOPMENT UNDER ECONOMY'S GLOBALIZATION**КОНЦЕПТУАЛЬНЕ МОДЕЛЮВАННЯ РОЗВИТКУ АГРОПРОДОВОЛЬЧОГО РИНКУ В УМОВАХ ГЛОБАЛІЗАЦІЇ ЕКОНОМІКИ**

Urgency of the research. Industry-specific features are the core aspects in the development of economic systems, thus, each segment of the national market must be considered taking into account these specific features.

Target setting. Globalization of the economy brings in new challenges to national economy. New development determinants and mechanisms of the agro-food market arise under the conditions of economy's globalization, thus requiring additional research.

Actual scientific researches and issues analysis. Development of the agri-food market attracts attention of many scholars. In particular, related questions have been considered by O. Hubar, V. Virchenko, Y. Pryhozyn, A. Toynbee, O. Spengler, O. Berezin, N. Datsenko, Ye. Kyrylyuk, T. Burns, DeVillé, I. Skavronska, M. Soltés and others.

Uninvestigated parts of general matters defining. The main determinants, methods, levers and preconditions for the development and effective integration of the national agri-food market into the international space and global environment.

The research objective. The purposes of the study are:

- to reveal the essence of the agri-food market development;

- to identify the peculiarities of this process under the conditions of economy's globalization;

- to identify the synergies and developments in the functioning of the agri-food market;

- to construct a conceptual model for the development of the agri-food market in the context of economy's globalization.

The statement of basic materials. The article offers the authors' own approach to the category "development" taking into account the globalization approach,

The conceptual model of the agri-food market development under the conditions of economy's globalization has been developed and presented here.

Conclusions. The conceptual model of the agri-food market includes such elements as the vector of development, the preconditions for development, the scope of development, the level of development, the groups of levers and methods, the result of development. An efficient model involves systemic development, which has a stable vector, based on the synergy effect and internal potential of the economic system and it also encompasses the global level.

Keywords: development; agri-food market; synergy; globalization of the economy.

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Urgency of the research. Agri-food market is an important segment of any national economy. The European integration vector in Ukraine's development changes the structure of the market, its role and functions. Globalization of the economy affects economic systems, thereby predetermining their fur-

Актуальність теми дослідження. Галузеві особливості є головними аспектами розвитку економічних систем. Тому кожен із сегментів національного ринку необхідно розглядати з урахуванням саме цих особливостей.

Постановка проблеми. Глобалізація економіки здійснює нові виклики національній економіці. Виникають нові детермінанти та механізми розвитку агропродовольчого ринку в умовах глобалізації економіки, які потребують додаткових досліджень.

Аналіз останніх досліджень і публікацій. Питання розвитку агропродовольчого ринку привертає увагу низки науковців. Зокрема, ці питання розкриті в працях О. Губаря, А. Вірченка, І. Пригожина, А. Тойнбі, О. Шпенгелера, О. Березіна, Н. Даценко, Є. Кирилюка, Т. Брунса, Д. Вілле, І. Скавронської, М. Золтеса та ін.

Виділення недосліджених частин загальної проблеми. На теоретико-методологічному рівні не визначено основні детермінанти, методи, важелі та передумови ефективної інтеграції національного агропродовольчого ринку в міжнародний простір та глобальне середовище.

Постановка завдання. Розкрити сутність розвитку агропродовольчого ринку, виявити особливості цього процесу в умовах глобалізації економіки. З'ясувати взаємозв'язки синергії та розвитку в системі функціонування агропродовольчого ринку. Побудувати концептуальну модель розвитку агропродовольчого ринку в умовах глобалізації економіки.

Виклад основного матеріалу. У статті запропоновано авторське визначення категорії розвиток з урахуванням глобалізаційного підходу.

Розроблено концептуальну модель розвитку агропродовольчого ринку в умовах глобалізації економіки.

Висновки. Концептуальна модель агропродовольчого ринку включає такі елементи, як вектор розвитку, передумови розвитку, сфера охоплення розвитком, рівень розвитку, групи важелів і методів, результат розвитку. Ефективна модель передбачає системний розвиток, який має сталий вектор, базується на синергічному ефекті та внутрішньому потенціалі економічної системи і охоплює глобальний рівень.

Ключові слова: розвиток; агропродовольчий ринок; синергія; глобалізація економіки.

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ther development. The development process of the agri-food market under contemporary conditions is complex and multifaceted. The related phenomenon and processes acquire new features consistent to the needs of the subjects of the contemporary environment. Under the conditions of economies' globalization, such trends are becoming more pronounced and often repetitive. The process of change in the market systems is dynamic, irreversible and multilateral in the global environment, which affects significantly all adjacent systems that are state-building elements at the same time. Industry-specific features are the main aspects in the development of economic systems.

Target setting. The already achieved level of the agri-food market development currently is lagging behind the indicators of most European countries. At the same time, Ukraine has considerable potential, which allows taking up a leading position at the agri-food market on the global scale. Globalization of the economy brings in new challenges to national economies. Under its influence, development of the agri-food market starts following a new vector. Thus, new development determinants and mechanisms of the agri-food market arise under the conditions of economy's globalization, requiring additional research.

Actual scientific researches and issues analysis. The question of the agri-food market development attracts the attention of many scholars. In particular, general scientific research of the essence for category "development" are considered in the writings by O. Hubar [1], V. Virchenko [2], A. Kuz'menko [2], Y. Pryhozhyn [3], A. Toynbee [4], O. Spengler [5] and others. Industry aspects of the national agro-food market are traced in the works by O. Berezin [6], N. Datsenko [7], Ye. Kyrylyuk [8] and others. The main aspects of essence and structure of the agri-food market have been considered in the article by Samoilyk [9]. Also, it is important to pay attention to the scientific contributions of foreign authors (T. Burns, DeVillé [10], I. Skavronska [11], J. Mazurek, I. Mielcová [12], M. Šoltés [13], Mamedov et al. [20], Dedina & Sánová [21], Vilmantas, & Melnikas [22] and others) who study the development of agricultural markets in other countries. Scientists consider that the development of agri-food market has the strategic importance for the national economy and for the creation of food security in global scales. At the same time, the development process is rather dynamic, and therefore is difficult to predict. New features, factors and levers, that change the development vector of agricultural markets in economy globalizations, constantly appear.

Uninvestigated parts of general matters defining. Despite the investigation by many scholars the problems of the agri-food market development, the main determinants, methods, levers and pre-conditions for the development and effective integration of the national agri-food market into the international and global environment are not considered on the theoretical and methodological levels. These exact aspects require additional comprehensive scientific research.

The research objective. The purposes of the study are: to reveal the essence of the agri-food market development, to identify the peculiarities of this process under the conditions of economy's globalization, to identify the synergies and developments in the functioning of the agri-food market, to create a conceptual model for the agri-food market development in the context of economy's globalization.

The statement of basic materials. Globalization approaches to the interpretation of the development can be seen in the civilizations theory by A. Toynbee and O. Spengler [4; 5]. In the works by O. Spengler development is considered in the context of the civilization evolution. The scientist believed that it is impossible to study history from the position of strict scientific analysis; the most important in the history is to understand the uniqueness of it, based on intuition, rather than on the basis of intelligence. It is possible to understand and appreciate the culture only from the inside, by experiencing it. There are two stages in the life of culture: the stage of raising the culture – organic evolution; the stage of declining the culture – civilization – a mechanical type of evolution, globalization (area principle defeats time principle, leading to inevitable world wars), lack of life spirituality (transition from art to sport, from literature – to musical hall (var'yete), from heroes – to engineers, replacement of poetry with mechanics) [1, p. 372; 5].

Toynbee A. considered that logic development can be understood only in the context of certain civilizations. The unit of studying history is a separate society. Societies are divided into two types: the first type is "primitive"; the second one is "civilizational". The society development is carried out

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through “mimesis” – imitation. The first type is society that allows to the old, past, to rely on the tradition and authority of ancestors. The second type imitates its heroes, leaders, creative personalities. The heroes create development dynamics, they are able to concentrate on energy and respond to the “challenge” of history. Toynbee A. considers that person does not achieve civilization due to the biological gift (heredity) or the favorable conditions of the geographical environment, instead person achieves civilization by reacting to challenging situations, which inspires him to efforts. Thus, the internal mechanism of history, according to A. Toynbee, can be represented as a challenge reaction. “Challenges”, in his opinion, are divided into three types: unfavorable weather and conditions (for example, swamps in the Nile delta – is a challenge for ancient Egyptians, forests and frost – for Russians); attack by foreigners; the decadence of previous civilizations (for example, the fall of Hellenorm civilization led to the development of the Byzantine and European cultures) [1, p. 372; 6].

These globalization theories contain contradictions in the essence understanding of the category “development” in terms of the globalization approach. On the one hand, globalization first of all involves destruction of borders, maximum convergence and assimilation of systems. At the same time, the basis of development is the protection of the integrity of the system and the object of development. Thus, development according to the globalization approach is irreversible, purposeful, natural process of integration of the object in the global environment, which involves changing of the state, moving forward outside of the object’s shell in all its spheres, the impetus for which is the synergistic effect of all system’s elements interactions (object of development) under the influence of progressive factors, expanded reproduction and restoration, includes growth and transformation of the object’s structure-forming elements, providing the integrity of the basic components of the system.

Development features are determined by its object. The agri-food market development is presented in the form of a scheme (Fig. 1).

The agri-food market can be developed in one or several priority vectors that depend on the purpose, preconditions and factors influencing in this process. In particular, the agri-food market can be developed in the direction of improving the economic results of economic activity as separate subjects of the market, as well as the market system as a whole. Also, the development of this market segment may be aimed at improving social outcomes, in particular, the formation of food security, the growth of food consumption culture, the creation of new jobs, the development of socio-economic infrastructure. An important vector for modern agri-food market development is innovative development.

Innovative agri-food market development is a positive change in the existing state of the subjects and the market system as a whole, based on the innovation process activation at various stages of agri-food products creation. The innovative development of the agri-food market involves the creation of a new product (new kinds of plants, breeds of animals, as well as products of processing of crop and livestock products), the emergence and use of innovative production technologies, organization of production processes and sales systems. In today’s conditions, the natural and ecological component of the agri-food market development is becoming increasingly important, thus the development vector may be aimed at reducing the negative impact on the environment, preservation of natural resources and their expanded reproduction in the process of economic activity in the agrarian sector. Under the conditions of economy’s globalization, the vector of sustainable agri-food market development, which combines all the above-mentioned vectors and provides balanced socio-economic and ecological development on an innovative basis, is the most desirable one.

The preconditions, the impetus, for the agri-food market development are the processes of economy’s globalization and the challenges, which accompany national markets integration into the global environment. The change in the course of the national economy and politics affects market systems condition, thus, the agri-food market adapts to the dynamics of the general economic system in which it operates, and therefore it develops. According to the theory of socio-economic cycles, development is a phase preceded by a crisis. Therefore, negative tendencies, which are systemic and long-lasting, lead to recovery of market subjects activity in future, the development of innovative technologies, and, as a consequence, the emergence on a new, better stage of functioning. The impetus for the agri-food market development may be a change in the natural and climatic conditions, which is especially relevant under the conditions of increasing anthropogenic load and increasing of global environmental

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problems. In climate change conditions, there is a need to invent new kinds of plants and breeds of animals, natural resources exhausting, in particular energy resources, leads to the emergence of alternative energy. Thus, the agri-food market is developing in order to adapt to the new natural and climatic changes.

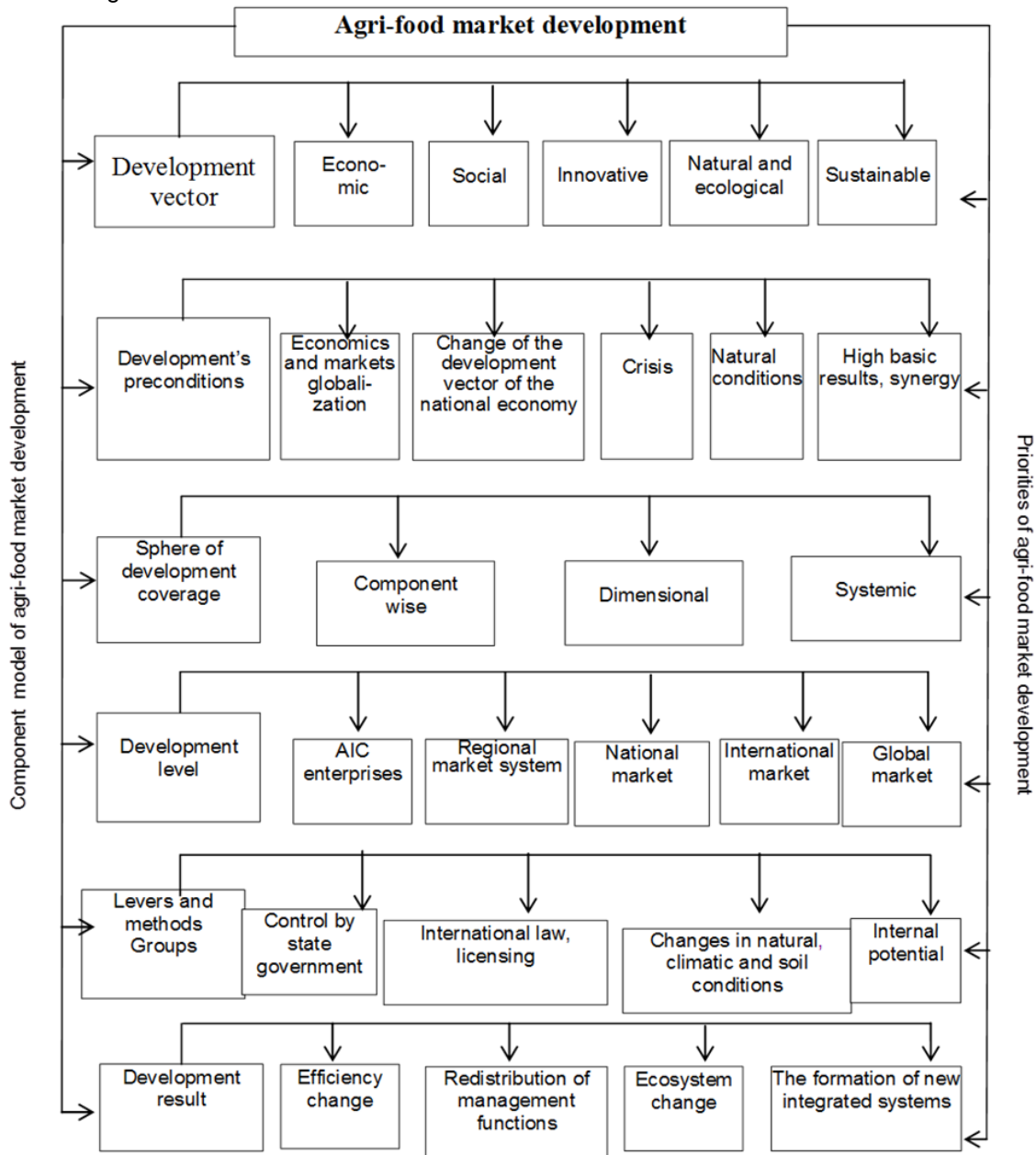


Fig. 1. Conceptual model of agri-food market development under conditions of economy's globalization

Source: developed by the authors

If the subjects of agri-food market are using an effective strategy, then the recession does not start after the stabilization stage. Accumulations of resources, obtaining surplus profits, effective combination of management mechanisms cause the emergence of a synergistic effect, which is main prerequisite for further development.

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Consequently, the synergy effect is a basic precondition for the economic systems development. Now synergetic is becoming more widespread in various manifestations and spheres of both economic science and other industries. The etymological essence of the expression “synergy” comes from biology and medicine and means the coordinated work of the whole organism organs as a whole; in addition, the synergetic theory is widely used in the process of physical and chemical processes for describing the interaction of atoms and molecules.

Translated from ancient Greek “synergetikos” is “cooperation, joint action”. In modern theory and practice, there was a separate science – synergetic, which began to actively develop in the 80s of the twentieth century. The first thorough studies in these areas are the works by G. Hacken [14]. In addition, it is advisable to draw attention to the research by E. Knyazeva [15], Ye. Kyrylyuk [16], A. Proshchalykina [16], M. Ovchynnykova [17], N. Potapova [18], N. Protasova [19]. They consider that synergy involves the coherence of elements interaction when creating a single integral structured system.

Synergetic, a synergistic approach has aroused in the theory of complex systems development. The object of synergetic studies is complex systems that are self-organizing. With this, self-organization is an irreversible process, which leads to the formation of more complex structures of the whole system as a result of the subsystems’ cooperative action. The main difference of self-organization from other processes, for example from growth processes, is a qualitative change in the state in which the system is located, and the fact that this change is a leap. In the general sense, synergetic is a science that studies processes in unstable systems, transition stages from the state of order to the state of chaos. The state of maximum chaos in the unbalanced process is the point of bifurcation [17, p. 263].

Considering development in terms of synergy allows to analyze the key positions of the synergetic methodology: difficultly organized systems can not be imposed with the development ways, but should be promoted with their own development trends; chaos may be a constructive source, from which a new organization of the system may arise; at certain moments of instability, small disturbances may have macro effects and develop into macrostructure, in particular, the actions of one particular person can affect macro-social processes; there are several alternative ways of development for complex systems, but at certain stages of evolution there is a certain pre-determinism of deployment processes and the present state of the system is determined not only by its past, but also by the future; a complexly system includes not only simpler structures and is not an ordinary sum of parts, but generates structures of different ages in a single tempo-world; taking to consideration the laws and conditions of the rapid, avalanche-like processes and processes of nonlinear self-development systems, it gives the opportunity to initiate these processes through human managerial actions [15, p. 4]; it allows us to bring together the inner and outer worlds (both external and inner people’s world) in constructive inclusion of instability in the picture of the universe [14, 17-19].

Considering these methodological principles of synergy, it is possible to trace the relationship of evolutionary development with the complex systems elements’ self-organization, and the people’s influence on the state of complex systems’ data, their transformation and restructuring, is inalienable.

Consequently, synergy, as well as development, arises during the interaction of elements that are transformed and united into the system. In this case, synergetic systems have many peculiarities: 1) it is characteristic for synergetic systems, the predominance of cooperative forms of components’ interaction, both inside the system itself and outside of it; self-organization is always connected with cooperative processes, collective coordinated behavior of the system’s parts (due to this behavior, new structures arise); 2) the results of the functioning of the synergetic system, and the ability to be endowed with those or other properties do not depend on the individual components of the system, but on the collective system elements’ interaction, their consistency, synchronization, coherence; 3) accident, the real situation is a constructive beginning, the basis for the development process; the process of self-organization occurs as a result of the chance and necessity’s interaction and is always associated with the transition from instability to stability; 4) synergetic proceeds from the principle that the surrounding world evolves according to non-linear laws; nonlinearity in the widest sense means the multivariate paths of choice from alternatives; the synergetic system is characterized by the nonlineari-

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ty of internal dynamics, the ability to change its structure, while preserving the integrity; 5) the synergetic system determines clearly the energy factors – the emergence of a powerful flow of energy, and its exit from the system; 6) the synergetic system has the constructive character of the contradictions that arise in the process of interaction; 7) the synergetic system has simultaneously, two tendencies: the desire to increase entropy and to its decrease (non-entropy tendency); One of these tendencies' predominance determines either the transition of the system to a higher level of development, or the deployment of entropy process, or the decline; self-organization appears in the ability to withstand tendencies of entropy [14-19].

So, in terms of a synergetic approach, we can distinguish many synergetic patterns of development (Tab. 1).

The agri-food market development covers different scales. In particular, only certain elements of the market system, such as recycling enterprises, infrastructure objects, and agricultural enterprises, can be developed; such development is componentwise. Also, the agri-food market development can be considered as dimensional. Its essence is to cover a certain territory and subjects that are in this territory, with positive changes and transformation, as the result of this the emergence of new subjects and objects, and the disappearance of the old ones appear.

Table 1

Characteristic of synergetic development patterns

Synergetic development patterns ^α	Characteristic ^α
Converting existing static and dynamic systems into more complex ones ^α	The basis of development is the transformation process of existing static and dynamic systems, their restructuring and transformation into new, more complicated systems, while their complexity is determined not so much by more structuring elements, but by the presence of new unique interconnections and vectors with low predictability of their subsequent change and influence on each other, as well as the possibility of further changes in the already new system. It should be noted that dynamic systems, which are elements of the general one, change faster and with less consequences for the base state than static, since the latter are characterized by larger gap distances between the initial and future states; since static systems have larger gap distances between the initial and future states. ^α
Changing the state of the object that causes a synergistic effect ^α	The development process leads to a change in the state of the object; its movement to the highest point, which causes the appearance of a positive occurrence – is a synergistic effect, the development result exceeds the expected results from the change of individual elements. ^α
Integrity preservation of the qualitative basic element's properties ^α	Synergy in the process of development appears primarily in the integrity preservation of the qualitative basic elements' properties, while the destruction of the base system occurs, which is primarily due to its openness, namely, due to the environment elements' influence on the transformation processes. ^α
Leaving the shell of an existing system ^α	Development involves going beyond the shell's boundaries of the existing system and directly or indirectly covering all elements of the system and aspects of its functioning; creating based on this a synergistic effect. ^α

Source: developed by the authors

System development is the most extensive; it covers all markets elements and their interconnections. This development is characterized by significant changes and may cause redistribution of spheres of influence on a global scale.

The agri-food market development is carried out under the influence of a methods and levers' combination, the main ones of which are determined by the state regulation of the economy system, the influence of international regulation components, as well as the natural and climatic conditions. At the same time, the main impetus to the development is the internal potential of the market's system, in particular, the availability of resources, their combination and interconnections, dynamism and willingness for transformation, the preconditions for the emergence of synergy.

The result of development can be an increase in efficiency (economic, social, environmental, and technological). The agri-food market has a significant impact on the ecosystem that is why the result of its development can affect the ecosystem, both for the better and for the worse. Also, in the process

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and as a result of development, redistribution of functions, spheres of management, levers of influence is occurred, subjective-object relations change, and new management hierarchy is formed. The synergy of the agri-food market development appears in the construction of new integrated systems; in particular, the national market entry into the global environment takes place.

Thus, the agri-food market development is a dynamic process that occurs continuously under conditions of globalization, which is characterized with the emergence of new industries, the emergence of new technologies, increasing efficiency of economic processes, the emergence of new partnerships. A combination of methods and levers of external and internal influence must be combined to achieve positive development results, the synergistic effect that is an impetus for the formation of new systems, arises.

Conclusions: The economy's globalization brings changes in the structure of economic systems which play a leading role in shaping the competitiveness of the economy. Significant changes are observed in the structure and model of the agri-food market. This segment of the market is very important for every country, including Ukraine. This country can become an important counterparty of the agri-food market on a global scale.

The conceptual model of the agri-food market includes such elements as the development vector, the development preconditions, the scope of development, the level of development, the groups of levers and methods, the result of development. An effective model of the agri-food market development in the context of economy's globalization involves systemic development, which has a stable vector, based on the synergistic effect and internal potential of the economic system and covers the global level.

It is advisable to highlight such synergistic features of the software – converting existing static and dynamic systems into more complicated, changing the status of the object, which determines the synergistic effect, the integrity preservation of the qualitative basic elements' properties, leaving the shell of the existing system.

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