

TRIZ: a Catalyst of Innovation

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In May 2002, Samsung Corporation (South Korea) presented a Recognition Award to inventor Nikolai Shpakovsky for his invention, which saved the company Euro 100 million. However, Nikolai is not just an inventor or electronic engineer. His official title at Samsung is “TRIZ Expert”. 10 years ago, the word “TRIZ” was hardly known. And today, almost every engineer heard about TRIZ. But to hear does not mean to know. What is TRIZ?

Originated in 1946 in the ex-USSR by Russian engineer Genrich Altshuller, TRIZ was aimed at understanding the process of technical creativity by massive studies of different inventions and technological literature. By 1990, over 1.5 million patents were browsed. These studies led to several discoveries: first, technology evolution is not chaotic. Instead, it is governed by certain regularities. Second, 98% of patented inventions comply with a relatively small number of basic inventive principles. During almost 40 years of evolution, TRIZ (which is a Russian abbreviation for the Theory of Inventive Problem Solving) recognized and presented these regularities and principles, and, on top of that, created a methodology of using this knowledge in a systematic way by everyone willing to invent.

Why can't we solve a difficult problem quickly? A major factor is that we have no needed knowledge at all, or we face a contradiction: we want to make a change, and we do not know how to make it without disturbing other demands. Imagine that we want to reduce noise that comes to a living room from outside while keeping a window open to let fresh air in. But installing additional sound insulation will disturb the room's interior. TRIZ major idea is that contradictions must be eliminated to obtain a breakthrough solution and not compromised! A recently patented invention proposes to use the lightweight, translucent curtain with embedded “invisible” electronic system which transforms the offending noise by altering its frequencies.

TRIZ helps to solve similar problems by providing systematic access to inventive principles which are structured according to the type of a given problem. Instead of random search for a solution, TRIZ proposes to use analytical approach: first, analyze a situation to extract a right problem; then build a model of the problem. And after that, TRIZ organizes a guided search for new ideas through the TRIZ knowledge bases which store all previous experience of many generations of inventors. Performing this process in a systematic way brings inventive problem solving to a totally new level: now we can use a scientifically-based technology of invention instead of trials and errors.



Is TRIZ effective? The US company Procter & Gamble already answered this question by making a decision to train several thousands company's R&D professionals in TRIZ. Today, TRIZ is extensively used by Boeing, Unilever, LG, Samsung. Dutch companies DSM and Philips have recently reported about a number of successful TRIZ projects. Look at one of the latest TRIZ solutions which is about to make a revolution in chemical technology. A process of chemical distillation has been known for a very long time and researchers were sure that nothing could be changed in it. And recently, a group of TRIZ experts together with chemical engineers of the company Linas Technology Inc. have unveiled a new technology of distillation. Imagine that now you do not need a 10 meter tall column to distill raw oil. A plant which can be fit to a living room of a Dutch family house can do the same! Cheaper, safer, but with the same performance and capacity.

We should however note, that TRIZ does not replace traditional creativity. It boosts creativity and drastically accelerates search for new feasible ideas. It helps to unlock hidden creative potential of every engineer.

More information about TRIZ, TRIZ-based services, and TRIZ-related publications can be obtained from InBITween Consulting Group. Phone: +31-(0)6-20423455; e-mail: info@xtriz.com. Website: www.xtriz.com

