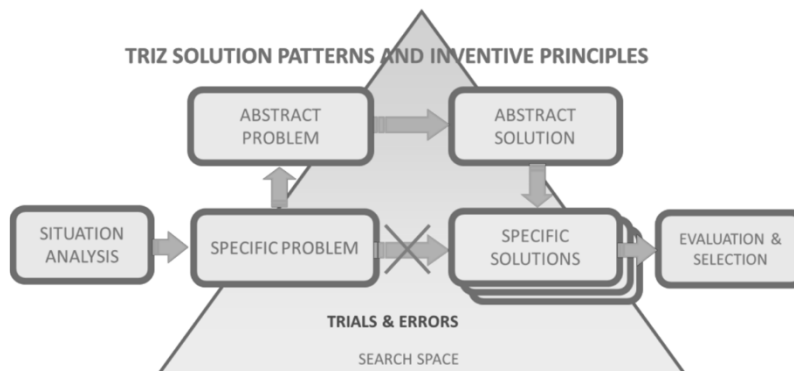# Business TRIZ
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1. TRIZ [1]

TRIZ is an acronym of the russian phrase „теория решения изобретательских задач" (Teoria reschenija isobretatjelskich sadatsch), translating to: theory of inventive thinking. It consists of a collection of over 30 tools, which offer a systematic approach for producing creative ideas. It is founded on the realization that the majority of inventions complies with a relatively small set of principles and that these principles can be used to boost our creative thinking. TRIZ does not replace creativity, but it provides thinking triggers and solution patterns. When confronted with complex problems, it is not necessary to use tedious trial-and-error to find a satisfying solution. Instead it is possible to rely on TRIZ to be guided to „strong" and promising approaches.

2. Translating TRIZ to Business [2]

Initially TRIZ was created by engineers for engineers, but within the last 15-20 years its application was expanded to non-technical areas. Successful application to existing (seemingly unsolvable) business problems, triggered the development of TRIZ for Business and Management, which has still been actively evolving during recent years. Because TRIZ focuses on studying high-level patterns and regularities of the non-linear (inventive) evolution of technical systems, the same or very similar general patterns can be applied to non-technical systems

> "Yes, both systems operate on radically different principles: a car is based on the laws and principles of physics and chemistry, while a company is based on business, psychological, market, and social laws and principles. But when we consider both systems at a higher plane, we will see that both a car and a company can be presented as networks (systems) of generic components which deliver certain functions, process either material or information, are engaged in transactions, interact with other components of outer systems, provide reactions and feedback, and so forth. If you feed wrong oil to a car engine, the car will break. If you feed wrong information to a company, the company will break, too." [3]

3. Main Approaches to Business TRIZ [2]

Contradictions

One of the earliest findings of TRIZ is that most problems are based on a dilemma or trade-off between two contradicting elements, that must be solved to find a solution. A contradiction results through a conflict in what we want to achieve: either two opposite states for one component (Technical Contradiction) or when improving one component worsens the state of another one (Physical Contradiction).

Ideality

The degree of ideality indicates a ratio between the perceived value delivered by a certain system, product or service and all types of expenses and investments needed to produce this value. It is used to compare two competitive systems and is defined as useful functionality of a system minus all negative factors that diminish its value, and divided by costs:

$$Degree\ of\ Ideality = \frac{Value\ Cretaors - Value\ reducers}{Costs}$$

Trends of System Evolution

If the Trends of Evolution are reproducible, then consequently evolution is not random and TRIZ can be used to predict the future evolution of certain technologies. Instead of listening to the demands of the customers, we listen to the „voice" of the products. By knowing which principles form the basis of the product, we can predict how it will evolve according to the Theory of Systems Evolution

4. Popular Tools in Business TRIZ [4]

Function Analysis

This tool helps to identify (hidden) interactions within a system with negative effects or insufficient performance, that may be poorly controllable, thus uncovering potential for further improvement. It makes it possible to rank functions delivered by system components and create a functional hierarchy, while establishing different levels of value delivered by system components. Valuable functions should be improved, and unimportant ones should be trimmed.

"Root-Conflict Analysis" (RCA+)

The goal of RCA+ is to define problems in terms of contradictions, by top-down decompositioning general problems, defined as a negative or ineffective influence on a system. It results in a tree that visualizes the interrelated contradictions that can become quite extensive and complex.

40 Inventive Principles und Contradiction Matrix

After we have identified the contradictions, the Contradiction Matrix provides a systematic access to the most relevant subset of Inventive Principles. The columns and rows of the matrix correspond to the parameters that are affected by the contradiction. The selected Inventive Principles do not offer an exact solution, but generic strategies and recommendations that have already successfully resolved similar contradictions. They still must be translated to a specific solution, that can be applied within the context of our specific problem.

Value-Conflict Mapping (VCM)

The technique is performed by completing a table which matches customer demands and market trends with certain parts of a system and their properties responsible for fulfilling those. Through that it establishes the contradictions between the key market demands and trends and the components of a current system. It helps to decide what part of our business model or our value proposition we would like to innovatively improve.

5. ICG T&C Roadmap to TRIZ for Business and Management [3]
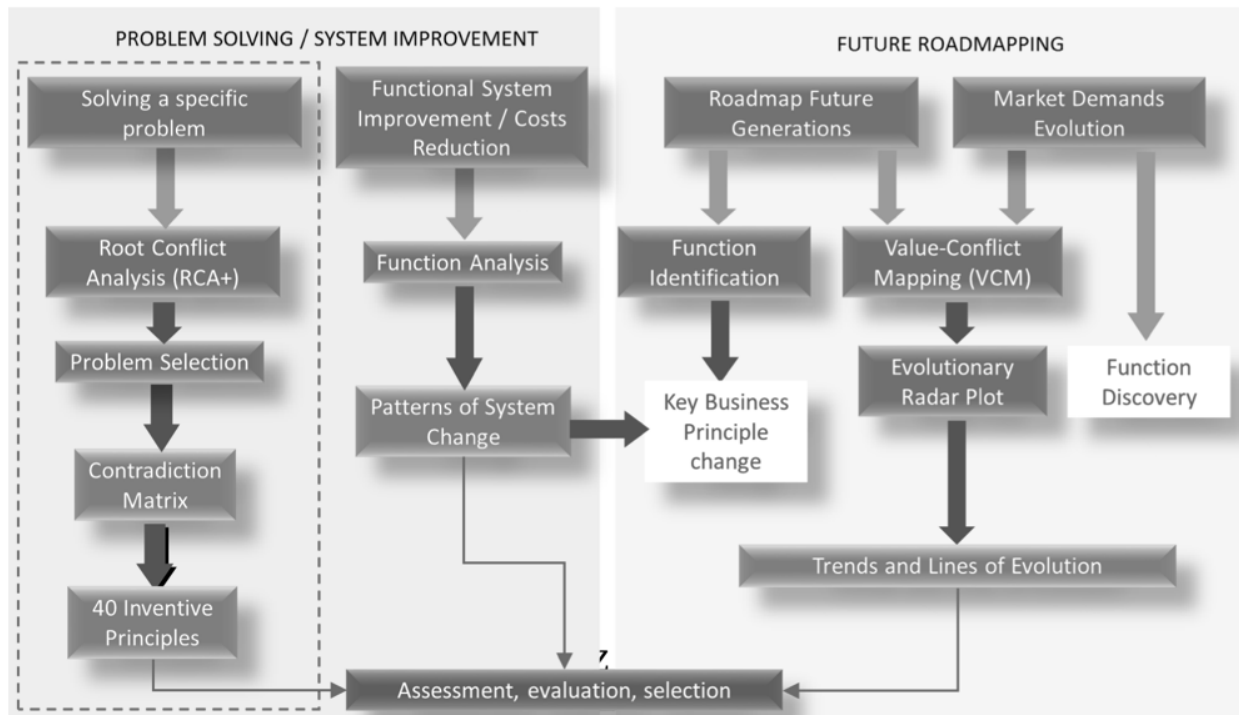
6. References

[1] http://www.xtriz.com, A short introduction to TRIZ and xTRIZ (15 min) by Valeri Souchkov, founder of xTRIZ

[2] Souchkov, Valeri. (2010). TRIZ and Systematic Business Model Innovation.

[3] Souchkov, Valeri. (2014). Breakthrough Thinking with TRIZ for Business and Management: An Overview.

[4] Results of Business TRIZ Online Spring 2021 http://wumm.uni-leipzig.de/conferences.php?conference=http://wumm.uni-leipzig.de/rdf/BusinessTRIZ-2021.rdf