



METHODOLOGICAL SIGNIFICANCE OF THE SYSTEMIC-SYNERGETIC APPROACH TO DETERMINING THE INTEGRATION OF SMALL AND LARGE ENTERPRISES

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Abstract

This article is devoted to analyzing the methodological foundations for studying the integration of small and large enterprises in the context of socio-economic development. The study examines the system of cooperative relations between enterprises through the lens of a systemic-synergetic approach. While the systemic approach determines the static and hierarchical structure of the system, synergetics substantiates its nonlinear development dynamics, self-organization mechanisms, and development in a non-equilibrium state. The article highlights the differences between cybernetic and synergetic approaches and emphasizes the role of positive feedback in the integration process. The analysis concludes by proposing a conceptual research plan based on a systemic-synergetic approach for studying the union of small and large enterprises.

Keywords: Small business, large enterprises, integration, systemic approach, synergetics, systemic-synergetic approach, cybernetics, self-organization, nonlinearity.

Introduction

Ensuring sustainable economic growth in the context of modern economic development is directly linked, first and foremost, to the effective development of business entities and the formation of mutually beneficial integration ties between them. Global practice demonstrates that fostering the development of



small, medium, and large enterprises in cooperative and proportionate relationships is crucial for enhancing the adaptability and competitiveness of the economic system. Therefore, supporting enterprise integration requires not only economic and practical measures but also a thorough methodological analysis that reveals the essence of this complex process.

The integration process, by its nature, is a dynamic and open system, and it is necessary to study its components (enterprises of various sizes), internal relationships (cooperative connections), and interactions with the external environment (market, state policy) holistically and in their interconnectedness. It is this systemic approach that allows us to take into account the nonlinear, self-organizing characteristics of integration.

The purpose of this article is to comprehensively analyze the theoretical and methodological foundations of the systemic-synergetic approach in studying such a complex economic phenomenon as the integration of small and large enterprises, and to substantiate its scientific significance. To achieve this goal, within the framework of the study, comparative differences between paradigms of integration striving for stability (systemic-cybernetic) and those tending towards self-organization (systemic-synergetic) are demonstrated, and the nonlinear and variable nature of integration processes is revealed.

Analysis of literature on the topic

The issues of studying research objects as systems were theoretically substantiated in Ludwig von Bertalanffy's General Systems Theory in the mid-20th century. Scientists such as V.G. Afanasyev developed the basic principles of systematic research, particularly the principles of systematicity and isomorphism. L.I. Lopatnikov classifies various approaches to the concept of a system (objective existence, as a model, a synthesized set).

However, by the beginning of the 21st century, due to the nonlinear, irreversible nature of complex economic processes, synergetics (E.A. Erokhina, J. Casta) emerged as a new paradigm in system studies. Synergetics examines the processes of self-organization in systems.

Although sufficient material on the study of integration processes has been collected in economic literature, the issues of examining cooperative



relationships between small and large enterprises based on systematic analysis and synthesis of synergetic concepts have been insufficiently researched. This study aims to fill such a gap.

Research Methodology

The study employs a systemic-synergetic approach, which is considered one of the universal methods for studying complex socio-economic systems. The choice of this approach is explained by the nonlinear, unbalanced, and open (in constant exchange with the environment) nature of the integration system between small and large enterprises.

Main principles of the methodology:

- Principle of Systematicity: Studying integration not as a simple sum of parts, but as an interconnected and holistic structure.
- Principle of Synergism: Analyzing the system's development process, its ability to transition to a new qualitative state (bifurcation) through self-organization and imbalance.
- Synthesis: The complementarity of cybernetic (stabilizing control) and synergetic (developing self-organization) paradigms.

Analysis and Results

The fundamental difference between systems analysis and synergetics (and related cybernetics) is manifested in their approach to the system.

Characteristics	Systemic-cybernetic approach	Systemic-synergetic approach
Main focus	System statics, order, and equilibrium	Processes of growth, development, and self-organization of systems [6]
Feedback	Negative (stabilizing) feedback	Positive (developmental) feedback
Attitude towards equilibrium	Equilibrium - the foundation of self-regulation [7]	Equilibrium - viewed as an obstacle to development
Integration process	In many cases, it is limited to structural analysis	Demonstrates cooperativity based on self-organization



While cybernetics considers fluctuations in the system as "evil," synergetics views them as a source of development and a cause of qualitative changes. This difference is especially important for the constantly changing business environment in a market economy.

The integration of small and large enterprises is based not only on administrative management (cybernetics) but also on the self-organizing nature of economic systems. The systemic-synergetic approach allows for the study of integration in the following two main directions:

1. Network approach: Analysis of the process of resource accumulation based on the mutual contractual and social relations (network) and trust mechanism among participants of the integrated association.
2. Assessment of synergistic effectiveness: Identifying the synergistic effect that arises as a result of the merger of small and large enterprises, which exceeds the simple sum of individual parts.

This approach creates a comprehensive and dynamic picture of integration, taking into account nonlinear tendencies and the heterogeneity of the environment.

Conclusions and recommendations

The application of a systemic-synergetic approach to studying the integration process of small and large enterprises serves as an important methodological foundation for revealing its complex, nonlinear, and dynamic nature. This approach overcomes the limitations of the cybernetic approach and allows for the analysis of integrated structures' ability to self-organize and transition to a new qualitative level under conditions of disequilibrium.

Based on the results of this study, the following recommendations are made:

1. Implement the research plan (analysis of the investment and construction complex's state, theoretical system design, and determination of efficiency criteria) based on the systemic-synergetic approach proposed by the author for conducting research using the example of small and large construction enterprises integration.
2. When developing programs for fostering cooperative ties between small and large enterprises, special attention should be given to positive feedback mechanisms (mutual trust, joint innovations, shared resource base).



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3. Strengthen the legal protection of sectoral forms of integration (clusters, cooperation networks), and reduce administrative barriers to enhance their self-organization potential.

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