

# **Innovation for Survival: An inside look into the World of Innovation Know-How**

**Chandan Lal Patary**  
ABB, Bangalore, India

## **1. Abstract**

Many hurdles human beings were faced and have been facing to lead a superior life. For existence, especially today human beings need to immediately come up with efficient way of living and manage changes creatively. Natural resources are diminishing at faster rate; human beings need to innovate continuously to live life efficiently, with minimizing damage to the nature. People need to think unremittingly what are new and the best way to achieve the goal by utilizing fewer resources and get the utmost result. Innovation is a part of Art and part of science. That's why Innovation is a part of every creature's DNA. Same is true for any organization. Organization that is providing values to the mankind through innovative products or any other means which make the life comfortable with less damage to the nature are best in profitability.

Organization resilience and sustainability also surges in a process. To attain the goal organizations continuously need to devote on various resources for advancement. Organization need to find which problem it should target and where it can exploit its strengths and maximize output. Organization should build strategic vision to sustain long time. How can organization's aspiration, envisage and execute the thoughts fast enough to produce value to the human beings. Long term sustenance entirely depends on continuous new solution which makes the life easy, efficient, and effective, cost competitive with minimal damage to the natural resources and require less change to adapt. The organizations which work on these fundamental fetch the best solution fast into the market and can create greater impact to the community.

This paper will explain below points

- a) Pitfalls in innovation process and how can team overcome hindrance by fostering creativity and build capability?
- b) How to smart-storm for the right problem and think out the box proposal and execute proficiently for innovative solution?

- c) How society can create ecology for innovation through education, research organizations, government funding agencies, technology companies, investors, entrepreneur and consumers, interdependent economies?
- d) How competently operation management process drives innovation? And creates sustainability
- e) How by tapping organization knowledge, utilizing strength, strategic alliance with others and right business environment will create more opportunities?

## 2. Keywords

Brainstorm, Convergent-Divergent, Delivery Excellent model

## 3. Introduction

An organization cannot count on building a secure future in the myopic belief that what has worked in the past will continue to work in a rapidly changing and increasingly uncertain world. It would be foolish to rely on “innovation by accidental good fortune or occasional inspiration”. Equally, it makes no sense to “call in the creativity consultants” once a year for a fire drill when someone in the organization feels it is time for “another round of innovation”. These approaches are neither pragmatic nor sustainable. To succeed in the long term, it is necessary to move beyond an ad hoc or unstructured approach to innovation. An organization will need to intentionally and deliberately foster an innovation-biased culture and develop and institute appropriate innovation processes, methodologies and supporting technologies. This may include the development of a collaboration-based knowledge management infrastructure – an “Innovation Community of Practice” that supports the sharing of innovation best practices, consumer and market research and potential opportunity platforms, and facilitates imaginative thinking across the organization.

Team where I have involved generated several new ideas into the product portfolio and achieved the best innovation team award in our organization for year 2012. Most of the ideas are productized and few are in pipe line for patent. Team believes staying ahead of the competition means going the extra step and generating and implementing unexpected ideas before the others.

How team has reached to this stage? Can we model innovation? What success formula can be reused to make this practice as a pattern for idea generation? Is there any organizational formula?

To answer above questions I have decided few areas which influence idea and its life cycle.

#### 4. Organization readiness

Team has created a process and culture over a period of time to get result, team has followed below principle.

Team has followed what Göran Ekvall in Sweden was evaluating suggestion systems 50 years ago for Volvo. The principle says that human factors were critically important but had been largely ignored.

Team has followed his groundbreaking work on the climate for innovation.

These are 10 factors associated with creativity:

- *Challenge—to what degree is team members challenged and emotionally involved by the work?*
- *Freedom—to what degree is team members to decide how to do their jobs?*
- *Idea time—Do team members have time to think through before taking action?*
- *Dynamism—How lively is the organization?*
- *Support for ideas.*
- *Trust and openness.*
- *Playfulness and humor.*
- *Conflicts—to what degree do people engage in interpersonal conflicts?*
- *Debates—to what degree do people engage in lively debates about the issues?*
- *Risk taking—is it OK to fail?*

Line manager has been frequently checking these parameters and how these factors are progressing in daily tasks. All these factors have been diligently taken into consideration in daily scrum and in all sprint meeting.

Organization is currently doing innovation wave in every quarter to assess, check and measure for improvements.

#### Brainstorming

Team has done several workshops and brainstorming session with different approach. All the team members has been asked to submit their paste into board and based on the notes discussion started. To make brainstorm effective and encourage introvert and extrovert type of people, team has used every participant has his or her pad of sticky notes and a pen. The facilitator makes sure all members of the group understand the problem and asks them to write down a minimum of 10 specific and actionable ideas to solve the problem, one idea per note page. The high level theme and problem definition comes from Global Product manager and Marketing manager. Team has to think without any discussion at initial stage. Introverts contribute equally as much as extroverts because all participants express their ideas in silence to start with. There is

no one dominates brainstorming session. Team has used ladder of abstraction to bring clarity in idea generation. Going down deep with each idea to elaborate each idea is effective.

Second, combining and integrating “push” and “pull” approaches often requires mixing people and teams that have very different cultures, values and mental models. It can therefore be productive.

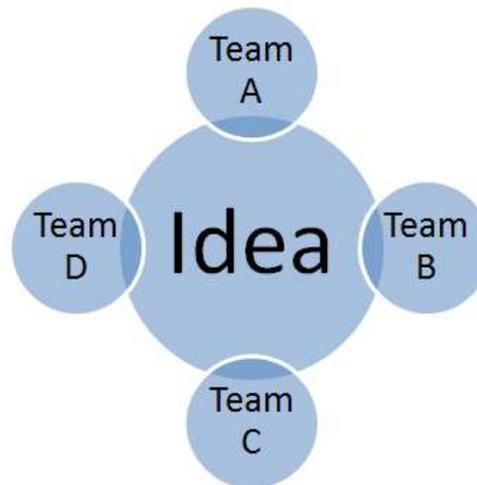


Fig: 1 Team collaboration

**Figure 1:** Demonstrates about the idea generation with relation to the team collaboration. More number of team involves with diversified background more idea generates and quality of the idea improves.

When people from diverse disciplines look at problems and opportunities from different points of view, great things happen. One expert, who cannot see the implications of his or her own work, is alerted by an expert in a different field. Two bits of understanding may come together to form a whole. Experts from different disciplines apply the other person’s tools to solve their problems.

Similar types of “right-storming” and “smart-storming” session conducted with global team. The goal is one, “Get as much idea as possible”. More idea we have, more opportunity, more pattern, more possibilities we have.

There is no fear, no criticism and no negative atmosphere. Team members are free from all types of work during workshop. Free mind is absolute to get the creative thoughts.

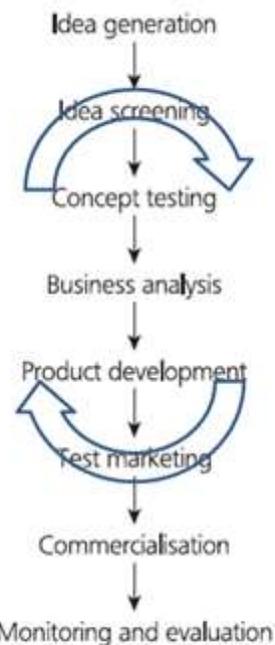
All the team members contributed to realize below innovation formula.

**“Innovation = theoretical conception + technical invention + commercial exploitation”**

Team members from Marketing, Product management, test team, system engineering/domain experts, and Program management participated in brain storming session. Few of the events for brain storming happen outside of the office premises for the change in ambient which triggers creativity.

Organization is making a framework where team can produce new idea and team realizes benefit out of the entire process. There is trust among team members which has built over a period of time.

Managing innovation is not only about unleashing creativity, but also about harnessing and focusing it. It is a balancing act—on the one hand releasing the flow of ideas to create and sharpen up innovations, and on the other making sure the ideas are focused toward actually delivering results that benefits the organization, without taking forever or consuming a vast budget. At each stage, the idea is reviewed to decide whether it is worth pursuing further. For every stage that it passes, an increasing amount of money, time, and resources must be dedicated to the project. Team is making sure that all the suggestions are reviewed by more than one person.



**Fig 2: Idea life cycle flow**

**Figure 2:** Demonstrates the idea life cycle. Life of an “idea” from start to end and how “idea” undergoes several round of refinement based on the various factor like need, cost, feasibility, etc.

Innovation is not a sequential process but it needs interaction and feedback from different channels. Over a period of time in knowledge creation! It is a learning process involving multiple inputs.



Fig 3: Sources of Idea

**Figure 3:** Demonstrates that various sources from where idea can come. Team need to monitor, capture different thoughts pointers and inputs to smart storm and generate relevant idea for the organization.

Business is a social construct about serving and satisfying people. Outstanding business leaders and great companies create successful management systems and structures based on cooperation and collaboration with many entities and partners, not just based on their own assets and organizational capabilities

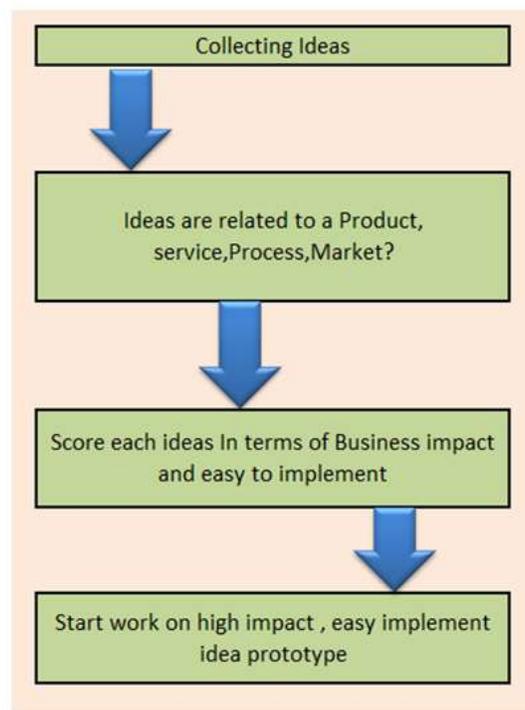


Fig 4: Idea and next step to decision making

**Figure 4:** Demonstrates that what to do next when team has many ideas and next step to proceed.

There are different categories of innovation:

- Product innovation: This is concerned with the development of a new or improved product;
- Process innovation: This reflects changes in how a company operates.
- Organizational innovation: This is concerned with changes in the organizational structure.
- Management innovation: This is concerned with, for example, the implementation of a Total Quality Management System.
- Commercial/marketing innovation: This is concerned with innovation in the marketing strategies and mix.

All the ideas can be put into any of the categories and start interacting with the respective department.

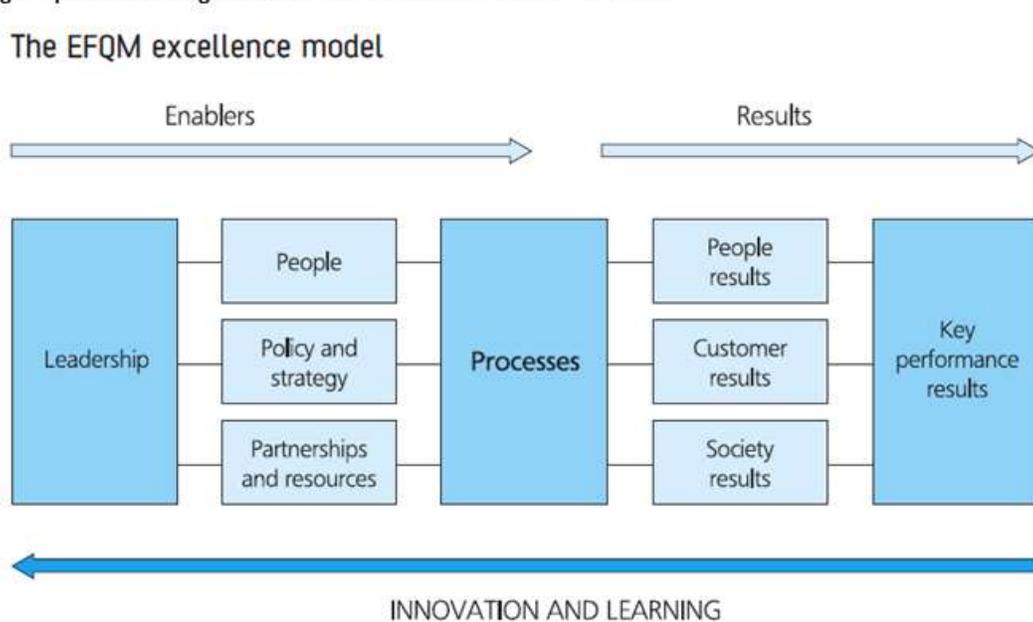
### Execution of the idea

One of the execution excellence model has helped team to refine and execute the ideas effectively is EFQM (**European Foundation for Quality Management**) excellence model. Program manager has effectively used this model to run the program execution. There are 5 enablers and 4 result criteria. There is a continuous learning process and

every review meeting program manager demonstrates what the outcomes are. What team should do differently to maximize the output?

The underlying idea is that *results* (people, customer, society and key performance) are achieved through a number of *enablers* in managing and controlling the input/output transformation *processes*. Technology innovation has the following levers: products and services, process technologies, and enabling technologies involved.

Fig 5: Operation Management Process-Execution Excellence Framework



**Figure 5:** Demonstrates reference to an execution excellence model and why team does not have to reinvent the wheel when we have existing excellence model .Team can generate ideas and push the idea into productization and continue with the feedback from various channel for the improvement. An excellent delivery framework converts ideas into market with excellent execution speed with quality.

Team has followed EFQM model to increase the Excellency in operational excellence. Sustainability will come when standard has been deployed and followed through.

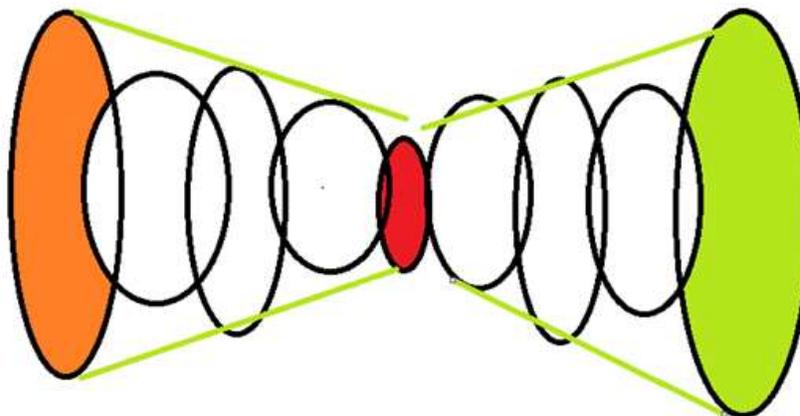


Fig: 6 Convergent and Divergent idea

**Figure: 6** Demonstrates convergent innovation front-end or funnels (identification and evaluation) with the divergent deployment and exploitation of the innovation (innovation bugle).

The mouth is wide, in that many ideas can begin the process, but more and more ideas will be rejected at each stage as they are shown to be unworkable for one reason or another. Only the very best ideas—those that are most likely to succeed—will ultimately make it into development.

Team has visited several different project sites to discuss with the users to collect the pain points and voice of customer. Elegant solution comes from customers we need to live in their world. A potential source of innovation can be frustration: the frustration experienced by users who want something additional or different from the products and services they use. This can be channeled to create ideas and prototypes for innovations. Customer feedback is used properly when it is used to identify what customers value rather than what they say they want. Organization is connected in many industrial forums where organization is contributing by sharing knowledge and collecting the societies need.

Majority our thoughts refinement comes from corporate research team where most of our PHD or Doctorate team members available from diversified domain. Significant investment proposed for competency development which is one of the key for ideation.

### **Strategic Alliance**

Merger and acquisition helps inflows of new ideas through increased product portfolio. People and competency profile has changed which provided larger organization knowledge asset to explore. For our team also it has helped us significantly. For

example a solution for mining customer can reuse and developed from smart grid solution.

## Collaboration

Team has several collaborations with many universities to know more about the concept, technique and exchange the ideas and thoughts. There were many fresh pass out from the college taken as internship to do at prototype. Some of them have been absorbed after completion of the college based on performance.



Fig 7: Knowledge builds with Collaboration

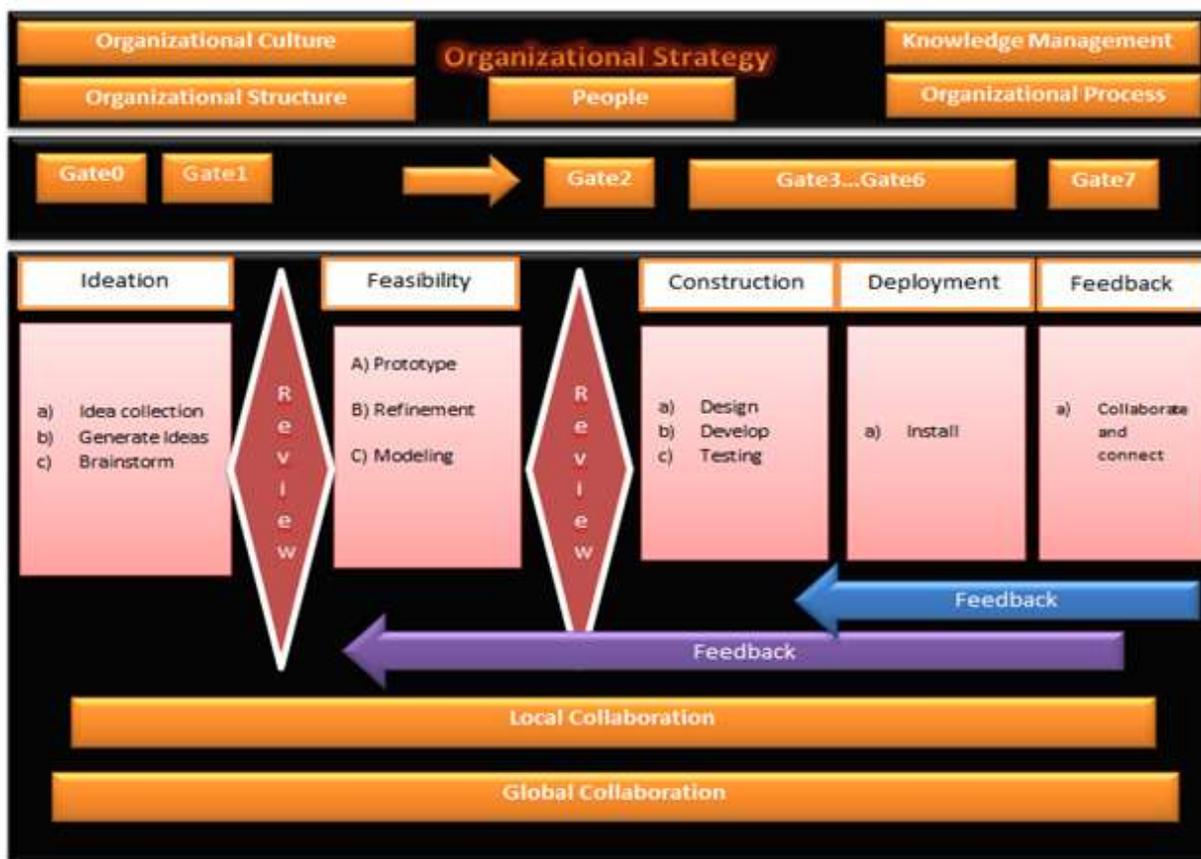
**Figure 7:** Demonstrates collaboration model for knowledge building.

- Learning and idea generation goes hand in hand but learning comes first.
- How have we built the knowledge?
- Knowledge can be bought; for example, by hiring staff, forming alliances, and partnerships or outsourcing?
- Knowledge may be rented by hiring consultants or subcontracting work?
- Knowledge can be developed through training and continuous Learning?

A more modern way is to use *crowdsourcing*, which is the planned use of viral-media platforms to solicit ideas and reactions. Crowdsourcing can tap into the latent

intelligence of large groups of people, turning them into smart mobs to help team to innovate. Optimists are more creative and innovative, more motivated, and more satisfied with their work. They also live longer, healthier, happier, and more successful lives. Entrepreneurs need to be reasonably optimistic to succeed. When you're in a positive (optimistic and hopeful) frame of mind, you tend to spread that positive attitude to others. It spreads quite naturally, both through what you say and through the way you act. Positive statements indicate that you're optimistic and possibility of idea generation.

The *purpose* of innovation is to create business value. That value can take many different forms, such as incremental improvements to existing products, the creation of entirely new products and services, or reducing costs, etc. Team has very good reward system because when workers know that management rewards new ideas, they will try to generate them. The best way that management can make its wants known, and believable, is to provide tangible rewards for new ideas.



**Fig 8: Innovation Framework with Stage Gate Model**

**Figure 8:** Demonstrates innovation framework. How from idea generation to idea refinement to productization flow goes. How other factor which are from organizational infrastructure influence the entire process. How local and global stakeholders influence the entire process.



Fig 9: Organization influence areas

**Figure 9:** Demonstrates the influence an organization gets from different forces.

## Measurement

How are we measuring the innovation success?

"X % of profit should come from Y number of idea added last year onto the product"

Team has measured the innovation success based on the above percentage. Our team has maximum contribution into the product roadmap.

Also team measure for improvement

- a) How many ideas generated at start?
- b) Failure cases?
- c) Time consumed to develop till end stage?
- d) What is the cost? How much more or less?
- e) Quality of the idea vs. customer satisfaction?

The essential ingredients in delivering successful new products and services are the key people involved and their creative ideas. It is not process, it is people. Success comes from a vibrant and energetic organization that encourages its creative members and partners to think innovatively about what they are doing.

This target organizational environment for this successful process is a *culture of new ideas*, the organizational tone generated at the top that encourages a free flow of

feedback *into and out of the company* on current products, opportunities, services, the competition, customers, and market operations.

Companies are looking to increase their level of collaboration with research bodies and universities, while scaling back their consulting expenditure.

At every stage gate review manager has to present the cost breakdown and decision making done for “Go” or “No Go” for each idea.

## Culture

Cultural change is a long term investment. It takes long time to change the way people thing, work and create an innovating culture. Leaders have to be patience to get the benefit out from team.

In our project team got excellent support from leadership team. Leader has identified the creative people through various exercise like interview and based on their output.

Leaders has identified the best time and get the maximize output through various way.

Leadership team has been continuously communicating about the innovation output, impact on organization growth and how each individual will get affected with the ideation. Reward and recognition is an item for quarterly team celebration.

Many of the team members who were in this mission used to work alone at late night and in the next day team used to get new ideas based on the input provided by the team members who worked late. That was the pattern and flexibility has been given to the management team to get the creative output. Domain expertise blended with business knowledge helps lot of breakthrough ideas to appear in mind. Team has unique mixture of people which helps to generate ideas from multiple dimensions. All team members are encouraged to work openly freely with their mind. Leaders have created a blame free environment.

Below points is observer as an output from a good cultural innovative team:

- a) *Team members are resilient.*
- b) *Welcome challenges*
- c) *Encourage healthy discussion*
- d) *Collaborate-coordinate-connect-walk the talk*
- e) *Humor is a part of daily work*
- f) *Encourage to fail and lesson learned shared*
- g) *Appreciate as when get opportunity*
- h) *Building team competency daily*
- i) *Sharing-caring-open-trust –respect*

j) *Never satisfy with the first result – continuous refinement for perfection*

## **Pitfalls of Innovation**

There are several pitfalls the team has identified. With presence of most of these innovations cannot be successful.

- a) Wrong path: Some time an idea which looks excellent at initial stage but could be a potential waste of time and money. Team has realized that idea has to undergo several rounds of review, discussion with all possible stakeholders to start working on it.
- b) Idea and criticism: Idea should not kill at first shot when it has just born. Idea has to undergo several rounds of review with stakeholders who understand business, market, technology and some other factors. Idea should not evaluate at initial stage when it has just born and kill at that phase, who knows it could be a breakthrough idea!
- c) Not getting enough support from upper management: One of the contributing factors to generate many ideas is support and encouragement from upper management. In absence of the support team lost the spirit. Funding is the one key to push the idea engine from one stage to next stage.
- d) Leadership: To get continuous excellent idea leadership skill of the management team play a significant role. Leader transforms the team culture, motivates and encourages and energizes teams to refine and produce great ideas. Strong leadership remains the key for organizations to set the stage to embrace innovation with deep conviction, sincerity, and dedication to make it happen.
- e) Information: There is a significant need of knowledge management and information flow in and out to the team. Knowledge and information is oxygen to the ideation process.
- f) Imposing rule for innovation: There are no rules for innovation. The moment organization deploys strict roles, creativity dies.
- g) Big bang workshop: Team has realized that idea generation is a part of continuous process. Once in year idea generation workshop may not be successful always. Though some time it works. Team members should not stop generating ideas only at big bang workshop. Big bang workshop kills innovation culture.
- h) Investment on competency development: In absence of investment for competency development ideas will not flow. In cost conscious world organization has to build a strong innovative competent team and increase capacity for idea generation.
- i) Risk: New idea implementation is an uncertain task. Leaders and team members should have appetite to take risks and manage risks efficiently.

## Connectivity with External Entities

University connection: Organization has many session interactive and presentation of various eminent lecturers on various research topics relevant and out of the subject.

Fresh entry into the system: Organization has many master degree level interns as a team member and fresh passes out in the project for small prototype development to large scale project support. Few have been taken and absorbed as an employee once they have completed their course. Few of the interns who has gone back to their college after completion team has found they refined their knowledge from college with same subject.

Subject matter expert as consultant: Organization has many consultants who are supporting for unique specific research areas. Good amount brainstorm happen when unique problem discussed with experts. Sometime the problem itself is new and first time happening in the world.

Connecting with customer base: Organization has many customer bases in India where the team is connecting with the user community. Frequent visits to the customer help to get new ideas and provide support to them.

International and national seminars: Many team members visit to various international and within India to attend seminars on latest industrial trend or presenting the future trend. Sometime organizations present the experience and collect the feedback, sometime organization participates as audience. Team members after back from such seminars present the brief presentation and outcome of the seminars to the internal audience.

Corporate research team: Organization is having strong corporate research base who are dedicatedly working for many breakthrough innovation is various scientific area and technology across the globe. Internal team is leveraging that expertise as a when in need.

## 5. Conclusion

Relying on what has worked in the past is no guarantee of success in the future. It is therefore important for an organization to develop an innovative and creative culture that will help it adapt successfully to change. At the end organization sustainability depends on how fast organization adapt to the changes. How fast organization generates new ideas and launch to the market before the competitors. Changed has to be managed by the organization with new ideas converted into a solution into the product or service to make profitably and sustainability. All these ideas can be driven by the internal to the organization or it could threat come from external forces. Innovation is a challenging and uncertain task.

*“There is nothing more difficult to take in hand, more perilous to conduct, or more uncertain in its success, than to take the lead in the introduction of a new order of things” (Niccolò Machiavelli, The Prince, 1537).*

**Checklist for innovation:**

<b>Effective process for Innovation</b>
<b>Infrastructure to support innovation</b>
<b>Strategy for innovation and same owned by the team members</b>
<b>Climate for innovation which support and encourage innovation</b>
<b>Network and connectivity with other for innovation</b>
<b>Build capability for innovation</b>

The only way a team can survive is by providing value to the stakeholders on a continuous basis. Cost advantage is one way for survival but is not going to help in the long run for the organization.

**5. References**

- 1) “Innovation management and new product development” – Paul Trott
- 2) “Innovation in information technology “– The national academic press
- 3) “The oxford handbook of Innovation” – The oxford university press
- 4) “The Myth of innovation “– Scott Berkun
- 5) EFQM for innovation – EFQM.org

## About the Author



### **Chandan Lal Patary**

Bangalore, India



**Mr. Chandan Lal Patary** is currently working as agile coach and program manager at ABB. He has deep experience in developing Software applications across various domains and has successfully executed many Projects. Chandan has worked on domains like Healthcare, Aerospace, Building automation, Power automation, Industrial Automaton under real time mission critical product development to large scale application development. Chandan has 15 years of industry experience. He is certified PMP from 2008, Green Belt certified holder from 2005. Chandan is an agile practitioner and Certified Scrum Master from 2011. Chandan holds a Bachelor's from National Institute of Technology (NIT-Agartala) in Electrical Engineering. He has completed one year Executive General Management program from IIM-Bangalore in 2007. He can be reachable through email/LinkedIn: [patarychandan@gmail.com](mailto:patarychandan@gmail.com)