

Establishing TRIZ Market

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Introduction

November 1999 marked an important period in the history of Ideation International. When Ideation was established in 1992, we believed that there was a natural market – the problem-solving market – for TRIZ products and services, and we believed that we had something significant to offer this market. However, we quickly came to two disappointing realizations:

- The problem-solving market was characterized by significant customer confusion and dissatisfaction with existing methods and techniques. In general, these methods and techniques had not delivered reliable, repeatable, and successful results. Thus, the market environment neither welcoming or conditioned for yet another technique, in this case TRIZ, which is still considered to be “new”.
- Our products and services were not user-friendly enough to attract customers and convince them that TRIZ was a uniquely powerful methodology.

With this understanding, we could not rely on the existing problem-solving market, and began working to establish a TRIZ market of its own.

Creating a new market is difficult because success hinges on your power to convince the target audience of the unique benefits and importance of the new product or service. We found that there are generally two ways that this can be accomplished:

- Through a description of the new product or service
- By demonstrating the superior benefits of the product or service

The second method is far more effective because you offer a measure of proof to your audience. The drawback is that this approach typically requires an investment of some kind, - time, money, or personal involvement – because demonstrable results are achieved through trials or “test runs”. The more time and money required, the more difficult it becomes to win customer approval.

Compare two situations: promoting a new knife for peeling vegetables, and promoting the first airplane. In the first case, results could be demonstrated rather easily. In the case of the airplane, however, had the Wright brothers

¹ Edited by Vicki Roza and Elicia Magruder

acquired only enough money to build one wing, they would never have been able to prove that their plane could fly.

When something new comes along, often the only way to convince someone to “give it a try” is to describe its origin, history, main components, processes, underlying theory, similarities to other proven things, etc.

TRIZ has a 50-year history of proven results, yet it still lacks impressive success stories. There are various reasons for this, including:

- For more than 50 years, TRIZ was practiced mainly in the former Soviet Union; success stories from this period have little credibility in the Western world.
- Implementing solutions requires both a financial and time commitment, which generally require a lengthy approval process.
- When breakthrough successes are achieved, the companies involved are unwilling to share proprietary details.
- Even when people see that TRIZ has provided successful results for others, doubts still remain as to whether TRIZ can help in their particular case.
- Results are highly dependent on personal commitment. Without this commitment, there are no results. The more effort one expends in learning and applying TRIZ, the better the results obtained. This in turn generates more enthusiasm, which provides the impetus to put forth even more effort. This mechanism, known as “positive feedback” or a “reinforcing loop,” has helped TRIZ enthusiasts become TRIZ experts or specialists.

The TRIZ market today

A pyramid that has lost its foundation

Like any other market, the TRIZ market should be considered as a pyramid. The foundation of this pyramid consists of those who have heard positive things about TRIZ. The next layer represents individuals willing to explore TRIZ. What is the ratio between the two – one in a hundred, one in a thousand? We don’t know for sure, it is a difficult statistic to measure. However, we do know that of those who decide to explore TRIZ and like it, not many will be willing to take the next step to make it a part of their lives.

The specific problem with the TRIZ market pyramid is that it was first built in the former Soviet Union. When transferred to the Western world, it lost its foundation. The majority of people who knew about TRIZ or had used it remained in Russia, while a few of the most experienced TRIZ experts emigrated to the United States and elsewhere. But even with a new home, a new foundation for TRIZ had to be created to meet the needs of different cultures.

A crucial factor in the acceptance and success of TRIZ and a valuable tool for enterprise and industry is making this foundation as strong and as broad as possible. In marketing terms this is referred to as “conditioning.” And this is why almost any TRIZ

education/promotion should be welcome. The broader the foundation, the stronger the base for the succeeding layer.

For individuals, traveling up the pyramid to the top can take a long time. Even the first step may take years. During 1999, Ideation received phone calls from several people who stated, “I spoke to you a year (or two years) ago... I am ready to move ahead...”

The language barrier is a serious hindrance as well. The greatest source of TRIZ works is the TRIZ library in Chelyabinsk, Russia, which is practically inaccessible to Western TRIZ enthusiasts. For most, learning Russian is a waste of time, and translating thousands of pages into English or other languages is a waste as well, as there is a low percentage of truly interesting and useful material.

As a result, we see the same misguided attempts made in the past being tried again and again, e.g. the numerous attempts to organize the tools of Classical TRIZ and provide recommendations for choosing the right tool for a particular problem. Likewise, many attempts have been made to modify and simplify ARIZ. One quickly tires of reading the “scientific” papers that discuss the advantages of re-ordering the ARIZ steps – the source of a joke within the TRIZ community. Indeed, it is a dismal experience reading such papers again 15-20 years later.

Thus, it is with mixed feelings that we read new publications whose authors scrutinize and criticize some of the older TRIZ works, clearly unaware that the issues they raise have been long resolved and related improvements made. For example, the limitations of the Contradiction Table and 40 Innovation Principles, and the confusion regarding their relation to other TRIZ knowledge base tools (a subject of ongoing discussion in TRIZ publications) stimulated the development of an integrated System of Operators². In most cases, language barrier and proprietary issues could be blamed for unawareness; in other cases, the authors are merely demonstrating their ignorance of this evolving science.

For these reasons, Ideation has always strived to acquire the highest level of expertise working with distinguished TRIZ specialists. We have also been careful to analyze our activities and learn from a variety of sources how to market new products and findings. It is frustrating to be aware of the typical mistakes and “bad turns” that have been made promoting TRIZ and then watch while others faithfully duplicate them.

Should we simply sit back while they proceed down this course? Probably – first, these mistakes are being perpetuated by our “competition”, and second most people learn best from their own mistakes.

But our goal is to create a global marketplace for TRIZ, and for those who prefer to learn from the mistakes of others, we offer a streamlined path to the top of the pyramid, even if that pyramid is still “under construction.”

² Boris Zlotin and Alla Zusman. An Integrated Operational Knowledge Base. TRIZ in Progress 1999. Ideation International. 1999. See also on Internet: www.Ideationtriz.com, TRIZ Journal, 1999.

What are we selling?

Russian origins – good or bad?

In 1989 the newly established TRIZ Association (in the former USSR) agreed that TRIZ would be marketed worldwide under the Cyrillic acronym “TRIZ” – it would therefore be recognizable regardless of the language being used. However, this strategy soon started to cause problems since there were “pluses” and “minuses” associated with the methodology’s Russian origin:

Pluses	Minuses
<ul style="list-style-type: none">• TRIZ had existed for more than 50 years. If it was so powerful, why was it unknown to the Western world? The answer – that it had originated in Russia – could be easily attributed to:<ul style="list-style-type: none">• The impenetrability of the Soviet iron curtain³• Russia’s reputation for inadequate use of its resources• Russia had some credibility with respect to scientific achievement	<ul style="list-style-type: none">• People were doubtful that something useful could come from Russia• There was little appreciation for the experience that had been acquired in disseminating TRIZ throughout Russia• Potential TRIZ providers were investigating various ways to “wrap” TRIZ in order to mask its Russian origin, resulting in market confusion

The question is still unresolved, should the methodology be called “TRIZ” or something else? The best answer is to make “TRIZ” a brand name as soon as possible. If we fail to do it now, we will have to fit TRIZ with a new wrapper.

Can an engine fly?

There is no doubt that TRIZ is the most effective methodology for solving technological problems, and thus it is the best engine for obtaining and maintaining competitive advantage. But an engine alone cannot fly; an airplane is required to get end users from one place to another. Similarly, problem solving is not an everyday activity for a typical industrial company, as is R&D, engineering, production, quality assurance, etc., though some companies have instituted procedures for addressing problems in a creative way. In any case, the best approach is to integrate TRIZ with the processes already established within a company. And TRIZ is naturally suited for such adaptation, as it is compatible with practically any technique.

We can continue the above analogy: As engines are marketed by engine manufacturers to aircraft companies, TRIZ can be marketed by consulting and engineering companies as a means of providing more value to their customers.

³ By that time, only one of the books written by G. Altshuller had been translated into English and published in the western part of the world: Creativity as an exact science. However, the translation was very poor and it was presented to a wrong audience (in the Cybernetics series).

To fly the jet or build it?

We continue to receive feedback from our software users; most are positive and are often accompanied by useful suggestions. Our software team carefully analyzes all suggestions and eventually implements those that are valuable and feasible. However, some of these suggestions illustrate the confusion among TRIZ users. For example, some remark that the System of Operators implemented in Ideation's TRIZSoft™ products is very useful, and they want to know which of the original TRIZ principles is being applied in a given situation. To ascertain this can sometimes be as difficult as finding the Wright Brothers' airplane inside a modern jet.

Although almost any element of TRIZ has both educational and problem-solving power, the two should not be confused. Classical TRIZ elements, such as the Contradiction Table, are great for educational and marketing purposes but are limited in terms of dealing with practical situations. On the contrary, the System of Operators developed some 20 years after the Contradiction Table, is very effective when applied to practical engineering problems. However, it is inconvenient for educational purposes because it is a complex network-like system whose full power is evident only within a software framework.

In the long term, of course, both the educational and problem solving aspects of TRIZ are important. But to avoid confusion, we recommend that priorities be established – that is, it must be decided which is more important to our customer...to learn and understand the basics of the methodology or to be able to quickly apply the tools to a problem to see the value. Many of the Classical TRIZ educators, do not explain this to a novice – the result is that an individual who has made up his mind to become a jet pilot wastes precious time learning how to fly a Wright Brothers airplane first.

It should be noted that the variety of TRIZ providers and offerings is usually *not* the cause of confusion. The automotive industry, with all its makes and models, is no less complicated, yet customers navigate through the automotive pyramid with relative ease. The cause of the confusion lies within the different levels of TRIZ products and services and the lack of awareness of these options in existing and potential TRIZ customers.

Understanding the requirements and objectives of a new user is critical: What is he/she most interested in – solving a long-standing problem? Evaluating the methodology for corporate use? Determining if this thing called “TRIZ” is teachable and if one can make a living by teaching it? Starting a consulting business? Different objectives require different approaches; just as knowledge and skills that are required to fly a jet differ from those required building it...

It is also disturbing that some of the customers who had come to Ideation to learn more about TRIZ have been told that there is no need for TRIZ software; that TRIZ is just a way of thinking, and that it can be learned and used without investing in software. For us this is similar to telling people there is no need for presentation software like PowerPoint,

that creating beautiful presentations is a matter of art, best learned through an art course. This advice makes absolutely no sense in the business world. Of course, you can create a dynamic presentation without the benefit of formal art classes, and you can accelerate the problem-solving process by using software tools. We have identified at least six reasons why an individual who wants to become a TRIZ professional needs software (see Appendix 1).

The ideal scenario is when a well-informed customer asks, “You know about the subject matter, we don’t, help us determine the best way to achieve our goals?” Unfortunately, this doesn’t happen very often. People tend to believe that their situations are unique, and for the most part, they are. But after dealing with hundreds of companies and thousands of individuals throughout decades of using and teaching TRIZ, statistics start coming into play. As a result, we know in advance the majority of questions and concerns...as well as most of the answers.

Institutionalizing TRIZ

Looking back over the dissemination and implementation of TRIZ in Russia, the following activities can be documented:

- Presentations and introductory lectures (1-8 hours)
- Short seminars (1-5 days)
- Long seminars/workshops (2-4 weeks), with either a project or final exam assigned to each student
- One- or two-year programs (4-8 hours per week) with a group or individual project
- TRIZ courses taught within various educational institutions
- Institutionalization of TRIZ within an organization

According to the experience of the Kishinev TRIZ School and its associates (amounting to more than 13,000 hours of education to some 6,000 students), the overall effectiveness of education, measured in return on investment, was highly dependent both on the form of education and the subsequent arrangements for TRIZ implementation.

Example 1

An example typifying the results of TRIZ education is a three-week seminar conducted by Genrich Altshuller, Boris Zlotin, Vladimir Gerasimov and others in Kishinev, Moldova during September and October of 1981.

Some 60 engineers from various industrial companies attended this seminar. By 1986, only three attendees, two of whom were Alla Zusman and Vladimir Proseanic, had continued their TRIZ activities.

Alla Zusman was working as a patent agent within a company that developed equipment for non-destructive testing of materials and products. With the support

of her supervisor, she was teaching TRIZ to engineers in her company. Today, two of her first students, Len Kaplan and Alexander Chernobelski, are accomplished TRIZ scientists/practitioners. Zusman, after teaming with Boris Zlotin and establishing the Kishinev TRIZ School in 1982, continued to teach TRIZ to various groups of professionals and children, and later began developing the foundation for TRIZ software.

Vladimir Proseanic held a middle-management position in a company that produced washing machines. He organized a group of individuals to utilize TRIZ to reduce costs and the results were good. He later joined the Kishinev School, and eventually co-founded Progress, the first private engineering company to provide TRIZ education and services.

Example 2

A less typical story concerns the institutionalization of TRIZ within a large company, Electrosila (the Russian equivalent of General Electric). In 1977, Boris Zlotin, already an experienced TRIZ specialist, accepted a position heading a group responsible for implementing Value Engineering (VE) throughout the company. As he familiarized himself with VE, Zlotin soon recognized that the idea generation stage was the weakest link in the method, and that TRIZ was well suited to fill the gap. With support from Electrosila's top management, he established a system that included the following:

- *A group of several corporate-level individuals who were responsible for coordinating all TRIZ and VE training and activities including full-time TRIZ specialists*
- *Two part-time facilitators in each engineering and R&D division, who participated in the full TRIZ training program (220 hours)*
- *Team members educated by facilitators (a 40-hour training program)*
- *Engineers within each division who were aware of TRIZ and its capabilities.*

TRIZ facilitators worked with ad hoc task forces, which were established to work on a number of important projects. The cases that were too difficult or that were considered corporate high priority were handled by the VE/TRIZ corporate center with the help of division facilitators. A multitude of projects were completed over the course of four years, each with proven results and documented cost savings.

Our recent experiences in the United States have confirmed our belief that a few stand-alone TRIZ successes (an enthusiastic seminar, a good solution to a problem, even a successful project) cannot demonstrate the full benefits of TRIZ, mainly because they do not illustrate long-term impact. Customer satisfaction with a TRIZ product or service quickly fades without proper support. In general, the following TRIZ products and services are being offered:

- Education



- Software
- Facilitation/Coaching
- Consulting

Based on customer feedback, the following advantages and disadvantages associated with these products and services have been identified:

Service/ Product	Advantages	Disadvantages
Education	<ul style="list-style-type: none"> • Understanding of the methodology premises • Learning a new way of thinking • Specially-selected case studies encourage students and stimulate enthusiasm, so that students feel that the course was worthwhile 	<ul style="list-style-type: none"> • Limited practice, primarily on specially-selected case studies • Students are left on their own after completing the course, without guidance or support • Students quickly lose enthusiasm following the course, since they usually fail to apply new knowledge and skills to real-life problems • Education takes people away from their jobs • A considerable amount of time (150-220 hours) is required for students to become familiar with all the tools and gain other useful knowledge • As a rule, there is no fast return on investment
Software	<ul style="list-style-type: none"> • Provides step-by-step guidance throughout the problem-solving process • Brings the full benefits of the Ideation/TRIZ knowledge base to the user • Automation of the most tedious and/or difficult work • Saves time and eliminates the frustration of selecting the appropriate TRIZ tool to address each particular problem • Acts as a “partner” by supporting the user’s innovation activity; helps the user “stay in creative shape” until the problem is resolved • Speeds up the education process 	<ul style="list-style-type: none"> • Limited understanding of the methodology • Users must be computer literate to use the software • Cost commitment • Users are left on their own, without support • As a rule, there is no fast return on investment
Facilitation/ Coaching	<ul style="list-style-type: none"> • Participants go through the complete problem solving-process and achieve results 	<ul style="list-style-type: none"> • Lack of understanding of the methodology premises and its other applications

	<ul style="list-style-type: none"> • Participants are able to see how the methodology works • Continuous support is provided until the problem is resolved • Participants gain confidence that they can solve the problem 	<ul style="list-style-type: none"> • Participants may fail in dealing with other problems • Difficulties might arise in implementing the obtained solutions
Consulting	<ul style="list-style-type: none"> • Customer receives a “turnkey” solution • No time or money is “wasted” on education or software 	<ul style="list-style-type: none"> • “Not invented here” syndrome hinders customer satisfaction and solution implementation • Financial commitment • No internal expertise is developed or accumulated • Complete dependence on external expertise

It is fair to point out that the identified disadvantages are not exclusive to TRIZ products and services. Rather, they are inherent to any creative method or activity, including those that are already established and that have good reputations (QFD, De Bono techniques, TQM, Value Engineering, etc.). These disadvantages, however, are critical considerations in establishing market share for TRIZ, as they seriously impede the dissemination of the methodology, and create unhappy customers who will be reluctant to give it another chance. Of course, this situation might correct itself, but it could take decades.

The only way to expedite and highlight our successes with TRIZ is through integration and institutionalization. As illustrated, the customer will generally not realize long-term satisfaction with any service or product offered separately – regardless of the supplier. The combination of products and services reduces most of the disadvantages.

Business model

In 1999, Ideation developed and successfully implemented a new business model that incorporated the following:

Steps	Purpose	Benefits
Advertising TRIZ via booklets, Internet, telemarketing	Provide enough information to peak interest and encourage exploration of TRIZ premise and capabilities	Customer can make a decision at virtually no cost
Offering specially-designed learning packages, including books, educational material, and/or simplified software	Provides further understanding of the methodology and the most efficient way to implement it	Customer can learn, at his leisure, more about the potential of TRIZ, and can try the software with a low investment of time and money ⁴ before deciding to take the next step
Creating Pilot Programs, with pre-analysis of technological problem	Ensures that the selected project has value while also being appropriate for educational purposes	The project can be used later as an educational case study within the organization. Completion of the project provides a return on the investment of education and software
Offering Two- or Three-day workshops based on the selected project ⁵	Summarizes and reinforces the knowledge learned earlier. Utilize software (professional edition)	Learn while working on a real-life project
Coaching ⁶ until the problem is fully resolved (usually for 45 days following the workshop) ⁷	Solves the problem and builds a “success story”. Develops skills	Participants have a fully completed project under their belts
Facilitating the next project ⁸	Gain confidence and experience	Utilization of the highest TRIZ expertise in preparation for the next step

It is clear to us that following these steps most of the disadvantages inherent to isolated TRIZ products or services become negligible. This was confirmed in the case of DTM

⁴ The learning package is fully refundable if the customer doesn't see value

⁵ Each participant receives his/her own copy of software during the workshop and the coaching independently on how many copies have been purchased. For individuals, the workshop can be replaced with training via Internet.

⁶ Coaching is provided via E-mails, phone conversations and face-to-face meetings if necessary. Could be replaced by facilitation on-site

⁷ The customer should commit to continue working on the problem right after the workshop.

⁸ Optional

Corporation, where this model was consistently implemented⁹. Nevertheless, there is something missing from this picture. For the model to work it must be supported by an influential individual within the organization, and eventually by top management¹⁰.

Ideally, the work mentioned constitutes the initial steps toward institutionalizing TRIZ, i.e. the creation of a systemized structure within the organization to continuously support TRIZ, and ensure optimum utilization and maximum benefits¹¹.

The Japanese model

As is typical, Japan follows its own path. In 1997, after a careful analysis of the TRIZ situation throughout the world, the Sanno Institute of Management, one of the largest management schools in Japan, began teaching TRIZ. Sanno has since educated thousands of students (including some by correspondence) and has made a commitment to implement TRIZ in Japan. After sending a team to Ideation International in the United States, and then inviting Ideation executives and scientists to Japan, Sanno entered an agreement with Ideation to become Japan's sole provider of Ideation/TRIZ education. In time, a group of Sanno technical experts become certified in the methodology. Today, a significant number of Sanno sales representatives are marketing various levels of TRIZ education, and a division dedicated exclusively to working with TRIZ has been established. Given the way things have happened in the past, it will be no surprise if American corporations soon begin learning about TRIZ from their Japanese competitors!

Conclusion

1999 saw a growing interest in TRIZ and in Ideation. Hundreds of individuals from industrial companies, government agencies, and educational institutions in the United States, Europe, the Middle East, Far East, South Africa, etc. became familiar with TRIZ and contacted Ideation for more information and/or help in learning and using this powerful methodology. The big difference between 1999 and previous years was that the people we talked with became much more serious about TRIZ. Most importantly, they became serious enough to ask, "What is the best way to benefit from TRIZ?"

The institutionalization of TRIZ is crucial for its future. Obviously, the support of this institutionalization demands a lot from the TRIZ provider, who must be proficient in all aspects of the methodology. The task is large and thus favors larger organizations that have the most resources. Does this mean, then, that there will be no place for the independent TRIZ provider? Of course not – remember, the TRIZ pyramid must be built! Anyone can contribute once he/she does justice to TRIZ and to his/her customers

⁹ See our web site www.ideationtriz.com

¹⁰ One of the most important conditions that determine impressive recent successes of Six Sigma system, embraced by some large American corporations, is creating a supporting infrastructure similar to the one established by Boris Zlotin in Electrosila Company in 1977-1982.

¹¹ The benefits, necessary conditions, the process of institutionalization and experience accumulated in Ideation International Inc will be discussed in a separate paper.

by explaining the full scope of the methodology, the necessary steps that must be taken, and the benefits of a total turnkey solution to acquiring TRIZ knowledge and skills.

We strongly believe that the majority of TRIZ providers have adopted TRIZ *not* simply as a way to generate income, but also as a way of making a positive contribution to society. The concept of TRIZ is so brilliant that, if properly carried out, there is great potential to help solve the world's toughest problems. We are all responsible for the future success of TRIZ. We owe it to ourselves, to our countries, to TRIZ founder Genrich Altshuller, and to the entire human race.

Six Reasons to Use TRIZSOFT™

Even if you are familiar with the TRIZ basics, have an understanding of TRIZ philosophy, and can use TRIZ tools manually, there are tremendous benefits available from exploring and utilizing I-TRIZ software. TRIZSoft™ provides the following advantages:

1. Step-by-step guidance through the problem-solving process	The Ideation Problem-Solving process provides a smooth and comprehensive journey through the Ideation/TRIZ (I-TRIZ) analytical and knowledge base tools, directing you to the next step, and supplying the necessary help and recommendations as you need it.
2. Full advantage of the I-TRIZ knowledge base	<ul style="list-style-type: none"> • I-TRIZ incorporates thousands of pieces of valuable information about innovation. Only a software program can hold all this information and make it available upon request. Pre-organized sets of information are available for over 50 most frequent engineering problems. • The I-TRIZ knowledge base is an advanced and complex reticular system with thousands of pre-fabricated associative chains that reflect the thinking processes of the best inventors and TRIZ experts. Following these links helps you to obtain the most ideal and feasible solutions.
3. Automation of the most boring and/or difficult tasks related to problem solving	<p>The I-TRIZ problem formulation process allows you to:</p> <ul style="list-style-type: none"> • Capture, visualize and, as a result, better understand your complex problem situation • Obtain an automatically-generated and comprehensive list of Directions for Innovation (i.e., pathways to solution) • Easily jump to an applicable portion of the knowledge base
4. Saves time and eliminates the frustration caused by having to select the appropriate TRIZ tool for each particular problem	The Ideation Process offers a unified approach to any type of technological problem. It includes all the steps necessary for a complete problem solving process, supported by an integrated software system.
5. A “partner” to support your innovation activity, helping you stay in shape creatively until the problem is resolved	Conventional brainstorming requires a team to exchange ideas and stimulate the creative process. However, even this does not lead to productive work for more than two hours (after which ideas tend to be repetitive and the idea-generation process becomes “flat”). TRIZSoft™ can serve as a problem-solving partner, providing continuous guidance and feeding you with information that supports the idea-generation process and allows, if necessary, “self-brainstorming.”
6. Allows you to significantly expedite the process of becoming a true TRIZ “master”	<p>The majority of (if not all) TRIZ masters certified by Genrich Altshuller have 15-25 years of TRIZ experience. From 1990 to 1993, a thorough analysis of the best techniques used by TRIZ practitioners was performed. The results were incorporated in TRIZSoft™ in the form of pre-fabricated associative chains and problem formulation patterns that model the most successful TRIZ thinking processes. Following these successful patterns and chains, TRIZSoft™ users are able to:</p> <ul style="list-style-type: none"> • Obtain more effective solutions • Quickly learn TRIZ and how to apply it successfully