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Synergetic approach to entrepreneurship Tomsk Polytechnic University

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Abstract

Nowadays in Russia there is a need to search for new organization forms of entrepreneurship and transformation of paradigms. It is necessary to take measures based on the synergetic paradigm. Now entrepreneurship exists on the principles of competition. Competition and synergy are antipodes. However, the time has come in business to pay more attention to the interaction and cooperation. Entrepreneurship is a complex, open, non-linear and unsustainable system. In the development of entrepreneurship as a system, a number of synergetic principles are manifested, namely the principle of interaction efficiency, the principle of chaos and order balance, the principle of resonance points. It is necessary to use a strategy focused not on GDP growth, but on synergetic effects, and replace the existing principle of competition with the principle of interaction and cooperation.

Keywords: Synergy, entrepreneurial structures, system approach, self-organization, interaction

1. Introduction

Nowadays there is a need to move from the classical management paradigm to a more modern synergetic one, which is able to explain such complex nonlinear processes as development, crisis, synergetic effect, etc. The purpose of this work is to analyze entrepreneurship as a synergetic system and to assess the importance of the principles of synergetics in modern conditions.

Synergetics is an interdisciplinary post-non-classical direction of research. Synergy implies the idea of interdisciplinarity and joint action, which contributes to the search for new paradigms of knowledge of existing phenomena, the development of society and the economy, the creation of the world picture that would meet modern requirements. Synergetics is positioned like a philosophy of hope. The formulated provisions form the basis of a new worldview, a new ideology, which is implicated by synergetics. This ideology derived from the knowledge of the laws of evolution, self-organization and self-management of complex systems, is clearly not enough for humanity. It meets the needs of the universal character, and not just naturally arisen in Russia aspirations to find a replacement for the lost known ideological attitudes [2].

It is important that synergetics is studied not only by scientists, but also by managers, engineers, economists, entrepreneurs, teachers who cannot stay away from the changes.

Currently in Russia there is a need to transform paradigms. The level of economic development of Russia is not high enough. It is necessary to take measures based on the synergetic paradigm. It is necessary to introduce strategies that are not based on GDP growth, but on obtaining synergetic

effects and synergetic technologies. It is a synergetic approach that will ensure not only sustainable development, but also quality, i.e. the transition to a higher level of development.

2. Entrepreneurial system

Entrepreneurial structures in Russia also need the accelerated development, which is possible due to the transition to the model of self-organization and the formation of positive synergetic effects. Collective, concerted actions at various levels are required. Currently, entrepreneurship exists on the principles of competition. Competition and synergy are antipodes. Competition implies struggle, synergy – cooperation. The time has come for entrepreneurship to pay more attention to interaction and cooperation. It should also be noted that there have been major changes in the evolutionary development of entrepreneurship – increased uncertainty, accelerated pace of change, increased complexity of economic, social and technological systems. It is the implementation of the principles of synergy that will improve the quality and efficiency of the development of entrepreneurial structures.

Entrepreneurship is an important sector of the economy. The topic of entrepreneurship is relevant and studied by many authors. The literature presents many definitions of the term "entrepreneurship". From the viewpoint of the synergetic approach, entrepreneurship is a cycle of interaction of elements that in the process of interpenetration form a certain complex, including: the search for a new approach to the problem, the generation and implementation of innovative solutions, the risk of failure, a beneficial result containing a synergetic effect.

As you know, the synergistic effect is an excess of the value of the product (goods or services) over the mechanical sum of the values of all resources (including labor) consumed to create this product. The synergistic effect is the result of an effective combination of all factors of reproduction, when this combination creates the surplus value embodying a synergistic effect. In turn, the effective combination of factors of reproduction (it is known to cover production, distribution, exchange and consumption) is carried out primarily because of active entrepreneurship, in its both direct and market forms.

Consequently, an entrepreneurship is the main, leading factor in generating a synergetic effect in all spheres and sectors of the economy at all its levels [7].

The immediate prerequisites for the synergetic interpretation of entrepreneurial activity come from the founders of the modern General Theory of self-organization presented by I. Prigogin and G. Haken, who carefully applied the ideas of non-equilibrium thermodynamics and synergetics developed within the framework of Physics and Chemistry and also Sociology, Political Science and Economics [1].

From the view point of the synergetic approach, entrepreneurship can be considered as a kind of a system consisting of self-acting entities, having characteristics, specific features, acting on the basis of certain principles and affecting certain objects. The business system has a certain internal order and is subject to certain laws (Fig. 1).

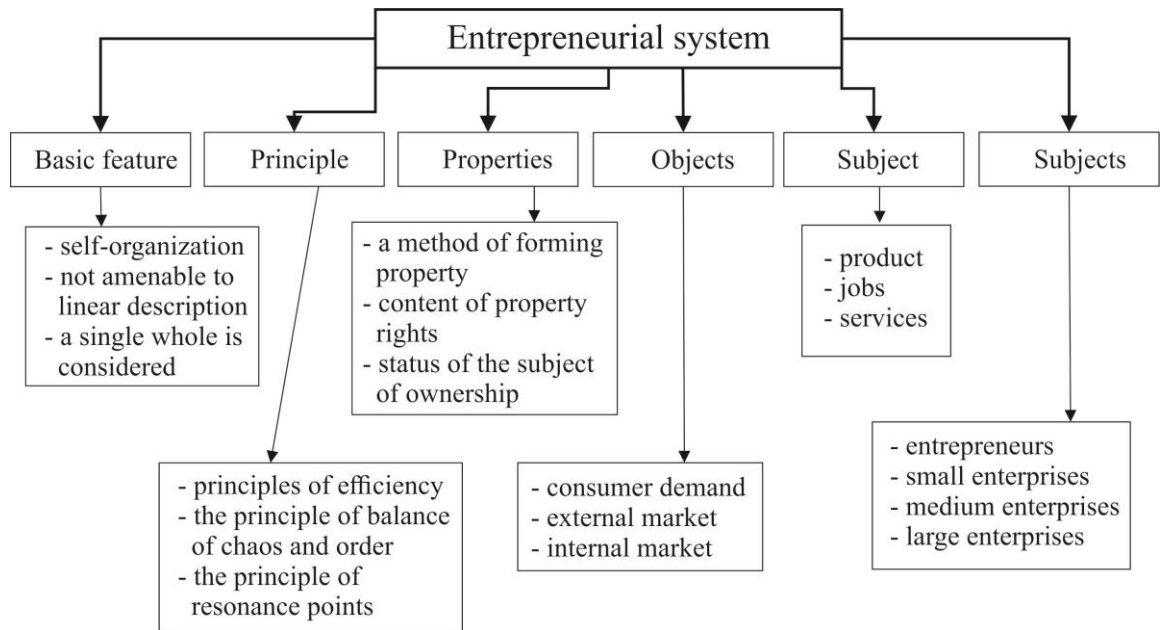


Fig. 1. Entrepreneurial system model

The business system is a complex mechanism of involuntary coordination, operating through a system of prices and markets, a communication mechanism that brings together the knowledge and actions of millions of different entrepreneurs. It solves the most complex problems involving thousands of variables and relationships. Such important concepts of synergy as the openness of the system, the constant exchange of information with associated systems, self-movement and self-organization are inherent in entrepreneurship, as a kind of system. In the development of entrepreneurship as a system, a number of synergetic principles are manifested, namely the principle of interaction efficiency, the principle of chaos and order balance, the principle of resonance points [6].

Synergetics is the development of a systematic approach to complex, open, nonlinear and unstable systems. Such systems include enterprise and entrepreneurship. The complexity is estimated by the degree of diversity of its possible reactions and the measure of non-predictability of the system behavior. Open relations are considered when there is a free multilateral exchange of matter, energy and information. A nonlinear system means that the properties of the system are more determined by internal processes than by external factors. Instability is the state of readiness of the system for changes and the moment of choosing their direction [4]. As seen in Fig. 1, the entrepreneurial system has the features and principles of a synergetic system. Thus, we will consider entrepreneurship as a synergetic system. Entrepreneurship implies the principles of self-organization, creativity, instability and interaction. However, these principles existed spontaneously and haphazardly. Currently, it is necessary to apply the principles of synergy in business actively and scientifically.

The features that characterize the entrepreneurial system as synergetic are the following:

1. It consists of many interrelated and interdependent elements.
2. It shows the basic properties of systems: direct and feedback, synergy, adaptation, stability, complementarity, equifinality, unsteadiness, historicity, emergence, communication.

3. It reveals synergetic properties of systems: uniqueness and unpredictability of behavior; the presence of limiting capabilities, the ability to adapt to external disturbances and "noise", the ability to resist entropy trends, the ability to target formation.

4. It has a multivariate and nonlinear trajectory of development, which makes it possible to assume that there are no dead-end paths of development.

5. The development process combines divergent (growth of diversity) and convergent (reduction of diversity) trends, the presence and formation of which determines the cyclical dynamics of economic development.

6. The behavior of the enterprise involves a huge variety, which causes the complexity of its development and management.

7. The probable, chaotic behavior of the enterprise is caused not by the limitation of the existing administrative methods, and the nature of its functioning and development [3].

3. Discussion

The analysis of these features allows us to conclude that it is possible to describe the functioning and development of business structures with the help of the principle of self-organization – the latest tool of modern science. In the theory of self-organization - in a nonlinear complex world the whole is not equal to the sum of parts. The whole is qualitatively different from the parts it consists of. In synergetics the whole modifies the parts.

Synergetics amazes us with interesting ideas. We can say that synergetics teaches us to see the world, and in our case, entrepreneurship, in a different way. It is clear that complex systems, such as entrepreneurship, cannot be imposed on their development paths. In addition, synergetics shows us why chaos can act as a creative beginning, how something new can be formed out of chaos. Synergetics shows that there are several alternative ways of development and it shows new principles of forming the whole from its parts. In synergetics, "the whole" is no longer equal to the sum of the parts. Now it is not less and not more than the sum of the parts, it is qualitatively new. Finally, synergetics gives us the knowledge of how to manage complex systems effectively.

There are two forms of entrepreneurship that interact with each other on the principle of direct and feedback:

- entrepreneurship in a direct form;
- entrepreneurship in the form of a market.

The first option is focused on the disclosure of creative and creative potential of the entrepreneur in the case corresponding to the nature of this potential, aiming at obtaining the socially useful result that has market efficiency. It means that the cost of achieving it is recouped and a sufficient profit is obtained during the sale of the relevant goods and services in the market.

The second variant of entrepreneurship in the market form is characterized by its orientation to profit and accumulation of monetary capital and the achievement of a socially useful result acts only as a means to achieve the target [7].

Entrepreneurial structures having emerged from the effect of negative synergy in the 90th years of the XX century require mobilization mechanisms that generate positive synergy effects. Only they are able to provide an accelerated, high-quality development of the entrepreneurial structures. Sustainable functioning and development of entrepreneurial structures can no longer be explained sufficiently by the existing classical ideas about its nature [5].

The new synergetic paradigm of the development of entrepreneurial structures takes into account the diversity, alternative development of entrepreneurship, the inevitability of passing them many

points of bifurcation, forming the field of equally probable states, while entrepreneurial systems can be strong and weak, protected and vulnerable, developing and degrading, emerging and dying.

Currently, a fundamentally new approach to the description of unstable, nonlinear dynamics of processes is being formed, which is called the theory of synergetic development.

Synergetic development is defined by:

- non-linearity of business processes;
- innovation pace;
- emphasis on the prevalence and effectiveness of self-organization;
- strengthening management and self-organization interaction;
- control orientation on the formation of synergistic effects, enabling the transition of systems to the new accelerated pace of life [5].

In business, the transition to synergetic management, the transition from the principle of object-subject to the principles of self-organization and self-development is relevant and necessary. It is necessary to search for new forms of production organization, change of technological structure and paradigm of production thinking in business structures. The transition to synergetic management is possible through the reengineering of business processes.

The crisis of the classical paradigm of management of highly complex nonlinear systems, which include entrepreneurship, has led to an unstable state of traditional ideas about its development. Therefore, the application of synergetic methodology to economic objects, including entrepreneurship, is quite justified. The study of business activity based on a synergetic approach using multidimensional nonlinear maps characterizing the dynamics of the processes shows that these processes are inherent, depending on the influence of various parameters, diverse dynamic regimes: equilibrium, cyclicity and rather complex behavior, including deterministic chaos, the result of which can be very undesirable consequences. Consequently, the increase in its role in business management in modern conditions is obvious and can be traced in its attempt to move to a qualitatively different level, taking into account objective laws and the natural logic of the functioning and development of economic systems of various types. Entrepreneurship with an immense variety of end states requires a new synergetic approach to analysis and management [3].

4. Conclusion

In conclusion, we can conclude that in solving specific problems of the economy, the transition to synergetic management today is particularly acute and relevant. Entrepreneurial structures, being complex, open, non-linear and unstable systems, are able to move to a better level of development through a synergetic approach. Synergetics, as a modern post-non-classical direction with the idea of self-organization, interdisciplinarity and joint action, is able to ensure sustainable development of entrepreneurship. It is necessary to use a strategy focused not on GDP growth, but on synergetic effects, and replace the existing principle of competition with the principle of interaction and cooperation. Thus, entrepreneurial structures now need to search for new forms of business organization and a new paradigm of thinking.

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