

TRIZ Challenges and Approaches to Address Them

Promoting TRIZ in the World

Meetup March 23-24, 2021

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Outline

- Background – current trends and challenges
- Major Challenges in Promoting and Selling TRIZ in the World
- Marketing and sale of TRIZ services – recommended tools
- Conclusions, Questions & Answers

Background: General Global Trends and Challenges

- Ideation becomes cheap. It is not so sexy anymore.
- Notion of Open Innovation becomes common.
- The world is much more transparent and accessible.
- Companies and individuals have tools, search engines that allow them to find relevant information (including innovation solutions) much faster.
- Geographical outsourcing becomes common and less efficient.
- Disruptive innovation is not on demand for many companies because of its risky nature. The vast majority of innovations are incremental.
- IT technologies become a driving force for innovation (IoT, Predictive Analytics, Big Data, etc.).
- New objects / products on the market - big systems with millions of components, networks (including neuro-networks), nano-structures, etc.
- New business challenges (new business models, effective IP strategies, commercialization of existing intellectual assets, identification of most effective objects and targeted features for innovation, etc.) require new approaches and tools
- Growing role of SMEs with limited resources (time, people, money) for innovation.
- Growing pressure from the Artificial Intelligence.

Background: TRIZ-related Trends and Challenges

- TRIZ becomes a well-known rather than exotic approach. Many big companies were incorporated TRIZ into their internal culture.
- Companies and consultants are “reinventing” many of TRIZ tools
- Some big companies are hiring TRIZ Masters instead of requiring innovation services from outside TRIZ providers.
- Thousands of people were already trained in TRIZ and got high levels of MATRIZ certification.
- Multiple TRIZ services providers are available on the market.
- Multiple versions of “simplified TRIZ” and “brief TRIZ education” are spoiling the market
- Russia as a source of R&D and TRIZ resources lost its sexy appeal.
- TRIZ still does not have a name recognition on the market. Companies and individuals don’t know about modern effective TRIZ tools and TRIZ authorship of products on the market.
- TRIZ tools are not so effective in some important areas/industries, like services (80% of GDP in the US, programming, business, new materials design, pharmaceutical, logistics, bio-systems, etc.
- Ineffective TRIZ Certification System. Discrepancy between person’s formal certification status and actual TRIZ knowledge and skills.

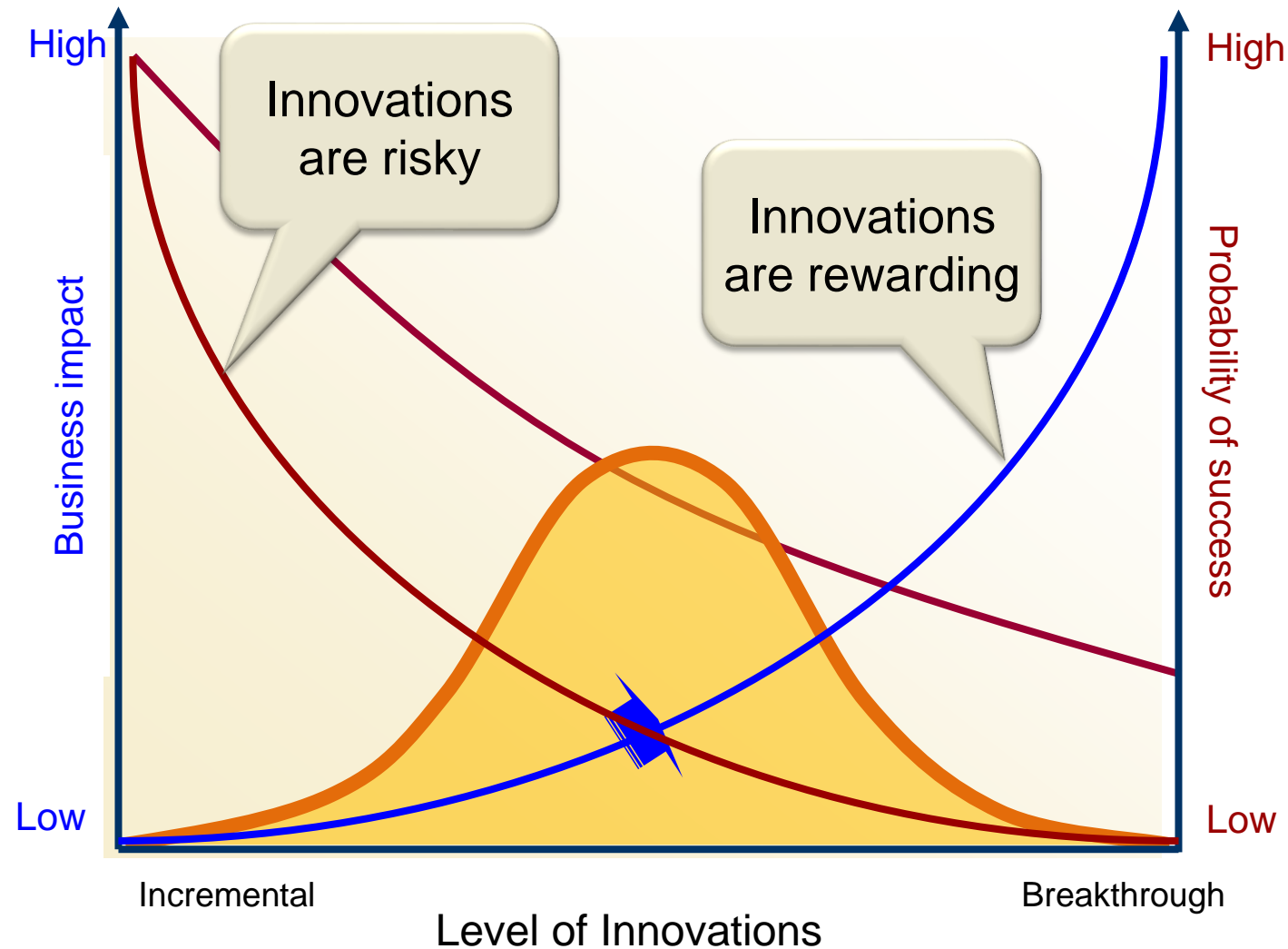
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Major Challenges in Promoting and Selling TRIZ in the World

- TRIZ itself is not a product at all. Many TRIZ providers are selling TRIZ rather than TRIZ-based products and services.
- TRIZ is positioning itself as a methodology for inventive problem solving. Company's decision makers are not really interested in addressing technical problems. Their focus of interest is ROI, revenue, profitability, market share, etc.
- Companies are looking for new products, technologies, or services rather than ideas. Unfortunately, the outcomes of the majority of TRIZ providers are ideas.
- TRIZ is targeting mostly high level disruptive innovation. However, the more disruptive the innovation is, the higher is the risk of its implementation. The majority of innovations in the world are incremental that don't require such powerful tools as TRIZ.
- Very limited number of convincing practical case studies showing the results of TRIZ activities – real products, technologies, and services on the market.
- Absence of effective TRIZ tools addressing specifics of popular modern areas, like IT (especially programming), biotechnologies, pharma, etc.
- TRIZ is still not considered as a science (especially important for promoting TRIZ in Academia).
- Sale is a performance. Many of TRIZ providers are not good actors.

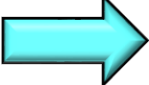








TRIZ Services Sales and Marketing Tools - Maximize the Risk-adjusted ROI



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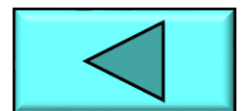
Marketing and Sale of TRIZ Services – Recommended Tools

- **Global Knowledge Network** of experts (GKN).
TRIZ project deliverables are in a form of some existing enabling technologies that can be adapted to address the client's innovation challenge. Jointly with Function-Oriented Search it makes Open Innovation (that many companies believe in) really instrumental. 
- **Smart Labs** – combination of TRIZ and subject matter expertise. Commitment to development of the solution from an idea to a Proof-of-Principle or even Working Prototypes. 
- **List of Clients** that successfully implemented TRIZ 
- List of **Products and Technologies** on the market resulted from TRIZ services. 
- List of successful **Startups** resulted from TRIZ development. 
- List of **Patents** resulted from TRIZ services (standalone list for each industry or branch of science). 
- Statistics of Companies **Innovation Effectiveness Improvement** with TRIZ. 
- **Testimonials / References**
- Impressive non-confidential **Case Studies / Success Stories**. 
- **Virtual Client Partners** - Lead Generation agreements
- List of **TRIZ service Offerings**. 

TRIZ Tools for Making Innovation Practical - Global Knowledge Network

8000+
SCIENTISTS
IN 24
COUNTRIES

Our **Global Knowledge Network** covers all areas of applied science and engineering, operating in countries including Russia, USA, Germany, UK, France, India, Israel, Australia, Colombia, South Korea, Japan, Canada, and China

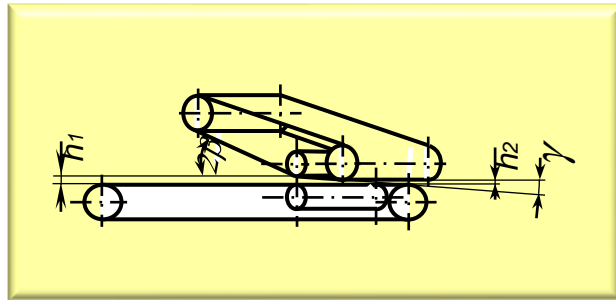


TRIZ Sales and Marketing Tools: Smart Labs

GEN TRIZ has developed its proprietary *Smart Labs* which can be customized and quickly made operational for prototyping of any conceptual solution and any type of technology.

Example: Banana Peeling Machine.

Concept



Proof-of-Principle Prototypes



Installation
into production line



Pre-Production Prototype
in the lab



Working Prototype



TRIZ Sales and Marketing Tools: Clients List

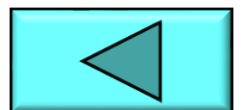
CPG



INDUSTRIAL



HEALTHCARE



TRIZ Sales and Marketing Tools: Products on the Market Resulted from GEN TRIZ Projects



Procter & Gamble: Teeth whitening product Crest WhiteStrips



Alcoa: Aluminum wheels



Clorox: More effective Britta filters



Wrigley: Longer lasting gum



Xerox: Toner cartridges



Chiquita: Single banana



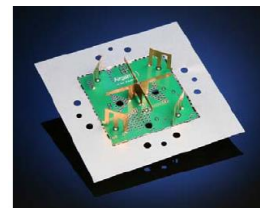
Owens-Illinois: Beer bottles



GlaxoSmithKline: Nasal strips



Healbe: Advanced fitness bracelet





Airgain: Smart Antenna MAXbeam for Wi-Fi devices



British American Tobacco: Tobacco heating device GLO™

TRIZ Sales and Marketing Tools: Successful Startups Resulted from TRIZ Development

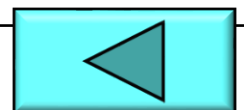
GEN TRIZ has been instrumental in developing disruptive innovations for a number of early stage ventures

Antennas		Airgain, Inc. (www.airgain.com) <i>Proprietary antenna technology for single and dual band WLAN antenna solutions for in-home data and video distribution. Went public in August 2016</i>
Platelet Preservation		Cellular Preservation Technologies (www.cellprestech.com) <i>Revolutionary platelet storage system that transforms the way biological materials can be stored and distributed</i>
Energy Storage		Powermers (www.powermers.com) <i>Proprietary nano-scale polymer technology for boosting performance of existing energy storage systems (SuC's, Li-ion, and Li-air batteries) and a new generation of advanced systems</i>
Biometric Monitoring		Healbe (www.healbe.com) <i>Wearable non-invasive wristband device for continuous monitoring based on measuring impedance, temperature, and pulse wave. Product is already on the market</i>

TRIZ Sales and Marketing Tools: Selected GEN TRIZ Experience in Technologies for Food, Beverage, Water Treatment, Sanitary

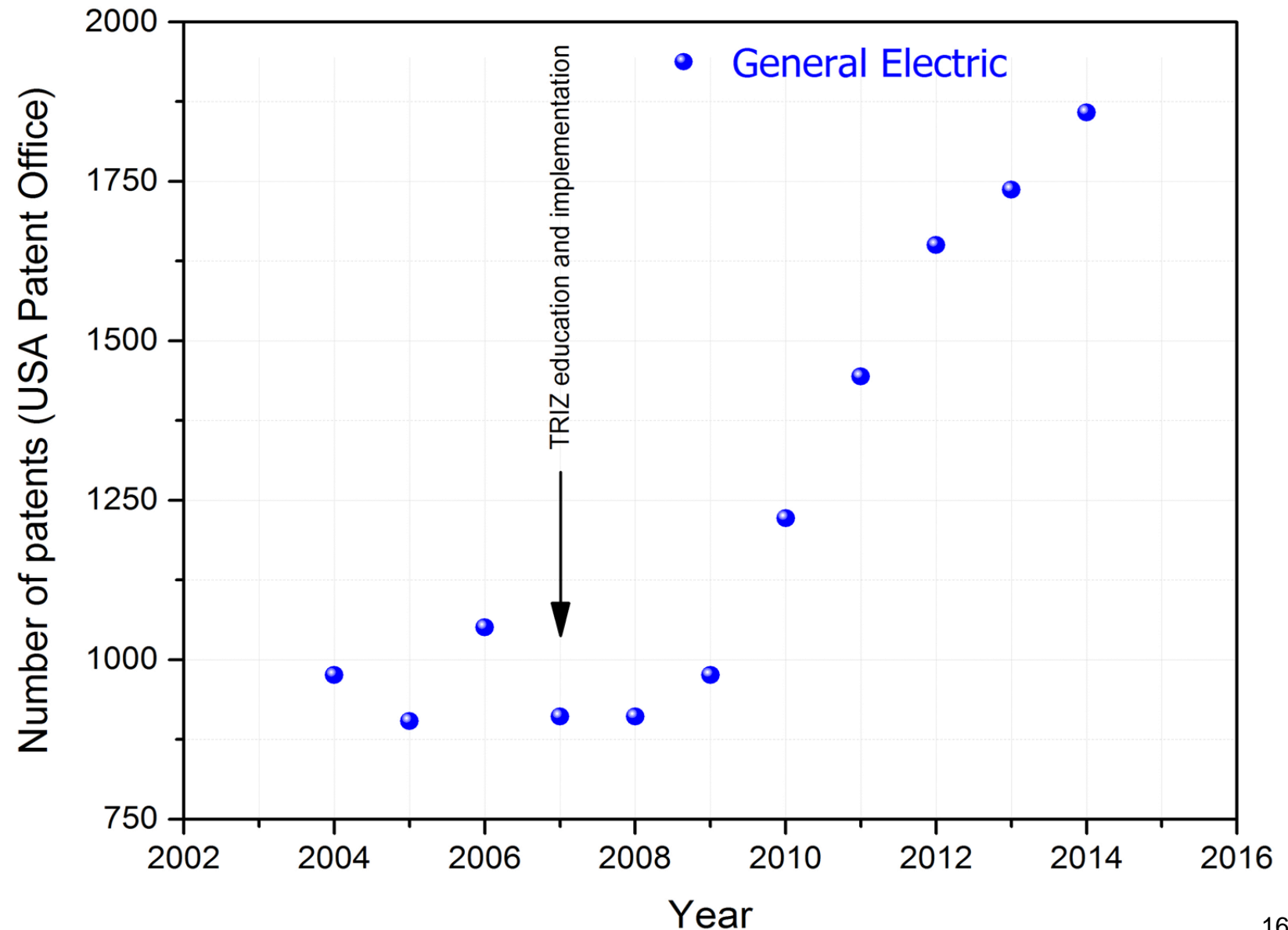
Product / Owner	Objective	Results
Dispensing system PepsiCo	Reduce contamination risk by designing an automated “hands free” system for sanitation and disinfection	Developed approaches for water disinfection through use of cold plasma, electro-chemical activation, and ultrasound US9144346, US9107538, US9016334 US 20130108748 A1
Packaging of liquids PepsiCo	Identify methods and technologies for applying antimicrobial additives along the internal surface of a bottle of specified polymer compound	Landscape of 29 potential technologies and approaches
Water treatment PepsiCo	Identify future technologies to support next generation water treatment and recovery; enabling both high quality ingredient water and zero liquid discharge	Identified eight novel technologies with differing principles of action to feed into client’s long-term development program
Surface disinfection KC PYYF	Identify technologies and approaches for controlling (kill, contain, disable) microorganisms on hard surfaces for extended time duration	http://www.kcprofessional.com/scott-24-hour-sanitizing-spray-video
Drinking water Clorox (Brita)	Develop concepts for delivery systems for fresh drinking water	US8480979, US8309030, US7713482, US8158084
Beverage Sterilization PepsiCo	Kill undesirable microflora inside sealed bottle with beverage by using remotely applied high voltage nanosecond pulses of electrical field	US20100112151 A1
Packaging of liquids OWENS BROCKWAY	A product includes a container including a neck, and a ring non-removably secured to the neck of the container.	US20140263156
Packaging of liquids OWENS BROCKWAY	A product includes a closure having a radially inner portion, and being removably securable to a container	US20140237949

NOTE: Results column includes selected patent filings (applications and grants), but does not represent a complete list.



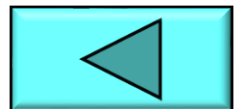
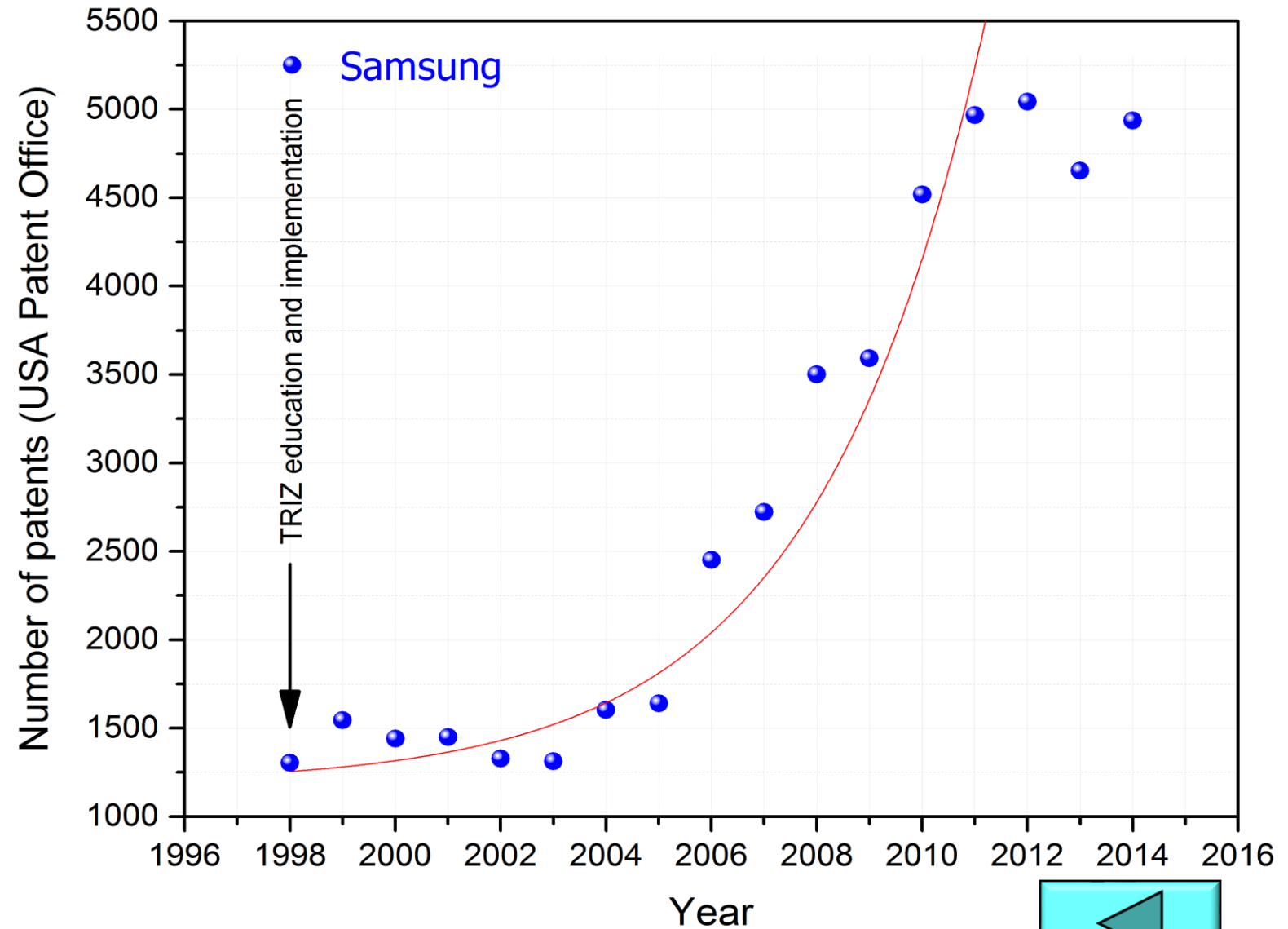
TRIZ Sales and Marketing Tools: Companies Innovation Effectiveness Improvement with TRIZ

**GENERAL
ELECTRIC**



TRIZ Sales and Marketing Tools: Companies Innovation Effectiveness Improvement with TRIZ

SAMSUNG

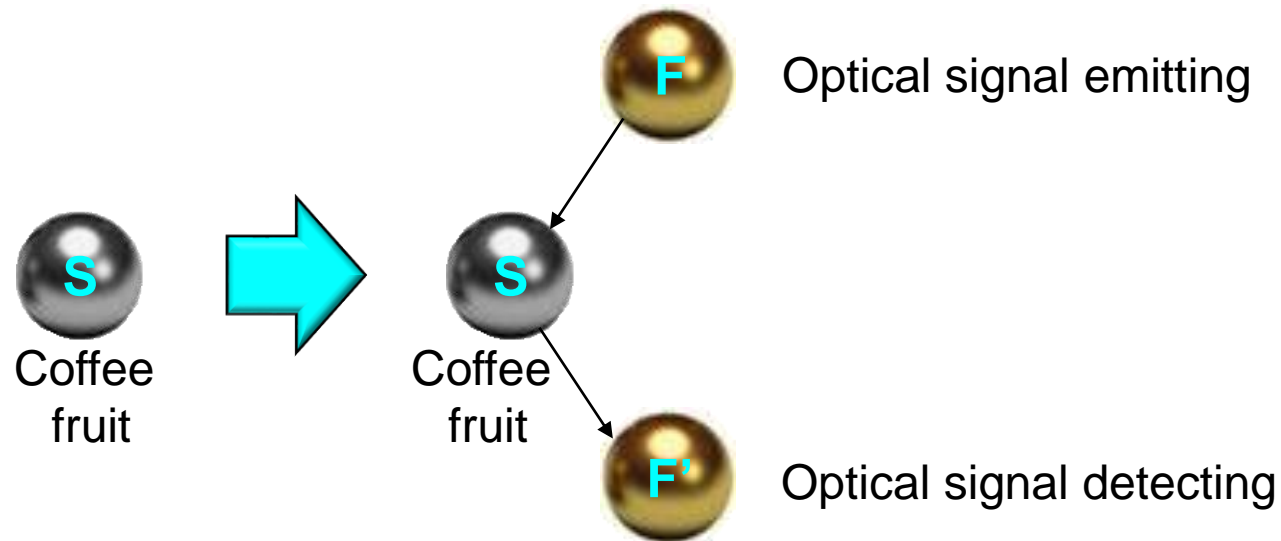


- A Colombian company is manufacturing a wide variety of agricultural equipment and other products for sustainable agriculture
- Coffee production (mostly the Arabica variety) is a very important line of the Colombian economy.
- The Colombian coffee region is mainly located at big mountains and the terrain is very inclined. The coffee is grown on the slopes of the mountains with special soils and that is one of the reasons why Colombian coffee is considered one of the best of the world
- Coffee combines that are used in flat terrains **cannot operate on the slopes**. Therefore, coffee in Colombia is **harvested manually**. Coffee growers pick the coffee by hand selecting the right color coffee beans.
- GEN TRIZ, LLC was asked to develop a solution for compact semi-mechanical coffee harvesting system.



Case Study – Coffee Harvester: Problem Solving

- Problem:
 - How to effectively distinguish ripe coffee beans from unripe ones?
- Application of **Standard Inventive Solutions**:

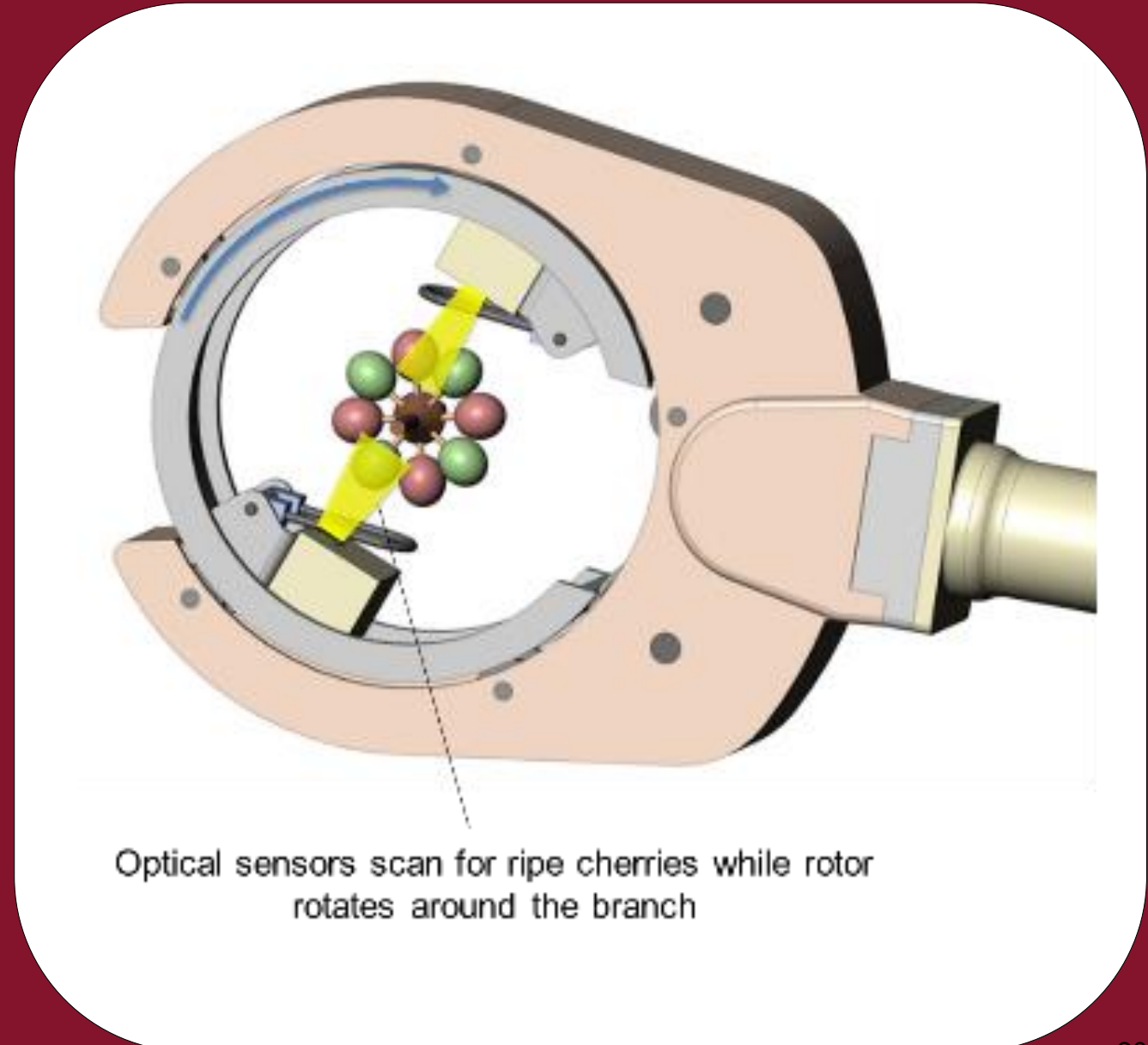


- Solution:
 - Use color difference to distinguish ripe coffee beans from unripe ones:
 - A ripe been is red, while
 - An unripe one is green

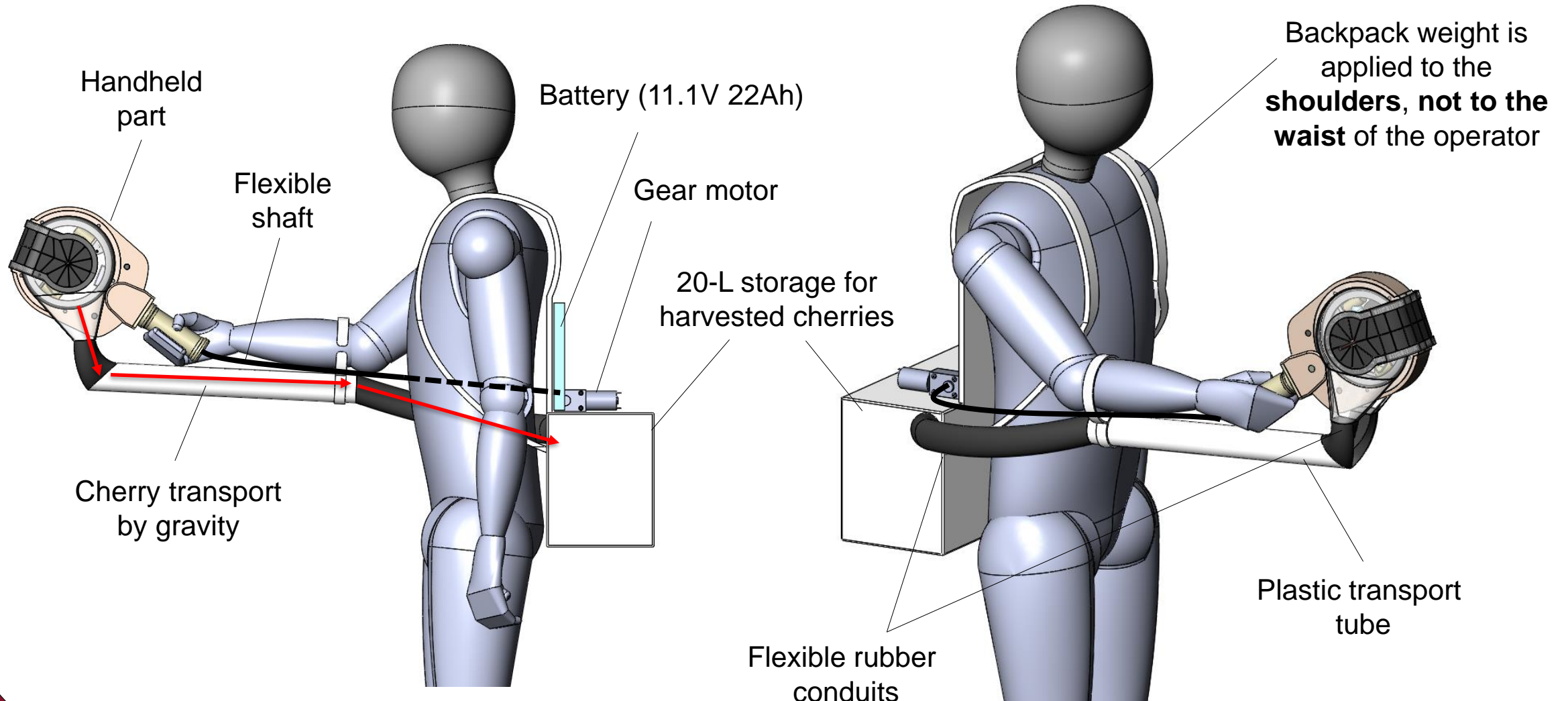


Case Study – Coffee Harvester: Solution

- A harvester rotates around the branch while operator moves the harvester along the branch. Actuator extends a wire loop when optical sensor detects a ripe cherry. The wire loop slides over and underneath the ripe cherry. It drags and detaches ripe cherry as the working tool rotates around the branch. The actuator retracts the wire loop afterwards
- A harvester operates in a “stripping mode” when wire loops are permanently extended and thus harvest all cherries in their way. “Stripping mode” could be activated by an operator or control system in order to increase harvesting speed if all cherries on the branch are ripe



Case Study – Coffee Harvester: Solution - How It Works



Case Study – Coffee Harvester: Business Impact



- Combine (handheld piece) weight: 2.3 kg
- Performance: 40 Kg/h (initial objective of the project was 80 Kg/day)
- Cost: much less than USD 700 per unit
- Convenient for Colombian conditions: rainy seasons, sloping ground, high density of trees per hectare, up to 2 m height of coffee trees
- Ergonomic design
- No camera is needed for ripe cherries recognition
- Prevents coffee beans from falling to the ground
- Safe equipment for the operator
- Minimal damage to branches, leaves and green fruits
- The solution is patented

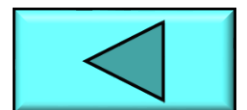
TRIZ Sales and Marketing Tools: Typical Offerings

INNOVATION TRAINING & FACILITATION

- ✓ Basic GEN TRIZ Workshop – 4 days
- ✓ Advanced GEN TRIZ Workshop – 5 days
- ✓ Expert GEN TRIZ Workshop – 10 days
- ✓ Special topics Workshops (for instance, IP Strategy) – 1-2 days
- ✓ GEN TRIZ Innovation System development (multi-level training, awareness course for top managers, continuous facilitation)
- ✓ All workshops include **solving of real practical problems** (up to 5 per workshop)
- ✓ Innovation Navigator software
- ✓ **International Certification Level 1-3**

INNOVATION PROJECTS

- ✓ Product, Process or Service Improvement
- ✓ New Product, Process or Service Development
- ✓ Cost Reduction
- ✓ Technology Forecast
- ✓ Technical Problem Solving
- ✓ Technology Scouting
- ✓ Adjacent Markets Identification
- ✓ Technology Due Diligence
- ✓ IP Evaluation and Circumvention
- ✓ MPV Discovery
- ✓ Failure Anticipation Analysis



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Promoting TRIZ in the World - Conclusions

- TRIZ itself is not a product. The object of marketing and sales is TRIZ-based services.
- There are some typical challenges / obstacles in promoting TRIZ. TRIZ community has to identify, analyze, and address them.
- Long-term TRIZ practices allowed to develop some effective tools for marketing and sale of TRIZ services.
- Some TRIZ marketing and sales tools are available for any TRIZ provider.

Promoting TRIZ in the World - Questions & Answers

Thank you for your attention!



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