

## ABSTRACT

### Certification work for the degree of "Master of TRIZ"

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#### Topic

#### **"THE HIDDEN MECHANISM AS A SYSTEMIC TYPE OF CONTRADICTION"**

**Organization:** International TRIZ Association (IBTA)

**Year of defense:** 2026

#### General Characteristics of the Work

##### **Relevance of the research topic**

Classical TRIZ effectively works with technical and physical contradictions but proves insufficient for solving chronic, persistent dysfunctions in complex business systems. Such problems are often not "breakdowns" but symptoms of **hidden mechanisms (HM)**, performing critically important latent functions for the survival of a part of the system. Direct attempts to eliminate a symptom without considering the hidden function lead to "systemic revenge" – the emergence of new dysfunctions. The relevance of the work is due to the necessity of expanding the ontology and toolkit of TRIZ for working with this class of problems, which has direct economic significance.

##### **Degree of problem development**

The phenomenon of latent functions is described in sociology (R. Merton), psychology ("secondary gain"), cybernetics (homeostasis, W.R. Ashby), and management (system archetypes by P. Senge). Within TRIZ, concepts of "harmful systems" and "pseudo-problems" exist; however, they are descriptive and do not provide operational technology for transformation. There is a methodological gap between the identification of organizational pathology and the tools for its resolution.

##### **Research objective**

Theoretical substantiation, formalization, and operationalization of the concept of a "**Hidden Mechanism (HM)**" as a new systemic type of contradiction (contradiction) in the paradigm of business TRIZ, as well as the development of a methodological toolkit for its diagnosis and transformation in complex business systems.

##### **Research tasks:**

1. Critical analysis of concepts of latent dysfunctions in related fields and within the evolution of the concept of "contradiction" in TRIZ.
2. Formalization of the definition, development of a structural-functional model and typology of the Hidden Mechanism.
3. Creation of a step-by-step algorithm for diagnosing and transmuting an HM.
4. Testing the methodology on real business cases.
5. Formulation of practical recommendations and prospects for theory development.

##### **Object of research**

Chronic, solution-resistant dysfunctions in complex business systems.

## **Subject of research**

The systemic type of contradiction "Hidden mechanism," its structure, functions, and methods of transformation within the TRIZ methodology.

## **Methodological basis**

The research is based on interdisciplinary synthesis:

- Core: classical and developed TRIZ (laws of system evolution, ARIZ, substance-field analysis).
- Systems-activity approach (G.P. Shchedrovitsky).
- Theories of organizational psychology and psychotherapy (secondary gain, circular interviewing).
- Methods of case-study, retrospective analysis, and thought experiment.
- Empirical base: more than 150 of the author's business projects.

## **Scientific novelty:**

1. A new basic concept has been introduced into the TRIZ conceptual apparatus – the "Hidden mechanism" as a systemic type of contradiction (contradiction).
2. An original structural-functional model (SFM) and typology of HM according to the criterion of the nature of the latent function have been developed.
3. A comprehensive algorithm for diagnosing and transmuting HM has been created and tested, synthesizing TRIZ tools with methods of system analysis and psychology of change.

## **Statements to be defended:**

1. A significant class of chronic business system problems represents not classical TRIZ contradictions but systemic contradictions of the "Hidden mechanism" type, where an explicit dysfunction (ED) is an inevitable price for providing a latent function (LF) critically important for a part of the system.
2. Resolving a Hidden Mechanism contradiction requires not eliminating the symptom but transmutation – redesigning the way of providing the latent function with legitimate, non-harmful means using a modified TRIZ toolkit.
3. The proposed structural-functional model, typology, and algorithm form an integrated methodology that significantly increases the "resolution capability" and effectiveness of TRIZ experts when dealing with profound, persistent organizational dysfunctions.

## **Practical significance**

1. For TRIZ consulting: a ready-made toolkit is provided for diagnosing and transforming the most complex business problems, preventing "systemic revenge."
2. For business analysis: the methodology allows for deep organizational diagnostics, identifying the true causes of chronic problems (Due Diligence, M&A, crisis management).
3. For developing TRIZ expert competencies: expands the role from a "problem solver" to an architect of organizational changes and a "systemic therapist."

## **Work approbation**

The main points were reported and discussed during working sessions and consulting projects with teams of more than 10 client companies from 2017 to 2026. The methodology was tested on a series of 5 detailed business case studies, demonstrating high effectiveness according to the criteria of diagnostic depth, result sustainability, and systemic effect.

## Structure of the certification work

The work consists of an introduction, seven chapters, a conclusion, a glossary, and a list of references. Total volume: 63 pages.

## Main Content of the Work

**In the Introduction**, the relevance is substantiated; the objective, tasks, object, subject, methodology, scientific novelty, practical significance, and statements to be defended are defined.

**Chapter 1** analyzes the evolution of the TRIZ problem field from technical to socio-technical systems, revealing the boundaries of the classical model of contradictions. A preliminary description of the hidden mechanism contradiction (HMC) as a conflict between an explicit dysfunction (ED) and a latent function (LF) is given. A comparative analysis with correlates in sociology, psychology, cybernetics, and management is conducted, revealing the existing methodological gap between description and transformation.

**Chapter 2** details the objective, tasks, methodological basis, and research design, built on the principle of qualitative multiple case-study. The stages of research, methods of data collection and analysis, and evaluation effectiveness criteria are defined.

**Chapter 3** conducts theoretical analysis and development of the conceptual apparatus. A refined definition of the Hidden Mechanism is given. A typology of HM is proposed based on the nature of the latent function:

1. **Compensatory-adaptive** ("crutch" for a defective formal system).
2. **Rent-oriented (parasitic)** (extraction of illegitimate benefits).
3. **Ritual-stabilizing** (reducing anxiety, maintaining the illusion of control).
4. **Conflict-buffering** (containing a more destructive conflict).

**Chapter 4** presents the developed Structural-Functional Model (SFM) of the Hidden Mechanism, comprising three levels:

1. **Phenomenological** (Explicit dysfunction – ED).
2. **Architectural** (Donor resource – DR, Executive element – EE, Functional core – FC, Latent function provision channel – LFPC).
3. **Teleological** (Latent function – LF, Beneficiary – B).

The place of HM in the hierarchy of TRIZ contradictions is defined as a higher-order meta-contradiction.

**Chapter 5** presents a detailed Algorithm for diagnosing and transmuting HM, consisting of two phases and seven steps:

- Phase I. **Diagnostics and modeling** (Steps 1-4: recording ED, reconstructing FC, identifying LF and B, building the SFM).
- Phase II. **Transformation design** (Steps 5-7: reformulation into a New Project Contradiction – NPC, solution generation considering typology, evaluation and implementation planning). A table of strategies and recommended TRIZ techniques for each HM type is provided.

**Chapter 6** conducts empirical approbation of the methodology on five detailed business case studies, representing different HM types. For each case, the application of the algorithm, obtained solutions, and evaluation according to the following criteria are demonstrated:

- K1. Diagnostic depth.
- K2. Quality of reformulation.
- K3. Result sustainability (12+ months).
- K4. Systemic effect.

Summarized analysis confirmed the adequacy of the model, algorithm, and typology, as well as the achievement of sustainable transmutation results.

**Chapter 7** summarizes the results, formulates conclusions, provides practical recommendations for TRIZ experts, identifies research limitations, and outlines promising directions for future work (development of an "Atlas of HM Archetypes," research on HM in the digital environment, integration with TOC, cross-cultural aspects).

**In the Conclusion**, the contribution of the work to the development of TRIZ and complexity management methodology is summarized.

**The Glossary** contains definitions of key terms introduced in the work.

**The List of References** includes 38 titles of domestic and foreign works.