

# QUALITY - Striving for Excellence

NATIONAL CENTRE FOR QUALITY MANAGEMENT



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## PRESIDENT'S PAGE

Innovation is out-of-box thinking which is inherently opposite to stability. Obviously risk is involved and therefore there is a tendency to avoid anything related to innovation; especially in an organisational set up where an environment that is conducive to accepting failures is not cultivated systematically.



Any innovation goes through a standard cycle where necessity and opportunity are seen as the key factors for introducing new products and services. This is followed by identifying customer needs, where a great deal of research is required. To be ahead of the market, you need to deep dive into understanding what the customers might derive value from, and often the customers might not know that either. When Steve Jobs introduced new products and features, he thought like a customer and beyond. That's how without any great marketing efforts, Apple was able to delight customers with its products and stay ahead of the competition.

Once the products and services are conceived, the next steps would be design & development, prototyping followed by commercial launch. Along the way, various quality tools and techniques could be used to make the innovation cycle effective and economic. Organisations need to adopt a structured methodology without prescribing what exactly needs to be done at each stage.

I suggest the Opportunity-Customer Need- Design & Development and Launch methodology (OCDL) for innovation.

STAGE	QUALITY TOOLS & TECHNIQUES
Opportunity	Benchmarking   Design Thinking   Brain Storming
Customer Needs	Voice of Customer   Quality Function Deployment
Design & Development	Design FMEA   Robust Designs
Launch	SIPOC   VSM   Process FMEA   Process Capability

Along with resistance to change and several other factors, organisations took long time to accept something like Six Sigma DMAIC as a structured methodology for improvement. Organisations must not repeat this mistake and should recognise the need to adopt structured methodologies early to avoid similar risk.

At NCQM, we celebrated 33<sup>rd</sup> Annual Day on the eve of Annual General Meeting. Mr. Somdev Singh, Innovation Advisor, Mahindra & Mahindra was Chief Guest at the function. He delivered a very very thought provoking lecture on Innovation and Quality.

Next few months are going to be packed with number of exciting events including NCQM BEQET Presidents Award function and DL Shah Memorial lecture.

Looking forward to your participation and feedback and suggestions for improving NCQM activities to serve you better. Please feel free to contact me on 9323177009 or [president@ncqm.com](mailto:president@ncqm.com)

34 Years in the Service of Quality

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## CALL FOR ARTICLES

**Dear Members,**

The new digital era is about connectivity and collaboration. Collaboration is a new skill we need to learn since we have all been mostly working in “separate” teams or “silos” within organizations. At NCQM, we are making an attempt to use our quality newsletter as an instrument for collaboration amongst our members and also the larger quality fraternity.

As a first step in collaboration, we request you to collaborate by contributing your knowledge and experience with your fellow members and quality fraternity. This could be in the form of articles or small write-ups on quality aspects within your organization or industry. Your thoughts and opinions matter more than information gleaned from the internet.

Please pen down your thoughts on matters that excite you, your organization's achievements, your personal achievements in quality, issues that concern you, etc. Your write-ups can range from 0.5 page to 3 pages along with diagrams. Please do not forget to add copyright information for any copyrighted materials that you have used.

So, grab your pens or fingers and write out or type out your thoughts and opinions on quality matters and send it us at [ncqm2013@gmail.com](mailto:ncqm2013@gmail.com).

Chairman  
Publication Committee  
NCQM, Mumbai

# The Elegant Solution - Toyota's Formula for Mastering Innovation

Lessons from the book by Mathew May

*The Elegant Solution* by Mathew May is an insightful introduction to Toyota's process of innovation. The author, Matthew May, was a consultant working with the University of Toyota as the company sought to expand its success with the Toyota Production System into other areas of the business. May has distilled 3 principles and 10 practices that he claims differentiate Toyota's approach to innovation from all others.

May's position focused on learning how to transfer their internal thinking processes from one part of the organization to another. He has clearly learned how to distill the essence of the Toyota thinking process and present it in an approachable manner.

The book is divided into three parts viz: Principles, Practices and Protocol.

## Part I – Principles

Part I starts with the definitions of *Innovation* and *Elegance*. Innovation is differentiated from Invention by the fact that it is trying to find out a way to do something better than it's ever done before. However, Elegance is defined as finding the *aha* solution to a problem without spending too much effort and expense. An Elegant Solution therefore is one in which optimal or desired effect is achieved with the least amount of effort.

People pursuing Elegant solutions require a working knowledge of the forces at play and obstacles in the way. There are three traps or temptations that one should guard against:

1. *Swinging from the fences*: It is the temptation to place your bets on a big idea that carries a huge risk accompanied by high cost.
2. *Getting too clever*: It is the temptation to add features to your product or service to outwit competition. However, it carries the risk of complexity and customer alienation.
3. *Solving problems frivolously*: This is the “brainstorm” trap where creativity is not aligned with the company's direction.

May has distilled the Toyota Way down to three basic principles (1) the art of ingenuity; (2) the pursuit of perfection; and (3) the rhythm of fit.

### Art of Ingenuity

This principle focuses on the innovator – a person and urges him or her to innovate by constantly challenging status quo without being trapped by job titles or levels. Thus, this principle opens innovation to every employee within the organization and not just the Design Team.

How is this done. Examine what you do daily. Ask tough, challenging questions: Why is my work important? Can

this be done better? How can I improve this job, process, company or product? History has shown that seeking a single idea that will turn the world upside-down is not the only way to achieve breakthrough improvements. A big breakthrough idea sounds glamorous, but it is risky and not the best way to innovate. Instead, small evolutionary changes can make your product a bit better each time.

### Pursuit of Perfection

While a handful of game-changing innovations can be traced to a stroke of genius, the vast majority of effective innovations in industry are a result of rigorous search for the optimal solution. The systematic pursuit of perfection is a discipline of incremental improvements and just plain hard work. It is everyone's job and cannot be outsourced. The beauty of organized improvement lies in its ability to consistently yield low-cost, low-risk high impact breakthroughs.

How do you do it? Instead of asking what you can improve, ask what is keeping you from perfection. Now, eliminate those obstacles one by one. Toyota's Lexus brand is a case in point. Toyota spent 45 years in continuous improvement before launching the luxury line. It then took two years to displace Mercedes-Benz and BMW as the top selling luxury car.

First, they established a clear, ambitious goal: develop a luxury car better than the best in the world. Then, each core member of the design team rented a different luxury car and drove it almost 150 miles, tracking performance and the experience of the ride, until they identified the "Mercedes S class and BMW 7 series" as targets to beat. They studied U.S. luxury car owners in several cities, examining everything from where they ate to how they worked. Toyota used direct observation, focus groups, academic studies and reverse engineering of BMW and Mercedes cars to establish criteria for the car that would become the Lexus. The team set and pursued impossibly high standards. The crucial final steps included acts of elimination: the team cut weight, noise and other obstacles to achieve perfection.

### The Rhythm of Fit

What distinguishes great innovation is its ability to serve the great needs of society with a meaningful contribution. This requires a keen insight into the prevailing systems surrounding your business. This principle requires us to think of how our idea will work within the larger system. A great innovation fits – fits the innovator, fits the times and fits within the larger system.

## Part II – Practices

Here are ten Practices that guide Innovation at Toyota:

**Let Learning Lead** - Many would-be innovations fail because those involved don't really understand the situation, which can happen when people don't value or understand learning. To solve this, make learning everyone's first responsibility. Give people time to observe and teach them how. Toyota uses Deming's Plan-Do-Check-Act, or PDCA as a standard model of learning. A more generalized, applicable four-step learning model, is called "I.D.E.A. Loops," which stands for "investigate, design, execute and adjust."

**Learn to See** - As you innovate, things won't always work out as planned. This happens when you don't understand the issue deeply. To solve this dilemma, "learn to see" the problem in context; understand how, when, where, and why it happens, and what impact it has on people.

First, get the facts. See things as the customer does. Initially, note what customers do. Watch them in context. Make your focus groups and lab experiments as realistic as possible. Then "become the customer." Go where the customers go. Do what they do. Next, "collaborate" with customers, involve them. Ask what they want and need and give it to them.

- 
- **Watch the Customer**
  - **Become the Customer**
  - **Collaborate with Customers**

**Design for Today** - Often something you try just doesn't work as well as you had hoped. This can happen when you get addicted to invention for its own sake or to an idea just because it's yours. To prevent this, design for a need that exists now. Begin by solving problems that are impediments in the present, not ones you anticipate in the future. Hybrid cars are a good example. It took Toyota a long time to develop them, but they met a real need.

**Think in Pictures** - Draw or diagram the problem (and solution) or use photos to bring the dream alive through images. You don't have to be an artist; you can use stick figures, clay models, collages, or existing graphic or software tools to evoke your dream. This process allows participants to connect thoughts and collaborate.

**Capture the Intangible** - Sometimes you know what the goal is, but something is missing. This can happen when the people focus too narrowly on the specific object being created and miss its larger purpose. To illuminate your

vision, try to explain that intangible missing essence. The most common intangible need is the desire to avoid risk. People who might buy your product fear that you'll waste their money, that it will fail or hurt them, or that they'll look bad. If you can show them these things won't happen, you'll come closer to selling the intangible.

**Leverage the Limits** - If innovation is essentially dead at your company, the organization may have gotten too comfortable. To reignite its start-up spirit, use limits as Toyota does (and as artists do) to force more creative solutions. Set "stretch goals" to push beyond the current level of performance. Align these bold, but specific, goals with the organization's core function. Jane Beseda set such stretch goals to revolutionize Toyota's North American Parts Operation. She set a target: cut \$100 million from distribution costs and eliminate \$100 million worth of inventory from the supply chain. At the same time, she wanted to improve customer service by 50%.

While you might be able to improve your results by 10% just through working harder, you have to change how you work to improve by 50%. Beseda found that different departments worked at cross-purposes. To solve that problem, Toyota adopted a new planning approach called, "Vertical-Horizontal-Vertical." Each unit's team planned on its own, met with teams from other units to plan integrated efforts, and then updated its unit-specific plans.

**Master the Tension** - If your team is solving problems, but in a flat, uninspired fashion, try to "work through creative tension." Toyota applies "dynamic tension," that is, establishing goals that pull the organization in two opposite directions, and then finding a solution that balances both. Using paired challenges can push your teams past the mental blocks and lazy thinking.

**Run the Numbers** - Often teams come up with solutions that don't work in the real world. This happens when you treat innovation as an art. Instead, balance your vision with hard data. Re-examine the challenge. Measure your process. Keep analysing it until you can articulate the issue in ways that lead to new solutions. Toyota pushes its engineers to refrain from "immediate action," because the first action is always along overly familiar lines. It emphasizes the need to move past hearsay and even experience.

**Make Kaizen Mandatory** - If your company innovates, but does so erratically, it is not managing creativity correctly. To solve this, integrate the "kaizen ethic" throughout your organization. In kaizen, you engage in an ongoing process of developing a standard, following it, and then developing even better methods, which become the new standard. Many creative people shy away from standards, fearing that they restrict creativity. That's false. A standard is

simply the best way known to do something, but you should adhere to it only until you find a better way.

When you set a standard, make sure it is the best method. Document it completely. Distribute the information companywide and shape your training programs so people live the standard.

**Keep It Lean** - Many companies assume that "more is better." They add options and features, making products hard to use and burying their core functions. Instead, keep solutions lean. Focus on fulfilling customer desires and refuse to add anything else. This isn't easy. Complexity is the opposite of lean. Complexity stems from inconsistency, overload and waste. Seek the sources of these problems system-wide and fix them.

### Part III – Protocol

If you are reorganizing your company for innovation, start with only one team. Get that team dedicated to shared goals and methods. Focus the members, so they commit to solving a single problem. Stick to your priorities. Show them how you want them to work, and review their actions with clear, specific metrics. Make perfection your goal. As you lead, demonstrate integrity, articulate a vision and guide people toward your shared goal.

### Conclusion

The book is a good read and guide to managing innovation the “small incremental” way. It should be of particular interest to small companies who do not have the financial might or management breadth to undertake large innovation programs.

## Admissions open for

January 2020 (Batch)

## DIPLOMA IN TOTAL QUALITY MANAGEMENT

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### Categories of Membership

Membership of NCQM will constitute of the following categories :

	Category	Admission Rs.	Annual Subscription Rs.	Admission & Annual Subscription inclusive of GST Rs.	Life Membership inclusive of Admission, One time subscription & GST Rs.
a	Patron	500/-	7,500/-	9,440/-	89,090/-
b	Institutional Member (Industry Association/ Trust / Society / Professional Body)	500/-	5,000/-	6,490/-	59,590/-
c	Corporate Member	500/-	2,000/-	2,950/-	24,190/-
d	Fellow / Senior Member	500/-	1,000/-	1,770/-	12,390/-
e	Member (Individual)	500/-	500/-	1,180/-	6,490/-
f	Student Member	300/-	300/-	708/-	N A

**GST as applicable (@18% w.e.f. July 1, 2017) GST Reg. No. 27AAATN3205E1Z1  
International Membership**

The international membership will be of two categories. No Admission fee will be charged.

Category of Membership	Annual Subscription* ( US \$** )
Organization	250 USD
Member (Individual)	50 USD

\*Plus GST as applicable (@18%)

# NCQM's 33rd AGM REPORT

The 33<sup>rd</sup> Annual General Meeting for the year 2018-19 was held on Sep 21, 2019 at the NCQM Learning Centre in Mumbai. Mr. Santosh Khadagade, President, NCQM chaired the meeting. The agenda covered confirmation of minutes of last AGM, Approval of Annual Report, Annual Accounts and Auditor's Reports for the financial year 2018-19.

Mr. Santosh Khadagade welcomed the members to the Annual General Meeting. Mr. Arvind Ghaisas, Hon. Secretary presented a summary of NCQM's activities and performance in 2018-19 while Mr. Ashok Kurup, Treasurer, presented the Annual Accounts. Dr. Krishnamoorthy addressed the members in the end and urged NCQM to adopt a "digital" avatar in their activities. He expressed hope that the next AGM would be a web broadcast.

### Annual Day Function

The AGM was followed by the Annual Day function at the same venue at 2 pm. NCQM organized a seminar on "Six Sigma & Innovation" as part of the Annual Day function. The lecture was delivered

Mr Somdev Singh, Advisor – Innovation and Business Transformation, Mahindra & Mahindra Group Companies.

Mr. Singh enthralled participants with his innovative and interactive style of presentation. He focused on how Six Sigma when complemented with Innovation could create step change in organization's performance. The highlight of his lecture was the "Thinking Frames" exercise that made the participants experience the process of generating innovative ideas for a mundane topic like "time" using Thinking frames.

NCQM felicitated its "Quality Stars" at the Annual Day function. "Quality Stars" are NCQM members (both Corporate and Individual) who have rendered exemplary service to the cause of quality in India. In addition, NCQM used the forum to communicate their personal and professional achievements in the field of business and quality. NCQM "Quality Stars" continue to be a source of inspiration and dedication to members of the quality fraternity.



Mr. Santosh Khadagade, President  
Welcoming all members



Mr. Arvind Ghaisas, Hon. Secretary  
presenting Annual Report status.



Mr. Ashok B. Kurup,  
Treasurer presenting Annual Accounts



Dr. S. Krishnamoorthy, Director,  
DON BOSCO, and one of NCQM Founder&GB Member  
addressing NCQM Members



Mr. Mahesh Gandhi, Trustee NCQM introducing  
Chief Guest Mr. Somdev Singh



Audience

## 1. Corporate Awardees

### 1.1 Teksons Limited, Thane

**Teksons** is ISO 9001:2015, ISO 14001:2015 & OHSAS 18001:2007 certified Company, offering customised solutions for cooling systems.

For close to six decades now, **Teksons** has proudly built a reputation for producing global quality combination coolers, radiators and heat exchangers for construction and earth moving equipment, defence, automotive and industrial & agricultural machineries.

State-of-the-art production facilities, outstanding Engineering team and determination to deliver under the most challenging circumstances has made **Teksons** a preferred partner for the most of its OEM and After-market customers.

**Teksons** has received numerous **Certificate Trophies, Commendation Certificate** both in terms of quality products, innovation and Just in time delivery performance.

**Teksons** employs more than 375 people. 12% of which are women.

**Teksons Limited is NCQM's Sustaining Member since 1988.**



On behalf of Teksons Limited, Mr. S. K. Jadhav - TQM & Adm. Mgr. Plant receiving trophy from Chief Guest, Mr. Somdev Singh,

### 1.2 MESO Private Limited, Mumbai

MESO is a leading manufacturer and exporter of Perfumes, Cosmetics and Toiletries since 1946. An ISO 9001:2015 certified company, their pillars of strength over the years have been commitment, service and quality. Their brands MESO, Marhaba, Instyle, Odeon have helped extend their markets across the globe such as USA, South America, Middle East, Far East and Africa encompassing products like non-alcoholic

perfumes, alcoholic spray perfumes and colognes, various skin care & hair care products etc.

Their diverse product categories are produced at a sprawling 50,000 sq.ft. manufacturing unit, located at Kandla Special Economic Zone, Gujarat. The state of the art manufacturing plant is equipped with latest machineries & equipments. All products go through strict quality controls, micro testing & clinical trials on humans only. Attached to it, is a well-equipped Quality Control Laboratory which enables them to enhance their Quality Control Program.

**MESO Private Limited is NCQM's Sustaining Member since 1998.**

### 1.3 Daga Global Chemicals Pvt. Ltd., Mumbai

Daga Global Chemicals Pvt. Ltd. (DGCPL), established in 1985, is a rapidly growing chemicals supply and distribution company, widely networked in India since 1985 (H.O.: Mumbai), with overseas sourcing and marketing arm at Shanghai, China (since 2004).

Daga Chemical handles Bulk and Fine Chemicals, Solvents, Intermediates, Agro and Pharmaceutical Raw Materials, Polymers etc.

- They cater to Chemical, Pharmaceutical, Agrochemical, Paint & Printing Ink, Pigment, Polymer etc. industry segments.
- They out source products competitively from India, China and Middle East.
- Provide techno-commercial sales support through a team of highly experienced personnel, and
- Logistics support.

They are the only chemical trading company in India to have been thrice accredited with coveted Jamnalal Bajaj Award for Fair Business Practices in 1995, 2001 and 2003.

**Daga Global Chemicals Limited is NCQM's Sustaining Member since 2008.**

## 2. Individual Awardees

### 2.1 Mr. K. R. Singhal

Mr. K. R. Singhal is a versatile personality, who works for the cause of mankind, having knowledge in various fields and experience in Banking, Quality Management System, QMS Audit, Publishing, Editing, Training etc. A fast learner, he is always on the look out for new and emerging concepts, having capacity and capability to handle responsibilities.

Mr. Singhal has been associated with various social and

professional organizations with a vision to bring positive change in the society. An optimist, social and outgoing person, good listener and dedicated worker. He is an active blog-writer and has published many publications.

More details may be seen at <http://profile-keshavramsinghal.blogspot.com>

**Mr. K. R. Singhal is NCQM's Sustaining Member since 1998.**



Mr. K. R. Singhal received trophy from NCQM Trustee Dr. H. M. Mehta L - R Shri Mahesh V. Gandhi, Trustee, NCQM, Chief Guest Mr. Somdev Singh, And Mr. B. Banerjee, Trustee NCQM

## 2.2 Mr. Prabhat Kumar Jindal

Mr. P. K. Jindal is B. Tech from IIT, Kharagpur and MBA from College of Defence Management

He is Fellow of Institute of Engineers, Fellow of NCQM, Senior examiner Ramkrishna Bajaj National Quality Award, Lead Auditor for ISO systems.

Mr. Jindal had over 25 years experience in the Indian Navy, Mazagon Dock Ltd and Gujarat Machinery Manufacturers at Anand, Gujarat.

He has conducted number of training programmes on ISO systems for corporate sector, conducted more than 1000 audits for ISO systems, evaluated more than 15 organizations for TQM process. He was awarded NAO SENA MEDAL during 1971 hostilities.

**Mr. P. K. Jindal is NCQM's Sustaining Member since 1998.**



Mr. Prabhat Kumar Jindal receiving trophy from NCQM Trustee Mr. B. Banerjee L - R Mr. M. D. Mandlekar, Mr. Santosh Khadagade, Mr. Mahesh V. Gandhi & Chief Guest, Mr. Somdev Singh

## 2.3 Mr. Raju D. Bhoite

Mr. Raju Bhoite is senior management professional with over 27 years of diverse & rich experience in formulating & implementing profit center operations of Certification Bodies.

He was Managing Director of SAI Global during Y2010 to Y2018 where he has the distinction of turning loss making Indian operations profitable & achieving revenue growth of 16.29% CAGR.

Mr. Raju has experience of conducting over 1500 audits in India as well as overseas in countries like USA, Australia, Dubai, Muscat, Iran, Thailand, Philippines, Malaysia, Vietnam, Indonesia and China.

He was also emerged in a key role as Subject Matter Expert (SME) for Asia for IATF 16949 program for SAI Global.

Prior to joining SAI Global, he was Regional Manager (West) for TuV Rheinland (I) Pvt. Ltd., Pune.

He has also worked with other MNC certification bodies such as DNV & KPMG.

**Mr. Raju Bhoite is NCQM's Sustaining Member since 2008.**



Mr. Raju Bhoite receiving memento from NCQM Trustee Dr. H. M. Mehta L - R Chief Guest, Mr. Somdev Singh, Mr. Santosh Khadagade, Mr. Mahesh V. Gandhi & Mr. B. Banerjee

## 2.4 Prof. M. V. Narayanan

Prof. M. V. Narayanan is B. Tech in Mechanical Engineering from IIT, MADRAS and M. Tech in Industrial Engineering & Operational Research - IIT, KHARAGPUR.

He has been the National Chairman (1993-94), Chairman – Board of Examinations (2003 – 06) and Fellow of the Indian Institute of Industrial Engineering (IIIE) and Senior Member, Institute of Industrial Engineers, USA.

He has been awarded Dr. Lillian Gilberth Award by IIIE.

Prof. Narayanan has four decades of rich experience in Management / System Consulting and Business Performance Improvements. He is widely travelled across Australia, Europe, Middle East, Nigeria and USA. His experience covers Sectors such as Manufacturing, Distribution, Projects and Retail

across Engineering, Process, Construction, and Service Industry segments.

**Prof. M. V. Narayanan is NCQM's Sustaining Member since 2008.**



Prof. M. V. Narayanan receiving medal from Mr. Santosh Khadagade, President, NCQM  
L - R Chief Guest, Mr. Somdev Singh, Mr. Mahesh V. Gandhi

### 2.5 Mr. Sawankumar R. Naik

Mr. Sawankumar Naik is Distinguished Professor recognized internationally by Industry and academia for his contribution to the field of Industrial Automation through innovative pedagogy and leadership. He has trained over 1400 employees of MNC's. He has 14 years of work experience. He has worked in industries like Ispat Industries, Larsen & Toubro and OTIS elevators. Currently he is a faculty in SVKM's NMIMS Mukesh Patel School of Technology Management & Engineering and the coordinator for NMIMS Bosch Rexroth Center of Excellence in Industrial Automation. He takes courses on Industrial Engineering, Project Management and Automation domain.

He is the recipient of Best Faculty Award (2011) and was recently congratulated by NASA for successfully mentoring student teams with consistent excellence Award winning performance over the last 10 years. He has bagged 15 International Awards for INDIA. He has been appreciated and felicitated at the hands of luminaries including Former President of India and Ace Scientist Dr. A.P.J. Abdul Kalam, Smt. Smriti Irani (HRD Minister of India), Shri Devendra Fadnavis (Chief Minister of Maharashtra), Shri Vinod Tawde (Sports, Culture and Education Minister of Maharashtra).

**Mr. Sawankumar Naik is NCQM's Sustaining Member since 2008.**

**A GREAT INNOVATION FITS –  
FITS THE INNOVATOR, FITS THE TIMES  
AND FITS WITHIN THE LARGER SYSTEM.**



Mr. Sawankumar Naik received medal from Mr. Aravind Ghaisas, Hon. Secretary, NCQM  
L-R Mr. M. D. Mandlekar, Mr. Somdev Singh, Mr. Santosh Khadagade, Mr. Aravind Ghaisas Mr. Mahesh Gandhi & Mr. Sawankumar Naik

### 2.6 Dr. Raj Mohan

Dr. Raj Mohan is Post-Graduate in Management, Industrial Management (Ind.Engg), Ph.D in Management, M.Sc -Applied Psychology, Master Black Belt in Six Sigma and Lean Leader (LMII). He is Alumni of Asian Productivity Organization – Tokyo.

Dr. Mohan is Chief Mentor of Man2Succeed (Management Consulting Firm) with Specialisation in Process Excellence, Lean and Six Sigma.

He is President at Capsulexel Foundation – An Indo-German Joint-venture founded for the Technology support to Industries in Southern India. In addition, he is Adjunct faculty to many Management and Business Schools across India and Resource Person for Lean Six Sigma Training and Project Consulting.

**Dr. Raj Mohan is NCQM's Sustaining Member since 2008.**

**NCQM Fellowship Awardee - AGM 2019**

**Mr. Sanjay B. Tahiliani, Kalyan**

## Welcome Aboard - New Members

### Corporate Member

Spartan Electricals (CM0586) Thane  
Mr. M. A. Viswanathan

### Life Individual Member

Dr. Mala Pandurang (LO0155) Mumbai  
Mr. Manoj Y. Parab (LO0156) Dombivali

## Innovation at School

by Mr. Sawankumar Naik, Distinguished Professor, NMIMS

Prof. Sawankumar Naik, a member of NCQM has been working for more than a decade building student teams for Space Exploration projects using contemporary Automation Technologies. The projects ranged from building Space Navigation Rovers to Moon mining systems and also diving deep into Ocean for Underwater exploration taking on real life challenges at NASA. Competing among 90 plus teams every year his team has won more than 15 Awards in last 15 years and is a consistently high performing team.

He has trained more than 1500 industry employees of MNC for Industrial Automation solutions. An inspirational teacher of modern times, he is internationally recognized as Distinguished Professor in the field of Industrial Automation. His teams received a big applause in NASA for winning numerous Awards like Best International Team Award, AIAA Telemetry/Electronics Award. Best Systems Safety Engineering Award. Best Design Report Award, Frank Joe Sexton Pit Crew Award and Educational Engagement Award to name a few.



When NASA is celebrating its 60<sup>th</sup> Anniversary and 50<sup>th</sup> year of Apollo Moon landing, Prof. Naik is motivating the students across India with his alumni team members through STEM events and workshops. He is the India Head for World's topmost underwater robotics competition - Annual International MATE ROV Competition.

In 2018, he conducted a National competition for school students and gave the winners an International platform to present their talents. Participating among more than 60 best finalist teams from around the world the team won an Award at the Internationals too. SMARVON, a start-up set up by his alumni was the backbone of this tremendous success. Prof. Naik and SMARVON were congratulated for accomplishing the marvelous feat of conducting the Regional Competition for the first time In India and success of this first time winners at the Internationals.

In the upcoming years, it is expected that the opportunity would be extended to college students as well so that our

Indian student get aware of the latest technologies around the world. At the International Competition the focus is on learning more than winning. All participating students who successfully qualify for the Internationals are able to represent their own country as well as know about the best methodologies in other countries. A big sportsmanship spirit is observed among all. Competing teams help each other troubleshoot. The goal of working together globally in unison to overcome technological hardships for accomplishing new dimensions is prime. Each student team is required to work as a company from the start allocating roles and responsibilities to each person. They have to demonstrate their company product through a Marketing poster in the exhibition. Every year the theme of the competition is based on real workplace challenges. Students design and build working ROVs (Remotely Operated Vehicles) applying their own creativity and skill.

Prof. Naik's team conducts workshops for new teams to give them the right direction. Some organizations help his team conduct workshops for underprivileged section of the society as well to help local students develop scientific solutions for social problems of our country. He has been felicitated at the hands of Former President of India Dr. A.P.J. Abdul Kalam in 2014. With more support he intends to inspire the Innovators, Leaders and Entrepreneurs of the future. He is working in the Mechanical Engineering Department of SVKM's NMIMS Mukesh Patel School of Technology Management & Engineering since 2007. From being felicitated with the Best Faculty Award in 2011 to being called a "Super Teacher" in 2019 he has sure come a long way. He is an inspiration. He has contributed immensely to develop and guide an "Innovation" mindset amongst student.

### FEEL GOOD CORNER

Master Kiran, son of our staff, Ms Shraddha Sanas, participated in the 11<sup>th</sup> All India Memory Championships 2019 held in Thane and secured 67<sup>th</sup> rank at an all India level and 26<sup>th</sup> rank in the "Junior" category. This competition is organized by the Global Alliance of Memory Athletics which is global organization focused on providing services and support to promote memory sports across the globe.

## Quality Around the World

### ASQ's South Asia Team Excellence Awards

ASQ's Team Excellence Award is a premier team recognition program—awarding achievements in improved performance in businesses of all sizes.

Some of the most successful companies have participated in ASQ's South Asia Team Excellence Award (SATEA) Process. The finalist teams showcased their success story of using quality concepts within their organisations to make valuable improvements in areas such as customer satisfaction, waste reduction, and employee morale—all leading to improved profitability.

The Team Excellence process begins by understanding the criteria and concludes by presenting your results. The idea is to document your efforts throughout the course of a project, which will focus your team and provide feedback along the way. At the end of your project, submit your completed project to the SATEA process for the chance to have your efforts recognized on an international stage. The last date for participation is November 15, 2019.

*(Source: ASQ)*

### ISO and Sustainable Development

Transforming our world is the aim of the United Nations 2030 Agenda for Sustainable Development and its corresponding 17 Sustainable Development Goals (SDGs). This ambitious action plan to enhance peace and prosperity, eradicate poverty and protect the planet is recognized globally as essential for the future sustainability of our world.

It calls on the contribution from all elements of society, including local and national governments, business, industry and individuals. To be successful, the process requires consensus, collaboration and innovation. ISO has published more than 22,000 International Standards and related documents that represent globally recognized guidelines and frameworks based on international collaboration. Built around consensus, they provide a solid base on which innovation can thrive and are essential tools to help governments, industry and consumers contribute to the achievement of every one of the SDGs.

*(Source: ISO)*

### ISO Standards released in 2019

#### ISO/IEC 20000 Series – IT Service Management

ISO/IEC 20000-2, Information technology — Service management — Part 2: Guidance on the application of service management systems, and ISO/IEC 20000-3, Information technology — Service management — Part 3: Guidance on scope definition and applicability of ISO/IEC 20000-1, have been revised and joined by the new technical report ISO/IEC TR 20000-7, Information technology — Service management — Part 7: Guidance on the integration and correlation of ISO/IEC 2000-1:2018 to ISO 90001:2015 and ISO/IEC 27001:2013.

They provide important information and recommendations for service providers, consultants and assessors to conform to the requirements of ISO/IEC 20000-1. These, and other

documents in the series, help users to interpret the requirements of ISO/IEC 20000-1 more accurately and also include examples and suggestions to enable them to apply it more effectively. This includes service management policies, objectives, plans, service management processes, process interfaces, documentation and resources.

#### ISO 20338 – Oxygen Reduction System

ISO 20338, *Oxygen reduction systems for fire prevention — Design, installation, planning and maintenance*, specifies minimum requirements and defines the specifications for the design, installation and maintenance of fixed oxygen reduction systems. It applies to those systems that use nitrogen-enriched air used for fire prevention in buildings and industrial production plants, and can be used for new systems as well as for the extension and modification of existing systems.

Insurance companies, manufacturers, installers and users will all benefit from ISO 20338, particularly from regions outside Europe, because it will enable them to improve the performance and safety of ORS, as well as provide a way for governments to set regulatory requirements, and for users to meet them.

#### ISO 56002 – Innovation Management System

An organization's ability to innovate is recognized as a key factor for sustained growth, economic viability, increased well-being, and the development of society. The innovation capabilities of an organization include the ability to understand and respond to changing conditions of its context, to pursue new opportunities, and to leverage the knowledge and creativity of people within the organization, and in collaboration with external interested parties.

An organization can innovate more effectively and efficiently if all necessary activities and other interrelated or interacting elements are managed as a system. An innovation management system guides the organization to determine its innovation vision, strategy, policy, and objectives, and to establish the support and processes needed to achieve the intended outcomes.

#### ISO 46001 – Water Efficiency Management Systems

The purpose of this standard is to enable organizations to assess and account for their water use, and to identify, plan and implement measures to achieve water savings through the systematic management of water.

It specifies water efficiency management system requirements and contains guidance for its use. Using this document, an organization can develop and implement a water efficiency policy through the establishment of objectives, targets, action plans, monitoring, benchmarking, and review programs. These should consider any requirements related to significant water use. A water efficiency management system enables an organization to achieve its relevant policy commitments and act as needed to improve its water management according to the requirements of this document.

*(Courtesy: ISO)*

## Special news- BEQET Workshop

**One day workshop  
on Saturday, December 7, 2019  
at NCQM Learning Centre,  
Vikhroli, Mumbai**

You may be aware that NCQM has been facilitating BEQET (Best Educational Quality Enhancement Team) competition for the past 13 years. Though quality of projects has marginally improved over the years, it is felt that significant improvement is still needed particularly in the area of “Use of quality improvement tools & Root cause analysis techniques”, which, as you know, are the backbones of any project study.

To fill this long felt urgent need, NCQM has decided to hold one day workshop on **Saturday, December 7, 2019**. There will be four sessions during the day between 9.30 am to 5.00 pm with usual tea & lunch breaks.

Three sessions will cover in highlighting certain basic QC tools and Root cause & Relentless Root cause analysis techniques, such as Nominal Group Technique (NGT), Why-Verify-Why analysis, Differential Diagnosis Technique (K-Method), which are normally found missing from most of the presentations. Few tips on project report writing will also be provided. One session will be exclusively devoted on methodology for successful execution of a live project.

This will be useful to Institutions in their NAAC, NBA Accreditation & National ranking as well.

**To further their cause of promoting quality NCQM is charging only Rs. 1180/- (inclusive GST @18%)** for this workshop. Please attend this day long workshop and take advantage of this unique offer and make this annual event a successful one.

For administrative reasons, maximum three persons will be permitted from each institute.

### For details contact :

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## NCQM's BEST EDUCATIONAL QUALITY ENHANCEMENT TEAM (BEQET) PRESIDENT AWARD-2019

To encourage Quality Improvement Teams in Educational Institutions in the country, NCQM has instituted **Best Educational Quality Enhancement Team (BEQET) President Award**. These annual awards have been introduced since 2006. The first award competition was held on January 11, 2007 and is being pursued year after year.

One of the thrust areas of NCQM has been to promote Quality Values among educational institutions in our country. For the past few years, NCQM's senior consultants have been successfully facilitating numbers of schools and colleges in their journey towards quality improvement.

It is heartening to note that, as an outcome of this process of facilitation, a large number of Quality Improvement projects have been successfully undertaken and many more are being attempted.

The improvement areas covered so far are academics, administration, infrastructure and house keeping. All of them have been following structured quality improvement methodologies, using the powerful team approach coupled with applications of appropriate statistical techniques.

Entries are solicited from Schools, all Colleges, and Technical / Management Institutes.

### 1. Entry into competition:

- 1.1 Each school or college or institution can nominate upto three (3) teams to compete for these awards.
- 1.2 Only those teams whose projects have been completed during the past two years, and the benefits are being maintained are considered for these awards.
- 1.3 Each nomination is required to be made on the Standard Application Form and submitted to NCQM, along with following entrance fee (inclusive GST as applicable).

NCQM Life Members - **Rs.1500/- + GST @18%**

NCQM Members - **Rs.2000/- + GST @18%**

Non-members - **Rs. 2500/- + GST @18%**

### 2. Time Schedule:

Call for Entries : Aug 30, 2019  
Acceptance/Acknowledgement : Dec 31, 2019  
Submission of Complete report with ppt : Jan 10, 2020  
Competition : Jan 21, 2020  
Award Presentation : Feb 2020

For details, list of participated colleges and their presentations visit our website. Application form can also be down loaded from the website [www.ncqm.com](http://www.ncqm.com).

### RCA training at Spartan Electricals

Mr. Santosh Khadagade, President, NCQM conducted a one-day in-house Root Cause Analysis training program at Spartan Electricals, Wagle Estate, Thane on August 10, 2019, The training covered the methods and tools associated with carrying out Root Cause Analysis. The program was interactive and Mr. Khadagade used data from the company to demonstrate application of RCA and helped participants understand the mistakes they made while doing root cause analysis. The program was conducted in vernacular language. Overall, the program was well received and the participants provided excellent feedback on the same.

### Lean Six Sigma program at Bharat Petroleum Corporation Limited

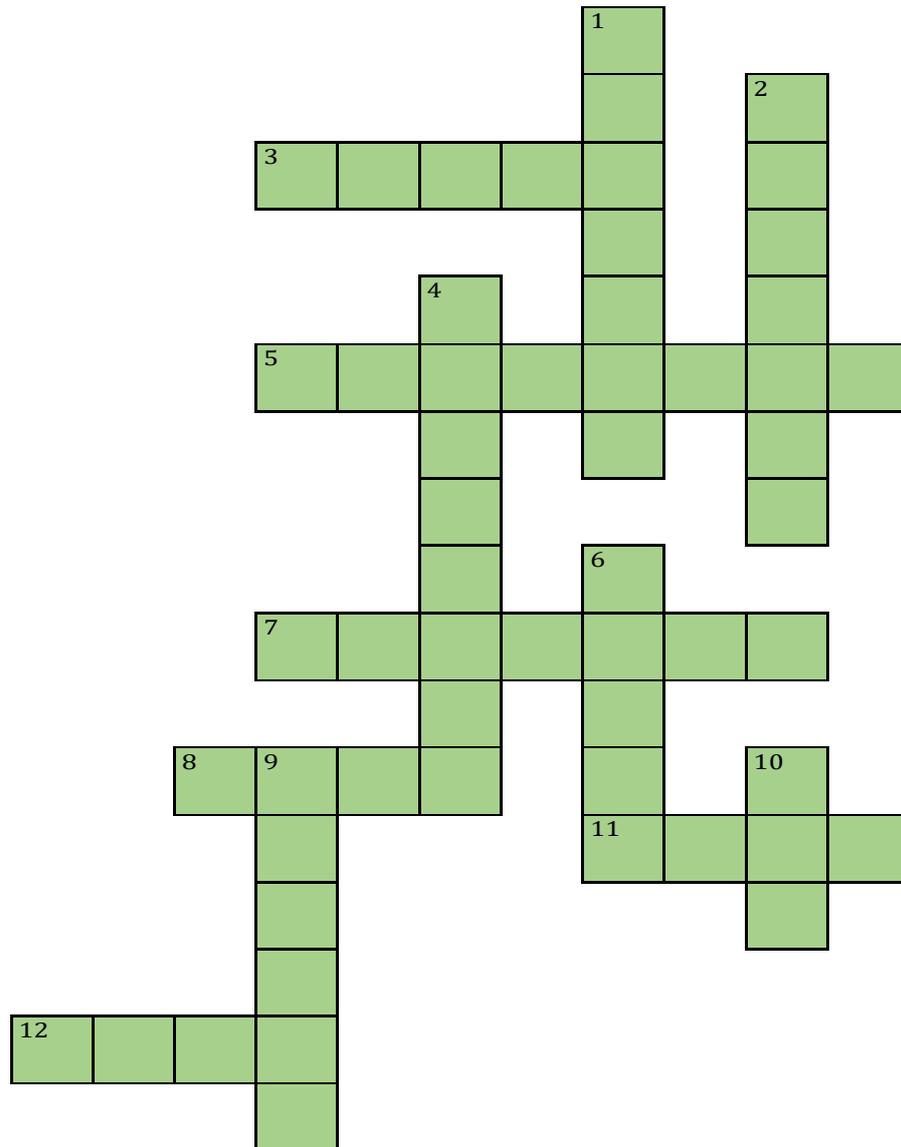
The “Lean Six Sigma” program at Bharat Petroleum Corporation Limited, Mahul Refinery was kicked off with a Senior Management briefing by Mr B Banerjee. The outcome was awareness of the Lean Six Sigma structured methodology to the Senior Management followed by formation of a Steering Committee. The next step was a 5-day training for the Green Belt participants covering Introduction, Define and Measure phases. The Consulting phase is planned through the next 10 months with weekly visits.

### TEST YOUR QUALITY KNOWLEDGE ANSWERS TO QUIZ IN LAST ISSUE

1. I have just received a customer complaint saying that a component is missing on the assembled part I deliver to his plant. What should I do first?  
**c. Block next deliveries to customer**
2. Measurement and Monitoring is a requirement that has been derived from the quality management principle \_\_\_\_\_.  
**c. Evidence-based approach to decision making**
3. The Japanese term meaning “Inconsistency or excess variation in either processes or demand” is:  
**c. Mura**
4. A team wants to illustrate which defect types are occurring most frequently. The quality tool they would use is a:  
**a. Pareto Chart**
5. Pareto law can be applied only for stable processes, as the shape of the law changes if distribution is not normal.  
**b. False**
6. All nonconforming products have to be identified, segregated, quarantined and rejected.  
**b. False**
7. Which of the following is not a measure of central tendency?  
**a. Range**
8. A Run Chart is a useful tool to show:  
**d. patterns and trends in a row of data points**
9. Two variables, x and y, are related. Variable x increases or decreases with y. Which of the following tools could best be used to graphically show this relationship?  
**c. Scatter Plot**
10. Process capability =1 indicates that  
**d. Some fraction of production is outside specs.**

( Source : Internal & Web )

## Q-Crossword



### Across

3. The architect of the Quality Trilogy
5. The basic premise for quality
7. Fitness for use
8. The basic model of quality management
11. Financial aspect of quality
12. The quality philosophy that Japan promotes

### Down

1. The phase used to "hold gains"
2. This one delivers output(s)
4. The diagram used for root cause analysis
6. Identifies stakeholders in Six Sigma
9. 85% problems are caused by processes
10. An effective asset maintenance program

## NCQM TRAINING CALENDAR

# January – March 2019

Dates	Program Title	Objective	Who should attend	Course Fees Rs.
17-18 Jan 2020	IMS Internal Audit Certification Training	Role and Skills required for effective IMS Audit	Functional Managers and Executives, IMS Coordinators	8000/-
31 Jan – 1 Feb 2020	ISO 22001 / FSSAI Awareness Training	Understanding requirements of ISO 22001 and Implementation	Functional Managers , Product and Process Engineers , Quality Managers/ Executive	7500/-
14-15 Feb 2020	Statistical Process Control	Implementation of SPC Tools & Techniques for process control and improvement	Functional Managers , Product and Process Engineers , Quality Managers/ Executive	7500/-
28-29 Feb 2020	ISO 45001:2018 – Awareness Training	Purpose and benefits of OH&SMS, Requirements of the new standard	Functional Heads, Functional Managers , SHE & Quality Managers/ Executive	7500/-
13-14 Mar 2020	TPM Tools & Techniques	Purpose & benefits of TPM Tools & Techniques and Implementation	Production/Operations /Maintenance / Quality Managers and Executives	7500/-
20-21 Mar 2020	IATF 16949 Awareness	Purpose & benefits of Standard's Requirements and Implementation	Automotive Supply Chain , Dept. Heads, Functional Managers/Executives/ Supervisors	8000/-