QUALITY STRIVING FOR EXCELLENCE

Feb - Mar 2021 Issue   **Vol IX / No: 1**

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THANK YOU

D. L. SHAH TRUST
FOR APPLIED SCIENCE, TECHNOLOGY ARTS & PHILOSOPHY

NCQM would like to thank the D L Shah Trust for sponsoring this issue as they do every year!

President's Message | Santosh Khadagade

The second cycle of the pandemic has begun and its cycle time is close to a year. We are certainly better prepared and equipped this time. We have understood certain fault lines in our ability to deal with such a crisis and these fault lines are at personal level, family level, organisational level, National and International levels. Remaining resilient during such times is perhaps most important today and Dr. Mashelkar's speech was extremely timely and important. Dr. Mashelkar gave his 10 Tenets of Resilience with Excellence in uncertain times. We could not have found a better speaker for this year's 12th D. L. Shah Memorial Lecture.

He indicated that the current crisis should not be considered as the last big crisis. This crisis should be considered as precursor to more serious possibilities in the wake of the climate change and its resulting consequences. And a true optimist, he said he believes in the enormity of human spirit to bounce back!

Looking back, introduction of Risk Based Approach in the ISO 9000 Standards was perhaps a single most important change. A road map to deal with such risks and situations should focus on how to balance safety with continuation of economic activity. This is where organisations will have to show resilience in business systems and processes. Leaders have a special duty to care about people in terms of providing emotional support– spend time with employees, visit the affected; learn from failures, communicate and train.

I congratulate and salute all the colleges who participated in the President's BEQET Award Competition 2020 in the face of the ongoing pandemic. The event was a great success and the quality of the entries was significantly better this year.

NCQM continues to work on the vision, i.e. support organisations to achieve excellence through quality. I am pleased to announce the much awaited Diploma program – PGDTQM in digital form. The admissions will start from 1st May 2021 and the course will begin from 1st July 2021.

We wish to thank all the members for their continued association and support. Membership renewal invoices will be sent shortly. I appeal to all the members to renew their membership. For any queries, feedback or requirements, please feel free to contact me @ president@ncqm.com.

THE MAN AND HIS MISSION

Mr. D. L. Shah was a well-known industrialist, philanthropist and a great visionary. Mr Shah made tremendous contributions to the Indian Industry in general, and the Machine Tool Industry in particular. His company Perfect Machine Tools (PMT) was a pioneer company in the machine tool industry. He was the President of the Indian Machine Tool Manufacturing Association and Machine Tool Marketing Association of India for number of years.

Quality' was a passion with Mr. Shah. It was his life's mission and objective to ensure that "Made in India" brand is recognized and respected all over the world. He worked tirelessly and with unwavering determination to achieve this mission. He was one of the founders of the National Centre for Quality Management (NCQM). He was instrumental in setting up the CMTI-PMT Trust, for promoting research & development in the field of machine tools, manufacturing technologies and to encourage design talent in this field. For the past number of years, the CMTI-PMT Trust's Award is awarded in every IMTEX exhibition, and is considered to be very prestigious. Mr. D. L. Shah organized the setting up of the 'PMT Centre for Quality Management' at Bhagubhai Mafatlal Technical Institute at Vile Parle, Mumbai. Through D.L. Shah Trust, founded & run by him till his demise, he published and distributed free-of-charge a number of books on Quality, Productivity & ISO.

During his life time he received several awards and honours, some of which are listed below:

- Gold Insignia & Citation (highest award given to a Foreigner) of Govt. of Poland for promotion of Indo-Polish trade.

- Austrian Award, given by the Austrian Govt., for promoting Austrian business in India.

- Qimpro Platinum Standard Award for Quality Management.

- Shiromani Award, conferred by the Shiromani Institute.

- Bajaj Auto Outstanding Quality Award', bestowed by NCQM, which was presented by Mr. R. Venkataraman, Former President of India.
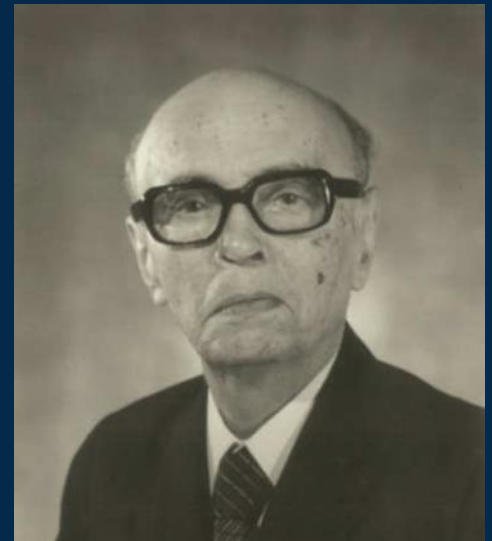
SHRI DAHYABHAI LALLUBHAI SHAH

(13.06.1907 — 03.05.1999)

- The 'Ambassador for Quality in India' Award, of the American Society for Quality Control. This was presented by the U.S. Consul General.
- IMC's 'Juran Quality Medal'. This was presented by the then Prime Minister of India.

D L SHAH TRUST FOR APPLIED SCIENCE, TECHNOLOGY, ARTS & PHILOSOPHY

His passion for quality and better life for all Indians was so great that he donated all his life's earnings to the D. L. Shah Trust founded in 1994 to ensure that his life's mission is carried forward even after he is no more.

The Trust's mission is:

To be known as the leading NGO to promote and propagate the ideas and visions of Late Mr. D. L. Shah, Founder D L Shah Trust for Applied Sciences, Technology, Arts and Philosophy by introducing systems, methods, mechanisms and practices to better the over-all Quality of life in INDIA.

Its objectives in brief are:

- To promote research and other activities related to the preservation, protection and improvement of the ecology and environment.
- To promote and foster the movement of Quality consciousness & Quality awareness as regards products & services provided in India.
- To promote the development & use of environment friendly industry process and water management techniques.
- To promote research & development as to safety measures and practices followed in industrial concerns.

- To work towards the introduction of systems, methods, mechanisms and practices to the betterment of the over-all Quality of life in India.
- To make Quality of dealings & business ethics to inspire confidence and faith among all public.
- To make "Made in India" label synonymous with "Quality of Excellence".

TRUSTEES

The Board of Trustees comprises eminent personalities, well known in their fields from industry, legal, CA and Indian Police Services. All Trustees are professionals of repute, and none is related to the Founder. Some of them are associated with the Trust since its inception, while the others have joined subsequently, due to their strong desire to work for a worthy cause.

- Mr. H. K. Taneja – Former Chief Executive of 'Indian Register of Shipping'.
- Mr. Rohan Shah – An eminent advocate, Sr. Partner of Economic Law Practice.
- Mr. Gautam Doshi – Group Managing Director of 'Reliance Anil Dhirubhai Ambani' Group.
- Mr. S. M. Pathania – Former Director General of Police, Maharashtra State.
- Mr. K. K. Nohria – Former Chairman & MD of Crompton Greaves Ltd.
- Mr. Baldev Raj Arora – Former Managing Director of Wyeth Ltd.
- Mr. Gur Sarup – Senior Auditor, International Association of Classification Societies.

RESEARCH

The Trust has set up **D L Shah Quality Research Centre** in association with Quality Council of India in New Delhi. The Centre has

been operational since March 2013. It is perhaps, the first research centre in the country on the subject of Quality. The current focus of the Centre is on primary Education and primary Healthcare.

QCI- D L SHAH QUALITY AWARD

D. L. Shah Trust has instituted National Awards on Quality in association with the Quality Council of India since 2006, now known as the **QCI-D L Shah Quality Award**. The First set of awards was given in 2006 to the winners by the then Honourable Rashtrapati of India, Dr. A. P. J. Abdul Kalam. The Award ceremony is held in Delhi every year in a Quality Conclave which is attended by over 700 to 800 Quality professionals.

The Awards recognize successful improvement projects in an organization that have linked quality initiatives to real term financial gains and competitiveness. These awards are given after thorough evaluation by a team of highly qualified and experienced quality assessors, and a jury comprising of senior officials of QCI and D. L. Shah Trust.

PUBLICATIONS

The Trust publishes a compilation of select case studies from the submissions of the QCI-D L Shah Quality Award. The publication is titled, Quality Best Practices - Selected QCI-D. L. Shah National Quality Award Winning Case Studies. Various volumes were printed and distributed.

The Trust also publishes two every fortnight on the 1st and 15th of every month. These are: Quality Info and Safety Info. Anyone interested in these journals can send an e-mail to the Trust at dlshahtrust@yahoo. co.in. They are also available on the Trust Website.

D. L. Shah Trust has published a number of books on Quality and had 60,000 copies of each of these books distributed free-of-charge to organizations, institutions and quality professionals all over India.

D L SHAH MEMORIAL LECTURE

NCQM organizes the 'D. L. Shah Memorial Lecture' every year with a sponsorship from D L Shah Trust. The primary subject / topic of the lecture series is 'Quality'. The lectures are delivered by professionals, academia and industry practitioners providing a wholesome perspective of the subject as well as practical application of the theories and techniques.

What makes the lectures useful is that they focus on the application in a real life industry scenario. This helps the audience learn how to implement quality philosophy and techniques effectively within their organisations. It also provides a great start for quality practitioners who are taking first steps in their quality journey.

The lectures are followed by a Question & Answer (Q&A) session, and a Learning Session. The Q&A session helps answer questions from the audience on the topic while the Learning session captures the learnings from the session.

A complete list of the D L Shah Memorial lectures held to date is given in the infographic on the next page.

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D L SHAH MEMORIAL LECTURES

#	Year	Topic	Speaker
1	2010	Managing Quality to Quality Management	Mr. Suresh Lulla, Managing Director, Qimpro Consultants Pvt. Ltd.
2	2011	Journey Towards Excellence	Mr. J. Sridharan - President, The Aditya Birla Management Corporation Pvt. Ltd.
3	2012	Quality for National Well Being	Dr. Girdhar Gyani - Secretary General - Quality Council of India.
4	2013	A Changing Dimension on Quality - Deming Experience	Dr. N. Ravichandran - CEO, Lucas TVS Ltd.
5	2014	Deming Journey toward Business Excellence	Mr. D. Bheemsingh, Sr. V P - TQM & Marketing, Rane Brake Lining.
6	2015	Quality For "Make in India" Vision 2020	Padma Bhushan Dr. M. B. Athreya.
7	2016	Past, Present & Future of Mahindra & Mahindra's Deming Journey	Mr. K.G. Shenoy, Sr. VP, M&M Ltd, Tractor & Farm Mechanization Business. Mr. Rajdeepak Chatterjee - Sr. GM, M&M Ltd, Automotive & Farm Equipment Sectors.
8	2017	Creating a Quality Culture in an Organisation - The Tata Steel Way	Mr. Anand Sen, President, TQM & Steel Business, Tata Steel Limited.
9	2018	Revolution of Quality & Productivity in Japan	Dr. Shrinivas Gondhalekar, Director, Kanzen Institute Asia-Pacific Pvt. Ltd.
10	2019	Tata Motors Way to Business Excellence	Mr. Anil Kumar Sinha, Head Quality, Tata Motors, Commercial Vehicle Business Unit.
11	2020	Quality First to Deming Prize — Journey at L&T ESP Business	Mr. Sandeep Mahajan, General Manager — Quality, Engineering, Strategic Sourcing, TQM Larsen & Toubro Limited, Electrical Standard Products, Electrical & Automation IC.
12	2021	Ten tenets of achieving resilience with excellence in uncertain times	Padma Vibhushan Dr. R. A. Mashelkar Former Director General of The Council of Scientific & Industrial Research (CSIR).

Ten Tenets of Achieving Resilience with Excellence in Uncertain Times

Introduction

If you go to Google and see which is the most googled word in the last 6 months, it is "Resilience". So how do you match "Resilience" with "Excellence" or how do you create resilience with returns while managing excellence. Therein lies the challenge.

We are in the midst of a pandemic. These crises are not new. For example, the geopolitical crisis (Donald Trump and Brexit) or economic slowdown 2008 was not the first one. Natural calamities (tsunamis, cyclones, floods) we have seen many and of course climate crisis is staring us in the face and leading to droughts, wildfires, rising sea levels and of course pandemics (SARS, Swine Flu and COVID 19). **So it becomes very important is that we must build resilience and that is going to be the most important leadership skill.**

Many people call COIVD 19 a "Black Swan" event. However, in an article in Harvard Business Review, someone has called it a "Black Elephant" – *a cross between a black swan event and the elephant in the room*. Therefore, we need to be careful about the events coming up in the future. For example, when we talk about Digital India, we need to be concerned about cyber security. And tomorrow, if a disaster takes place due to cyber security, we cannot complain that we did not anticipate it.

Significant setback for the world's ambition to achieve Sustainable Development Goal (SDG) is abundantly clear because we had talked about no poverty, no hunger, quality education by 2025 . All of these have not been achieved. Now there are mega trends that need to be revisited post pandemic. Accelerating digitalization of life and business will lead to concentration of profits to digital platforms. Similarly, there are other trends such as dispersion of urban population as well as cross-border divisions of labour to be considered. Digitalization has hit a fast forward button.

Why Resilience is Important Now?

As a political scientist, Joseph Nye said, "*We will have less historical precedent or understanding of today's challenges and that demands a new dimension of resilience*". This resilience has to be at the Individual level, Team level, Organizational level and National level. Two examples of most resilient individuals are Nelson Mandela and

Dr. R. A. Mashelkar, National Research Professor, has been the Director General of Council of Scientific and Industrial Research, Chairman of National Innovation Foundation as also the President of Indian National Science Academy, Global Research Alliance and Institute of Chemical Engineers (UK).

In recognition of his pioneering research contributions in polymer science & engineering, he has been honored as a Fellow of Royal Society, Foreign Fellow of US National Academy of Science as well as Engineering, Foreign Associate of American Academy of Arts & Science and Fellow of US National Academy of Inventors. 44 universities from around the world have honored him with honorary doctorates.

The sixty plus awards won by him include the prestigious TWAS-Lenovo Science Prize, Business Week (USA) award of `Stars of Asia' & JRD Tata Corporate Leadership Award.

Dr. Mashelkar, who was a member of the Scientific Advisory Council to the Prime Minister for over thirty years, has been honored with Padmashri, Padmabhushan, and Padma Vibhushan, three of the highest civilian honors.

and Mahatma Gandhi. We have seen many examples of individual resilience e.g. 15 year old girl cycling 1200 kms to bring her father home from Gurugram to Bihar. It is the human spirit which will finally conquer.

We learn a lot about resilience from biological systems viz:

- Redundancy – duplication of elements (factories, stocks)
- Heterogeneity – Different type of elements (contract types, factory types and locations)
- Modularity – Separate modules (subsidiaries, plants) loosely linked can act like circuit breakers
- Adaption – Rapid adjustment to new circumstances
- Prudence – While future may not be foreseeable, downside scenarios can often be plausibly envisioned
- Embeddedness – Most systems are embedded within larger systems.

And applying these design principles from biological systems can increase resilience.

Ten Tenets for Resilience

The Ten tenets for Resilience are:

1. Adaptability
2. Agility
3. Resilience Thinking
4. Scenario-based Planning
5. Purpose Driven
6. Platformization
7. Digital Ready
8. Foster Self Disruption
9. Climate Conscious
10. Autonomous Innovation.

1. Adaptability

It is the best strategy when the business environment is hard to predict and shape. Classical strategy is to be big, but it is preferable to be Adaptive and be fast, or a Visionary and be first. However, most important is Shaping (Be the Orchestrator) strategy whereby organizations can renew themselves viably in a harsh environment. TCS grew from $155 million in 1996 to $21 billion in 2019. They follow a strategy which adapts to shift in technology, customer needs and business environment. **For Charles Darwin said, "*It is not the strongest that survive nor the most intelligent that survive. It is the one that is the most adaptable to change.*"**

2. Agility

Agility is how quickly you can adapt and respond to change.

For example an open source ventilator was developed in just 13 days at 1% of the cost of high-end ventilators in Israel where 40 collaborators developed it from scratch, and then they released the source code to make and use freely. In India, MyLab started work in Jan 20 as soon as WHO released the genome sequence. On 28 March they launched the first made-in-India kit. They tested 1.2 million people in three months with a 3X reduction in price and 95% components sourced locally. On 25th July they launched the first ever made-in-India antigen testing kit at a cost of $7.00 per test. The $1 antiviral repurposed drug for COVID 19 (Favipiravir) was developed by CSIR in four weeks.

3. Resilience Thinking

Resilience Thinking means designing the system in such a way that it can handle any unforeseen events. When Dhirubhai Ambani wanted to set up a refinery in India the global consultants asked for what specifications would he like to design. He said he would want his refinery to handle every type of crude. Reliance today handles 135 types of crude! They are completely resilient to all sudden

geopolitical changes.

4. Scenario-based Planning

Scenario-based planning is about making assumptions on what the future is going to be and planning accordingly. e.g. Shell has been developing possible visions of the future since 1970s. For almost 25 years they have been ranked amongst the top ten companies globally because of their expertise in scenario-based planning. Shell has responded faster than other companies by virtue of its sensitivity to emerging topics such as climate change, the rise of China and shale gas. *Future back planning based on megatrends and scenarios will be critical to succeed in future*.

5. Purpose Driven

Purpose is about why does an organisation exist. If you look at an organisation people know what we do and how we do it. However, they don't know why we exist! **Hence understanding purpose is important and every employee should be engaged in fulfilling that purpose.**

Purpose-driven companies outperformed S&P 500 by 10X between 1996 and 2011. Employees with strong sense of purpose were at least 4X more likely to be engaged in their jobs when compared to other employees. Reliance's response to financial meltdown of 2008 was to create a purpose driven alignment across all levels called "Mission Kurukshetra" and, it focused on Extreme Efficiency, Value Maximisation and War on Waste.

6. Platformization

Platformization is particularly important. Moving from products to platforms is the future. In 2009 out of the top five companies globally (except Microsoft) all were brick and mortar companies but in 2019 all top five global companies were platform companies. **In fact, platform forms the world's most valuable company**. In India, Jio's success has been due to its total solutions approach - inclusive

business models and world class digital capabilities. That is why RIL was able to jump 47 places to be 51st most valuable company in the world!

7. Digital Ready

Digital Ready is about adoption of digital technologies/end-to-end digitalisation for value creation. Digital transformation is key to becoming resilient. End-to-end digital companies show great improvement on parameters such as productivity, sustainability, agility, speed to market and customization. **Digital transformation builds long term resilience and financial performance**. *As Industry 4.0 has gained importance, agility and flexibility have gained prominence over cost.* Companies with mature Industry 4.0 implementation report stronger ability to respond to crisis.

Digitalization is the core of self-optimization. Aspen Tech software's self-optimising characteristics include **self-learning** (utilising systems data for accurate prediction), **self-adapting** (reacting in real time to changing conditions) and **self-sustaining** (detect anomalies and trigger mitigation). This helps them anticipate future conditions and build resilience. *Therefore, definition of quality should change from just products and services to a broader one in the digital age.* Digital Twin is helping build resilient operations across Oil & Gas, Renewable Energy, Transportation and Manufacturing. In the healthcare industry, digital twin is a multi-scale personalised computational model of a patient built from the patient's data updated with each scan and exam resulting in person-centric prevention and holistic treatment.

8. Foster Self Disruption

Foster Self Disruption is about innovate to disrupt yourself or someone else will! I recommend a book by Vijay Govindrajan titled, "*The Three Box Solution*" where he says that companies will have to manage three boxes

Past (forget the past, let go of values and practises that fuel current business but fail new ones), Present (optimise current business) and Future (invent a new business model). By balancing these three boxes, managers can resolve the inherent tension of innovating a new business while running a high performing business at the same time. **Inventing new business models is going to be critical.**

Over 260 years, Novartis has been thriving by leaping across knowledge disciplines. It started with organic chemistry then moved to microbiology and then to genomics, and today Novartis is a medicine and data science company. **If we don't reimagine or don't reinvent ourselves, we will not survive!**

9. Climate Conscious

Climate Conscious is about adopting sustainability and environmentally friendly approach while doing business. Sustainability is not a choice, it is a business imperative. **It is not "good" or "green", businesses have to be both "good" and "green". It cannot be "green" or "growth", it has to be "green growth".**

C K Prahalad wrote a paper in 2009 on why sustainability is a key driver of innovation. Unilever launched its Sustainable Living Plan in 2010. Reliance is talking about becoming a net carbon zero company by 2035. In fact one of the greatest ways of removing CO_2 is using algae. In the presence of sunlight, water and CO_2, algae photosynthesise and convert it into lipids which goes to oil. World's biggest "Algae to Oil" plant is being experimented with in Gujarat.

There is Mission Possible Platform, a World Economic Forum initiative, where a coalition of 26 public and private partners are working on industry transition to set heavy industry and mobility sectors on the pathway towards net zero emissions by mid-century. The objective is to initiate 15 transitions across three socio economic systems viz. Food, Land and Ocean use, Infrastructure and Built in Environment and, Energy and Extractives to deliver $10 trillion of annual business opportunities and 395 million jobs by 2030.

10. Autonomous Innovation

Autonomous innovation is vital as communities are primary responders to crisis. An amphibious bicycle made in just 3 days by Bihar's Mohammad Saidullah for tackling flood water related problems is an example of innovation out of necessity. He was rewarded by the National Innovation Foundation for this grassroots innovation. This is at an individual level however at the collective level innovating during a crisis triggers faster recovery.

I would like to end by talking about a book titled, "*Leapfrogging to Pole Vaulting*" by myself and Ravi Pandit published in 2019. The origin of this book is my conversation with Mr Mukesh Ambani where he talked about leapfrogging. A frog leaps because it is afraid of a predator and hence jumps a few feet. Applying this to business, being afraid of a competitor should we also jump a few feet or should we pole vault? The size of the pole determines the size of ascension.

This book has a third chapter which talks about the 10 resilience tenets integrated into a single **ASSURED** framework:
A – Affordable
S – Scalable
S – Sustainable
U – Universal (User Friendly)
R – Rapid
E – Excellent, and
D – Distinctive.

The framework has been tested against companies and found to be validated. I recommend that we adopt this framework for our organisations. **My final point is that building "Atmanirbhar Bharat" with ASSURED resilience would be the key for our future!**
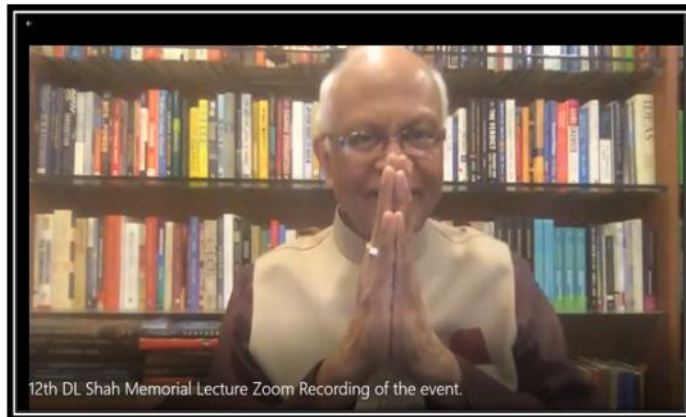
NCQM Trustee, Mr. Maheshbhai Gandhi delivering the welcome address

Trustee, Mr. Hari Taneja informing about D L Trust and its activities

Dr R A Mashelkar delivering the 12th D L Shah Memorial Lecture

NCQM Trustee, Mr Basudev Banerjee facilitating the Learning Session

NCQM Office Bearers at NCQM office for the virtual 12th D L Shah Memorial lecture

announcement!

POST GRADUATE DIPLOMA IN TQM

ELIGIBILITY
Graduate Degree in any discipline with Minimum 2 years' experience

INTAKE
January and July Every Year

DURATION
One year

CONTACT SESSIONS
Periodic contact sessions are conducted for providing guidance and responding to student queries and difficulties

ASSIGNMENTS
Project work involving application of the subject matter in their organisations

Course Structure

Paper I - Total Quality Management (TQM)

Paper-II - Statistical Process Control (SPC) Techniques with applications

Paper-III - Quality and other Management Systems

Paper-IV - Additional Tools and Techniques for Organisational Excellence

Paper-V - TQM in Service Industries / TQM in Manufacturing Industries (any one)

EXAMINATIONS
Online examinations in June and December every year comprising of Multiple Choice Questions

EVALUATION
Satisfactory completion of project work and passing examination in each of the subject

For registration, please contact:
Course Coordinator,

National Centre for Quality Management
G-501/503,Kailas Complex, Hiranandani-Vikhroli Link Road, Vikhroli (W), Mumbai-400079
Tel: (022) 4011 1962 / 2517 0483 / 69 / 9969542885
Email: ncqm@ncqm.com, Web site: www.ncqm.com

Walter Shewhart was a great follower of the philosopher and epistemologist, Clarence Irwing Lewis. Epistemology deals with the science of learning and acquiring knowledge. Lewis had written a book in 1929 called "Mind and the World – Order - An outline of the Theory of Knowledge". In this book he had mentioned that we must have a theory to begin with when we want to acquire knowledge. A theory could be a hunch, a set of principles, a set of laws , etc . Actual testing of the theory and recordings of the observations could make us improve the theory, change the theory or even abandon the theory.

No theory is wrong – only effective or ineffective. Every theory is good in it's own world, but may be ineffective in another.

Let us take an example to explain this. There is a child aged 6 years who has been watching his father go to work everyday. The father goes to work on a motorcycle. The child has seen something that happens every morning and has drawn a conclusion – " My father kicks the lever on the right hand side very hard and the motorcycle revs to life". His theory is very simple, you just have to kick the lever very hard to make the motorcycle start. One fine day, when no one was at home, he decided to " start " the vehicle himself. He climbed on the motorcycle and kicked on the lever hard, but nothing happened. He kicked again, but nothing happened again.

Obviously, his theory was ineffective. There must have been something he missed out. So, the next time he observed his father closely as he started his motorcycle. He found that he did miss out something! His father turned a key on top before kicking at the lever! So that was it! His theory changed – now he realised that one had to open a " lock " before he kicked the lever. Now if he did not have a theory – he would not have anything new to learn, he would not have had any questions. So now with his revised theory, he tried to start the motorcycle himself and succeeded.

Some time later, he saw his father kicking away at the lever, but the motorcycle did not start. He then heard his father tell his mother that he would take the bike to the

Balaji S Reddie in the founder of The Deming Forum in India. Balaji graduated from the Government College of Engineering, Pune with a Degree in the Electrical discipline. He completed a Post Graduate Diploma in Quality Management in 1996 and Master of Science in Quality Management from BITS, Pilani. Balaji has worked in Industry for 17 years starting as Production & Maintenance Engineer and rising to the position of General Manager .

He has been interested in the Deming Philosophy since 1994 and had presented a paper at the W. Edwards Deming Institute in February 2002. Balaji was spoke at the Annual Conference of the W. Edwards Deming Institute, US in 2018. In January 2019 he was inducted into the Advisory Council of the W Edwards Deming Institute , USA. He is a life member of various professional bodies such as ASQ, NCQM, IIPM, IIQM, etc.

neighbours' to see if they could help out. The boy accompanied his father to the neighbour's house. The neighbour was an elderly gentleman who listened to the boy's father very attentively. He then took the bike, ran with it for some distance, then jumped and sat on it and lo and behold! - the bike started! The boy was pretty confused by now. His revised theory about the " key " and " kick " needed some revision. He asked his father " what did he do that you weren't doing? " The father told the boy that " he would understand when he grew up! " When the boy grew a little older, he learnt about Newton's laws of motion in school. It then struck him that the neighbour had got the bike into some kind of momentum before starting it! So that's what the lever was used for! It gave the rear wheel some momentum and that's how the bike started! Why couldn't he think of this before? He couldn't because he did not know of certain principles i.e. Newton's laws of motion. Now, armed with these principles, he could predict the starting of the bike.

Soon he grew up and inherited his father's motorcycle. Whenever he faced a problem of starting, he would just run with the bike and start it! One fine day, he faced a starting problem again, only this time, even when he ran with the bike, it did not start. So, he approached the mechanic who had put up shop a few blocks away and gave him the following explanation – " I tried to run with the bike and start it in motion, but it wouldn't start. " To which the mechanic just bent down and put his hand under the chassis and removed a contraption which he called the " Spark Plug ". He then went on to show the boy " how dirty it was ", cleaned the tip and put the plug back in it's place under the chassis. Now when the mechanic kicked the lever, the bike started. It was then that it dawned on the boy that when he kicked at the lever or ran with the bike, a spark was formed in the gap in the Spark Plug which then ignited the fuel and started the bike.

(I know this explanation will make hard boiled engineers laugh).

Now all through his stages of growth, the boy lived in different worlds, and he had a theory that was useful until it was replaced by a better theory that "explained" things better and more importantly – helped him predict the outcome of actions. **So we can say that a theory is** - "**A sentence that relates cause with effect; fits without fail all observations of the past, and helps us predict the future for a similar set of causes, with the risk of being wrong.**"

Thus information by itself is not knowledge. Information, coupled with theory which helps interpret the information/observations at any instant, leads to knowledge. Thus theory has temporal spread. Theory is a window into the world. Without theory there are no questions to ask. Without theory we will have nothing new to learn. All knowledge advances theory by theory. This is the foundation of the PDSA cycle. To sum up , the steps in understanding a " Theory of Knowledge " are:

- Ask Questions
- Formulate Theories
- Carry out Experiments
- Observe
- Confirm Theories
- Verify Theories
- Act on any differences
- Make improvements, if necessary
- Repeat the cycle.

I would like to quote Brian Joiner here . He once said " *The basic notion of PDSA is so simple that when I first heard it, I felt I understood it in five minutes. Now, more than a decade later, I think I might understand it some day.* " I too feel the same!

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Introduction

BEQET 2020 competition was held virtually on Saturday 6th February 2021.

Ten teams from six colleges participated. Mr. Mahesh Gandhi, Founder member and Trustee of NCQM welcomed the delegates. Mr. Santosh Khadagade, President of NCQM gave a brief description of activities and achievements of NCQM since its inception way back in 1985. Mr. Shailesh Sheth, Dr. Leena Raje and Mr. B. Banerjee were the three judges. Since Dr. Raje , due to some urgent work, could not be present in the forenoon. Mr. Santosh Khadagade acted on her behalf. At Mr. Khadagade's instance, Mr. Banerjee conducted the proceedings for the day.

Proceedings

To start with Mr. Banerjee again welcomed the esteemed participants. He then clarified the 3P Assessment Criteria comprising Preparation, Participation and Presentation. Since elements of presentation requires analytical and problem solving skills, it was decided to give 40% weightage for this criterion. Other two had 30% weightage each totalling to 100%. Timing for each presentation was set as 15 minutes with 5 minutes of questions & answers. Option for asking questions was given first to other participating teams and then the judges in turn added their valuable observations. Three teams were covered before tea, three more between tea and lunch, and last four teams were covered after lunch by which time Dr. Raje also joined. To reduce variation in scores between judges each was requested to jot down strengths and OFIs (opportunities for improvement) for each presentation. Based on in depth discussion on them consensus score (not average scores) were arrived at.

Declaration of results

Unlike earlier years results were not declared at the end of the same day. Participating teams were informed that it will be declared during prize distribution at the end of Shri D. L. Shah Memorial Lecture scheduled on Saturday 13th February 2021 in the afternoon. This was done to take care of presence of each participating team for the prestigious event.
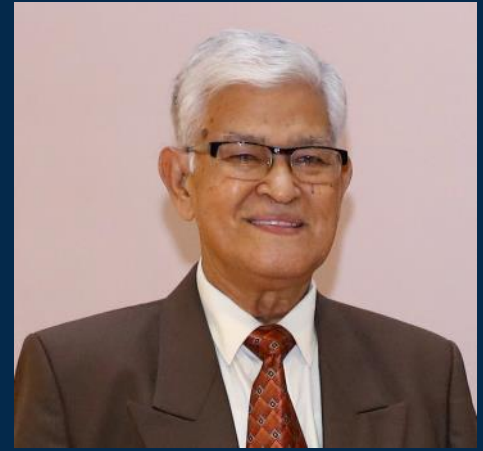
Mr. Banerjee is the Trustee of NCQM and Chairman of its Education Committee. He specialized in Statistical Quality Control (SQC) and Operations Research (OR). He was Senior Vice President – QA at Associated Capsules Group (ACG) reporting directly to the group Managing Director for 14 years. Prior to joining ACG, he worked with Metal Box India Ltd and Indian Statistical Institute.

Mr. Banerjee has conducted over 350 hours of training in Lean Management, Six Sigma, SPC, Change Management across pharmaceutical, oil & gas and chemical process industries. He has mentored over 50 LSS projects covering more than 100 team members.

On world quality day in 2013 he received "Life Time Achievement Award" from Quality Forum of India for his 50 years of yeomen service in the field of Quality and Systems. He is a Certified Examiner for Ramkrishna Bajaj National Quality Award (RBNQA). He has authored 4 books titled "OR Techniques for Management", "Statistical Techniques for ISO 9000 Certification", "Interface between SPC and ISO" and "Statistical Process Control with Applications".

Salient points made by honourable judges

Mr. Shailesh Sheth

- Wide range of contemporary topics presented.
- Improvement in quality of presentations observed.
- By and large time management was fairly good.
- Presentations lacked future perspectives such as digitalization and Quality 4.0 etc.

Dr. Leena Raje

- Thoughtful and innovative ideas presented.
- Clear focus on quality improvement could be observed.
- NCQM presentation format was largely adhered to.
- Move to new frontiers during pandemic situation was found to be lacking.

Mr. Santosh Khadagade

- Coverage on new education policy brought out by GOI could not be seen.
- Preparatory work shop on application of SPC and RCA tools in educational institutions seems to be helping a lot.

Mr. Basudev Banerjee

Ten Opportunities for Improvements (OFIs) as perceived by Mr. B. Banerjee after listening to the presentation of all the ten teams are summarized below:

- Teams are still found to be using "Brainstorming" for finding probable root causes of problems. Towards quantifications they were strongly advised to replace it with NGT (Nominal Group Technique). This will help in prioritization of reasons as well.
- Couple of teams attempted NGT with ranks from 1 to 10. However, determination of dominant cause was rather difficult. They were advised to follow numerical values between 1 to 100 percentage of weightages.
- Teams would develop better analysis by applying the Why—Verify—Why Analysis as a means of RRCA (relentless root cause analysis).
- Teams should refresh their knowledge on basic QC tools. One team confused a simple Bar Diagram with a Histogram.
- One team talked about COPQ. But its elements and their quantifications were not available.
- One team presented "Sustainability of improvement journeys" in an organization. But its "Review Mechanism" was not integrated with the system.
- One team leader (Dr. Kamal Shah, Dean of R & D's team) from Thakur College of Engineering & Technology followed ADLI (Approach, Deployment, Learning and Integration) process for "Enablers" and LeTCI (Level, Trend, Comparison and Integration) for "Results". This approach was advocated to be standardized for all future projects. For "Results", Benchmarks and even Targets" should be included in future.
- On "Tangible Benefits" most of the teams provided statements only like significant improvement, drastic reduction, etc. All of them were advised to put "Numerical Before/ After Figures".
- All teams were advised to start with "Voice of Customer" such as survey of existing students, Alumni, Industry, Society and then follow PDCA (Plan, Do, Check and Act) cycle to bridge gaps in the identified needs and expectations.
- Towards Continual Improvement SGIAs (Small Group Improvement Activities) like Kaizen, Quality Circle, etc. were suggested for all levels within the organization.

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BEQET 2020 WINNERS

BEQET 2020 PRESIDENT AWARD - 1st PRIZE

Thakur College of Engineering & Technology, Kandivali (E), Mumbai

for their Project titled

Inculcating Entrepreneurial Mindset in Engineering Students for Nation Development

Represented by

Team Leader, Dr. Kamal Shah with team members Dr. Rekha Sharma, Dr. Sangeeta Mishra, Mr. Hemant, Ms. Ashwini Shanbhag and Mr. Mahindra Shelar.

BEQET 2020 PRESIDENT AWARD - 2nd PRIZE

Shri M. D. Shah Mahila College Malad, Mumbai

for their Project titled

Sustainability of Quality Initiatives in an Institution

Represented by

Team Leader, Smt. Bina Atluri with team member Ms. Vidyalaxmi Ratnakar.
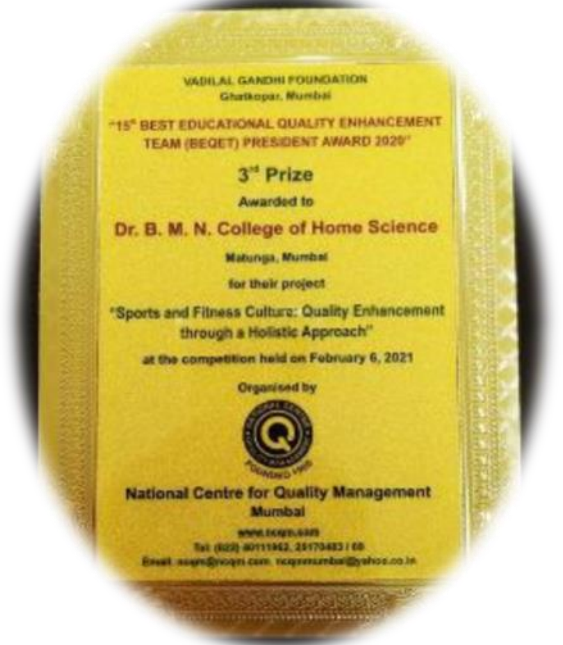
BEQET 2020 PRESIDENT AWARD - 3rd PRIZE

### Dr B M N College of Home Science Matunga, Mumbai

for their Project titled

Sports and Fitness Culture: Quality Enhancement through a Holistic Approach

Represented by

Team Leader Ms. Paulomi Desai with team members Ms. Rikisha Maniyath, Dr. Jahnvee Joshi, Mrs. Bharti Dudam, Prof. (Dr.) Mala Pandurang, Ms. Dipali Kalamkar and Ms. Priyanka Vinjale.

BEQET 2020 PRESIDENT AWARD SPECIAL CITATION
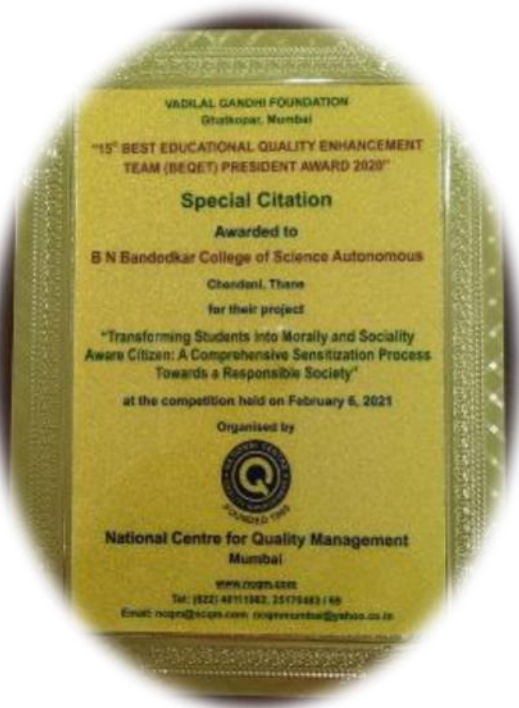
B N Bandodkar College of Science Autonomous, Chendani, Thane

for their Project titled

Transforming Students into Morally and Socially Aware Citizen: A Comprehensive Sensitization Process Towards a Responsible Society

Represented by

Team Leader Dr. Moses Kolet with team members Mr. Vicky Pail, Capt. Bipin Dhumale, Dr. Vinda Manjramkar, Dr. Moitreyee Saha, Ms. Divya Nair, Mr. Abhijit Kale and Student Ms. Anushree Keni & Mr. Govind Bohora.

ASQ's World Conference On Quality & Improvement (Virtual) May 24 - 28

The 2021 program is truly timely and relevant, with more than 85 sessions addressing essential role of quality for organizations, countries, companies, and people moving toward a post-pandemic world.

This year showcases a robust mix of presentations geared toward young quality professionals, experienced quality experts, and everyone in between. They span an array of topics viz. data analysis, audits, Quality 4.0, robotics, risk, lean, Six Sigma, and effectively navigating your team, career and company in an uncertain virtual world.

Source: ASQ

programme and portfolio management and their governance.

The standard is now joined by ***ISO 21502, Project, programme and portfolio management – Guidance on project management***, which offers guidance and structure in managing projects with a focus on benefits and outcomes, from inception to completion, including project-related oversight and direction activities.

These two standards are part of the ISO 21500 series that also includes:

- ISO 21503, Project, programme and portfolio management – Guidance on programme management

Standards News

Project Management

Two key standards in ISO's series of documents for Project Management have just been updated and expanded, providing even more extensive guidance on these issues.

ISO 21500, Project, programme and portfolio management – Context and concepts, is a foundational standard that provides overarching guidance for the use of the ISO 21500 series of standards. It gives an overview on project,

- ISO 21504, Project, programme and portfolio management – Guidance on portfolio management

- ISO 21505, Project, programme and portfolio management – Guidance on governance

- ISO/TR [1] 21506, Project, programme and portfolio management – Vocabulary

- ISO 21508, Earned value management in project and programme management

- ISO 21511, Work breakdown structures for project and programme management.

Building Management

With the current pandemic pointing the finger at enclosed public areas, the built environment has never had so much flack. So ensuring buildings are safe, accessible and environmentally friendly is also the objective of a large number of ISO standards, with some recent additions.

ISO 23234, Buildings and civil engineering works – Security – Planning of security measures in the built environment describes which methods and routines need to be implemented in various stages of a building or civil engineering works project, as well as the competencies needed to achieve a good result.

ISO 52127, Energy performance of buildings – Building management system (parts 1 and 2) provides a common methodology to set and maintain the energy performance of buildings (EPB). ISO 52127 is part of a larger family of International Standards aimed at harmonizing the methodology for assessing the energy performance of buildings, called the "EPB set of standards".

ISO 21542, Building construction – Accessibility and usability of the built environment, can help as they specify a range of requirements and recommendations for many of the elements of construction that relate to building access, including accessibility management. It is currently under revision to ensure it continues to meet market needs, with the updated version due to be published in the coming months.

Technical report **ISO/TR 22845, Resilience of buildings and civil engineering works**, is a good place to start because it provides an index of typical existing information on concept, disaster risk and countermeasures for the resilience of buildings and civil engineering works.

Energy Management

Implementing an energy management system (EnMS) can result in many benefits, such as cost and energy savings, and when established across multiple organizations, these benefits are even greater. A common EnMS enables the sharing of knowledge and resources as well as collaboration on energy-saving projects across organizations of all kinds and sizes. This includes SMEs too.

ISO 50009, Energy management systems – Guidance for implementing a common energy management system in multiple organizations, is aimed at uniting organizations that have some common element, such as energy supplier, sector or location, to optimize their energy use collectively, whatever their size.

Food Safety Management

A new handbook **ISO 22000:2018 – Food safety management systems – A practical guide** provides in-depth and practical information to help organizations more effectively implement a food safety management system (FSMS) in accordance with ISO 22000:2018.

Source: ISO

TRAINING CALENDAR: MAY-JUNE 2021 on Zoom App

Schedule & Fee*	Program Title	Objective	Contents	Who Should Attend
May 21-22, 2021 **Rs. 5500 Plus GST**	**Certificate Course : IMS** **(9001/14001/45001)** **Internal Auditor ****	• Undertake Effective planning & performing effective audit of Integrated Management Systems • Gain Sound knowledge and skills on auditing against these standards and communicating the findings effectively.	• Evolution of IMS Standards, Principles, PDCA Cycle, Process Approach & Risk Based Thinking • Requirements & Major changes in IMS Standards • Highlights on ISO 19011:2018 • Audit Planning: Audit objective and scope, Audit Checklist, Selection of audit team • Audit Execution: Audit Findings, Reporting of Audit Findings, Follow up and Closure • Auditing Skills / Techniques, • Experience sharing by Lead Auditors	• Internal Auditors for IMS • Functional Managers/ Executives/ Supervisors • Potential External Auditors • Trainers and consultants
May 7-8, 2021 **Rs. 5000 Plus GST**	**Problem Solving with RCA & RRCA**	• Identify problems at work place that hinder functioning of the organization and affect product / service quality • Master structured approach to problem solving • Gain expertise on problem solving tools and techniques	• Problem definition & approach to Problem Solving. • Importance of data & its type. • Use of Basic Quality tools: Histogram, Pareto Chart, Brain Storming, CE Diagram and Control Charts • RCA Techniques: Why-Why Analysis, Why-Verify Why-Analysis • RRCA Techniques- NGT and KT Analysis • Characteristics of effective problem solver	• Managers, Executives, Sr. Supervisors from all functions • Trainers and Consultants
June 13 **Rs. 5500 Plus GST**	**Certificate Course : Certified "5S" and "8W" Practitioner: Effective Management of Workplace**	• Prepare the participants for proper understanding of the Principles of 5S Workplace Management and 8W Waste Elimination for an efficient and effective workplace.	• Understanding of "5S" principles- of Seiri (整理), Seiton (整頓), Seisō (清掃), Seiketsu (清潔), and Shitsuke (躾) • Visual control for better management of problems • Understanding 8 wastes in manufacturing and 5 wastes in office environment • Elimination of NVA – non-value added activities, • 5S & 8W Audits • Case studies from industry	• Managers, Executives and Supervisors from all functions • Functional Heads, Trainers and Consultants,
June25-26, 2021 **Rs. 5000 Plus GST**	**Statistical Process Control Workshop**	• To learn the power of SPC to truly understand the process behaviour that enables an Organisation to plan and manage processes effectively • Participants would get a hands on experience on implementation of SPC in their environment.	• Basics of Statistics Data Analysis, Concept of variation, Central Tendency and Dispersion • Process variation, Process Capability, Cp, Cpk • Process Control Charts: Variables & Attributes: $\overline{X}$-R, I-MR, p, np, c and u charts • Acceptance Sampling • SPC Implementation sharing of experiences	• Managers, Executives and Sr. Supervisors from Operations, Quality Assurance and Quality Control • Trainers and Consultants

*   10% Member discount applicable, Additional Group discount of 10% for 3 or more participants

*   Participants attending two or more training programs will get additional discount of 10%

** *Certificate Courses have examination at the end*

Timings: Registration at 9.30 a.m.   Session Timings: 10.00 am to. 5.30 pm

For Registration contact: Email: ncqm@ncqm.com, **ncqmmumbai@yahoo.co.in, Tel:** (022) 4011 1962 / 2517 0483/ 9969542855