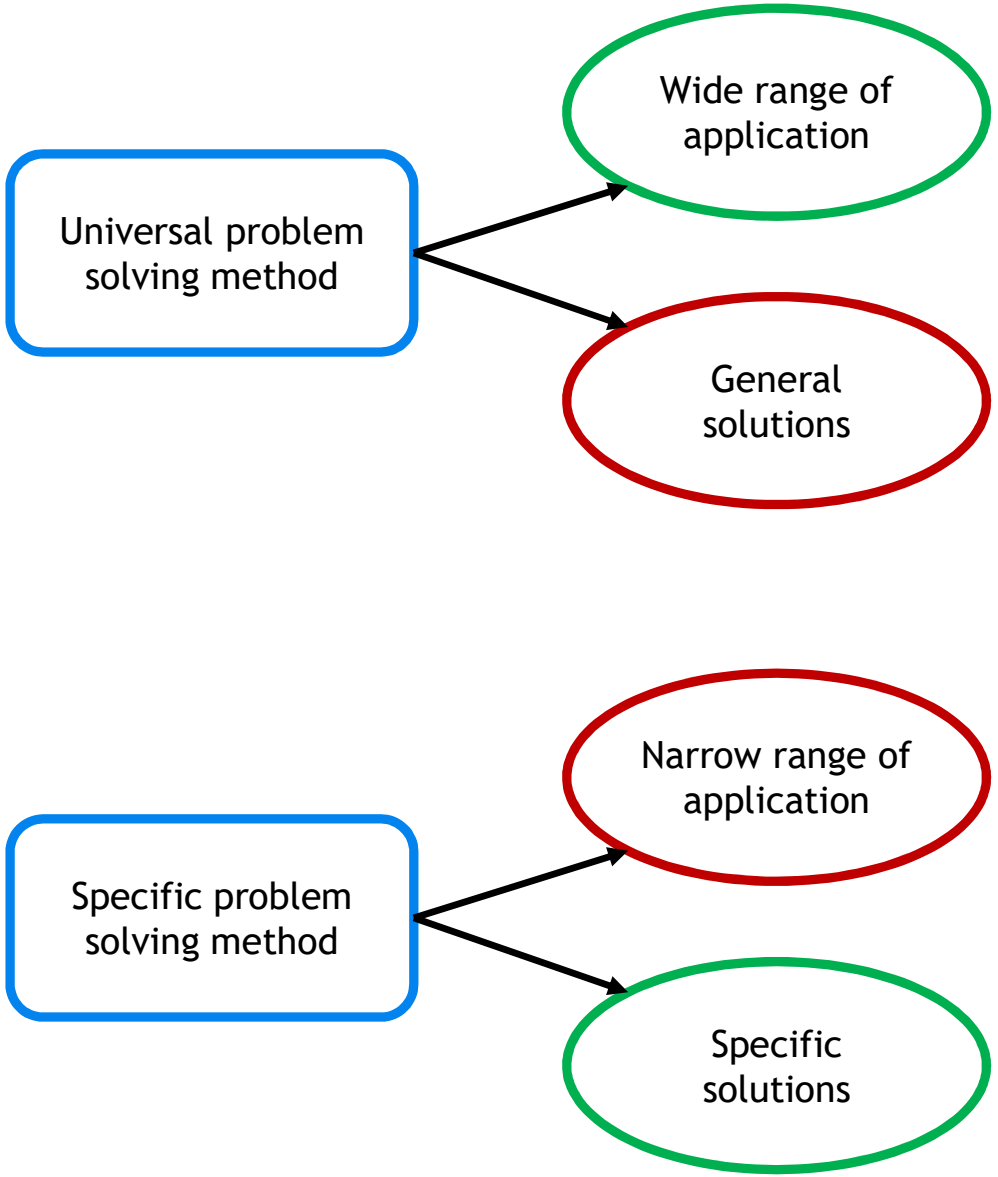
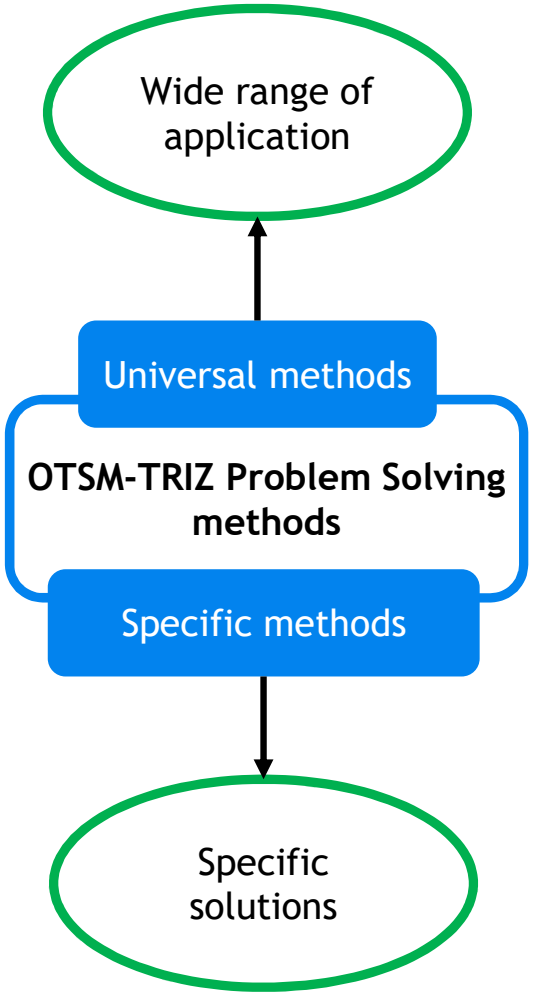

# OTSM-TRIZ -
# General Theory of Powerful Thinking

# KEY PROBLEM OF OTSM-TRIZ

# KEY PROBLEM OF OTSM-TRIZ (Part 1)



# KEY PROBLEM OF OTSM-TRIZ (Part 2)




In order to be universal, the rules of problem solving methods should be as general as possible. But the more general the rules of the problem solving are, the more general and the less practical the solution will be.

And vice versa: when the rules (and methods) are specific and precise, they are helpful for solving a specific problem which is of the practical use. However, the more specific they are the less universal they are as well.

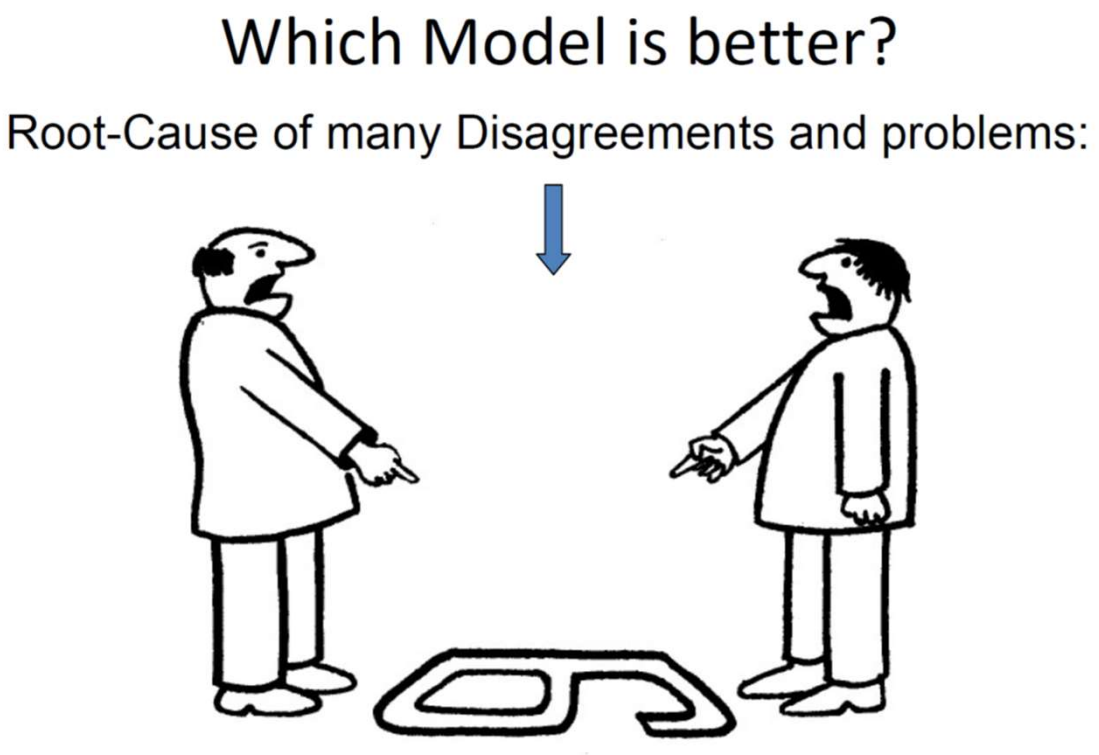
*N. Khomenko. Keynotes for 6th TRIZ Symposium in Japan, Tokyo. September 2010.*


# OTSM AXIOMS

# THE OTSM AXIOM OF THE DESCRIPTION (models)

*There are different ways to describe the world around us.*
*There is an infinite number of ways to describe the world.*

N. Khomenko, R. De Guio. *2010. OTSM System of Axioms*




Nobody is wrong! Everybody describes their perception about something from their own standing point.
**OTSM provides a solution – OTSM Network of Problems.**

# THE AXIOM OF THE PROCESS

*Any element should be seen as a process and vice versa.*
*This process, which is linked with a human being as soon as we are in a problem solving context, evolves in accordance with objective laws and takes into account specific objective and subjective factors.*

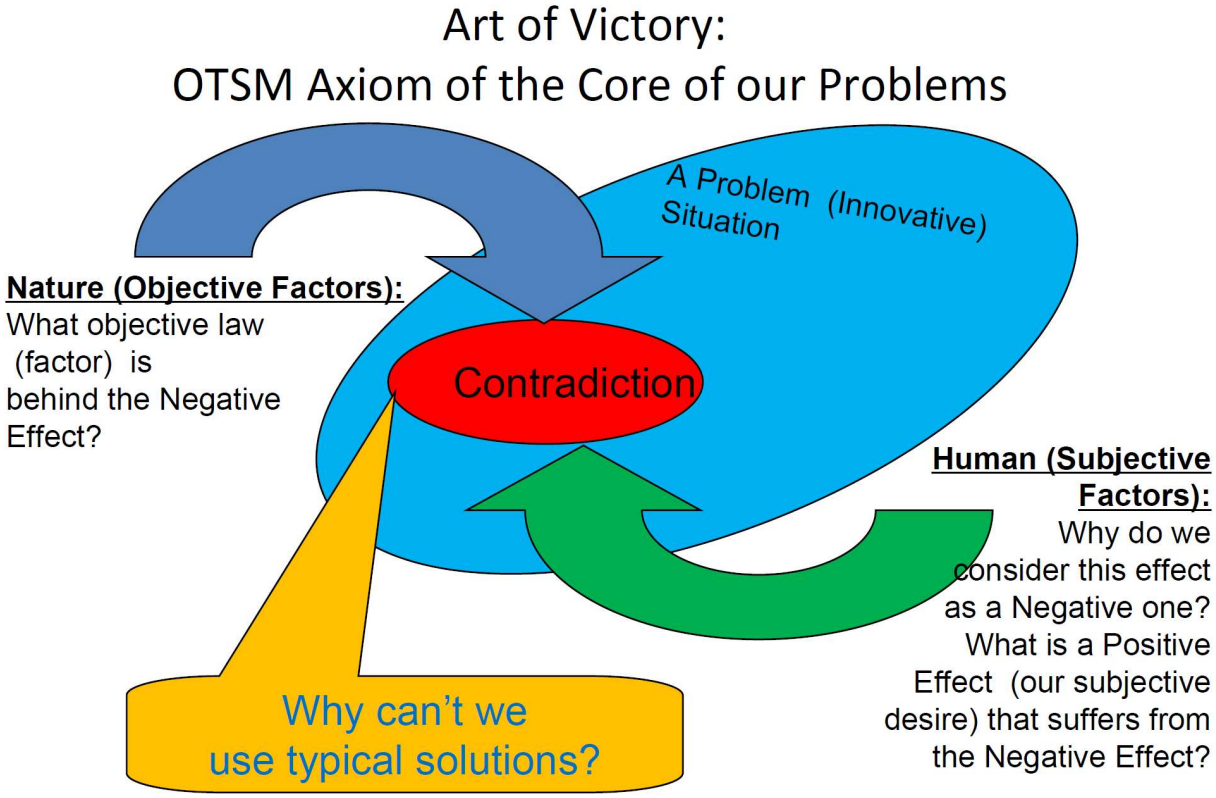
N. Khomenko, R. De Guio. *2010. OTSM System of Axioms*

Modern approaches in system and business engineering related to processes:

- Technology maps;
- Flow models;
- Business process models;
- Product life-cycle models;
- Phylogenies & ontogenies in the system operator (M. Rubin)

# THE AXIOMS OF THINKING

*Axiom of impossibility. In order to overcome psychological inertia during a problem solving process, it is necessary to accept (temporarily) the assertions, the logical value of which seems "false" at a first glance, and analyze the consequences of these assertions.*
*Axiom of the core of any problem. Any problem can be stated as a contradiction between our subjective desires for something appearing in a specific context on the one hand, and objective laws that cause this specific situation, one the other hand.*



# THE AXIOM OF INDEPENDENT OBSERVERS

*Any perceived problem is a transcription of a situation from the point of view of the person who is involved in the problem. In order to overcome the problematic situation; it is necessary to get out of the role of the problem "owner" and analyze the situation from different points of view.*

1. *The point of view of the problem solver, namely, the person directly working on the problem.*
2. *The point of view of the regulator, namely, a person who checks the formal side of the application of rules of OTSM methods and technologies.*
3. *The point of view of the judge who tries to understand the disagreements between the problem solver and the regulator.*
4. *The point of view of the referee who tries to understand the world vision of the problem solver, the regulator and the judge when they interact.*

N. Khomenko, R. De Guio. *2010. OTSM System of Axioms*

Modern approaches to stakeholder analysis in system engineering and TRIZ:

- Stakeholder analysis;
- Analysis of Stakeholders' requirements;
- Contradiction in requirements (M. Rubin).

# THE AXIOMS OF WORLD VISION

***Axiom of Unity.*** *The world is a whole and unique system that evolves in accordance with objective laws of all the sub-systems.*

***Axiom of Disunity.*** *The world is a set of different systems, each of them evolving in accordance with its specific laws.*

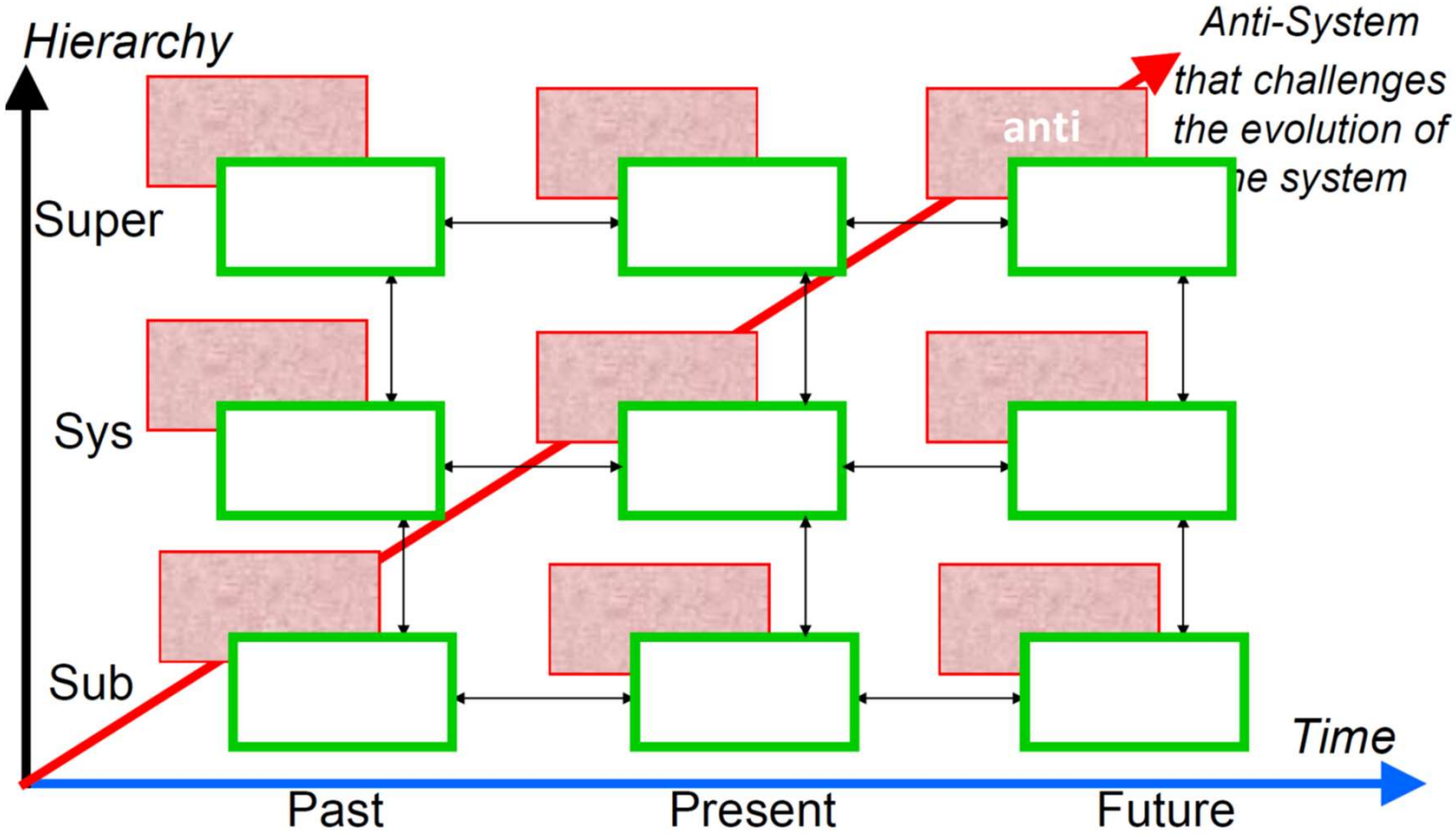
***Axiom of Connectedness Unity and Disunity.*** *The way the law is manifested in a specific situation is defined by its resources.*

*Consequences:*
*Unity and diversity of the world are governed by the resources used by different systems. Any resource is subject to both general laws and specific laws defined by their specific properties.*
*General objective laws are manifested differently in specific situations. This difference depends on the nature of the interplay between the law and the specificity of the situation.*

N. Khomenko, R. De Guio. *2010. OTSM System of Axioms*


# The OTSM Advanced Scheme of Powerful Thinking

# Altshuller's Scheme of Powerful Thinking

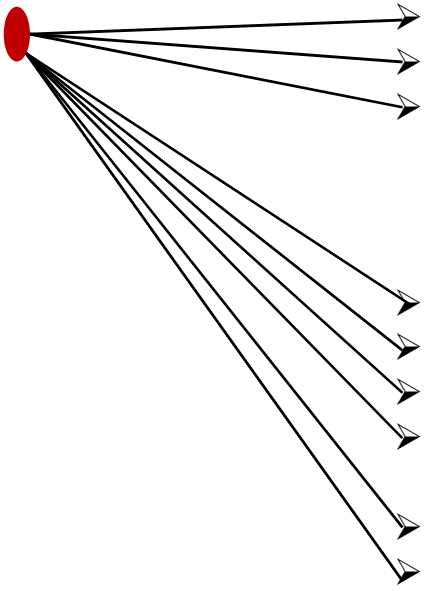



Multi-screen diagram is useful for:

- the analysis of available resources in the system;
- the analysis of problems in the system and their interdependences with problems in super- and sub systems;
- capturing simultaneously a lot of objects for the analysis (overcoming the limit of the attention span of 5+/-2 objects).
- the analysis of a problem in its interconnectedness with other problems

# The Advanced Scheme of Powerful Thinking

The function of the Advanced scheme of powerful thinking (multi-screen model) is to support the analysis and the problem-solving process.



**CLASSICAL AXES**

- Hierarchy axis (super-system – system - sub-system - …)
- Time axis (past – present – future)
- Anti-system axis (system – anti-system)

**ADDITIONAL AXES**

- Abstraction axis (specific concept – abstract concept)
- Probability axis (deterministic event – probabilistic event)
- Axis of objectivity (objective - subjective)
- Axis of variability of attributes (the current value of the selected attribute is the degree and direction of the deviation from the current value)
- Axis of opportunities (possible, real - fantastic, unreal)
- The axis of causal relationships (rational - irrational)