



NCL Innovations Seminar Series: 6<sup>th</sup> Talk

## **Innovation Flow** **- the science of flowing Ideas and** **Inventions into Innovation**

by

**M.V. Shankar**

Principal Scientist, Dow Chemical International Pvt Ltd, Pune

on

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Second Floor Lecture Hall, Main Building

National Chemical Laboratory

Pashan Road, Pune – 411008

**Abstract:** Most of us make our daily living by generating creative ideas, solving tough technical problems and translating our ideas into inventions. Now what would give us greater satisfaction? – Innovation, i.e taking our insightful ideas and breakthrough inventions successfully to the market. How good are we at Innovation? – the present statistics are quite discouraging - typically, for every hundred good ideas, ten may lead to breakthrough inventions and one to an innovative product that meets a critical need of the customer. To accelerate the Innovation process and to maximize the Return on Innovation, we need a systematic Innovation process that will (a) focus and structure our ideation efforts (b) align our ideas to solve a critical need and ensure that the Customer sees added value and most importantly (c) give us the satisfaction of seeing our idea through the end of the Innovation Funnel.

As an inventor, I have often wondered how to bridge the gap between invention and innovation. When I got into managing technology programs, I struggled to defend and nurture those promising out-of-the box ideas that tend to get killed in conventional stage-gate processes. To create an effective Innovation strategy, I wondered how I can balance the capabilities of emerging technologies and the needs of emerging markets. I studied many Innovation processes, creativity tools, consulted with Innovation experts, researched many Innovative organizations (Google, 3M, Apple, Toyota, P & G etc) and also learnt from facilitating Innovation in R&D organizations (GE, Tata and Dow). I found that the secret to successful innovation lies in systematically growing the innovation potential of ideas.

I evolved my Innovation approach based on TRIZ – Theory of Inventive Problem Solving - to address primary concerns like:

- How do we make sure that we are solving the right Problem?
- How to balance Imagination Vs Knowledge and come up with creative, yet technically feasible, solutions?
- How to learn from creative ideas and smart solutions that have solved similar problems in other domains? How to integrate this knowledge into our solution?
- If our technical expertise / domain knowledge alone is not sufficient for Innovative Problem Solving – then what other new skills do we need to learn?
- Is there a systematic approach to sail the Idea through various barriers and translate it in to an innovative product?

The discussion will address these prominent questions that come to our mind whenever we hear the word Innovation. I will introduce creative thinking tools like 5 Whys, 9 Windows, Reversal of Assumption, 4-Quadrants etc. We will also discuss TRIZ-based Innovation tools like Ideal Final Result (IFR), Function Maps, Contradictions, 40 Inventive Principles, Technology Evolution Trends and Evolution Potential.

**Shankar MV**



Shankar MV  
Dow Chemicals

Shankar MV is a Physicist turned Materials Scientist. He is Principal Scientist at Dow R&D Centre, Pune. Prior to joining Dow, he has been a lead scientist at GE R&D, Bangalore for eight years. He has ten patented inventions and an award winning new solid state illumination product based on his invention. His expertise is in electronic and optical materials. He has designed and developed novel luminescent materials for application in White LEDs. He has been actively learning, practicing and teaching systematic innovation methods and TRIZ-based innovative problem solving tools. He facilitates cross-pollination of ideas, innovative problem solving and the creation of strategic intellectual property across technology domains.

His interests include physics, philosophy, psychology, creativity and technology entrepreneurship.

**Contact info:**

Shankar MV

Email: Shankar.Venugopal07@gmail.com