	Four Day Workshop on **MATRIZ certified TRIZ level 1 Workshop** Organized by ProINN Consultancy @Venture Center
LEARN	• TRIZ is a Russian acronym and stands for "Theory of solving Inventive Problems" • TRIZ is the most predictable structured Inventive problem solving approach adopted by many companies (Indian and MNC's) across when traditional problem solving fail • Learn problem analytics like: approach to identify intermediate / key disadvantages and harm present in the system through functionality • Understand how to develop new concepts for any given product that are radically different • Learn to define new problems that needs to be solved to get novel products / service • Ability to identify inventive problems (solving contradictory requirements) that holds technology development. • Learn ways to identify psychological inertia and develop ways to come with "out of box" solutions for inventive problems to any given product or situation
ORGANIZED BY	ProINN Consultancy @ Venture Center
ANCHOR FACULTY	Mr. Tito Kishan Vemuri, MATRIZ certified CEM representative with License #: 063/08-2017/1 to teach and certify
FOR WHOM	Inventors, Entrepreneurs, Corporate Strategists Product Planners and Technology Managers Professors and Students of Engineering and Management Scientists, Technology /IP Managers/Patent Professionals/ Innovation Officers / MSME / Manufacturing & Process industries
WHEN	**Monday – Thursday | 27 - 30 June 2016** **Time: 9:00 AM- 17:00 PM**
WHERE	E-Class Room, Venture Center, 100 NCL Innovation Park, Dr. Homi Bhabha (Pashan) Road, Pune - 411008
CONTACT	Mr. Tito Kishan Vemuri Contact no: +91 96864 99774 Email Id: titokishan@proinnconsultancy.com
COST	Limited seats: 20 Fees: Rs. 40,000 + applicable taxes *Note: Fees once paid is not refundable under any circumstances https://www.townscript.com/e/triz-level1-workshop-pune

INTRODUCTION AND OBJECTIVE

A proven way of differentiating a product or a process is by patenting the concept/solution. There are few methods that can help in this pursuit… a proven systematic approach and many unstructured approaches (person dependent).

For example, Thomas Edison (World's greatest inventor) with help of his labs tried ~1000 experiments to invent improvised carbon filament and patented. Above great invention and many inventions in the past were developed by using trial and error methods at an expense of TIME. In the present competitive world where robust pipeline of new/enhanced product offerings is a need to increase the market share, can Corporates/MSME/Start-ups afford to use above approach (knowing the fact that people change jobs) and be confident to develop technology in a predictable time frame?

An example: It took about a century to build USS Nimitz carrier (99K tons warship) from USS North Carolina (16K tons) that was accomplished by solving many contradictory requirements (like: angle of decent vs. safe landing) through trial and error methods. Can the CENTURY long product development cycle be reduced to FEW YEARS? YES by addressing a critical challenge: to identify and solve contradictory requirements.

Humans inherently have biases in their thinking. One of the complimentary conditions that limit personal creativity is psychological inertia (PI)… Our idea generation follow habits cultivated or techniques worked earlier and thus limits our ability to think creatively. One way to overcome PI is to ignore your first solution and demand for a second one. This leads to another critical challenge: how to come with multiple WoW solutions that are simple and novel?

TRIZ, a Russian acronym for "Theory of Solving Inventive Problems" developed by Genrich Altshuller, a Russian inventor, addressed above critical challenges. Altshuller developed a systematic approach, once understood and followed will empower toolkit for everyone to invent.

Corporates like Samsung, General Electric, Proctor & Gamble, Intel, Hyundai, to name a few, have adopted this structured methodology in technology development and addressed above critical challenges with success.

Objectives:

- Enables to develop multiple concepts with low cost and high efficiency
- Facilitates WoW solutions from out of the domain through understanding functionality using FoS approach
- Enables to identify contradictions and helps to solve with win-win solutions and expand technology envelope
- Enriches system understanding and helps focused ideation leading to high quality idea generation
- Empowers to overcome psychological inertia through multiple ways – Out of box thinking at any situation
- Learn ways to use physical effects and come with multiple ways to solve a problem

For Corporates / MSME / Start-ups, TRIZ level 1 workshop helps in:

- More product offerings in shorter time – Adopting systematic approach across the organization helps in low idea to product ratio. A study show it is about 3000:1 and varies from industry to industry.
- Greater employee satisfaction leading to employee retention and culture development– Increases the organization value as it empowers every employee to grow on value curve… from engineer to a better problem solver.

ABOUT TRIZ

How it works: Functions are the founding blocks of any engineered product. The basic function of telephone didn't change since Graham Bell invented Telephone. TRIZ's systematic approach starts with understanding present value of an engineering system by clearly defining functions of each component, their interactions, identify harmful and insufficient functions that are either to be removed/improved. This effort establishes a blue print for identifying opportunities towards improvement of an existing engineering system. Then the goal is to identify key disadvantages that helps us to define contradictions.

Technical systems are complex and consist of inter-related parts. Changing one part of the system may introduce a negative effect on the system's other parts. In other words, an improvement in one part of a system that impairs other parts of the system, or to adjacent systems, creates a technical contradiction – and making an invention requires removing the technical contradictions. In other words, define an inventive problem by identifying a right contradiction that is holding the technology development.

By identifying and solving the right contradictions following the structured approach and by overcoming psychological inertia, everyone can come with solutions that are novel and patentable. Once a contradiction is identified, find relevant inventive principles and initiate ideation. In other words, we approach to get from task to contradiction, from contradiction to the method, and method to a solution. Then we can walk step-by-step from the problem statement to the answer.

Critical differentiator of TRIZ is its ability to help identify and solve contradictory requirements over other methods like Theory of constraints or Value engineering.

PROGRAMME OUTLINE

- Understanding basic concepts of systematic innovation using TRIZ methodology
- Learn structured problem solving:
  - ➢ Identify an engineering system that needs to be improved / developed / where harm has to eliminated
  - ➢ Perform problem analytics that include: Functional modeling, cause effect chain analysis
  - ➢ Develop concepts: Trimming rules, Ideal final result and Resources, 9 Windows
  - ➢ Solve inventive problems: Function oriented search, contradiction matrix and Inventive principles

WHO IS IT FOR

- Inventors, Entrepreneurs, Corporate Strategists
- Product Planners and Technology Managers
- Professors and Students of Engineering and Management
- Scientists, Technologists/IP Managers/Patent Professionals/ Innovation Officers/MSME/Manufacturing/Process industry

COURSE INCLUDES

- Printed course material
- Certificate of Participation
- Tea and lunch at Innovation Café
- MATRIZ certified TRIZ level 1 certificate for those who successfully pass the test

Speakers	
  Tito Kishan Vemuri	Tito **Kishan** Vemuri **Mr. Kishan** is a technology innovation coach. He is passionate about mentoring and facilitating technology innovations in India and beyond and groom inventors. He excels in mentoring inventors to grow their ideas into innovations and empower them to be either entrepreneur / intrapreneur. ***Profile:*** Inventor and Technical Innovation mentor with strong technical expertise and experience in translating technical ideas into technology innovations. Experienced in developing Intellectual Property strategy across multiple product lines based on business strategy and translated strategy into action through Innovation workshops and mentoring. Demonstrated with a proven track record of facilitating "Close to thousand" inventions through Innovation workshops with some inventions incorporated in new products. Successful innovator track record with a granted patent and mentored 'Hundreds' of inventors and established a culture of Technical Innovation at world's largest Power generation OEM's India Engineering operations. ***Education:*** M.Tech, NIT Suratkal ***Certifications:*** • Certified six sigma Master Black Belt by GE, USA • Certified Design for Six Sigma Black belt by GE, USA • MATRIZ certified TRIZ level 3 practitioner & Certified IP Analyst ***Experience:*** 21 years of experience in IP Strategy development, Patent circumnavigation, Strategy execution, Robust Product design & development, Change leadership and Operational excellence – GE Aviation, GE Power & Water and TATA Consulting Engineers ***Key accomplishments:*** • One granted US patent • Received GE management award for grooming talent in experiential teaching • As a process improvement coach to an ASEAN airline, developed & executed bottom line improvement strategy and brought predictability in Airline operations through operational Excellence program and change management. Enabled significant $xM approved • Certified 100+ GB's on DMAIC and DFSS ***Teaching:*** • Taught 600+ Greenbelts and 50+ Black belts in DMAIC & DFSS; • Taught to 300+ engineers on TRIZ level 1 • Taught across Asia (India, Vietnam, Malaysia, Indonesia, Thailand, Singapore), Middle East (Dubai, Abu Dhabi) & South America (Chile)… to Indian / Multinational corporates and to Airline operators.

WORKSHOP SCHEDULE: DAY1

Timing	Duration	Module title and description	Speakers
08.45-09.15	30 min	Registration	
09.15-09.30	15 min	Introduction to the workshop	
09.30-10.30	60 min	Module 1: Problem Analytics • TRIZ Introduction • Inventive thinking Hands-on activity	Kishan V.T
10.30-10.45	15 min	Tea break	
10.45-13.00	135 min	Engineering system definition • Barriers to inventive thinking: Psychological inertia • Problem definition • Component analysis	Kishan V.T
13.00-14.00	60 min	Lunch	
14.00-15.00	60min	Engineering system understanding • Interaction analysis • Functional Modeling	Kishan V.T
15.00-15.15	15 min	Tea break	
15.15-17.00	105 min	Engineering system understanding cont'd • Exercise	Kishan V.T

WORKSHOP SCHEDULE: DAY2

Timing	Duration	Module title and description	Speakers
0900-0930	30 min	Day 1 Recap	Kishan V.T
0930-10.30	60 min	Problem understanding • Cause effect chain analysis • Exercise	Kishan V.T
10.30-10.45	15 min	Tea break	
10.45-13.00	135 min	Module 2: Defining new problems • Trimming • Exercise	Kishan V.T
13.00-14.00	60 min	Lunch	
14.00-15.00	60min	Module 3: Problem solving strategies • Product cost out strategy + Exercise	Kishan V.T
15.00-15.15	15 min	Tea break	
15.15-17.00	105 min	Performance improvement strategy • Function oriented search + Exercise	Kishan V.T

WORKSHOP SCHEDULE: DAY3			
Timing	**Duration**	**Module title and description**	**Speakers**
09.00-09.30	15 min	Day 2 Recap	Kishan V.T
09.30-10.30	60 min	Understanding contradictory requirements • 39 Engineering parameters • Exercise	Kishan V.T
10.30-10.45	15 min	Tea break	
10.45-13.00	135 min	Solving contradictory requirements • TRIZ Matrix, Engineering contradictions • 40 Inventive Principles • Exercise	Kishan V.T
13.00-14.00	60 min	Lunch	
14.00-15.00	60min	Case study • Product cycle reduction… from century to years	Kishan V.T
15.00-15.15	15 min	Tea break	
15.15-17.00	105 min	Solving contradictory requirements • Physical contradictions • Exercise	Kishan V.T

WORKSHOP SCHEDULE: DAY4			
Timing	**Duration**	**Module title and description**	**Speakers**
0900-0930	30 min	Day 3 Recap	Kishan V.T
0930-10.30	60 min	Solving contradictory requirements • Engineering & Physical contradictions cont'd	Kishan V.T
10.30-10.45	15 min	Tea break	
10.45-13.00	135 min	Module4: Ideality • Ideal Final result; Ideality strategies; 9 windows & Resource analysis • Exercise & Ideation	Kishan V.T
13.00-14.00	60 min	Lunch	
14.00-15.00	60min	IP Basics and IP Strategies • Smart Inventor	Kishan V.T
15.00-15.15	15 min	Tea break	
15.15-16.45	90 min	MATRIZ TRIZ level 1 Exam (optional)	Kishan V.T
16.45-17.00	15 min	Workshop participation certificate	