Quality : The only Strategy

QUALITY STRIVING FOR EXCELLENCE

Aug-Sep 2020 Issue **Vol VIII / No: 4**

Inside this issue

Industrial Revolution 4.0 — Digitalization 2

Remembering W Edwards Deming 4

News 8

NCQM Announcements 9

BEQET 2020

BEST EDUCATIONAL QUALITY ENHANCEMENT TEAM (BEQET)

PRESIDENT AWARD 2020

NCQM is inviting applications for the 2020 edition of its prestigious BEQET President Awards.

Read Announcement inside!

Printed & Published by Chairman, Publication Committee, on behalf of National Centre for Quality Management, G-503, Kailas Industrial Complex, Vikhroli - Hiranandani Link Road, Vikhroli (W), Mumbai - 400 079.

President's Message | Santosh Khadagade

Greetings to all amidst the new ways of working! The pandemic has challenged us to think differently and use technology beneficially . Online platforms such as Google Meet, MS Team, Zoom, etc. are being used extensively resulting in better communication, reduced travel time and higher productivity. Impact of the pandemic has accelerated adoption of Industry 4.0 followed by Quality 4.0.

The strategic group is focusing on the two key areas viz. automation and digitalisation. The NCQM webinar series focused on these two areas. We started with Industry 4.0 webinar followed by Quality 4.0 webinar. Future webinars will continue to focus on these areas.

Quality professionals have to quickly adapt to the changes by deploying automated test and inspection equipment capable of giving fast and accurate results. They are also capable of capturing data on real time basis facilitating the quick di-agnosis and corrections as appropriate. Use of statistical process control to understand the common and special causes has become more important today to prevent any errors in judgement and avoiding costly inappropriate actions. Timely and detailed failure analysis using timely and accurate data would help to drastically reduce cost of quality resulting in improved financial performance and an unprecedented level of ROIs on quality initiatives.

Normal activities have started resuming slowly for NCQM. A few inhouse training programs have been conducted and, with increased interest from industry, regular training programs on virtual platforms will resume in few weeks. The 15th annual cycle of BEQET President Awards has been announced already. Our flagship event, DL Shah Memorial lecture will also take place on schedule. NCQM is working on digitalization of the diploma program modules and the first batch would commence from April 2021.

Once again we wish all the members safe working and good health. For any queries, feedback or requirements, please feel free to contact me at president@ncqm.com.

Industrial Revolution 4.0 — Digitalisation

Opportunities & Challenges for Manufacturing Sector

The term Industry 4.0 encompasses a new industrial revolution - one that connects advanced manufacturing techniques with the Internet of Things to create manufacturing systems that are not only interconnected , but communicate , analyse and use information to drive further intelligent decision & action back in the physical world.

The digital market has a plethora of exciting tools , technologies and use cases to offer. Be it the Industrial Internet of Things (IIOT) , Artificial Intelligence (AI), Advanced Automation & Robotics, Virtual Reality, Big Data Analytics, Cloud Computing, Cyber security, etc. These offer a tremendous potential to improve productivity and give superior outcomes across the entire value chain of business.

Clearly there is no one size fits all solution. Depending on the nature , size & complexity of individual businesses, a tailor made solution based on basic guiding principles need to be developed. To move ahead and take specific advantage of these technologies to improve productivity across functions /departments , **it is necessary to have Business as Driver & Technology as a Enabler to achieve specific business goals.** We need to have a good blend of Strategy, Vision, People & Technology to ensure *successful outcomes.*

In the manufacturing sector, the digitalization efforts under Industry 4.0 could enable achieving operational excellence in some of the prominent areas including:

- International Trade & Supply Chain — Optimization of inputs & outputs
- Production Planning & Scheduling
- Production Execution
- Maintenance & Reliability
- Health , Security , Safety & Environment (HSSE)
- Energy Management
- Engineering & Capital Projects
- Quality Management
- Supply Chain (Spares/Consumables)

Mr. Chandrashekar J. Iyer graduated in Chemical Engineering from IIT Varanasi in the year 1983. He completed his Diploma in Systems Management from Jamnalal Bajaj Institute of Management Studies, Mumbai.

He has worked for thirty six years in various functions in Mumbai Refinery of Bharat Petroleum Corporation Ltd including Process / Project Technology, Process Safety, Energy & Environment, Scheduling & Blending, Quality Assurance & Plant Operations as well as EA to Director (Refineries). He was a management representative of ISO 9000 / 14000 Management Systems in Mumbai Refinery.

From April 2017 till his superannuation from service in Nov 2019, he worked as Executive Director (In-charge) of Mumbai Refinery (Refinery SBU Head), overseeing the entire refinery with responsibilities for Health, Safety, Environment, Plant Operations, Technology, Projects, Finance & Administration of Refinery .

Currently he is expert guest lecturer on various operations management topics such as Supply Chain, Industrial Revolution 4.0 in the manufacturing sector & Project Management as well as Total Quality Management, Energy, Environmental & Sustainability aspects in leading management & engineering colleges as well as industry forums.

Strategy for implementation of IR 4.0 is key to success which would need to involve the following elements:

1. Identification of the specific challenges that are experienced in day to day operations . Use of 80/20 Pareto principle for identification of priority of issues to be taken up based on business impact is critical.
2. Potential options/Use cases to address these challenges with technology enabler. Scanning the world wide trends would be helpful.
3. Steer the efforts towards using digital solutions to mitigate issues /improve productivity. This could include a dedicated task force, periodic structured meetings, a organizational digital vision & road map for the future.
4. Set up Key Performance Indicators to lead the solutions towards a meaningful delivery. Implement Pilot projects or Proof of Concepts in partnership with established vendors/ Start-ups.
5. Sharing knowledge & experience for replication across the company.

It is very important that top management of the organization specifically drive the Industry 4.0 (Digitalization) efforts & ensure that all functions and levels in the organization from the junior most field workers, middle management & senior management are fully committed & involved in these efforts and accountable /responsible for delivery.

Based on my personal experience in developing a digitalization road map in the manufacturing sector , it is very clear that the impact of digitalization on productivity can be achieved by a focused organizational effort with a clear vision/management commitment .

In conclusion , Industry 4.0 provides a great opportunity to the Indian Manufacturing sector to greatly improve their productivity & take the country forward in the COVID-19/ post COVID-19 world order.

World Wide Trends

Industrial Internet of Things : This platform is a set of hardware & software facilities that assist and support application for industrial companies using the internet to connect devices & equipments.

Artificial Intelligence : This is a way of making a computer, or a software think intelligently in the similar manner the intelligent human being thinks.

Virtual Reality : An involved immersive experience mainly used for improving training /learning outcomes.

Analytics & Big Data Analytics : Big Data Analytics is the process of examining large and varied data sets or big data to uncover information including hidden patterns, unknown correlations, market trends and customer preferences that can help organizations make informed decisions.

Digital Modelling : This refers to a digital replica of physical assets (physical twin), processes, people, places, systems, devices that can be used for various purposes.

Cloud Computing : Cloud Computing is a technology that uses the internet and central remote servers to maintain data & applications.

Cyber Security: Cyber security is implemented to prevent threats and attacks and protect the critical Operational Technology (OT) /Information Technology (IT) assets from various vulnerabilities.

Remembering Dr. W Edwards Deming

Dr. W. Edwards Deming was an eminent scholar and teacher in American academia for more than half a century. Considered by many to be the master of continual improvement of quality, as well as their overall operation, Deming is best known for his pioneering work in Japan. Deming's role as the architect of Japan's post-World War II industrial transformation is regarded by many Western business schools and economists as one of the most significant achievements of the 20th century.

In June 1980, the acclaimed documentary "If Japan Can, Why Can't We" reintroduced Dr. Deming to America. He quickly became the voice of quality and sparked the quality revolution. Playing a major role in the resurgence of the American automobile industry in the late 1980's, Dr. Deming consulted with corporations such as Ford, Toyota, Xerox, Ricoh, Sony and Proctor & Gamble, whose businesses were revitalized after adopting his management methods. Dr. Deming continued to author and lecture well into his 90's. His final book, ***The New Economics***, was published after his passing in 1993 at the age of 93. It was the culmination of his life's work, detailing ***The Deming System of Profound Knowledge***®.

His Work

Deming's contributions to the field of quality and management are significant and unparalleled. The Deming Philosophy looks at the world through a lens that is different from all others. The Deming Philosophy, known as Dr. Deming's "theory of management" and later his "System of Profound Knowledge," represents a holistic approach to leadership and management. The philosophy brings together an understanding of variation, theory of knowledge, psychology and appreciation for a system.

> The moral is that it is necessary to innovate, to predict needs of the customer, give him more. He that innovates and is lucky will take the market
>
> - W Edwards Deming

Dr. W Edwards Deming

Oct 14, 1900 – Dec 20, 1993

Honours

1. Shewhart Medal, American Society for Quality (1955)
2. Order of the Sacred Treasure, Second Class, Japan (1960)
3. Samuel S Wilks Memorial Award, American Statistical Association (1983)
4. National Medal for Technology and Innovation, US (1987)

The Deming System of Profound Knowledge® is a way for people and organizations to continually improve. The four elements of Deming's System of Profound Knowledge contain:

1. ***Understanding of and Appreciation for your Organization as a System*** - How to lead and optimize a system - not destroy it. Foster respect and joy in work.
2. ***Understanding Variation*** - Conclusions we can/cannot make from data and observations. Actions to take.
3. ***The Theory of Knowledge*** - Is what we "know" really so? Learning - Improvement - Rational Thinking.
4. ***Understanding Psychology*** – The truth about how humans react and interact. Beliefs - Behaviours - Consequences.

Dr. W. Edwards Deming taught that by adopting appropriate principles of management, organizations can increase quality and simultaneously reduce costs (by reducing waste, rework, staff attrition and litigation while increasing customer loyalty). ***The key is to practice continual improvement and think of manufacturing as a system, not as bits and pieces.***

Deming offered 14 key principles to managers for transforming business effectiveness. The points were first presented in his book ***Out of the Crisis***. Although Deming does not use the term in his book, it is credited with launching the Total Quality Management movement.

In the 1970s, Deming's philosophy was summarized by some of his Japanese proponents with the following "a"-versus-"b" comparison (refer figure below).

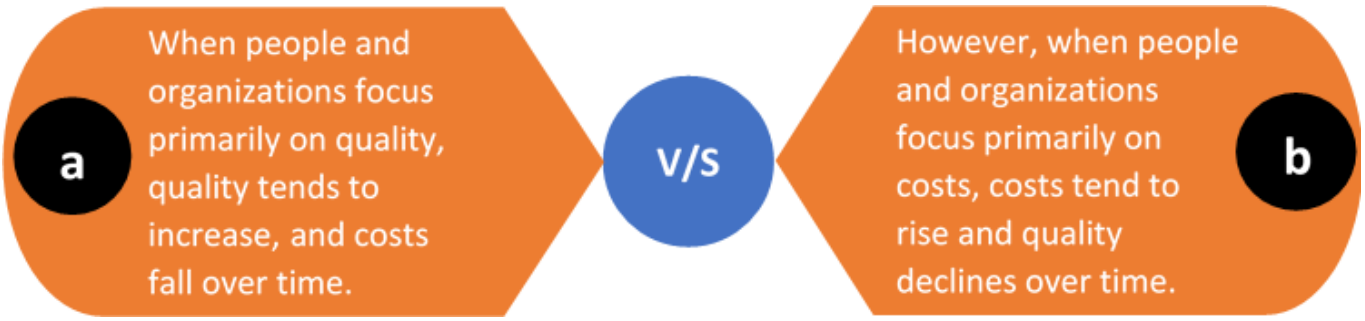
He published hundreds of original papers, articles and books covering a wide range of interrelated subjects—from statistical variance, to systems and systems thinking, to human psychology.

He was a consultant to business leaders, major corporations, and governments around the world. His efforts lead to the transformation of management that has profoundly impacted manufacturing and service organizations around the world.

Honours

In 1951, the Deming Prize was established to honour W. Edwards Deming who contributed greatly to Japan's proliferation of statistical quality control after World War II. In 1960, the Prime Minister of Japan (Nobusuke Kishi), acting on behalf of Emperor Hirohito, awarded Deming Japan's Order of the Sacred Treasure, Second Class for his significant contribution to Japan's reputation for innovative, high-quality products, and for its economic power.

In 1955, Deming was awarded the Shewhart Medal by American Society for Quality. In 1983, Deming was awarded the Samuel S Wilks Memorial Award by the American Statistical Association.

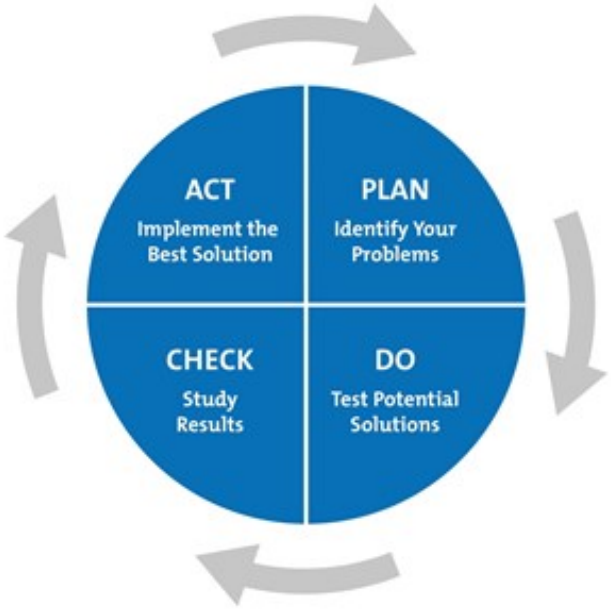


He was awarded the National Medal for Technology and Innovation by the then President of USA in 1987.

Deming was a visionary, whose belief in continual improvement led to a set of transformational theories and teachings that changed the way we think about quality, management, and leadership. **He believed in a world where there is joy in learning and joy in work - where "everyone will win."**

PDSA (Plan-Do-Study-Act)

In the 1950s, Dr William Edwards Deming developed a method of identifying why some products or processes don't work as hoped. His approach has since become a popular strategy tool, used by many different types of organizations. It allows them to formulate theories about what needs to change, and then test them in a "continuous feedback loop."



© The Deming Institute

Deming himself used the concept of Plan-Do-Study-Act (PDSA). He found that the focus on Check is more about the implementation of a change. He preferred to focus instead on studying the results of any innovations, and to keep looking back at the initial plan.

W. EDWARDS DEMING'S 14 POINTS

1. Create constancy of purpose for improving products and services.
2. Adopt the new philosophy.
3. Cease dependence on inspection to achieve quality.
4. End the practice of awarding business on price alone; instead, minimize total cost by working with a single supplier.
5. Improve constantly and forever every process for planning, production and service.
6. Institute training on the job.
7. Adopt and institute leadership.
8. Drive out fear.
9. Break down barriers between staff areas.
10. Eliminate slogans, exhortations and targets for the workforce.
11. Eliminate numerical quotas for the workforce and numerical goals for management.
12. Remove barriers that rob people of pride of workmanship and eliminate the annual rating or merit system.
13. Institute a vigorous program of education and self-improvement for everyone.
14. Put everybody in the company to work accomplishing the transformation.

Deming Prize

The Deming Prize is an annual award presented to an organization that has implemented TQM suitable for its management philosophy, scope/type/scale of business, and management environment. Regardless of the types of business, any organization can apply for the Prize under certain conditions, be it public or private, large or small, domestic or overseas, or part of or entire organization. There is no limit to the number of potential recipients of the Prize each year. All organizations that score the passing points or higher upon examination will be awarded the Deming Prize.

Dr. Deming's Lectures on Statistical Control of Quality was compiled from stenographic records and distributed for a charge. Dr. Deming donated his royalties to Japanese Union of Scientists and Engineers (JUSE). In appreciation of Dr. Deming's generosity, the late Mr. Kenichi Koyanagi, managing director of JUSE, proposed using it to fund a prize to commemorate Dr. Deming's contribution and friendship in a lasting way, and to promote the continued development of quality control in Japan.

The Deming Prize examination is different from the other Excellence Awards since it does not require applicants to conform to a model provided by the Deming Prize Committee. Rather, the applicants are expected to understand their current situation, establish their own themes and objectives, and improve and transform themselves organization-wide. In addition to the processes used and results achieved, the effectiveness expected in the future is also evaluated. **The Deming Prize Committee views the examination process as an opportunity for "mutual-development," rather than "examination."**

The advantage is that the organization will implement TQM activities that are relevant to their business rather than follow a model. This ensures that the organization is free from the "examination effect" where the objective is to pass an examination. The disadvantage is that there is very little guidance available for organizations in implementing TQM practices. Some organizations may take longer than expected to implement appropriate TQM practices which may result in demotivation.

The Deming Prize Committee believes that organizations should undertake this process of "self-discovery" relying on the principles and practices of TQM. Further, it will create a sense of ownership of their TQM system since it will be unique to their business.

India has been quietly embracing Deming's philosophies in their TQM journeys. Since 2000, organizations based in India have received the most Deming Prizes (Japan is second and Thailand is third).

Source: Deming Institute

Sources:

1. *Deming Wikipedia*
2. *JUSE website*
3. *The Deming Institute website*

*****

News

NCQM News

Webinars

NCQM kicked off its webinars for members with the first webinar on "Exciting & Successful Digitalization Journey of BPCL Mumbai Refinery" by Mr. C J Iyer, Former Executive Director of the Mumbai Refinery, BPCL. This webinar was well received and generated a buzz amongst the members.

NCQM is organizing a few more webinars about one every month on topics of interest in industry and quality.

Standards News

Energy Management

ISO 50004:2020 — Energy Management Systems — Guidance for the implementation, maintenance and improvement of an ISO 50001 energy management system

This document gives practical guidelines and examples for establishing, implementing, maintaining and improving an energy management system (EnMS) in accordance with the systematic approach of ISO 50001:2018. The guidance in this document is applicable to any organization.

ISO 50002:2014 — Energy Audits — Requirements with guidance for use

ISO 50002:2014 specifies the process requirements for carrying out an energy audit in relation to energy performance. It is applicable to all types of establishments and organizations, and all forms of energy and energy use.

ISO 50002:2014 specifies the principles of carrying out energy audits, requirements for the common processes during energy audits, and deliverables for energy audits.

Health and Safety Management

ISO 45001:2018 - Occupational Health and Safety Management System - A practical guide for small organizations

Work-related injuries, illnesses or fatalities are always difficult for any kind of organization, but the negative effects for small businesses can be overwhelming. This handbook, published jointly by ISO and UNIDO, aims to help smaller economic units implement the requirements of ISO 45001:2018. Readers will get simple explanations and practical examples that support their first steps into the intricacies of workplace health and safety.

Select Standards Recently Published

1. IWA 31:2020 - Risk management — Guidelines on using ISO 31000 in management systems
2. ISO/TS 24179:2020 - Human resource management — Occupational health and safety metrics
3. ISO/IEC 20000-2:2019/Amd 1:2020 - Information technology — Service management — Part 2: Guidance on the application of service management systems — Amendment 1

Select Standards in FDIS stage

1. ISO/PRF TR 22914 - Statistical methods for implementation of Six Sigma — Selected illustration of analysis of variance.

(*Source: ISO*)

NCQM Announcements

BEQET 2020

OBJECTIVE / PURPOSE

To encourage Educational Institutions in successfully promoting Quality practices in their operations, and there by significantly enhancing satisfaction of their customers, both internal and external.

THE AWARDS

The Awards include an Award Trophy to the winning institution and a Certificate to leader of the team. The Runners – up institutions are awarded with Certificates of Merit, with a Certificate to leader of the team. Other team members of the winning as well as runner up teams can get the certificate on request at a nominal cost.

ELIGIBILITY CRITERIA

- An Institutional / Corporate Member of NCQM.
- Colleges and Management Institutes affiliated to any University in Maharashtra or in any other state.
- All Colleges and Institutions affiliated to NCQM Institutional Members.

ENTRY INTO COMPETITION

- Each College or Institution or Management Institute can nominate upto three (3) teams.
- Only those teams whose projects have been completed during the past two years, and the benefits are being maintained are considered for these awards.
- Each nomination is required to be made on the standard Application Form, as per the format enclosed, and submitted to NCQM, along with following entrance fee.

  NCQM Member - Rs. 2000 + GST@18%
  NCQM Non-Member - Rs. 2500 + GST@18%

The project submitted can be used by NCQM for the purpose of publishing in NCQM Newsletter, Books and Quality Conferences in the future or as and when desired with prior permission.

TIME SCHEDULE

Call for Entries	- Nov 30,2020
Application Deadline	- Dec 15,2020
Acceptance	- Dec 31,2020
Final Submission	- Jan 10, 2021
Competition	- Jan 21, 2021
Award Presentation	- Feb 20, 2021

ASSESSMENT PROCESS

STAGE 1 – ELIGIBILITY VERIFICATION

Each application will first be scrutinized and assessed by NCQM against the eligibility criteria. NCQM may seek necessary clarifications from the applicant institution, if required. After this Stage 1 assessment, NCQM would inform in writing application's eligibility.

STAGE 2 – FINAL PRESENTATION

1. Applicant's team is then invited for Stage 2 assessment before a Panel of Judges, consisting of at least three eminent members.

2. The assessment will be based on the presentation of their work by the team members.

3. The Panel will primary be guided by the Assessment Criteria described below.

4. Each team is required to impress on the Panel how the members have selected the project and how they had approached solving the problem, the results achieved so far, and initiatives to hold on to the gains.

5. Each team will be given a 15 min. slot for their presentation followed by a 5 min. question – answer session.

6. Based on the final scores and consensus amongst the judges, 3 winners will be announced.

ASSESSMENT CRITERIA

The Assessment Criteria will be broadly along the lines of the 3-P Model viz. Preparation, Participation, Presentation. Every parameter will be graded on a 5-point scale.

Preparation	Participation	Presentation
• Improvement Area Identification • Project Definition • Quantification Addressed • Measurements Followed • Abilities and Attitudes • Others, if any "Team Spirit"	• Degree of Horizontal Involvement • Extent of Vertical Involvement • Skills Imparted to the Team • Skills Executed by the Team • Level of Management Commitment • Others, if any	• Analytical Skills demonstrated • Presentation Skills Displayed • Problem solving methods followed • Solution Irreversibility • Extended Application • Others, if any

Quality : The only Strategy

PROJECT STORY FORMAT

1.1 Institution
1.2 Project Title
1.3 Problem Area
1.4 Project Definition

2.1 Team Members
2.2 No. of Meetings Planned
2.3 No. of Meetings Held
2.4 % Attendance
2.5 Project Start Date
2.6 Project Close Date

3.1 Annual Costs of Poor Quality Identified
3.2 Benefits Aimed
3.3 Benefits Achieved

4.1 Project Diagnosis
a. Probable Causes
b. Tools Applied
c. Conclusions

5.1 Evolving Solutions
a. Likely Solutions
b. Tools Applied
c. Conclusions

6.1 Experimenting Solutions
a. Experimentation
b. Tools Applied
c. Results

7.1Project Closure
a. Target Benefits
b. Achieved Benefits
c. Tangible Benefits
d. Intangible Benefits

8.1 Enclosures, if any

9.1 Document Prepared By
Name
Designation
Place
Date

10.1 Document Approved By
Name
Designation
Place
Date

10.2 Tangible benefits authenticated by Head of the Institution.
Name
Designation
Place
Date
(**Affix Seal of the Institution**)

Quality : The only Strategy

APPLICATION FORM

Name of the Institution	
Address	
Institution Head	
Contact Person	
Contact Details	
Project Title	
Team Leader	
Team Members	
Project Highlights with Achievements	
Enclosures (attached)	1. The Project Story (format on previous page) ☐ 2. Other Details, if any ☐ 3. Participation Fee ☐
Authorized Signatory	(Affix Seal of Institution)
Date of Application	

Please send in your applications addressed to:

National Centre for Quality Management
G-503, Kailas Industrial Complex, Vikhroli (W), Mumbai - 400079.
Tel: (022) 25170483 / 69 / M: 9969 542885
Email: ncqm@ncqm.com / ncqmmumbai@yahoo.co.in
Web: www.ncqm.com