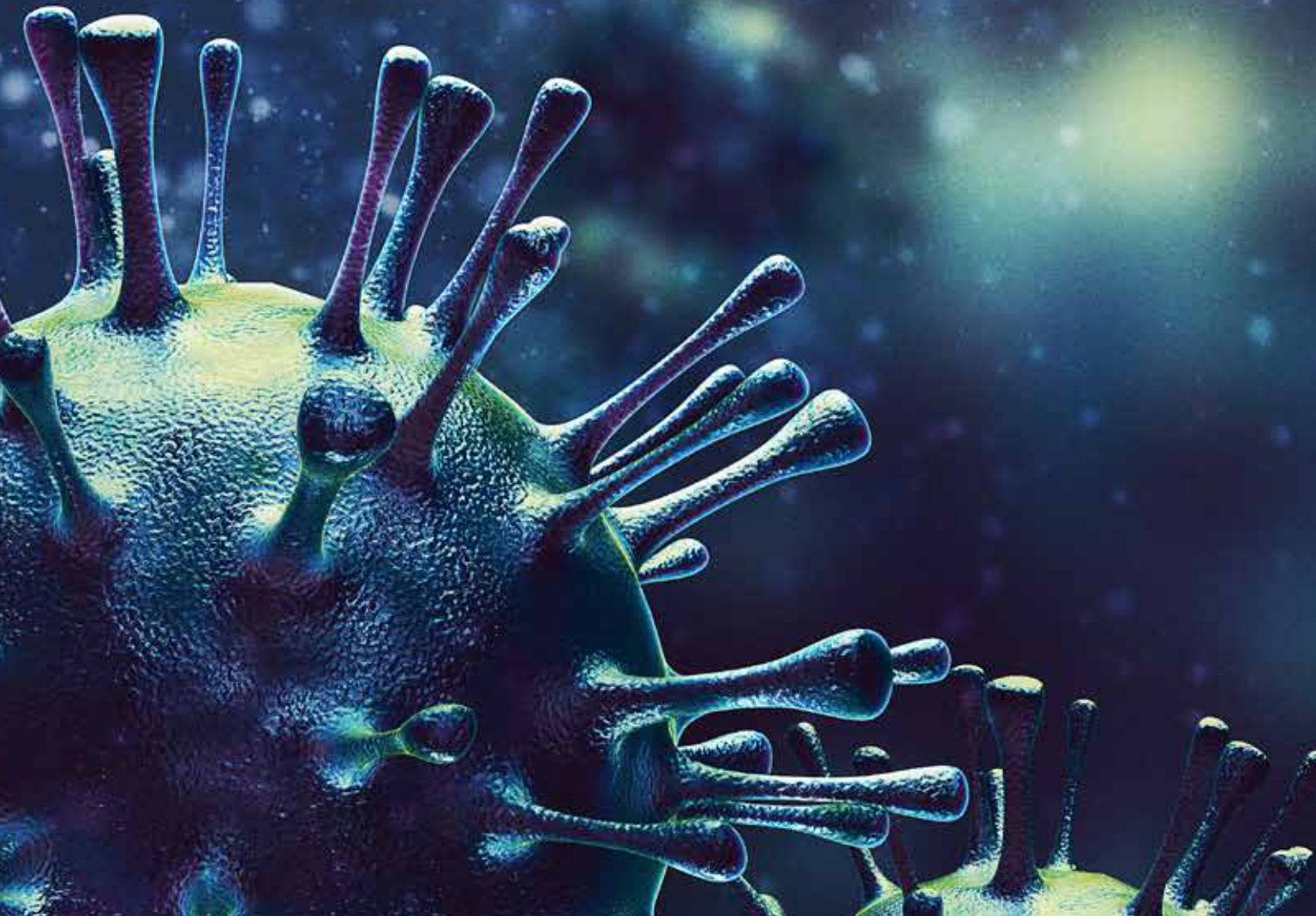# CORONA हारेगा, INDIA जीतेगा!

Quality Council of India is committed to ensure that its Boards and Divisions are assisting the nation on various fronts to fight against this pandemic

EDITOR'S NOTE

Dr. Ravi P. Singh
Secretary General
Quality Council of India

Dear All,

I hope you are safe alongside your family and loved ones.

In the last issue, I had apprised you on the focus areas of QCI and our efforts in Nation Building. QCI is continuing to make strides in the journey towards improving quality of products and services by ensuring competitiveness of Indian industries through many facets of standards, conformity assessment and vitual assessment.

At QCI, we are mindful of how COVID-19 is still causing much concern for many people, businesses, and establishments worldwide. During these difficult times, we want to ensure that our Boards and divisions are assisting the nation on various fronts to fight this pandemic. Our constituent boards, NABL and NABH, have been working tirelessly to expand capacity of India's health ecosystem and testing capabilities. Additionally, we have PPID teams working with different ministries to support provision of essential services and its supply chain across the country. I am also proud of the fact that we rightly predicted and built a stable video- based assessment platform which will eventually become the norm in these changing times. Further, we took decisive steps to create a cell which looked after the training requirements of all our stakeholders.

Accreditation of medical labs with scope of service to test COVID-19 has been fast-tracked and is being conducted online. NABL is working in close co-operation with ICMR to ensure competence of accredited labs and their

ability to comply with the prescribed testing guidelines. So far, 315 NABL accredited labs are testing for RNA virus by RT PCR, which is considered to be the Gold Standard for testing of Covid-19 around the world. NABL standards have been made available free of cost to laboratories to provide their might in combating COVID-19.

NABH has also continued to provide reliable data for number of ICU and Non-ICU beds in each state as well as ventilator availability. Online trainings for doctors and nurses and other healthcare professionals has been scaled up considerably. NABH also collected data of PPE requirements in private hospitals and make sure that the healthcare workers had adequate supply to protect themselves of infection.

Besides the above, QCI was involved in tracking complaints of citizens during lockdown and made sure that the response was available to them quickly. The average disposal time of the citizen grievances has been an impressive 1.57 days.

QCI accelerated validation of statutory requirements of service providers providing essential COVID- 19 related services on Government e-Marketplace GeM portal and has, so far, completed Vendor Assessment for 50+ manufacturers within a month.

I thank QCI team for rising up to the occasion and I am confident that we will continue to support the efforts of the government in every possible manner within our domain area.

Since we could not get the publishing of this magazine during the lockdown, we have decided to have a combined issue this time and now we shall make sure that the quarterly issue is brought in time, everytime.

KILLING
CORONAVIRUS
COVID-19

CONTENTS

MEMBERS WRITE

Editorial Team: Sanjay Singh | Anam Qureshi   **Designed By:** Nidhi Batra

Accreditation Facilitating Quality Products and Laboratory Services in Situation Created by Covid-19

Excellence in laboratory services is driven by a well-implemented management system combined with established technical competence

Accreditation provides confidence in delivery of a competent service related to testing of patient samples, protective equipment and materials etc. Accredited laboratories providing their services and delivering reliable results meet the expectations of Government, Regulators and industry. Medical laboratory services play a pivotal role in ensuring that patients receive the most pertinent treatment and care based on their accurate, traceable and reliable test results. Also, for protective equipment and products

that are critical for treatment of patients, a robust approach of assuring quality (like testing from accredited laboratory), ensures that products are safe, compliant to required norms and fit for intended use.

NABL grants accreditation in the following fields:

- Testing Laboratories – ISO/IEC 17025: 2017

- Calibration Laboratories – ISO/IEC 17025: 2017

- Medical Laboratories – ISO 15189: 2012

- Proficiency Testing Providers – ISO/IEC 17043: 2010

- Reference Material Producers – ISO 17034: 2016

NABL has established its management system in accordance with ISO/IEC 17011: 2017 and is signatory to International Laboratory Accreditation Co-operation (ILAC) and Asia Pacific Accreditation Co-operation (APAC).

The entire world is in the grip of Covid 19 and is constantly making efforts to increase the testing facilities and supply of life saving equipment & products. Many NABL accredited Medical laboratories have come forward to offer their services for testing of Covid 19 using RT PCR. As the entire nation is under lockdown, assessments have been cancelled. The officers of NABL have worked tirelessly to conduct assessments remotely with the help of experts and the services of these laboratories are being utilized to screen Covid 19 patients. More than 50 laboratories are now offering the service. Although there is tremendous pressure on the Government to increase the screening, it has relied

only on NABL accredited laboratories due to the confidence in NABL accreditation by virtue of its rigorous accreditation process and ILAC & APAC MRA signatory status.

It is well known that the hospital and laboratory personnel run the risk of getting infected due to their proximity with infected subjects. The shortage of assured quality protective gear can jeopardize the entire battle against the Covid 19. NABL has proactively put up the list of accredited laboratories for testing products like personal protective equipment, sanitizers, gloves, mask and medical devices. NABL has reached out to the industry through various platforms and disseminated information about the

tests being offered for these products by NABL accredited laboratories in various regions. This has helped the industry in speeding up supply of assured quality products to hospitals.

To further strengthen the fight against Covid 19, NABL proactively disseminated information on standards for protective supplies to its laboratories through newsletter. The laboratories can be competent by making minor changes / addition to their existing facilities and can provide testing service in this noble cause of saving precious lives. The response is heartening.

Accredited laboratories have a very crucial role to play in the current fight against Covid 19. NABL is promptly facilitating the laboratories by conducting assessments remotely, thus synergizing in the effort. To conclude, it is evident that accreditation has a very vital role in instilling the required confidence and NABL is contributing its part in nation building at every step.

Mental Health and The Covid-19 Pandemic

Taking Care of Your Emotional Health

In January 2020, the World Health Organization (WHO) declared the outbreak of a Novel Coronavirus disease, COVID-19, to be a Public Health Emergency of International Concern. Just two months later, in March 2020, WHO characterized the threat as a pandemic. As of date, the crisis has affected 180 countries, more than 2.6 million confirmed cases with nearly 2 lakh deaths.

As the pandemic continues to ravage the modern world and change the 'normal' as we know it, large unseen fallout has been the inducement of large-scale fear, anxiety and paranoia amongst the people across the world.

Across the globe, the hospitals are overburdened with the rising numbers of cases. As the cases are rising, there are certain groups of people which are more at receiving end such as older adults, care providers and people with underlying health conditions. The impact of news and media coverage of the pandemic is adding to the stress and anxiety levels in the general public.

The main psychological impact due to rising cases in the world, especially in countries where a large number of cases and deaths have been reported, is elevated rates of stress or anxiety. But as new measures and impacts are introduced – especially quarantine and its effects on many people's usual activities, routines or livelihoods – levels of loneliness, depression, harmful alcohol and drug use, and self-harm or suicidal behaviour are also expected to rise.

Also adding to the stress levels is the fact that no reliable cure has been found for the disease, and development of effective vaccines is still a long way off. According to CDC, a mass-produced effective vaccine may not be available until the second half of 2021.

Social distancing could be a reality now; with a fatality rate starting from 2% to five, the COVID-19 pandemic has brought economic activities to a halt, as many countries have adopted social distancing because the only reliable measure in arresting the progression of this pandemic. This has also given

Dr. Atul Mohan Kochhar

MD, DNB, MNAMS, FAAD
CEO, NABH

Dr. Kashipa Harit

MBBS, DHA
Deputy Director, NABH

> " The impact of news and media coverage of the pandemic is adding to the stress and anxiety levels in the general public

rise to a plethora of psychological state issues, in several sections of the society, again, the foremost common being anxiety and stress.

The causes of upset because of COVID-19 pandemic are many. Uncertainty about the longer term, lifestyle disruption because of lockdowns and reside home measures, the new paradigm of labour from home and also the lack of out-of-doors exposure is adding to the strain and fear about the disease itself.

In children, isolation and reside house is especially distressing. Absence of sunlight exposure is probably going to cause anger, rage, crying etc in babies. Adults staying reception are feeling depressed, anxious, angry and frustrated. Work from home is a replacement phenomenon and also the sudden dependence on this new regimen is unnerving and stressful. Additionally, the absence of retainer is causing stress to lots of reside home adults.

It is possible that this unparalleled disruption of lifestyle and sleep patterns is also causing undetected hormonal imbalances. However, since psychiatric and / or psychological assistance is not immediately accessible, the identical might not be addressed whether or not seemed to be a difficulty.

In this time, most hospitals have closed regular OPDs and inpatient wards because of overburdening by Covid-19 patients. Thus, for patients of chronic diseases, the disruption of routine healthcare and also the perceived threat of viral exposure at a hospital are posing a challenge.

As per CDC, stress during a communicable disease outbreak, like Covid-19, can have varied manifestations.

How to identify the common signs of distress

- Fear and worry about your own health and also the health of your loved ones
- Concern that regular treatment or community services is also disrupted because of facility closures or reductions in services and transport closure.

- Changes in sleep or eating patterns
- Difficulty sleeping or concentrating
- Worsening of chronic health problems
- Worsening of psychological state conditions
- Increased use of alcohol, tobacco, or other drugs, domestic abuse
- Feeling socially isolated, especially if they live alone or are in a very community setting that's not allowing visitors due to the outbreak.
- Guilt if loved ones help them with activities of daily living.
- Increased levels of distress also present if someone has:
  a. psychological state concerns before the outbreak, like depression.
  b. Live in lower-income households or have language barriers
  c. Experience stigma due to age, race or ethnicity, disability, or perceived likelihood of spreading COVID-19.

For Healthcare Providers

a. Fighting the battle from the frontlines the matter is compounded. Various reasons of psychological stress during this group can be:

b. Scarcity of essentials like sanitizers, PPE, masks etc

c. Overutilization and unavailability of medical equipment like ventilators and NIV machines

d. Lack of definite guidelines on treatment of infected patients

e. Discrimination against healthcare providers, incidents of eviction from rented accommodation

f. Fear of going back to family after getting to patients etc

Protector - Protect Thyself

Taking Care of Your Emotional Health

For Parents

Children and youths react, in part, on what they see from the adults around them. When parents and caregivers cater to the COVID-19 calmly and confidently, they'll provide the most effective support for his or her children. Parents are often more reassuring to others around them, especially children, if they're better prepared.

For people at higher risk for serious illness, especially senior citizens with co-morbidities like diabetes and hypertension have increased chances of stress and depression. In older adults depression is also mistaken for a traditional a part of aging also.

Ways to address stress

Take care of your body: Take deep breaths, stretch. try and eat healthy, well-balanced meals. Exercise regularly, get many sleep. Avoid alcohol and medicines.

Take breaks from watching, reading, or taking note of news stories, including social media. Hearing about the pandemic repeatedly are often upsetting.

Make time to unwind. try and do other activities you enjoy.

Connect with others. Talk with people you trust about your concerns

Take breaks: Make time to unwind and remind yourself that strong feelings will fade. Try taking in deep breaths. try and do activities you always enjoy.

Stay informed: Watch, listen to, or read the news for updates from officials. remember that there are also rumours during a crisis, especially on social media. Always check your sources and switch to reliable sources of knowledge like government authorities.

Seek help when needed: If distress impacts activities of your existence for several days or weeks, sit down with a qualified doctor

The way forward

An epidemic of psychological state challenges is also the most important fallout of a pestilence just like the present one. It's vital for all stakeholders to understand the importance of the difficulty and take appropriate measures to stem the fallout.

Solutions have to be sought at every level – individual, societal and governmental. In fact, since the pandemic has affected most of the planet, international cooperation on psychological state is the need of the hour.

As important because it is to spot solutions, it's even more important to understand that a one-size-fits-all approach won't work. We clearly have to identify the high risk groups – just like the elderly, the chronically ill and also those on the front lines – healthcare providers and enforcement agencies. Clearly identifying the high-risk groups can help prioritize efforts to deal with the challenge.

The danger is obvious and present and it's staring us within the face. If we recognize this and take early steps, the matter can mostly be contained. But if ignored, the risks it poses can jeopardize all efforts being made by scientists, healthcare providers and governments to win the fight against this invisible enemy.

NABH Digital Health Standards – Defining the Future of Healthcare Quality

Dr. Atul Mohan Kochhar

MD, DNB, MNAMS, FAAD
CEO, NABH

Novel Corona virus Disease or Covid-19 pandemic has turned the world, as we knew it, upside down. New challenges, by the dozen, appear to have sprung up overnight. But so have the opportunities – notably in healthcare delivery.

Immediately after the lockdown, anticipating the need for safe medical consultation, Board of Governors (in supersession of MCI) gifted the Nation, the basic draft rules for Telemedicine. These were subsequently notified in the Gazette by the Government of India. The Indian rural and remote population will be the ones to benefit the maximum in the long run and our health indices will improve as a result.

These important practice guidelines on the widespread use of telemedicine have, no doubt, made medical consultations on various technology platforms, possible and legal, but have left unanswered various questions regarding quality of care being delivered remotely.

The Telemedicine Act while allowing the mushrooming of many virtual consultation operators does not touch upon these vital issues of patient consent, data safety, legal indemnity and notably standards of care.

With a view to bring clarity and uniformity on all such issues, National Accreditation Board for Hospitals and Healthcare Providers (NABH) initiated and announced NABH Digital Health Standards – a first, anywhere in the world.

The NABH Digital Health Standards aims to consider all relevant aspects of the application of patient interfacing technologies across the continuum of care applicable for outpatient, inpatient, and remote patient monitoring.

The need for digital health standards has always been well recognised. In order to make good quality healthcare accessible to all, to bring about clarity concerning the rights of the patients, doctors and healthcare providers accreditation and standards are crucial not just for data privacy but also for the quality of care.

The large focus will be on the privacy and confidentiality of the personal data to ensure the safety of the healthcare records. Digital Health Standards may also consider guidelines with regards to legal obligations, interoperability and communication standards, data security, remote monitoring and mobile apps.

NABH Digital Health Standards are also likely to act as a catalyst in the faster adoption of technology as with the accreditation, the patient knows that the doctor is following the NABH accredited protocols for delivering the care. Further, these Standards are likely to help the patients and consumers to differentiate between the healthcare platforms on safety.

The Digital Health Standards will be aligned to the existing NABH standards and goals and NABH will aim to acquire ISQua accreditation for these standards.

The Drafting Committee for Digital Health Standards is headed by Chairman Prof. Rajendra Pratap Gupta, a leader in Policy and Telemedicine. The committee is fortunate to have received nominations from every stakeholder including MOHFW, NITI, BIS, CDAC amongst others.

Dr. Atul Mohan Kochhar, CEO NABH, also serves as a Member Secretary to the Digital Health Standards Committee.

NABET Activities during COVID -19 pandemic

(Webinars Conducted)

Formal Education Excellence Division (FEED Division)

Digital awareness workshops on Competency Matrix & its impact on professional development

FEED-NABET conducted digital awareness workshops on Competency Matrix & its impact on professional development. Various accredited and non-accredited schools (55) participated in the workshop.

Speakers:

- Ms. Madhu Ahluwalia , Sr. Advisor NABET
- Dr. Sheela Ragavan

FEED-NABET conducted various digital awareness workshops for administrators, schools and teachers. The workshops were designed keeping in mind the need of the school stakeholders as well the domain of FEED. Some of the screenshots are given below:
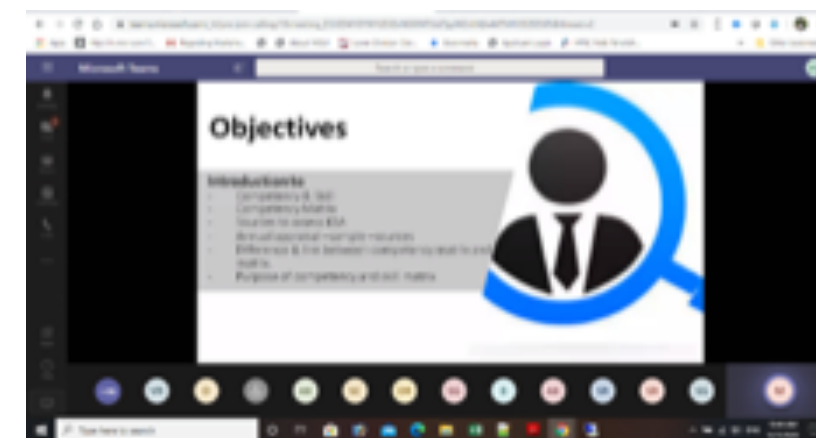
The program was designed for: School Stakeholders

Following were the takeaways of the programme:

- Understanding of Competency & Skill
- Difference & link between competency matrix and skill matrix.
- Purpose of competency and skill matrix
- Sources to assess KSA
- Development of Competency Matrix
- Linking to Annual appraisal and Staff Development

Digital awareness workshops on Preparing Schools for Pandemic (PSP)

FEED-NABET conducted Digital Awareness workshops on Preparing Schools for Pandemic (PSP) to address reopening protocol after COVID-19 lockdown and further provide safety guidelines. 85 schools participated in the workshop.
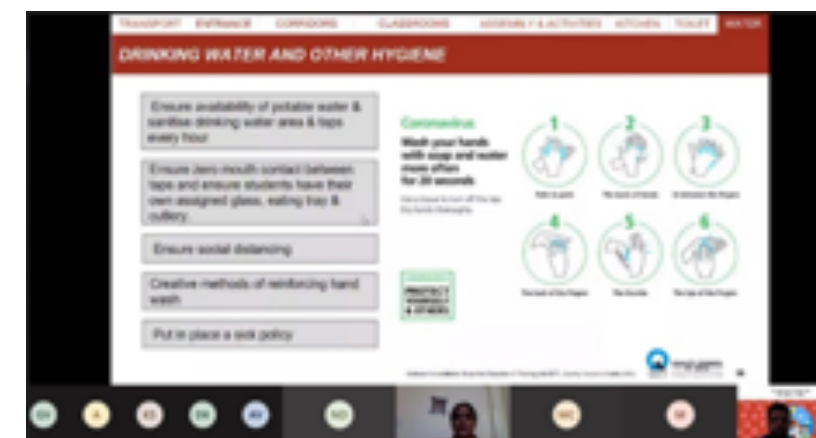
Speakers:

- Ms. Madhu Ahluwalia,
- Sr. Advisor, NABET
- Dr. Sheela Ragavan
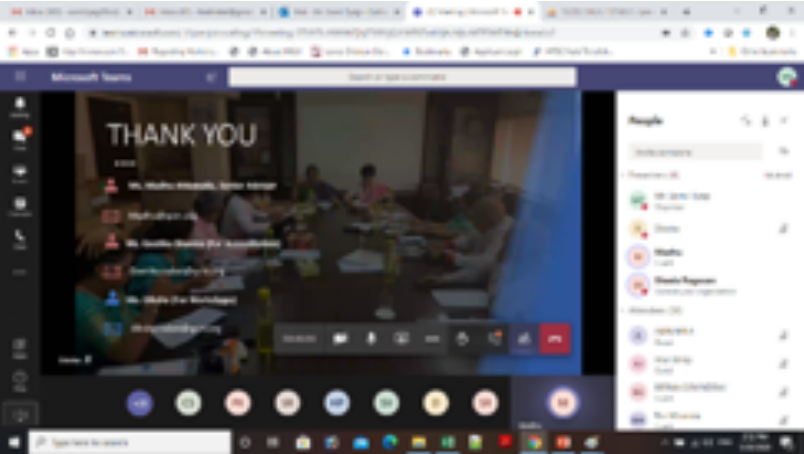- Mr. Saurabh Arora,
  Assistant Director, NABET

The program was designed for: School Stakeholders

Following were the takeaways of the programme:

- Creating broad context-based safety guidelines to reopen schools
- Understanding protection, prevention, mitigation and recovery strategies
- Instituting education continuity plans and business continuity plan for schools
- Pandemic preparedness for school: Transport, School Entrance, School Corridor, Classroom Seating, Teaching and Learning, Kitchen/ Canteen Hygiene, Toilet & Bathroom Hygiene
- Surveillance activities by medical personnel, teacher & principal.

Digital awareness workshops on Empowering Teachers: Building Capacity

FEED-NABET conducted digital awareness workshops on Empowering Teachers: Building Capacity covering different aspects of teaching and moulding classrooms into active learning spaces. 700 teachers from India and Abroad participated.

Speakers:

- Ms. Madhu Ahluwalia Sr. Advisor, NABET
- Dr. Sheela Ragavan
- Ms. Adiba Faiz, Accreditation Officer, NABET

The program was designed for: Teachers

**Following were the takeaways of the programme:**

- Attributes of an effective teacher
- Teaching Strategies
- Application of different teaching strategies in the classroom
- Understanding learners
- Classroom Management
- Setting expectations & ensuring safe evaluation for development
- Self-Reflection
- Understanding Self-Assessment tool developed by NABET

Digital awareness workshops on Accreditation Standard for Quality School Governance

FEED-NABET conducted Digital Awareness workshops on Accreditation Standard for Quality School Governance to spread awareness about the Standard. 146 participants from India and abroad joined us for the workshop.
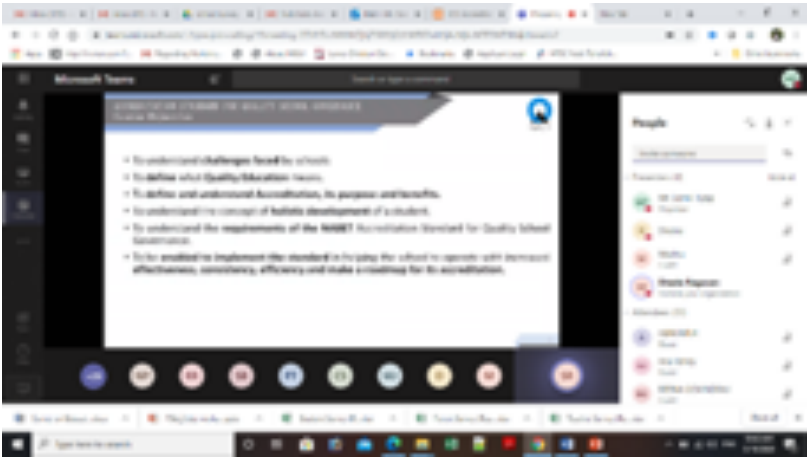
Speakers:

- Ms. Madhu Ahluwalia, Sr. Advisor, NABET
- Dr. Sheela Ragavan

The program was designed for: Management Committee Members, Education System Coordinators, Teachers / School Administrators (Core team members), Principals, Educationists / Curriculum Developers and Education Consultants who wish to implement Accreditation Standard for Quality School Governance in the schools.

Following were the takeaways of the programme:

- Understanding the requirements of accreditation standard
- Implementation of the requirements of accreditation standard
- Understanding best practices: Benchmarking and innovation
- Facilitation to prepare a Road map for accreditation

Digital Awareness workshops on Accreditation Standard for Quality School Governance (Pre-Schools)

FEED-NABET conducted digital Awareness workshops on Accreditation Standard for Quality School Governance for Pre-Schools to spread awareness about the Standard. 59 participants joined us for the workshop.

Speakers:

- Ms. Madhu Ahluwalia, Sr. Advisor, NABET
- Dr. Sheela Ragavan
- Dr. Jai Kumar
- Dr. Gaurang Tiwari, Accreditation Officer, NABET

The program was designed for: Management Committee Members, Education System Coordinators, Teachers / School Administrators (Core team members), Principals, Educationists / Curriculum Developers and Education Consultants who wish to implement Accreditation Standard for Quality School Governance in the schools.

Following were the takeaways of the programme:

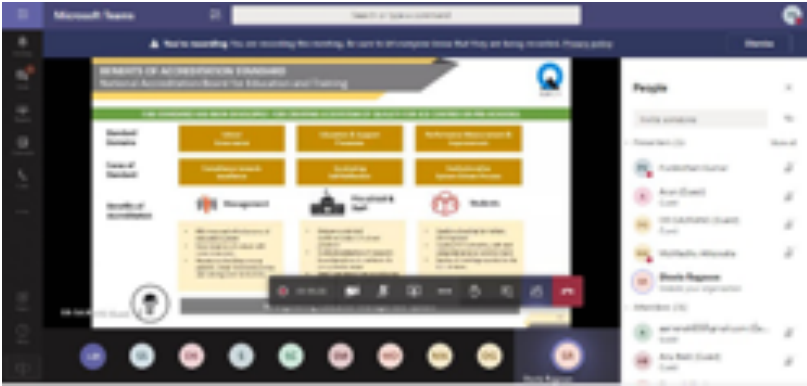- Understanding the requirements of accreditation standard
- Evolving coherent policy of quality governance
- Understanding best practices
- Implementation of the requirements of accreditation standard
- Facilitation to prepare a Road map for accreditation

Environment Division

Environmental Risk and Safety

Training and Capacity Building (TCB) Cell /NABET organised training course on 'Environmental Risk and Safety'(Webinar). The capacity building training program was designed for EIA Coordinators, Functional Area Experts, Team Members, Functional Area Associates, EIA Assessors, Regulator, Government Bodies, Industries, PSUs, Environment Consulting Organizations, Environment Consultants, Environment Training Organizations, etc.

This training course, involving the introduction of Risk assessment and explanation of 'Quantitative Risk Assessment' techniques, mitigation measures and other related to. More than 300 participants benefited from the program and no fee was charged from the participants.

Date - 14th May 2020

Duration - 11:00 am - 01:00 pm

Faculty - Sh. V. S. Bhaskar (Environmental Risk & Safety Expert); Sh. Gopal Mani, (Process Safety Expert); Sh. NV Subbarao - (QRA) Expert from M/s Chola MS
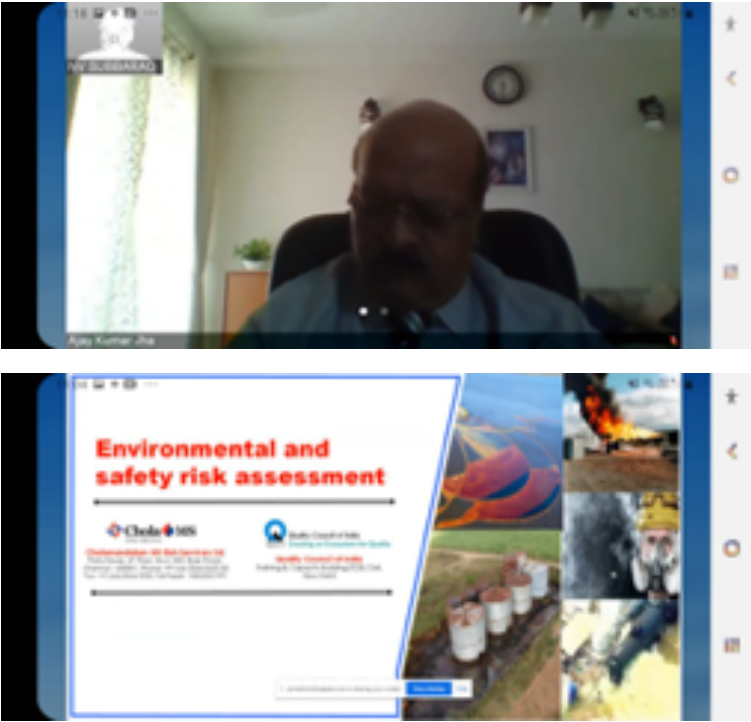
Awareness program on Groundwater Regulation and NABET Accreditation Scheme for Ground Water Consultant Organizations (GWCO)

QCI-NABET conducted a free webinar on "Webinar: Awareness Program on Groundwater Regulation and NABET Accreditation Scheme for Ground Water Consultant Organizations (GWCO)" on 2nd June 2020. We received an overwhelming response. The webinar was attended by around 250 participants.

Speakers:

- Mr. A.K. Jha, Sr. Director, NABET
- Dr. Dipankar Saha

The program was designed for: Ground Water Consultants, Hydrogeologist, GW Project Co-ordinator, and related Technical Area Experts, Assessors, Industries using water in their process, PSUs, etc.

Following are the takeaways of the programme:

- Basic understanding of groundwater
- India's ground water situation and its consequences
- Aquifers in India, National Aquifer Mapping programme
- Central Ground Water Authority, rules and regulations. Guidelines
- Hydrogeological report preparation
- Artificial recharge measures
- Different types on investigations required
- Brief about NABET's Accreditation Scheme for Ground Water Consultant Organizations

Skill Training and Service Division

NABET Conducted a webinar on **Covering the Distances from Campus Classes** to Virtual Classes on 13th May 2020 with the following objectives:

- Understanding the nuisances while adapting from campus/ classroom learning to online learning
- Discussions on roadblocks faced while going from classrooms to online learning
- Challenges that are overlooked
- Remedies/ solutions to the challenges faced

More than 250 delegates participated in the webinar

MSME Division

Webinar on 5S for MSME Sector During and Post COVID -19 on 2nd May 2020

A webinar was organized for the MSME units across India which are part of the Lean Manufacturing Scheme and was conducted by Mr. Hemendra K. Varma, Founder Director of 5S Institute. The webinar was attended by more than 40 participants.The outcome was to understand the concept of 5S. It is a workplace practice that comes to us from Japan.

5S is a structured and disciplined method of organising and running the workplace. This powerful workplace tool lies at the foundation of all major Quality improvement programmes -- be it TPM, TQM or Six Sigma

Webinar on Cost Effective Methods of Building Training Ecosystem for MSMEs on 17th May 2020

A webinar was organized for the MSME units across India which are part of the Lean Manufacturing Scheme and was conducted by Prof. Santosh Ranjan. The webinar was attended by more than 30 participants.

The outcome of the webinar was to:

- Understand the emerging trends of learning

- Explain learner's demography
- Recognise the components of learning ecosystem
- Analyse the available technology suitable to support business requirements
- Identify the digital transformation requirements of your business
- Infer the steps for building training ecosystem

Lean Division of NABET-QCI organised a 1-Day certificate program on Value Stream Mapping on 20th May

The program was designed for Quality managers, TQM & Supply Chain Professionals, MSME Executives, Consultants, Supervisors, Process owners, Engineering & Management Students.

Course Content Included:

1. What is VSM?
2. Why it is required?
3. How it relates to Lean Management / Lean Principles
4. 3M – Muda, Mura & Muri
5. Value Vs Waste
6. Basic concepts to know before starting VSM
7. Types of VSM
8. Levels of VSM
9. Different types of flow
10. VSM Symbols
11. How to Draw VSM
12. Case Study – Exercise
13. VSM Metrics
14. How to capture the Pain points & Gain Points
15. What is bottle neck and how-to de-bottleneck?
16. How to make a Road map – RIE Plan
17. Lean Tools
18. Standardization
19. A3 Report
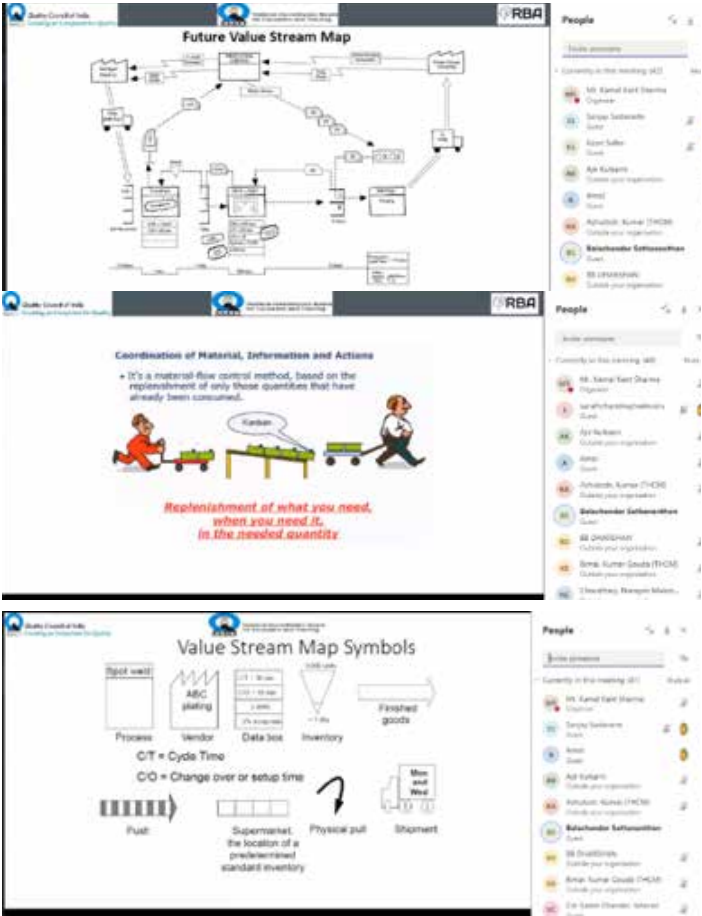
The program was attended by 39 delegates and was highly appreciated. Speaker: Mr Balachandar Sathananthan

Webinar on Digital Technologies for MSMEs on 29th May 2020

A webinar was organized for the MSME units across India and was conducted by Mr. Zubin Jagtiani of Think7.

The outcome of the webinar was to:

- To create awareness about the availability of such technologies at a practical and affordable price point
- that can be implemented especially given the uncertain future
- The challenges related to physical distancing, availability of skilled manpower, logistical challenges, etc.

Webinar on Assessment Using Drones on 5th June 2020

Objectives of the webinar:

- To provide brief introduction about assessment and inspection opportunities using drones
- Software tools for data capture and processing
- To provide information about various sustainable real-life applications
- Various payload options for drones
- Drone simulator for training and skill development
- Implementing challenges and technology barriers

Webinar on Digital Transformation for MSME in India – A competitive Advantage on 11th June 2020

Webinar Objectives:

- Create awareness amongst members about Digital Transformation & more specifically on Industry 4.0 concepts and share information about global best practices and business drivers that govern the creation of roadmap
- To provide an overview on the challenges faced during the Industry 4.0 transformation journey and ways to overcome the challenges
- To provide an overview on the technology enablers related to Digital Transformation: IoT, Edge Computing, Cognitive, AI & Cloud
- To provide an overview of the solutions available within IBM that will help in the realization of the use cases related to Digital Transformation

Webinar Outcomes:

- Gain awareness about Digital Transformation and its challenges
- Improved understanding on the technology enablers of digital transformation
- Achieve know-how on how to create a personalized roadmap towards Digital transformation
- Understand the need to stay relevant in terms of changing technological landscape
- Program was attended by 55 participants

NBQP Activities during COVID -19 pandemic

(Webinars Conducted)

What is your choice post COVID-19

Date - April 13, 2020

Objective:
To provoke new paradigms and inspiration for actions post-COVID-19

- How to balance strategy and operational excellence post-COVID-19?
- What should be the focus of the businesses to heal and get strong?
- Introduce a framework for building the muscles of driving excellence

About the Topic
How to build immunity of your business post-COVID?

- Since the Coronavirus does not affect everyone in the same way, the impact of COVID-19 on businesses will not be the same
- But we have to protect ourselves
- Follow certain norms Build immunity

Key Takeaways
Stay calm, focus on building muscles and gaining strength

- Panic won't help
- Cutting costs won't help

- Only focusing on efficiency, waste reduction and creativity will help

No. of Participants: 174

Food Processing Sector in light of COVID-19 scenario & opportunities for start-ups

Date: 25 April 2020

Objectives:
Understanding the impact of COVID-19 pandemic on the food sector

- Exploring the challenges posed by the pandemic and how the industries in the food sector can overcome them
- Learning about the opportunities for start-ups in the food sector

About the Topic
Food processing industry being a sunrise sector and identified as a priority sector by the government, has also been impacted by the COVID-19 pandemic. However, being very dynamic and diverse, the food processing sector offers several opportunities. The webinar highlighted the implications of COVID-19 pandemic on food sector and how the challenges could be converted into opportunities.

Key Takeaways:

- Building resilience during the pandemic
- Strategies for overcoming challenges in the food sector in the backdrop of COVID-19
- Insights on opportunities in the food sector

No. of Participants: 474

Appropriate Communication in Medical Healthcare

Date : 27th April 2020

Objectives:
Importance of effective communication in a Healthcare setting

- Reasons for communication failures
- Evidence-based strategies at an individual, team and organizational level that could be adopted to improve communication
- Managing difficult situations such as breaking the bad news, handling angry patient or caregivers

About the Topic:

Communication in a healthcare setting is one of the most important tools we have for providing efficient patient care and improving patient satisfaction. Furthermore, in dealing with current COVID-19 pandemic it is crucial for not just medical professionals but everyone attending a patient to be sensitive to the communication needs of patients and their caregivers.

Key Takeaways:

- Understand the role of communication in the healthcare setting, especially patient care and safety
- Recognize possible barriers to effective communication at a personal and organizational level
- Develop a few essential verbal and non-verbal communication skills
- Utilize specific strategies for communication during stressful situations

No. of Participants: 114

Opportunities and Challenges to integrate MSME with Industry 4.0

Date: 29th April 2020

Objectives:

- Explore the availability of different challenges and opportunities for the MSME to integrate and upgrade their manufacturing process/systems with Industry 4.0
- Create an awareness about the various initiatives, schemes and National policy by Ministry of Micro Small and Medium Enterprises, Government of India towards the implementation of Industry 4.0
- Showcase the national projects of importance implemented by Government of India for Industry 4.0

About the Topic:

India as a Nation has people with diversified expert skillsets, availability of varied and huge natural resources, and ample opportunities, depending on the geographical region, socio-economic profile and strong business environment where SMEs and MSEs contribute enormously for the growth of the Nation. India as a country has huge market potential for Industry 4.0 and can contribute enormously for the Nation's economy. The program gives a blueprint and draws roadmap about the challenges and opportunities to integrate the MSME with Industry 4.0.

Key Takeaways:

- Strategize the technologies of Industry 4.0 according to customer needs and requirements
- Various technologies of Industry 4.0 that are available in India and implemented by MSME
- Opportunities of Digitalization to transform the manufacturing system of MSME to Industry 4.0
- Upskilling and reskilling required to meet the demands of Industry 4.0 in MSMEs

No. of Participants: 322

Preparing for a new normal (Restarting the operations and businesses after COVID – 19)

Date: 1 May 2020

Objectives:

- A broad guideline on resuming operations
- An insight learning for managing operations in the current crisis situation
- How to ensure health and safety at workplace and at home?
- Looking Ahead & safeguarding business continuity

About the Topic:

How the industries will manage through these turbulent times?

Post COVID-19, we will witness a new normal and change will be inevitable. This program will have presented:

The MSME perspective from Indian Industries Association

- Specific issues and challenges faced by MSMEs while re - starting
- Pitfalls to be avoided
- A broad guideline on resuming operations
- Role of Govt. and other stakeholders

An insight into Toyota's learning for managing operations in the current crisis situation

- What are the first few essential steps for re - starting the operations?
- What will be the roles and responsibility of the managers?
- What are the possible barriers and how to overcome them?
- How to ensure health and safety at workplace and at home?
- Looking Ahead & safeguarding business continuity

Key Takeaways:

- An ability to develop a step-by-step plan of action for restarting the operations
- A monitoring system for health and safety of the employees at the workplace
- A plan for how to kick off and sustain the plan

No. of Participants:560

Enabling peak performance for Chemical industry - leveraging digital solutions

Date: 7 May 2020

About the Program :

When it comes to production of chemicals, challenges are many!

Lower lifecycle costs of plants and processes are key for improving competitiveness of Chemical industry. Only highly available, reliable, and comprehensively optimized plants are capable of achieving maximum yields, thereby contributing to the success of a business. Optimal plant performance, continuous transparency, tailored quality, and short development & set-up times are of utmost importance for the production of fine & specialty chemical products. Also, Health, Safety & Environment (HSE) regulations must be strictly adhered to in order to assure process and plant safety throughout the entire life cycle.

Key Takeaways:

- How automation solutions can be flexibly applied to suit the production methods, plant size etc. for plant & process automation, process safety thus enabling availability, high performance and an efficient batch production (in rapidly changing market conditions)
- How to gain a competitive advantage over a long term

No. of Participants:124

Digital solutions to handle Regulatory and Quality challenges in Pharma industry

Date: 15th May 2020

About the Program :

The quality in Pharmaceutical manufacturing has been an important topic since its inception. The ultimate goal for every Quality team in pharma company is to have zero regulatory observations during audit. In recent years, regulatory authorities like FDA and CDSCO have increasingly observed CGMP violations involving data integrity during inspections that has led to numerous regulatory actions. Integrating all information of QMS (Quality Management System) to a larger ecosystem following data integrity & part 11 compliance is today's need.

Key Takeaways:

- Paint points/challenges of Quality in Pharmaceutical Manufacturing
- Advance digital solutions to address the Quality Assurance and Quality Control challenges in Pharma Industry

No. of Participants:127

Insight into future of MSMEs - QMS approach to Next normal

Date: 21st May 2020

Objectives:

- To explore the journey to next normal in this COVID- 19 scenario
- To identify the risks and challenges ahead
- To find out ways to mitigate Risks
- To highlight the opportunities for improvement

About the Program:

In the present COVID-19 scenario, this program aims to provide to the entrepreneur an insight into the future of MSMEs using QMS approach towards the journey to Next Normal. Identify the risk and challenges way ahead and find out ways to Mitigate the risks. Helps in evolving a practical approach in finding practical solutions

Key Takeaways:

- What Next? - Quickly reaching a consensus on the "new normal" production rates
- Recovering from the Economic Shock – Defining an action plan for how to recover from the economic shock from its status quo to the "new normal" level
- Practical steps - using QMS as a tool
- Once this picture is clear, government support may need to be called upon to safeguard the short-term functioning of the industry and help manage the transition to the "new normal" for this strategically important sector

No. of Participants:117

Ayurveda: New Harbinger of Hope in present Health Crisis

Date: 22nd May 2020

About the Program:

Traditional healthcare systems are becoming important considering the safety, potential efficacy and ease of availability thereby promoting a healthy lifestyle. Find out how Ayurvedic approach lays emphasis on promotion and protection of health and encourages healthier lifestyles and immunity enhancement in order to minimize the risk of illness and infection thereby promoting good health at all levels - mental, physical & emotional

Key Takeaways:

- How Ayurveda interventions are relevant in addressing the current challenges and restoring health
- The Integrative model of Care it addresses and benefits it offers

- Potential of traditional healing system in handling the crisis situation and engaging the community in creating a more positive health environment
- Insight on the range of measures under Ayurveda to help citizens amid the Covid-19 crisis

No. of Participants:267

Adopting digital safety in Social distancing times

Date: 3rd June 2020

About the Program:

Business operations - and lives - have changed drastically by the COVID-19 outbreak. There has been a sudden shift to the remote working which has become a necessity considering the current crisis situation. With our homes becoming our offices, we are challenged by the new WFH order and rising cybercrime threats, particularly where businesses may not have a work from home policy in place. This program will provide you an insight on new security threats that are surfacing and how we need to safeguard ourselves and company data in the WFH scenario. It will provide useful insights for business owners to develop a robust WFH policy and revamp its cyber security policy framework.

Key Takeaways

- It will educate all participants on best practices required to safeguard themselves from rising cybercrimes and adopt digital safety

- Explain the common mistakes netizens make online and how to avoid those risks
- Do's and Don'ts of social media - best practices to avoid legal tangles
- The existing legal framework in India applicable to cyberspace
- Available legal recourse in case an incident occurs
- Issues such as identity theft, man in the middle attack, phishing, bullying, fake news, ransomware attacks etc
- Important judgements on issues such as Privacy protection, freedom of speech amongst other issues
- Real life case studies handled by the speaker as a cyber lawyer & Expert (while maintaining confidentiality)

No. of Participants:161

Financing options for MSMEs and economic revival during COVID – 19 crisis

Date: 8th June 2020

Objectives:

- To bring awareness on the recent stimulus package announced by the Government for economic revival, with focus on the MSMEs
- To highlight the financing options for the MSMEs in the backdrop of COVID-19 crisis

About the Topic:

COVID-19 pandemic has affected the economies badly. Due to the lockdown, businesses of all sizes and sectors have been impacted. Amongst these, the MSMEs are hit hardest. Being, the backbone of the economy, it is important that the MSMEs are revived. Understanding this need, the Government of India has recently announced a stimulus package of Rs. 20 lakh crores for the economy including that for MSMEs, which will play an important role in the revival of the economy.

This program highlights the aspects of the stimulus package and the financing options that MSMEs can avail.

Key Takeaways:

- Understanding the financial challenges and opportunities for MSMEs
- Brief insights about the stimulus package announced by the Govt
- Learning about the financing options that the MSMEs can avail

No. of Participants:194

ACCREDITATION Supporting during COVID-19

COVID-19 pandemic has affected the economy, public health sector and culture to a great extent. The global crisis situation has caused unprecedented levels of uncertainty for businesses, consumers, regulators and governments. Accreditation of Conformity Assessment services and their global recognition are particularly important in the present scenario.

Accreditation operates in the public interest across all market sectors. It provides an attestation that accredited bodies offering testing, calibration, certification, inspection and verification services have the technical competence and impartiality to check the conformity of products and services with the relevant standards and regulations.

As part of a collective response to combat COVID-19, NABCB- National Accreditation Body in India has supported consumers, regulators, government, businesses through different schemes which it operates under certification and inspection programme. Advantages of few schemes is highlighted below:

Improving Food Safety during Covid-19

Food satisfies one of the most basic needs for a human being's survival; and if done right, a human being can not just survive, but thrive on good food. It ensures nutrition for proper functioning of the body as well as helps build strength and immunity to ward off extraneous attacks by harmful agents.

In these times of Covid-19, the masses have become increasingly conscious about the food they consume. The requirements for satisfying a customer has now moved beyond satisfying hunger and mere taste buds. Now, there is a growing concern over the standard of quality, safety and hygiene of the food material and one can expect increased scrutiny both from the end-

consumer as well as the customers along the supply chain, including regulatory bodies. It has thus, become critical to stand out from the crowd and highlight the features that make your product safe and hygienic.

Food safety describes the handling, preparation, and storage of food in ways that prevent food-borne illness. Food safety is a right of all individuals of the country. Food safety management standards help organizations identify and control food safety hazards, at the same time as working together with other ISO management standards, such as ISO 9001.

Applicable to all types of producer, ISO 22000 provides a layer of reassurance within the global food supply chain, helping products cross borders and bringing people food that they can trust. NABCB grants accreditation to certification Bodies as per ISO/ IEC 17021-1-2015 and ISO/TS 22003 for Food Safety Management System to certification bodies to carry out certification in accordance with ISO 22000. NABCB has granted accreditation to 18 Certification Bodies in FSMS till date.

Organisations certified for under FSMS scheme by accredited certification bodies help in building the trust for government, regulators, and consumers. Further, NABCB accredited certification body helps to ensure the acceptability of certificates at global level facilitating trade of food products. This is because NABCB is signatory to the International Accreditation Forum (IAF) Multilateral Recognition Arrangement (MLA) thus facilitates cross-border movement of food goods and services and reduces the time needed to perform additional Conformity Assessment.

In our country an important landmark in this regard has been the Food Safety

Standard (FSS) Act, 2006. It ensured a consolidation of all the laws prevalent in India with regard to food and is credited for the establishment of Food Safety and Standard Authority of India (FSSAI), under Ministry of Health & Family Welfare (MoHFW) which sought to establish standards and regulate the storage, distribution, processing and transportation (export & import) to ensure Safe delivery of food to end-consumers. **It is to be noted that as per Food Safety and Standards Act, 2006, all food business operators must have an FSMS (Food Safety Management System) plan.** A plan is required even if the food business has a food safety certification from HACCP, ISO or FSSC. FSSAI has recently come up with a guidance note on "Food Hygiene and Safety Guidelines for Food Businesses during Covid-19 pandemic."

The document is primarily intended for all types of food businesses including food service, transportation and retail operations. **The guidelines issued by FSSAI for COVID-19 requires the food businesses to ensure that high hygiene standards in line with established Food Safety Management System (FSMS) and ensure its implementation.** It can thus be noted that implementation and maintenance of a robust FSMS helps an organization to easily and steadfastly orient itself to adopt the guidelines issued by FSSAI for food hygiene and safety during COVID-19. Further, FSSAI relies on NABCB accreditation. FSSAI has produced third-party auditing regulations which prescribe NABCB accreditation for food safety audit agencies. NABCB grants accreditation to certification Bodies as per ISO/ IEC 17021-1-2015 and ISO/TS 22003 for Food Safety Management System to Certification Bodies to carry out certification in accordance with ISO 22000.

The World Health Organization (WHO) has also issued an interim guidance document 'Covid-19 and food safety guidance for food businesses.' In this document WHO has greatly endorsed the need for a sturdy FSMS and has ensured its sustainability in the unpredictable and pandemic-laden current and future times. It has provided reassurance to organizations practicing good food safety in these difficult times for businesses, especially those looking to maintain the best standards for their customers and in the process carve out a market presence for themselves for being 'food safety centric.'

Thus, FSMS or ISO 22000 complements, and to a large extent, helps to meet the regulatory requirements and the end-consumer requirement with regards to food safety. It is a voluntary standard but is viewed as an essential point of compliance when evaluating any entity along the food supply chain for it makes good business sense to have a structured approach to inculcating food safety in all business processes.

Protection of IT system while working remotely

In the current world of pandemic wherein all activities are driven through online platform, keeping information secure and IT systems and networks operating effectively during a disruption can be a challenge. When remote working is often required to enable organization to operate at acceptable service levels, the risk to information security can increase and that's where standards may help by offering best practice and practical guidance for businesses and individuals to build their resilience. ISO/IEC 27001 "Information technology — Security techniques — I

nformation security management systems — Requirements Information Security Management" popularly known as ISMS can help protect organization and reduce risk by putting in a robust and systematic approach for managing information. ISO/IEC 27701 standard provides an overarching framework on Privacy Information Management Systems (PIMS), to help companies fine-tune their data privacy practices and keep pace with the changing privacy threat and regulatory landscape through a rigorous risk and compliance driven approach, while being focused on measurement and continuous improvement. This is the world's first International Standard on PIMS and incorporates a mapping against the requirements of EU GDPR. Organization interested in this ISMS scheme must reach out to accredited certification bodies for certification to ensure global acceptance. NABCB has granted accreditation to seven certification bodes in ISO/IEC 27001 and one certification body in ISO/ IEC 27701. To check the authenticity that certification body has issued an accredited certificate, customers are encouraged to look at the IAF MLA Mark, NABCB symbol along with the symbol of the Certification Body.

Business Continuity Management Systems (BCMS): Way to trouble-free recovery process to sustain business operations

Business Continuity Planning / Management to sustain business operations has become a challenge during the current COVID-19 world. The organizations must have the ability to mitigate damage and continue operating. A solution to the same is ISO 22301; an international standard

for Business Continuity Management System (BCMS). This standard is designed to help organizations prevent, prepare for, respond to and recover from unexpected and disruptive incidents in reasonably short period of time. To do so, the standard provides a practical framework for setting up and managing an effective Business Continuity Management System. ISO 22301 aims to safeguard an organization from a wide range of potential threats. Thus, there is a need to understand and prioritize the threats to your business with the international standard for business continuity. Business continuity includes three key elements like resilience, recovery and contingency.

The organizations willing to implement this standard must obtain certification from a third-party so as demonstrate to regulators, customers, prospective customers and other interested parties that they are adhering to good practice in BCMS. NABCB has recently started this scheme of BSMS and till date has one applicant. Organizations looking for information can visit NABCB -http://nabcb.qci.org.in/accreditation/.

NABCB adapts to Virtual World to take path for forward during COVID-19 crisis

The current day emergency due to COVID-19 pandemic has prompted limitations on business and travel. It was very important to quickly adapt to the new "normal" to maintain business continuity. Perceiving that many accredited Conformity Assessment Bodies (certification, inspection and validation and verification bodies) were keen to maintain accreditation and include more scope to keep up with the demand generated by

COVID-19 situation. NABCB quickly worked on strategy to respond to the crisis and worked to formulate a policy on remote assessment. NABCB rolled out its policy on Remote Assessment in last week of March 2020 in line with international requirements of International Accreditation Forum (IAF) mandatory requirements laid down in documents IAF ID 3, ID 04 and ID 12. The policy looked at the option to conduct assessment activities remotely. It was necessary that the requirements were understood by all stakeholders, to ensure the same, NABCB initially conducted a webinar for assessors to discuss and clarify the method of remote assessment. NABCB secretariat discussed the requirements at length with Conformity Assessment Bodies and sought consent. After detailed discussion with assessors and relevant stakeholder the necessary modifications were made in the policy and a detailed checklist was prepared for smooth conduction of the assessments. Prior to planning of assessment trail runs were conducted with Conformity Assessment Bodies to ensure timeliness of assessment. The platform's IT security feature was ensured by the CAB. NABCB has effectively conducted 32 remote assessment including surveillance assessment, re-accreditation assessment and assessment related to scope extension amounting to more than100 man-days since April 2020.

NABCB has agreed for scope extension in fast track mode for granting scope to accredited inspection bodies in area of Personal Protective Equipment (PPE). Using accredited inspection services will provide assurance in product to customers.

To summarize, NABCB has supported government, regulators, industry, consumers in assuring quality of processes, services and products in COVID-19 crisis.

Coal Project

QCI in response to limit the risk of exposure of manpower to COVID-19 temporarily suspended its sampling activity on 24thMarch 2020. After 2-3 days QCI initiated for the necessary steps and required documentation to resume the sampling activity considering coal as an essential commodity. After getting all the approvals and precautionary guidelines QCI started the foresaid activity in:

- South Eastern Coalfields Limited (SECL)
- Mahanadi Coalfields Limited (MCL)
- Northern Coalfields Limited (NCL)
- Central Coalfields Limited (CCL)
- Eastern Coalfields Limited (ECL)
- Bharat Coking Coal Limited (BCCL)
- North Eastern Coalfields (NEC)

Western Coalfields Limited (WCL) was left behind as it lies in Maharashtra which is the worst affected state from this pandemic. So far, QCI has sampled approx. 83 lakhs metric tonne of coal from April'20 to till date and more than 70% results of collected samples have been communicated considering transportation of samples to the testing laboratory as a challenge in nationwide lockdown situation.

Unloading end Projects

The same lockdown situation leads to breakdown the sampling activity at unloading and mine end on 24thMarch 2020 but as the terms and conditions in the lockdown has been relaxed by the Ministry of Home Affairs, QCI has started the operations at: -

- Lanco Anpara Power Limited at Sonabhadra District, Uttar Pradesh, resumed sampling activity from 4th May, 2020 and 5 lakhs metric tonne of coal has been sampled till date
- Orissa Corporation Power Limited at Hemgir, Orissa, resumed the sampling activity from 5th May, 2020 and around 2 lakhs metric tonne of coal has been sampled till date
- Hindalco Industries Limited (Mahan Aluminium) at Dhaudar, Madhya Pradesh, QCI is actively performing operations at plant end after recommencement of work from 4th June, 2020

Fisheries Project

Bearing in mind to provide the unadulterated food in Goa state, QCI team has analysed the COVID-19 situation and identified the risk factor and working conditions to start the testing of formaldehyde in fish and its related products.

Based on the discussions regarding ground situation, analysing all the important precautionary check points QCI resumed the operations on 21st and 26th April, 2020 at Pollem and Patradevi check post respectively. So far, around 600 trucks have been tested negative in pandemic situation.

Creating an Ecosystem of Quality in Public Procurement

Government e-Marketplace (GeM) under the Ministry of Commerce and Industry provides an end-to-end online Marketplace for Central and State Government Ministries / Departments for procurement of common use goods & services in a transparent and efficient manner.

For withstanding the nation in providing the ease and fast procurement of quality medical essentials at the onset of COVID-19 pandemic, the QCI team as a Knowledge and Quality Partner (to GeM), is helping in maintaining the quality of products and services offered by vendors on the portal.

Under the product category, QCI has coordinated and executed online/offline collaboration with accredited Certification/ Regulatory bodies to ensure quality in procurement and is also in the process of onboarding of Inspection service as an online service module on GeM with the help of NABCB accredited IBs.

Under the service category, Quality Check of Service Providers is a very important task and is done by validating the necessary certifications/statutory compliances and project experience uploaded by service providers. From Jan to May 2020 more than 20,000 service providers have been validated, 70% being approved while 30% were rejected on the basis of wrong/expired/incomplete compliance certificates and/or wrong/incomplete project experience.

Furthermore, QCI (PMU) is validating the vendors registering under exemption category of vendor assessment (i.e. NSIC, DIC, BIS, ZED, PSU & UCC). From Jan to May 2020, it has exempted 68% vendors from 5000 on priority, within TAT of 6 hours.

QCI has been working closely with all the stakeholders and is participating with GeM in the various workshops organized for sellers & service providers to disseminate the information about the seamless and lean manner adopted in enhancing quality measures.

Dr. Ramanand N. Shukla

Director - ZED, QCI

Getting back to the new normal through
Workplace Assessment for Safety & Hygiene (WASH)

COVID-19 pandemic has brought the world to a standstill and India is no exception. This pandemic has not only taken several thousand lives globally but has also impacted the global economy and the livelihood of people.

For India alone, some reports have estimated the cost of lockdown at $ 4.5 billion a day. The lockdown did help in containing the spread and casualty to a great extent; however, as it can't remain forever, the Government recently announced its plan for relaxing the lockdown in a phased manner.

While the country is trying to adapt to the new normal, there will be clearly a much larger focus on health, safety and hygiene, not only in the personal lives of the citizens but also for the organisations. As the uncertainty with respect to COVID-19 is still looming large and the positives of the lockdown cannot be afforded to be negated, there is a need to bring specific standards/

protocols for the organizations, institutions etc. to ensure that they are able to re-open and operate safely with little or no instances of recurrence. This requires following imperative priorities for the organizations/institutions:

1. Ensuring safe operations and workplace for safeguarding health and safety of employees, customers and public

2. Complying with relevant COVID-19 related requirements from health and other regulatory authorities

3. Ensuring business continuity in operations to serve customers and protect businesses

Taking cognizance of the pressing need to ensure continued safe operations of the work after the relaxation in the lockdown and the need to safeguard health and safety of the employees, customers and other stakeholders with respect to COVID-19, QCI has developed and launched a harmonised WASH Standard (Workplace Assessment for Safety & Hygiene) with the assistance of its accredited bodies.
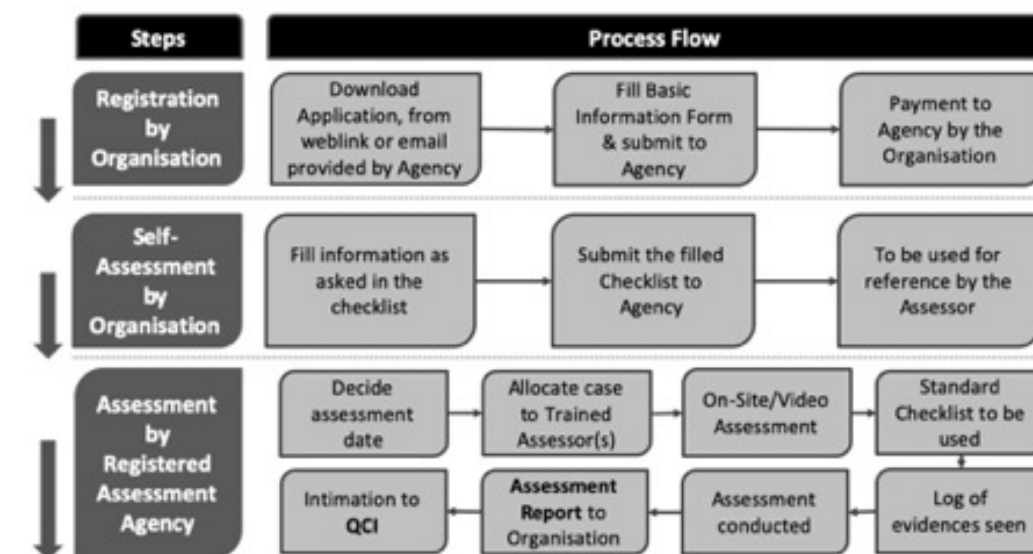
The WASH standard is a holistic standard with 15 key elements and their respective requirements that aims to assist an organisation to assess its preparedness to continue operations safely while mitigating COVID-19 risks.

The 15 Key Elements of the WASH Standard

Management Commitment	Hygiene And Safety	Public Interaction	Business Continuity	Risk Management
Regulatory and other Requirements	Preventive Measures	Documentation Requirements	Ventilation	Communication
Waste Management	Training And Awareness	Transport Management	Supply Chain	Control of Discriminatory Practices

The Process Flow of Workplace Assessment for Safety & Hygiene (WASH) Scheme

The process to apply for the assessment has been simplified by standardizing the steps of the process, the documents and reports for the benefit of organisations interested in getting the assessment done. The process flow of the WASH assessment is as under:

More information on WASH standard and the process can be obtained by visiting https://www.qcin.org/WashScheme.php

Key Features of WASH

Holistic

The WASH standard is a holistic standard with 15 key elements that can be used to assess any organization (manufacturing, service, healthcare, hospitality, IT/ITeS, Trade etc.) for its preparedness to mitigate COVID-19 risks.

Transparency

The assessment process involves a step of self-assessment which is based on the same checklist that is used during the assessment, making the entire process transparent.

Flexibility

The assessment can be conducted virtually (through video) or on-site. This provides the organizations a flexibility to choose an option that suits them best.

Third-party assessments

The assessments are conducted by registered assessment agencies accredited by NABCB, a constituent board of QCI, through trained assessors meeting the competence criteria for WASH assessments.

Objective Assessment Report

The outcome of the assessment is an objective assessment report that provides a feedback on the adequacy of their systems & processes to operate safely while mitigating the COVID-19 risks.

Activities around COVID-19

The ZED Division is involved in the following projects around COVID-19 pandemic

WASH (Workplace Assessment for Safety & Hygiene) Scheme

System for Assessment, Awareness and Training in Hospitality Industry (SAATHI) Scheme on the guidelines of MoT

WASH (Workplace Assessment for Safety & Hygiene) Scheme.

It is a harmonized model with 15 key elements applicable to all workplaces, being it manufacturing or service or any other sector. This scheme is being implemented through accredited Certification/Inspection Bodies of QCI. The cost is extremely nominal at Rs. 10,500/- per man-day (max 2 man-days).

Objectives of the scheme are:

- Assess organisations on their preparedness to restart and run operations safely against COVID-19

- Ensure safety & health of employees/customers and identify vulnerable areas within the organization

- Check compliance of all new COVID-19 related government requirements

- Ensure business continuity in operations to serve customers and protect businesses

Outcome of WASH assessment:

- A holistic assessment report on the preparedness of an organization's

system and processes related to Safety & Hygiene with regards to COVID-19 risk in order to identify gaps

- Helping organisations to take appropriate actions to ensure safe workplace and operations

Current Status:

- 34 Assessment Agencies registered

- 66 Master Trainers and more than 500 Assessors trained

- Outreach in progress to States, CPSUs/PSUs, OEMs & Industry Associations

- A series of Training webinars are scheduled for Industry as well as professionals, 3 batches are full

- DPIIT has asked for an assessment on the WASH standard

System for Assessment, Awareness and Training in Hospitality Industry (SAATHI) Scheme on the guidelines of MoT

Mechanism of assessment of hotels and restaurants is being created so as to assist them in their reopening post lifting of lockdown, against the COVID-19 guidelines based on the

guidelines issued by the Ministry of Tourism and MoHFW. This is currently under proposal stage. MoU is expected to be signed soon. Briefly the following activities are envisaged:

- Developing a mechanism of dissemination of guidelines as issued by Ministry of Tourism in a manner that the Hotel/accommodation/Restaurants at all levels understand them well and adopt them in letter and spirit.

- Development of a self-assessment / self-certification framework & protocol based on the approved guidelines. This will help the hotels and restaurants to carry out a quick self-assessment to identify gaps, if any, and make improvements.

- Development of the content for training and conducting free training webinars. This will help the hotels and restaurants to understand the guidelines, and its relevance to COVID-19 risks.

- Development of a mechanism to conduct physical assessments. This would be done by developing a checklist based on the approved guidelines so as to conduct assessment as and when self-assessment/self-certification is received by the Ministry and the Hotel/restaurant has attended the training webinar.

ACCREDITATION STANDARD FOR QUALITY SCHOOL GOVERNANCE

National Accreditation Board for Education & Training (NABET) is one of the statutory board of Quality Council of India mandated for accreditation in the field of Education, Training & Services. Four distinct verticals have been formulated to provide focussed strategic direction to the activities of the Board. One of the verticals of NABET, **Formal Education Excellence Division (FEED)**, fosters quality in school education through spreading awareness, conducting assessments and accreditation. FEED - NABET accredits schools on **Accreditation Standard for Quality School Governance (ASQG)** in the country with a view to provide framework for the effective management & delivery of holistic education program aimed at overall development of school. The standard has three interwoven domains.

School Governance

Education & Support Processes

Performance Measurement & Improvement

BENEFITS OF ACCREDITATION

OVERALL
→ Standardisation of schools practices in alignment with National & International Benchmarks
→ Better collaboration between stakeholders leading to improved effectiveness
→ A sound basis for school improvement, strategic planning, restructuring, and staff development.
→ A way to manage change through regular assessment, planning, implementation, and reassessment

STUDENTS & PARENTS
→ Improved quality of education
→ Holistic education helping students for personality development
→ Organized and transparent school system for better day to day experience for students and parents
→ Feedback system to get student and parent's issues addressed

SCHOOLS
→ Capability development for delivering quality education
→ Quality improvement in existing school system/ process
→ System/ process driven activities
→ International standards applied for local and national school needs

MANAGEMENT
→ Benchmarking school against best in education field
→ Establishing centre of excellence and continuous improvement
→ Regular feedback on performance through internal and external assessments

FEED-NABET has accredited and assessed 5,500+ schools till now in India and abroad.

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The role of QCI's Voluntary Schemes in strengthening AYUSH during COVID-19 pandemic

Echoing the Hon'ble Prime Minister of India's clarion call to "Go Vocal for Local" and become "aatmanirbhar", high quality is set to become a priority in a market-driven economy endeavoring to achieve self-sufficiency and create a culture of quality-consciousness. In a post-COVID world, we are bound to see a higher demand for certified products, processes, and personnel, based on international standards and best practices.

The Banaras Hindu University (BHU), Varanasi, formed a nine-member working group to oversee the implementation of the nine-point 'Mahamana Declarations' by examining the role of indigenous alternative medicine systems in India in combating COVID-19.

The QCI has been at the forefront in the finalization of these declarations and Action Plan on the role of AYUSH and Covid-19 Pandemic, with Dr. Ravi P Singh, SG, QCI, being one of the key resource persons for the same. The declarations focused on incorporating the best of scientific and technological advancements to empower citizens globally to make an informed choice based on evidence of outcomes of AYUSH as an adjunct therapy alongside modern medicine in the fight against COVID-19.

The action plan proposed several activities across the nine Working Groups and Special Interest Groups (WG/SIG) which highlighted the significance of Voluntary Schemes of QCI as a tool to create a quality ecosystem within the AYUSH sector. To bring it at par with globally accepted standards, it is crucial to ensure that AYUSH products and services are "safe with uniform standards and are of high quality as per global best practices."

The PAD Division of QCI takes pride in having undertaken schemes that focused on strengthening the quality in government and industry alike. The plan also highlighted the key activities undertaken by QCI. As observed in the Indian context, the quality protocols for AYUSH medicines are validated by third-party systems which are designed by QCI through its AYUSH Mark scheme. The scheme aims to reinforce the concept of quality in the AYUSH medicine through in-process checks, coupled with market sampling. It focuses on mainstreaming the Indian System of Medicine and integrating the AYUSH infrastructure into the healthcare system. The approach of QCI was acknowledged during the deliberations and was considered as an action point to be addressed by WG/SIG 03. This activity focused on amending the standard-setting exercise for AYUSH medicines, emphasizing that the scheme should be made popular by building awareness about the benefits of the MARK amongst the consumers and the manufacturers.

The changing role of AYUSH practitioners has been taken up as a crucial key point in the declaration. QCI and FRLHT's Voluntary Certification Scheme for Traditional Community Healthcare Providers (VCS – TCHP) forms a part of WG/SIG 04, given its potential to formulate effective and efficient strategies to provide low-cost primary healthcare

to every villager, and moving a step forward towards achieving Universal Health Coverage in the country. In the wake of the current healthcare crisis, the VCS-TCHP holds the potential to aid in laying down strong risk management strategies within India's health policy landscape to deal with epidemics.

A need to conserve our biodiversity from destructive harvesting was felt by the stakeholders. It was also felt that a standardised protocol for the collection and cultivation of medicinal plants to maintain a balance in nature should be in place. The Voluntary Certification Scheme for Medicinal Plant Produce (VCSMPP) of QCI,

supported by the National Medicinal Plant Board (NMPB), GoI, was designed to eliminate quality issues in medicinal plants by defining the Good Agricultural Practices and Good Field Collection Practices of commercially important medicinal plants. We are all aware that these medicinal plants are the raw material for Ayurveda Siddha Unani formulations. The entire idea of a clean raw material (devoid of adulteration) is to create effective formulations that will restore the confidence of the common man in our traditional healthcare systems. This concept was appreciated and was included as a part of the WG/SIG 05 of the action plan.

Being a key player in the quality infrastructure of India, QCI is committed to sensitizing citizens across the world about the traditional medicine system of India, ranging from medicinal plants to good manufacturing practices for AYUSH in partnership with other stakeholders.

QCI's intervention in the Mahamana Action Plan will not only help internalize the schemes at the grassroots but also provide last-mile access to high-quality AYUSH products and services.
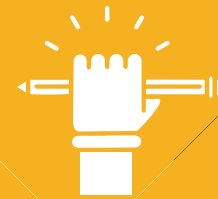
Fullfils the Quest for Learning

Quality Council of India has launched an e-learning certification platform in line with the Government of India's Digital India campaign to bridge the existing skill gap. eQuest is equipped with a unique model of blended learning with courses designed and prepared by industry recognised experts.

eQuest has several courses in the domains of Quality, Technology, Management, Environment, Healthcare, Agriculture, Laboratories and Food sector covering topics like Total Quality Management (TQM), Total Productive Maintenance (TPM), Good Agricultural Practices (GAP), Blockchain, Project Management etc.

The Ecosystem of eQuest

Students and Working Professionals

To strengthen skill and knowledge in line with emerging requirements to enhance employability

Entrepreneurs

Learn best practices in line with emerging trends of market

Assessors and Consultants

Reskilling or upgrading of existing skill set

Training and Capacity Building Division

To synergize training, awareness workshops and capacity building activities at the national and international level, an independent division **'Training and Capacity Building (TCB)'** under the **Quality Council of India (QCI)** is established to coordinate such activities centrally in a structured manner.

TCB Division strives to reach out to the Ministries, States, PSUs, Corporates, and other relevant stakeholders for their training need analysis and carry out trainings, awareness and capacity building, activities. Additionally, it aims to collaborate with various national / international organisations for conducting such programs.

Virtual Trainings

With an increase in demand for accreditation and certification across various sectors, TCB supports the Conformity Assessment Bodies, Ministries, Regulators, Corporates, Manufacturing and Service Industries to interpret and comply with the industry standards thereby enhancing their productivity.

TCB is conducting various Virtual Training sessions on topics like ISO/IEC 17020:2012, ISO/IEC 17025:2017, ISO 15189:2012, ISO/IEC 17065:2012, ISO/IEC 17021:2015 and Uncertainty

of Measurement and Decision Rule as per ISO/IEC 17025:2017 etc. The interactive sessions discuss all the salient and critical aspects which is delivered through PowerPoint presentations by renowned faculties. Further to this, 2-Week Distance Learning Program (self-study program) has also been introduced.

Large number of professionals are benefitted from these trainings coming from various organizations/ backgrounds like Inspection Bodies, Laboratories, Certification Bodies, Regulators, Government Bodies, Industry, PSUs, Consulting Organizations, Consultants, Training Organizations, Trainers etc.

TCB has received an overwhelming response from the audience, thus several upcoming trainings have been announced and many are reportedly in the pipeline for the coming months.

Classroom Training

TCB provides Classroom trainings where the course content and learning material are taught in-person to a group of participants by the domain expert. This allows a scope for a face–to–face interaction between the participants and the instructor. Moreover, participants benefit from peer learning as they also engage with fellow participants.

TCB conducts classroom training on a single topic spanning over 1 to 5 days or hold training bundles. This allows participants to attain additional guidance from the experts directly.

In-house Training

TCB has the capacity and capability to provide training programs

designed to fit to the needs and requirements of the organisation with the guarantee to deliver custom-designed trainings at their premises.

These in-house training provides effective learning experiences to the organization's technical personnel, quality personnel, scientists, and engineers.

These programs are designed for increased involvement of participants and hence bridging the gap in terms of their knowledge and skills. The trainings conducted by TCB are equipped with practical approaches using live examples, case studies, interactions & discussions through group exercises and presentation activities.

Online training / E-learning/ Webinars

'LEARN ANYTIME, ANYWHERE,' - TCB provides an online training platform - eQuest. Learning is now easy with a variety of online courses available at https://equest.co.in/.

The mission of eQuest is to connect the academic honesty with quality training to create skilled professionals. This platform provides an opportunity to gain new skills and refresh the existing skill sets in line with emerging requirements. Further, this platform acts as a catalyst to enhance the employability opportunities for the professionals.

eQuest offers 40+ eLearning courses on themes that form the core areas of QCI and the courses include the training programs covering sectors like Healthcare, Agriculture & Food Safety, Laboratories, Quality,

Environment, Education, IT and Project Management etc. These courses are designed for working professionals and students and have a stringent curriculum.

Two of our eLearning courses are vetted by IIM Bangalore and running successfully on **SWAYAM**, an initiative of the Ministry of HRD.

In this unprecedented time, TCB has been proactive in conducting various **Webinars** independently and in collaboration with the boards of QCI. This aimed at providing all the professionals from various fields a platform to be educated, aware and have discussions on related topics with experienced and renowned experts. Since its inception, TCB has conducted various webinars which has seen overwhelming number of participants in each session.

Weekend courses

TCB has added a new dimension to its role by designing and developing weekend courses suitable for working professionals & students.

These courses are designed to learn during weekly off and are a blessing for those who seek to study further, and yet find it difficult due to lack of time, economic constraints, and resources.

The weekend courses are designed to meet several challenges faced by conformity assessment fraternity and to prepare them to face the current dynamic environment enabling them to become leaders in their respective fields.

Please visits us at **http://tcb.qcin. org/** or write to us with your queries/ requirements to tcb@qcin.org

Indian Certification for Medical Devices (ICMED) Scheme

- A joint initiative of AIMED and QCI

Dr. Manish Pande
Director, PADD, QCI

Dr. Arul Jason
Project Associate, PADD, QCI

The Association of Indian Medical Device Industry (AIMED) in collaboration the QCI and NABCB has rolled out ICMED Scheme as a Voluntary Quality Certification Scheme for medical devices.

ICMED Scheme is the first indigenous quality assurance system for manufactured medical devices in India with an objective to facilitate harmonized medical device regulatory requirements.

This move is also intended to significantly eliminate trading of sub-standard products or devices of doubtful origins-- a widespread and injurious phenomenon in the Indian market.

The scheme ushers in world-class standard for the manufacture of medical devices within the country by instilling device-patient safety for consumers and the convenience of obtaining quality certification. This ensures significant savings by bringing down the cost and time involved to obtain foreign dominated certifications.

Through ICMED, the medical device industry is enabled to demonstrate adherence to the best international standards alongside with enhanced credibility in the world market and also take care of the entire gamut of Indian scene too.

The Scheme offers 3 types of certifications - ICMED 9000, based on ISO 9001 plus additional requirements; ICMED 13485 based on ISO 13485 plus additional requirements; and ICMED 13485 'plus' based on ICMED 13485 plus product specification as per the Ministry of Health and Family Welfare's technical specifications.

It has necessitated to establish a quality ecosystem in the country by forging in institutional mechanisms based on globally recognised best practices, sound technical standards and competent certifiers. This has high potential to promote that the medical devices manufactured in India has high quality which eventually will bring esteem "Har Kaam Desh Ke Naam" to the Indian industry.

INDGAP - India Good Agricultural Practices

Dr. Manish Pande
Director, PADD, QCI

Aayushi Dhawan
Junior Associate, PADD, QCI

Agriculture is the primary source of livelihood for about 58% of India's population. While agriculture contributes to national GDP and is registering a diminishing share in the GDP, it still engages a large majority of small and marginal farming households, thereby, retaining its centrality in terms of employment and centrality in rural economies.

India needs to maintain consistency in quantity and quality of agriculture produce to strengthen the livelihood of the small holders. This is particularly challenging for unorganized and fragmented sectors such as fruits & vegetables, livestock and dairy where traceability continues to elude.

In order to address the issue, PADD, QCI has come up with INDGAP which not only focuses on the quality and quantity of the produce obtained from a unit area but also focuses on various aspects of food safety. It has been comprehensively mapped against relevant SDGs and Targets and Agenda 2030 of the United Nations to enable identifying and measuring action in the achievement of the SDGs at a later stage.

Image: Relaunch of INDGAP document by Dr. Rajiv Kumar, Hon'ble Vice Chairman, NITI Aayog

QCI is also in the process of benchmarking INDGAP to the global standard GLOBALG.A.P. to achieve the vision of PM Narendra Modi to double farmer's income by 2022 and help the country's farmer to aggressively on-board to the quality and food safety journey, which in turn will help doubling the exports.

Voluntary Certification Scheme for Medicinal Plant Produce

Dr. Manish Pande
Director, PADD, QCI

Nishtha Khanna
Junior Analyst, PADD, QCI

If you ate today, thank a farmer. A farmer is not just working for survival of his own but of a community at large. Well known agricultural scientist, Masanobu Fukuoka quoted, "The ultimate goal of farming is not the growing of crops, but the cultivation and protection of Human Beings."

QCI along with the National Medicinal Plant Board (NMPB) has extended its arms to help the farmers in the remote areas to attend the capacity building and sensitization workshops conducted under the VCSMPP Scheme for increasing the scope of production, quality and traceability in the medicinal plant sector.

Medicinal plants are at the core of providing livelihood and health security to a large segment of Indian population associated with the traditional medicine and herbal industry. Medicinal plants, being the raw material for AYUSH medicines, accounts around 90% of AYUSH formulations which practically implies that the sustainability of the AYUSH traditional medicinal system is based on the degree of care with which medicinal plants are handled.

The VCSMPP has been designed to emulate international best practices in the medicinal plants sector and introduce Good Agriculture Practices (GAP) and Field Collection Practices (GFCP) for medicinal plants to enhance confidence in the quality of India's medicinal plant produce among the buyers and consumers.

The adoption of the scheme and its practices will help the farmers earn a higher income and create a better standard of living for themselves. The scheme is allowing the farmer to use Quality and Standardization of their produce and focus on exporting it to earn higher values. The scheme is also focusing towards creating awareness regarding the sustainable practices to focus on export of medicinal produce as well.

Medicinal Plant Production generates employment through development of ancillary industries and give higher returns to the farmers. Growing medicinal plants can easily be integrated into the existing farming systems. The foreign exchange reserve can grow through earnings from medicinal plant export. The end products created through medicinal produce have a longer shelf life. These crops can be grown on degraded, marginal and problematic soils which ensure 100% usage of land.

The MoU between QCI and NMPB for the VCSMPP implementation provides for conducting capacity building workshops, development of Packages of Practices (PoPs) for future reference, establishment of demonstration areas for farmers and provision of certification of medicinal plants.

This effort of QCI and NMPB together is meant for the betterment of the food providers and by all means stands strong with the moto, "Har Kaam Desh K Naam".

An Ecosystem For Standardisation:

A Pertinent Intervention In An Economic Slowdown?

C S Sharma
Joint Director
PADD, QCI

Definitions and Processes

Standardization is the process of implementing and developing technical standards based on the consensus of different stakeholders that include firms, users, public interest groups, standards organizations, and governments etc. There is no denying the fact that it is regarded as a powerful

"Economic Lever" as it provides structured methods and reliable data that save time in the innovation process. This eventually makes it easier to disseminate ground-breaking ideas about cutting-edge techniques and state-of-the-art technologies.

From the perspective of trade among nations, Standardization is the framework of agreements which makes all relevant stakeholders in an industry adhere to processes associated with the creation of a product or performance of a service within set guidelines and requirements. All in all, it ensures a targeted approach to achieve the desired growth rate.

The growing influence of standards & technical regulations and corresponding conformity assessment procedures on trade and commerce has been recognized worldwide through the agreements on Technical Barrier to Trade (TBT) and Sanitary & Phytosanitary (SPS) measures of the World Trade Organization (WTO).

Standardization: The Cornerstone of Economic Growth

Standardization is the product of the basic economic principle that the market can effectively chart a valid future direction through the use of collective wisdom and understand the impact of change on itself and adjust accordingly. The four levels of standardization, viz. - Compatibility, interchangeability, commonality & reference are intricately interlinked to give us the framework of standardization we know today.

As per the classical economic theory, there exist 3 basic factors that are responsible for economic growth- Labour, Capital & Land. As time has evolved, there has been an addition to another significant factor that has taken up the forefront in this league and i.e. Human Knowledge. Hence, not only is the quantitative increase of capital & labor important for the Economy, but also there is a prima facie requirement of qualitative

improvement of labor & capital through technical progress which will eventually result in sustainable economic growth. These so-called quantitative & qualitative components contribute to the determination of Total Factor Productivity (TFP) in growth economics.

Research and Independent Studies:

According to a recent research work performed by the German Institute of Standardization, there lie four main partners of Standardization: Businesses, Private Households, the State and the Standards body. The latter acts as an intermediary among the other three. Standardization thus has a great impact on the Company as well as its interaction with the immediate business environment.

The effects on the Company's business sector include potential competitive advantages over the other companies & the formation of Strategic Alliances and R&D.

Few of the independent surveys, conducted in the economies like Germany, Austria & Switzerland, showcased that businesses that diligently dwell in standardization tactics and interventions frequently reap short and long-term benefits about costs and competitive status than those which do not participate in the same at all. Participating companies have more of a say in the adoption of a national standard as compared to European or International Standard. In this case, the company gains a competitive edge because it will not need to make extensive modifications to conform to a European or International Standard.

Independent research on the economic contribution of standards to the UK

economy published in the year 2015 by independent experts at the Centre for Economics and Business Research (Cebr) and commissioned by BSI and businesses find that standards boost UK productivity and improve performance, kick-start innovation, and support UK domestic and international trade.

The research highlights benefits across seven key sectors in the UK economy. The most productive sectors use standards the most: aerospace and defense, for example, increased productivity by 20.1% between 2005 and 2014, while the UK average was 4.9%.

Of those companies surveyed, 84% say that using standards enhances their reputation; 73% say that standards allow greater control of environmental problems; 89% say that standards contribute to the optimization of compliance with regulations, such as health and safety legislation; 50% say that standards encourage innovation through the diffusion of knowledge, and 70% say that standards contribute to improving their supply chain by improving the quality of supplier products and services.

The research also identified that investing in standards pays dividends for organizations, and these standards always generate more benefits for companies than they cost to implement.

Standardization: Advantages Galore

With regard to manufacturers, Standardization empowers to reduce their purchasing costs considerably, as there are demonstrably low overhead expenses in procuring standardized materials that are abundantly available for use. This fact is further supported by

an independent survey and researches which indicate that Standardization can reduce manufacturing costs by **50%.**

Standardization can also lead to lower transaction costs in the economy as a whole, as well as savings for individual businesses. Transaction costs drop considerably as a result of standards, for they make information available and are accessible to all interested parties.

The dependence of a business on a single supplier can be reduced by standardization, as availability of standards opens up the market. The result is a broader choice for businesses and increased competition among suppliers. Companies can also have enhanced confidence in the quality and reliability of suppliers who use standards. Standards are also used by businesses to exert market pressure on companies further down the value-added chain, i.e. their clients.

Standards also contribute to lower accident rates, as standards reflect the current state of technology, they can help businesses reduce their liability risk as well.

In any case, cooperation between companies in matters of standardization is advantageous, for the resulting synergy can help reduce costs and increase profits.

Despite a few shortcomings of standardization like- Loss of uniqueness, businesses can reduce the economic risk of their R&D activities by participating in standardization and at the same time lower their R&D costs.

Countries are now accordingly evolving strategies to synergize standardization work with technological, social & economic development at the national level as well as for playing influencing roles in Global standardization efforts.

An Indian Perspective:

The rapid growth of the Indian Economy, its size and emerging relevance in global trade with an ambitious target to become a 5 trillion economy by 2024 makes it essential to establish a robust 'Ecosystem for Standardization' in India with a harmonized dynamic & mature standards framework. This would fuel economic growth & enhance the 'BRAND INDIA' label.

The standards propagation in India should focus on sectors that are important to the economy and society. Since standardization is a form of technology transfer, it is particularly important to get businesses that are leaders in their sectors involved in new standards projects. Further, all participating businesses must be convinced that the benefits of sharing the R&D results of other companies are greater than the risk involved in revealing their results.

 An important movement in this regard is: The Indian National Strategy for Standardization (INSS). It considers the current state of development across sectors, the existing quality infrastructure and the policy directions concerning domestic economic developments and for trade in goods and services.

The INSS provides direction for India's political and executive leadership on how best to use standardization, technical regulations, quality

infrastructure, and related activities to advance the interests and wellbeing of Indians in the global economy.

The INSS addresses four broad pillars of the Quality Eco-system viz.:

- Standards Development.

- Conformity Assessment & Accreditation.

- Technical regulations & SPS measures.

- Awareness & Education.

INSS is focused on aligning the strategy of Standardization with other National policies related to trade and industry, consumers and the environment.

It is based upon following key considerations:

- Positioning standards as a key driver of all economic activities relating to goods & services, developing comprehensive eco-system of standards

- Adoption of best practices in standardization, conformity assessment, accreditation & technical regulation, and creating an integrated infrastructure, road-maps, and institution for their effective management

- Using standards for providing a level playing field to the domestic industry and enhancing the competitiveness of Indian goods and services in domestic & international marketst

Conclusion – Economy and Standardization:

To conclude upon the role of Standardization, economic growth is not solely dependent on the inventions of a few organizations /companies but also upon dissemination of the technological knowledge among the industrial eco-system within an economy. Standardization and Economic Growth are directly proportional to each other.

An example in this regard is the coming together of non-pharma companies with big business pharma for establishing a response to the COVID-19 pandemic. It is a reasonable assumption that non-pharma companies would not have standardization and regulatory compliance with regard to pharma as compared to big pharma which are both standardized in operation & highly regulated. Thus, Standardization has helped chart out a common workable model for production of essential medical/pharma items during the pandemic.

Hence, Standardization must be consistently recognized as a 'Catalyst' to Innovation and reliability. The truest marker of effectiveness of standardization is indeed that the more technical knowledge exists within the organizations of countries and is continuously integrated into the Standardization framework, the greater will be the country's technical and economic progress.

References:

1. Research Work Published by BSI Group on- The Economic Contribution of Standards to the UK Economy
2. Research Work Published by the German Institute of Standardization.
3. The Indian National Strategy for Standardization reference documen

Project Planning and Implementation Division (PPID)

Sampling, testing and analysis of coal at Mahan Aluminium Plant

Client/Stakeholder/Ministry: Hindalco Industries Limited (Mahan Aluminium)

Hindalco Industries Limited (HIL) intreated QCI for carrying out a pilot project for coal sampling at unloading end for one of their units at Mahan Aluminium for 3 months starting from February 2020 which may be extend further depending upon the quality of work during this pilot work.

During the project QCI is responsible for sampling and analysis of the coal coming from various coal mines through road mode. The process of sampling provides a transparent mechanism to analyse the quality of coal dispatched to their respective plants. Its National Accreditation Boards identified and engaged NABCB accredited inspection bodies for collection of samples as per the decided methodology.

The milestones achieved are:

- QCI has commenced its operations from 9th February 2020 (within 10 days after receiving the work order from HIL)

- Out of 350 trucks ~50 trucks are sampled daily depending upon the SOP. A total volume of 371050 MT of coal has been sampled till 31st March, 2020.

- QCI has deployed 5 on-ground representatives with 3 people deployed at the central team to overlook entire operations.

Sampling, testing and analysis of coal at thermal power plant

Client/Stakeholder/Ministry: LANCO Anpara Power Limited

LANCO Anpara Power Limited (LAPL) has nominated QCI for quality analysis of coal at their thermal power plant for 2 years starting from January 2020 with provision to extend for another 2 years by mutual consent. QCI with its ability, willingness, expertise and infrastructure to undertake the job of coal quality testing has agreed to undertake on being appointed, the sampling and analysis of coal that is being fed to mill bunker.

The sample is collected from the Mill bunker of coal which is being fed to boiler through falling stream. The importance of this activity is to check the coal quality; if the lower grade coal is used instead of prescribed for the design of boiler, a substantial amount of impact may be seen in its working and efficiency.

The milestones achieved are:

- QCI has successfully commenced its on-ground operations from 24th January 2020

- A total volume of 559000 MT of coal has been sampled till 31st March, 2020 and around 40 samples are collected on a daily basis.

- QCI has deployed 4 on-ground representatives to maintain the transparency in entire operations.

Sampling, testing and analysis of coal at mine end

Client/Stakeholder/Ministry: Odisha Coal and Power Limited (OCPL)

Odisha Coal and Power Limited (OCPL) has nominated QCI for quality analysis of coal at their mine end for 1.1 year starting from 10th February, 2020 with provision to extend another 1 year by mutual consent.

During the project QCI is responsible for sampling and analysis for the coal dispatched from OCPL coal mine through road mode. The process of sampling provides a transparent mechanism to analyse the quality of coal dispatched. QCI along with its National Accreditation Boards identified and engaged NABCB accredited inspection bodies for collection of samples as per the decided methodology.

The milestones achieved are:

- QCI has commenced its operations from 18th March 2020

- Out of 224 trucks ~29 trucks are sampled daily depending upon the SOP

- QCI has deployed 4 on-ground representatives with 3 people deployed at the central team to overlook entire operations

Interim Evaluation of Technical Education Quality Improvement Program (TEQIP) Phase 3

Client/Stakeholder/Ministry: Ministry of Human Resource Development

Technical Education Quality Improvement Program (TEQIP-III) was designed as a Central Sector Scheme with the project outlay of Rs.2660 crore for the period of 2017-2020 starting from 1st April, 2017 in collaboration with the World Bank. The objective of the project is to improve the quality of Engineering Education in existing institutions with a special consideration for Low Income States and Special Category States and support to strengthen few affiliated technical universities to improve their policy, academic and management practices.

Only the Government and Government aided AICTE approved Engineering institutions/Engineering Teaching Department/Constituent Institutions of Universities/Deemed to be Universities and new centrally funded institutions in SCS were made a part of the project.

Currently, the project is running in its third phase of implementation, covering 174 technical education institutes and 12 Affiliating Technical Universities across the nation.

QCI conducted the third-party interim evaluation for the TEQIP Phase III by performing assessment at technical institutes against pre-defined indicators.

Third-Party Assessment of Design Innovation Centres

Client/Stakeholder/ Ministry: Ministry of Human Resource Development

National Initiative for Design Innovation (NIDI) scheme was launched by the Ministry of Human Resource Development in 2013-14 with the aim to promote, design & innovate in educational spaces such as publicly funded institutes of national repute like IITs, NITs, central and state universities & leveraging the potential of bright young minds.

Under NIDI, 20 Design Innovation Centres (DICs), 1 Open Design School (ODS) and a National Design Innovation Network (NDIN) have been set up so far. The DICs were to focus on product design, industrial design, process design or system design with the outcomes aligned to the needs of the society. The DICs were conceptualized to form a hub-

spoke model with each DIC on-boarding, 3 partnering spoke institutions with various specializations across the country. NDIN is a digital platform to bring together the academic design community of India by linking the academic design institutions with industry, individual practitioners, NGOs, professional design bodies across the globe, and the general public. ODS was formed to extend the reach of Design Innovation education through a combination of online courses and projects in a blended learning model.

Currently, there are 20 DICs as Hubs and 69 DICs as Spokes which have been approved in a phased manner across India. Out of the 89 DICs, 25 hubs and spokes were selected for the assessment of the scheme on a sample basis. In addition to 25 DICs, a review of Open Design School & National Design Innovation Network was conducted through field visits. The scope of the project was to assess the progress made by the scheme and layout strategy recommendations for future course correction.

The assessment was conducted in two phases. The first phase consisted of uploading of documents online and submission of online survey questionnaires by several

stakeholders such as students of DIC, faculty coordinators, student coordinators, etc. In the second phase of the assessment, 8 assessors were deployed for on-ground assessment to capture and validate the progress made. Simultaneously, discussions were held with various stakeholders in all DICs & Spokes. A central control team was also set up to monitor the daily progress.

The project was time-sensitive and the final report was to be submitted within 7 weeks of the commencement of the project. A consolidated report with comprehensive set of findings, challenges faced by the DICs, and recommendations for the scheme was prepared within the stipulated time and shared with MHRD.

SUSV (Support to Urban Street Vendors) Excellence Awards 2019-20

Client/Stakeholder/ Ministry: Ministry of Housing and Urban Affairs

The objective of the study is to assess the implementation of Support to Urban Street Vendors (SUSV) component under NULM by analysing the functioning of ULBs as per the guidelines and further creating a ranking and award mechanism in order to enhance the working of SUSV across all ULBs in India.

Ministry of Housing and Urban Affairs has engaged QCI to recognize the working of ULBs in implementing SUSV in coordination with Street

Vendors Act, 2014 ULBs towards addressing the concerns of urban street vendors by facilitating access to suitable spaces for vending, institutional credit, improved skills and social security linkages. This exercise is also expected to instil a sense of positive competition among the ULBs of all states.

Swachhata Excellence Awards 2019-2020

Client/Stakeholder/ Ministry: Ministry of Housing and Urban Affairs

The Ministry of Housing and Urban Affairs has engaged QCI to recognise Area Level Federations (ALFs), City Level Federations (CLFs) and Urban Local Bodies (ULBs) working towards achieving sanitation outcomes with their communities and promoting dignified livelihoods in the sanitation sector as a contribution to the Swachh Bharat Abhiyan. DAY-NULM Swachhata Excellence Awards has been instituted by the ministry for the aforesaid purpose.

For the same, QCI did an assessment of 43 ULBs, 20 CLFs and 36 ALFs throughout India. The components assessed were Solid Waste Management (SWM), Open Defecation Free (ODF) and Faecal Sludge and Septate Management (FSSM).

Census Survey of Water Bodies

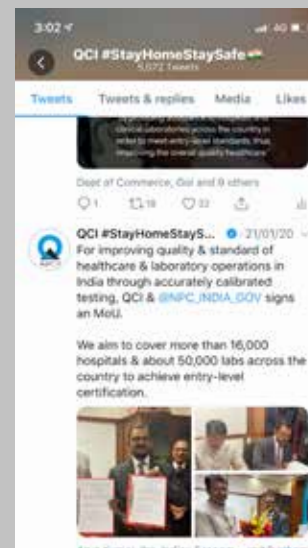## Client/Stakeholder/ Ministry: National

Mission for Clean Ganga

The objective of the project is to map all the water bodies such as ponds, lakes, tanks, kunds, and reservoirs in 2200+ villages spread across the Indo-Gangetic plain, monitor its status and measure the ease of revival. The assessment shall be conducted in pre-monsoon and post-monsoon season and each of the water bodies will be geo-tagged and assigned a unique code of identification. Based on the primary data collection, secondary research, Focused Group Discussions (FGDs) and Key Informant Interviews (KIIs), QCI shall compute the revival rate and assist the National Mission for Clean Ganga (NMCG) in preparation of National Action Plan for sustainable development of water bodies in Indo-Gangetic plain.

Artificial Limbs Manufacturing Corporation of India (ALIMCO) APCs

Client/Stakeholder/ Ministry: Artificial Limbs Manufacturing Corporation of India, Kanpur

Assessment of end products at the 5 auxiliary production centres of ALIMCO located at Bhubaneshwar, Bangaluru, Mohali, Jabalpur and Ujjain. The assessment will be conducted bi-annually. The parameter of the assessment includes the compliance level of products with respect to ALIMCO specifications, drawing and Indian standards.

Our Social Media Presence
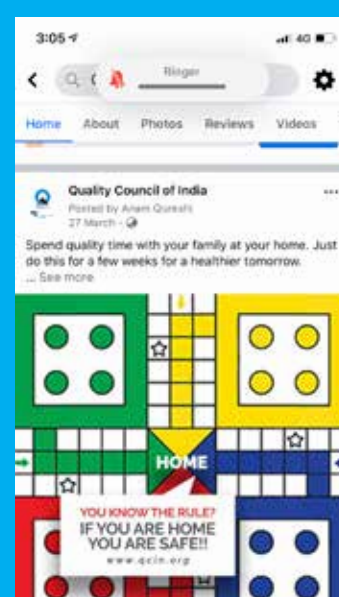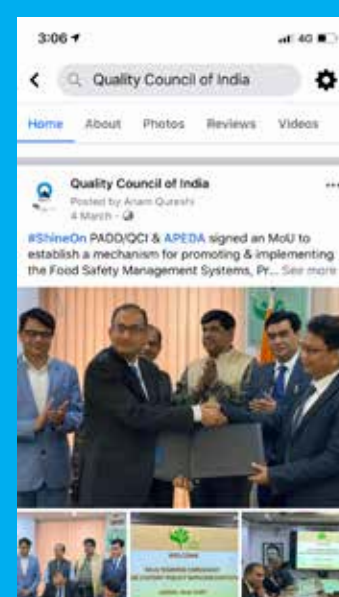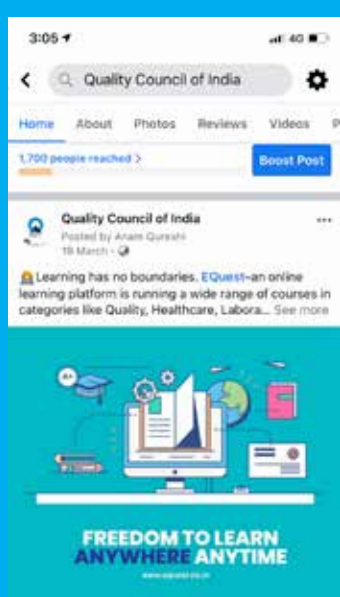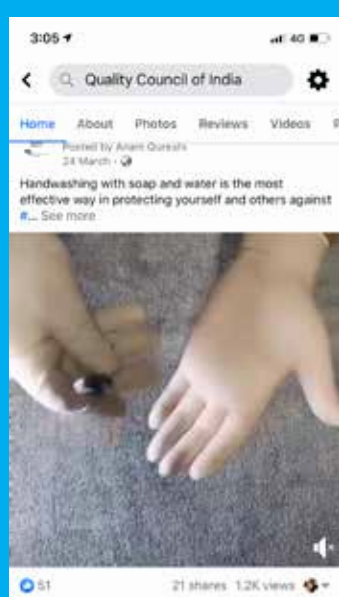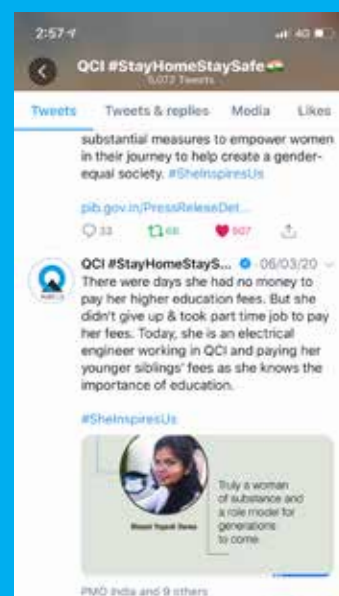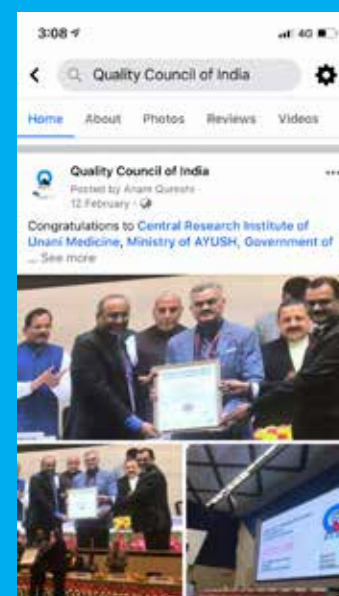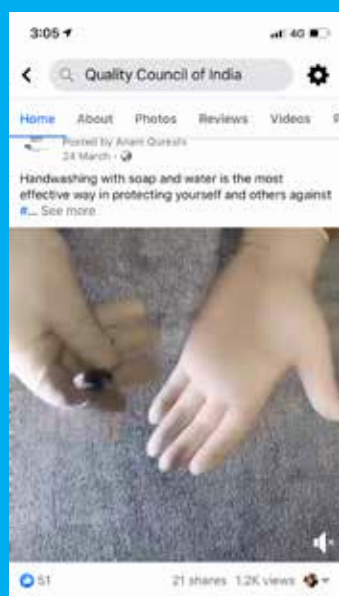
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National Accreditation Board for Testing and Calibration Laboratories

NABL Updates

One-day Awareness Program on NABL Accreditation

A one-day Awareness Program on NABL Accreditation conducted on 10th January 2020 at G.B. Pant National Institute of Himalayan Environment & Sustainable Development, Almora: 26 participants attended the program.

Assessors' Conclave 2020 (Calibration)

NABL conducted Assessors' Conclave (Calibration) on 23rd January 2020 at National Physical Laboratory (NPL), New Delhi.

The program had interactive sessions on effective use of assessment techniques, harmonizing assessment process, management of assessment, assessor rights & obligations and training on NABL Web portal & NABL Assessment app. As a result of brainstorming during the Conclave, assessors volunteered to contribute in sub-committees for various policy and procedural improvement.

More than 75 assessors attended the Conclave.

* Jan To March 2020

Legal Metrology - Awareness Program

Legal Metrology - Awareness Program conducted on 28th - 29th February 2020 in Gurgaon

Mr. Avijit Das, Director, NABL and Dr. B. N. Dixit, Director, Legal Metrology inaugurated the Awareness Program

The Technical Sessions on different disciplines of Metrology were presented by:

1. Mr. Ashutosh Agarwal, Legal Metrology (Legal Metrology Policies, Prospectus and Practices)

2. Dr. Sanjay Yadav, NPL (Pressure Metrology)

3. Dr. Rina Sharma, NPL (Traceability of Measurement)

4. Mr. Goutam Mandal, NPL (Mass, Volume & Measurement Uncertainty)

NABL officials presented general information on NABL accreditation process, specific criteria, policies and overview of ISO/IEC 17025: 2017

One-day Awareness Program for QA Agencies in Diagnostic X-Ray equipment

A one-day Awareness Program on "Accreditation of Quality Assurance Testing Agencies for Diagnostic X-Ray Equipment as per ISO/IEC 17025:2017" organized by NABL in coordination with AERB on 3rd March, 2020 at Niyamak Bhawan, AERB, Mumbai.

Around 100 participants from AERB recognized QA agencies and medical physicists along with officers from AERB and BARC benefitted from the Awareness Program.

NABL Trainings

A 5-day NABL Assessors Training Course as per ISO/IEC 17025: 2017 in Bengaluru during 07th to 11th January 2020

A 3-day NABL Training Program on 'General Requirements for the Competence of Reference Material Producers' as per ISO 17034: 2016 in Hyderabad during 9th to 11th January 2020

A 5-day NABL Assessors Training Course as per ISO/IEC 17025: 2017 in Gurugram during 21st to 25th January 2020

A 5-day NABL Assessors Training Course as per ISO/IEC 17025: 2017 in Gurugram during 21st to 25th January 2020

National Accreditation Board for Hospitals and Healthcare Providers

NABH Programs & Trainings

S.No.	Program	Accreditation/Certification Granted
1.	Accreditation Program	42
2.	Certification Program	280
3.	Empanelment Program	115
	Total	**437**

Accreditation, Certification & Empanelment Status
from January 2020 to March 2020
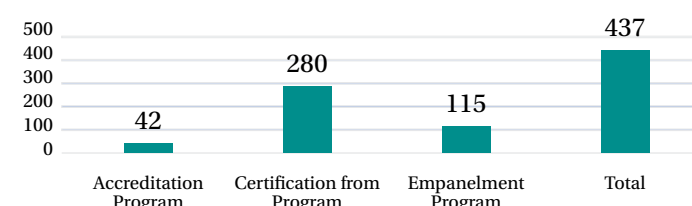
Assessment Conducted:

Total nos. of assessment 1015 conducted for Accreditation, Certification and Empanelment during January 2020 to March 2020

S.No.	Program	Accreditation/Certification Granted
1.	Accreditation Program	308
2.	Certification Program	577
3.	Empanelment Program	130
	Total	**1015**

Assessment Conducted from
from January 2020 to March 2020
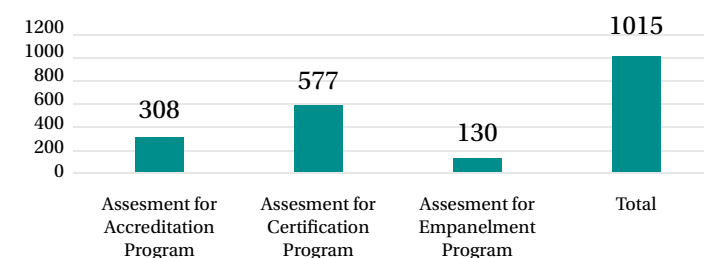
* Jan To March 2020

NABH Training Programs on Implementation (POI) & Education Workshops

Program on implementation training conducted in the various cities on NABH Accreditation Standards of Hospitals, AYUSH, Blood Bank and Nursing Excellence, Pre-Entry-Level Hospital & SHCO Certification Standards, Clinical Audit Workshop and Continual Quality: Tools and Techniques Workshop

The objective of this programme is to provide guidance to healthcare providers on implementation of NABH standards

This programme is very useful in developing Internal Capability within the hospitals to work towards implementation of quality and patient safety standards, achieving accreditation and maintaining the same

In all, 4 programs were conducted during January 2020 to March 2020 wherein more than 150 healthcare professionals participated

Hospital Accreditation Standards 5th Edition

The launch of the Standards with Guidebook, Assessment Guide & Newsletter (Quality Connect-1st issue) was done in New Delhi by the Chairman-NABH, SG-QCI & various other dignitaries from the healthcare

industry on 15th of February 2020. The Technical Committee was felicitated for the hard work put in to bring out the 5th edition. The rollout timelines for the 5th Edition are being finalized. The tentative date is 1st July 2020.

Approximately 500 active assessors were invited.

The new edition guidebook containing the changes in transition from 4th edition to 5th edition was taught in detail by the Technical Committee Members.

Dos & Don'ts were told to the assessors in detail.

The code of conduct was included in the same & the assessors were asked to abide by the same.

AYUSH Accreditation mandate by central councils

Following are the new developments in AYUSH Program:

Central Council for Homoeopathy, Under Ministry of AYUSH, Govt. of India, approved to put in the final draft of the gazette (to be finalized by Ministry soon) to all Homoeopathy Medical colleges & Hospitals under CCH registration to achieve NABH Accreditation within two years (reference: Minutes of the 4th meeting of Expert Committee regarding measures to incorporate qualitative parameters in HCC (MSR) Regulations, 2013).

The six peripheral research institutions for Unani Medicine were directed by Central Council Research for Unani medicine, Ministry of

AYUSH, Govt of India, to implement NABH AYUSH Accreditation program. One among them CRIUM, Hyderabad has achieved Accreditation. Accreditation Ceremony was held at International Unani Day Celebration, 11-12 Feb 2020, Vigyan Bhawan, New Delhi.

Ministry of AYUSH, Govt of India has collaborated with NABH for promotional programs on accreditation and entry-level certification programs. Ministry has agreed to give financial grant and logo.

Re-designing of NABH Accreditation & Certification Certificates

- The revised design has following seven Security Features:

- Alpha Numeric Barcode
- Alpha Numeric QR Code
- Micro/Nano Text (Can be seen through 60% Magnifying Lens)
- Anti Copy Feature
- Variable Data printed in non- scan able transparent Ink
- Ultraviolet Mark (Readable under UV Light)
- Correlation Mark (Can see through Decoder Film)

SampleCertificate for Full Accreditation Program

Sample certificate for Entry-Level Certification Program

NABH International

NABH International Roll Out Plan is being readied. Team NABH participated in SEPC flagship event "India Heals 2020" held this year at Kochi from 30 Jan to 2 Feb 2020. NABH was invited for speaking sessions each on first two days and also given stall space to showcase NABH scope of services to international and national delegates. Delegates from around 20 countries and more than 100 service provider organisations from the health sector participated. We have got good leads on which promotion work will start soon.

NABH Newsletter

NABH released its first newsletter NABH QUALITY CONNECT to provide comprehensive information related to NABH activities and updates about healthcare quality.

NABH QUALITY CONNECT will be projected as the brand name for our revamped training initiative.

Quality Campaign

NABH has launched an Umbrella of Quality Campaign designed to promote Quality, Safety & Wellness and for brand recognition.

NABH is planning to compile a book on Healthcare Quality Improvement. It will require some time but will be a good resource material.

> [Quality Campaign - NABH has launched an Umbrella of Quality Campaign designed to promote Quality, Safety & Wellness and for brand recognition]

Textbook / Monographs

It is proposed to bring out small monographs and a textbook covering various aspects of patient safety and Quality. Timeline is 18 months.

Internal Training

Following trainings for NABH staff have been conducted:

1. Disaster Management

2. Communication Skills

3. Fire Safety including Mock Drill

4. Training on Basic Life Support in Emergency Cases

Glimpses of NABH Activities

Launch of 5th Edition Hospital Accreditation Standards

Assessors' Conclave-cum-Refresher -Course at Bengaluru on 23rd Feb 2020

Assessors' Conclave-cum-Refresher -Course at Mumbai on 1st March 2020

CRIUM, Hyderabad has achieved Accreditation. Accreditation Ceremony was held during International Unani Day celebration (11-12 Feb 2020) at Vigyan Bhawan, New Delhi

MIS Assessor Training Course at Delhi (20th to 23rd February 2020)

AYUSH Assessor Course at Mumbai (24th to 29th February 2020)

Clinical Audit Workshop at New Delhi on 19th January 2020

Continual Quality Improvement: Tools and Techniques Workshop at Delhi on 23rd February 2020

Clinical Audit Workshop at Delhi on 15th March 2020

National Accreditation Board for Education and Training

NABET Updates

Formal Education Excellence Division (FEED)

Projects & Workshops of Undertaken by FEED

Quality Interventions in Teaching Learning Process to improve Student Learning Outcomes

In the year 2017-2018 (Cycle I), NDMC and NABET partnered to foster excellence in school education sector. The project completed its Cycle III in the year 2019-2020. In the month of January & February 2020, student & teacher assessment was conducted and the results were compiled to measure the impact of structured interventions in teaching learning process.

Student Assessment: Post Evaluation

Assessment, Quality Intervention & Certification of Schools under Municipal Corporation of Greater Mumbai (MCGM)

To improve student learning outcomes and create a robust system of monitoring & evaluation of the public education system, MCGM partnered with QCI to conduct assessment, quality intervention and certification of schools. After successful completion of assessment in 30 schools, final report was submitted along with targeted action plan for schools and recommendation to authorities. In order to check the effectiveness of the project holistically, MCGM has extended the project to conduct re-assessment of these schools.

Final Report submission to Education Department officials of MCGM

Project Completion Meeting with Education Department officials of MCGM

* Jan To March 2020

FEED conducted Evaluation & Assessment of 28 Teachers at Indian School Sur, Oman

To improve teaching practices and student learning outcomes, QCI partnered with schools of Oman to develop a robust system of evaluation & assessment of teachers. The overall objective of conducting the assessments was to provide detailed report on individual teacher starting from current practices, areas of improvement and suggested action plan to improve classroom teaching

Teacher Assessment in Schools of Oman

Glimpses of NABET School Accreditation assessments

Total Assessment visits (Readiness/ Final/Surveillance) conducted by FEED from January to March 2020: 27 school assessment visits

Glimpses of School Assessment Visits conducted on NABET Accreditation Standard

Glimpses of workshops organized by FEED

Total workshops organized from January to March 2020: 4 workshops

Training Assessors for School Accreditation workshop was held in Delhi from 16th to 18th January, 2020.

Preparing Schools for Accreditation workshop was held across 3 states as per following details:

- Mumbai: 21st to 23rd January, 2020
- Hyderabad: 24th to 26th February, 2020
- Kerala: 28th February to 1st March, 2020

Ms. Madhu Ahluwalia, Senior Advisor-QCI addressing participants during Training School Assessors Workshop held in Delhi

Preparing School for Accreditation Workshop held in Mumbai

A brief report on Evaluation & Assessment of Residential Hostels in Odisha

The year 2020 began in the remote forested areas of Odisha for the Formal Education Excellence Division (FEED) at NABET. NABET collaborated with the Department of ST & SC Development, Minorities and Backward Classes Welfare, Government of Odisha to evaluate and assess the quality of services in the 4,000 residential hostels managed by the Department.

In an effort to understand the conditions existing in these hostels, standardise the processes and initiatives, and thereby further improve their basic services, Government of Odisha initiated Mission Suvidya in late December. As part of this Mission, NABET-QCI will assess and evaluate hostels on a quality framework, benchmark their performance and provide concrete recommendations to prepare them for ISO 9001:2015 Certification. Such a certification will ensure certain level of quality maintenance in the processes, thereby ensuring continuous improvement and effectiveness of hostels leading to a better learning and hospitable environment in these hostels. NABET agreed to undertake the project as a pilot for assessment of 246 residential hostels in two districts – Keonjhar (156 hostels) and Sambalpur (90 hostels).

The project was undertaken in a two-phased methodology. Phase I comprised of secondary research, creation of evaluation framework and pilot, while Phase II comprised of training, field assessment and compilation of results and analysis. The evaluation of the residential hostels was based primarily on seven parameters: Governance & Management, Health & Nutrition, Safety & Security, Human Resource, Basic Amenities & Recreation and Quality Assurance Mechanism. Final grade was awarded to each hostel on the basis of their facilities, initiatives and processes under these parameters.

The entire project was completed within a strict timeline of two months. The evaluation and assessment were conducted by a team of 25 NABET professionals who were positioned at Odisha at various PMU locations. The team was headed by Mr. Saurabh Arora, Assistant Director, NABET and guided by Ms. Madhu Ahluwalia, Senior Advisor, QCI under the leadership of Dr. Manish Jindal, CEO, NABET. The assessment led to the grading of hostels on the basis of their scores. Out of 246 hostels, 8 hostels were found in the Achiever category, 164 hostels in the Learner category while the rest were assigned to the Beginner category. These hostels were provided with concrete recommendations to move to the next category and prepare them for ISO certification.

The successful completion of the pilot assessment has begun the inculcation of a habit for self-assessment among the residential hostels. It also created a repository of self-assessed data points for better trend identification of systemic issues and ground realities. Such self-assessment and external evaluation created sensitization among hostels towards their areas of strength & areas of improvement,

Familiarization workshop under the chairmanship Shri. Shri Ashish Thakare (District Magistrate, Keonjhar) conducted by NABET on 27th September 2019.

Hon'ble Chief Minister of Odisha, Shri Naveen Patnaik looks on as Dr RP Singh, Secterary General, QCI signs the MoU with the Department the launch ceremony of Mission Suvidya at Bhubhaneswar on 6th December 2019.

Assessors interviewing boarders in the hostel during the Field visit conducted by NABET from 7th to 24th January 2020 in Keonjhar and Sambalpur district.

Presentation on Assessment Outcomes & Findings under the chairmanship of Smt. Ranjana Chopra (Principal Secretary, SSD Department) conducted by NABET on 3rd February 2020.

and further prepared them to enhance their structuring and documentation of processes.

Activities undertaken By Environment Division (January – March 2020)

Refresher Program for Assessors, Jan 21-22, 2020

Dignitaries on the dais (from Left to Right), Dr. S. Devotta, Chairman, Technical Committee, Dr. Manish Kumar Jindal, CEO, QCI-NABET, Dr. R. P. Singh, SG, QCI, Sh. A.K. Jha, Sr. Director QCI-NABET; Addressing during the inaugural session

Two-day refresher program for EIA assessors was held on Jan 21-22, 2020 at ICCW, New Delhi on the new proposed changes and their implementation in the EIA scheme version 3'. The program was attended by assessors, Accreditation & Technical Committee Members and concerned officials of NABET.

Activities undertaken by Skill Training and Service Division (Jan. to March 2020)

Brief Report on FIT India School Certification Program – 5Star/ 3 Star

Fit India Movement is a nation-wide movement in India to encourage people to remain healthy and fit by including physical activities and sports in their daily lives. It was launched by Hon'ble Prime Minister of India Shri Narendra Modi ji at Indira Gandhi Stadium in New Delhi on 29 August 2019 (National Sports Day). It provides a unique and exciting opportunity to work towards a healthier India. As part of the movement, individuals and organisations can undertake various efforts for their own health and well-being as well as for the health and well-being of fellow Indians. Fit India would be a success only when it becomes a people's movement.

Fit India Mission encourages Schools to Organise a **Fit India School Week** in month of November/December. It has also prepared a set of **Fit India School Certification** with simple and easy parameters.

Status of School Certification

As part of FiT India Movement, FiT India Mission is actively working towards certification of Schools under FiT India Campaign. Under the campaign, Schools are being certified into following 3 categories –

- Self-Certification: Stage 1: Fit India Logo and Flag
- 3 Star Certification Desktop Assessment and Site Assessment
- 5 Star Certification Desktop and Site Assessment

Out of 231 schools selected for Pilot Project only 43 schools could be recommended for 3Star/ 5 Star Certification

Details of School Assessment – FIT India Project

Sr. No.	State	City	Region	3 Star Applicants	5 Star Applicants	Total Cases
1	Assam	Guwahati	East	18	6	24
2	Gujarat	Surat	West	39	13	52
3	Madhya Pradesh	Indore	Center	18	17	35
4	Punjab	Amritsar	North	49	17	66
5	Tamil Nadu	Coimbatore	South	30	24	54
	Total			**154**	**77**	**231**

Applications Qualified in 3 Star After DA

Sr. No.	State	City	Region	3 Star Applicants	3 Star Qualified
1	Assam	Guwahati	East	18	2
2	Gujarat	Surat	West	39	8
3	Madhya Pradesh	Indore	Centre	18	5
4	Punjab	Amritsar	North	49	16
5	Tamil Nadu	Coimbatore	South	30	5
	Total (A)			**154**	**36**

Applications qualified in 5 Star after DA

Sr. No.	State	City	Region	5 Star Applicants	5 Star Qualified	3 Star Qualified
1	Assam	Guwahati	East	6	1	0
2	Gujarat	Surat	West	13	3	0
3	Madhya Pradesh	Indore	Centre	17	5	0
4	Punjab	Amritsar	North	17	5	1
5	Tamil Nadu	Coimbatore	South	24	4	1
	Total (B)			**77**	**18**	**2**

3 Star Certification

Site Vist -3 star	3 Star Certified	Basic Certification	No Rating
28	25	2	1

5 Star Certification

Site Visit - 5 Star	5 Star Certified	3 Star Certified
15	11	4
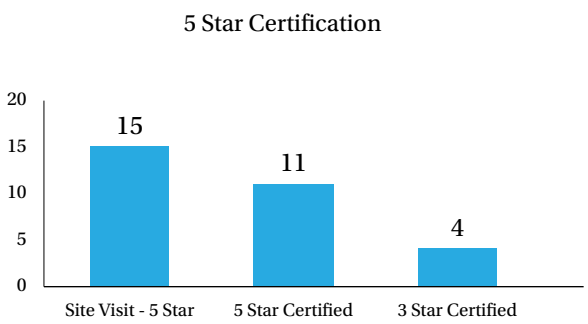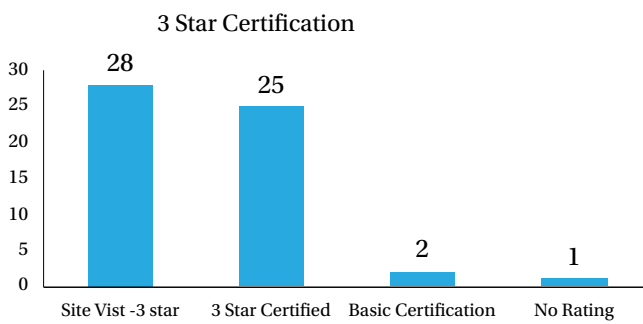
National Accreditation Board for Certification Bodies

NABCB

NABCB Updates

NABCB grants accreditation as per requirements of ISO/IEC 277001:2019

NABCB accredited M/S Bureau Veritas India Pvt. Ltd., Mumbai as per requirements of ISO/IEC 27701:2019 and the organisation is the first accredited certification body to be accredited as per this new standard requirements. ISO/IEC 27701:201 9 is a new standard for Privacy Information Management Systems (PIMS).

As privacy concerns and requirements continue to increase globally, the addition of ISO 27701 to ISO 27001 certifications will become increasingly important for organizations. The benefit of seeking accreditation to ISO 27701 is that it streamlines compliance obligations for ISO 27001 and the GDPR by integrating privacy into organizations and demonstrating increased security and privacy in the organization.

Meeting with Certification Bodies

NABCB conducted its annual interaction meeting with the accredited/applicant Certification Bodies (CBs) on 17th February 2020 at New Delhi. The meeting was attended by 43 participants from 30 applicants/accredited CBs. The objective of this meeting was to set a platform for discussion with CBs on issues pertaining to the understanding of NABCB accreditation processes and update them on the recent changes in the accreditation criteria and International Accreditation Forum (IAF)/Asia Pacific Accreditation Cooperation (APAC) resolutions or any other related matters.

Mr. M Jena, Director NABCB made the opening remarks explaining purpose of meeting. Mr Rajesh Maheshwari, CEO, NABCB briefed about NABCB efforts in the direction to increase CBs industry presence and to engage accredited CBs into the Quality ecosystem. Mr Shyam Bang, Chairman, NABCB highlighted that India is a large market with million-strong industry sector with huge scope of growth for CBs. He stressed that NABCB and CB should work together in the direction to credit an impact on perception of quality from India in the international market.

* Jan To March 2020

During the day long meeting NABCB highlighted its efforts in the direction to increase CBs industry presence and to engage accredited CBs into the Quality ecosystem. Presentations were made related to IAF resolutions, NABCB IAF MLA status, status of use of NABCB accreditation by Government / Regulators/ Industries.

NABCB also informed the CBs about its plans to launch new schemes which include Asset Management System, Anti-bribery Management System and Facility Management System.

An update on the endorsement of NABCB accreditation by global Scheme Owners such as FSSC, GLOBAL G.A.P, GAA-BAP and BRC-GS in Food sectors.

NABCB also urged CBs to invite NABCB to their PSU and industry client meetings to put forth accreditation & certification as a 'win-win' strategy.

Inspection Body Meeting

NABCB held a 1Day meeting with applicant and accredited Inspection Bodies (IBs) on 18th February 2020 at New Delhi. NABCB holds annual meeting with inspection bodies to discuss and deliberate on issues being faced by IBs and NABCB and updates them about the changes in processes. The meeting saw a participation of 70 representatives from 57 inspection bodies.

Mr. Rajesh Maheshwari, CEO NABCB made the opening remarks where he explained the participants the purpose of the annual Inspection Body meeting and urged them to utilize this meeting as a platform for discussion on issues pertaining to the understanding of ISO/IEC 17020 and discuss their concerns in relation to NABCB processes. Mr Shyam Bang, Chairman NABCB, also addressed the participants and informed that the number of Inspection Bodies under NABCB accreditation has increased over a period of time, but considered that there was a need to bring more IBs under NABCB accreditation so as to have an impact on perception of quality in Indian industry.

The highlights of the meeting was the active participation of officials of different Regulators/Government bodies who presented their experience of utilising the services of NABCB accredited third-party Inspection Bodies. These organisations included Directorate General Quality Assurance (DGQA), Food Safety and Standards Authority of India (FSSAI), Bureau of Indian Standards (BIS), Directorate General of Foreign Trade (DGFT) and Petroleum and Natural Gas Regulatory Board (PNGRB). The organisations also provided an insight into different processes followed in their organisation and updated about different schemes.

Presentations were made by two of the inspection Bodies who shared their perspective, experience and expectations of IBs. These IBs include M/S Intertek India Pvt. Ltd. Mumbai and M/S Dr. Amin Controllers Pvt. Ltd. Mumbai.

Further, discussions during the meeting focussed on informing about the changes in NABCB accreditation procedure, detailing process of witness assessments and providing an update on use of Unique Identification number and ILAC/MRA Mark. The meeting resulted in discussion on various issues with Inspection Bodies during which responses were provided to a number of queries raised by IBs. Meeting ended with a positive feedback from participants.

NABCB participates in National Standards Conclave

6th National Standards Conclave was held from 5th-16th January 2020 at New Delhi. It was organized by Ministry of Commerce and Industry in collaboration with Confederation of Indian Industry (CII), Bureau of Indian Standards (BIS), Export Inspection Council of India (EIC), National Accreditation Board for Certification Bodies (NABCB) and the Centre for Research on International Trade. The National Standards Conclave is organized every year to generate awareness amongst industry members and other stakeholders about the importance of "Standards" in the changing scenario of Global Trade. Conclave this year provided a platform for diverse perspectives to increase India's international trade profile by using standards harmonization as a tool for trade facilitation and greater value chain integration.

The conclave was inaugurated by Mr. Piyush Goyal, Minister of Commerce and Industry, Railways Govt. of India.

Dr. R P Singh, Secretary General, QCI spoke in the Welcome & Special Session. He presented a 5-point agenda for "Transformative Change in Trade and Regulation'. This 5-Point Agenda constitutes a new basis for international cooperation among all countries.

Mr. Shyamsundar Bang, Chairman, NABCB chaired the Session on "Chemicals and Petrochemicals". He expressed that Chemical industry is an important sector contributing to the GDP of the India. He stressed on the need to harmonise IS and ISO standards and simplify compliance procedures for industry to allow the competiveness of the Indian Industry.

Mr. Rajesh Maheshwari, CEO, NABCB participated in the panel discussion in the Session on "Technical Regulations – The Current Status and Way Forward."

NABCB participation included Mr. M Jena, Director; Mr. Ajay Kumar Sharma, Joint Director and Mr. Anand Deep Gupta, Deputy Director.

NABCB participates in Steering Committee for Good Clinical Practice (GCP) Professional Certification Scheme

Mr. Rajesh Maheshwari participated in first meeting of Steering Committee of Good Clinical Practice (GCP) Professional Certification Scheme held on 6th February 2020 at Faridabad. He delivered a talk on "Accreditation – a global system for creating confidence between economies to promote and propel economic growth and free trade." Participants were explained the role of third-party accreditation and process of accrediting the certification bodies. There were intense interactive discussions held during the meeting and it was concluded that the committee will be undertaking the task to develop the voluntary scheme for certification of GCP professionals, accreditation of GCP professionals training providers and the certification process. Work has been initiated for same and NABCB is a member of this committee.

NABCB participation in Conference on Automotive Technologies organized by CII

Mr. Rajesh Maheshwari participated in conference on "Modern Automotive Technologies -For Future of Mobility in India" organised by CII. Mr. Maheshwari was a panellist during the panel discussion on topic related to Automotive R&D in India - Emerging Landscape and Challenges. During this discussion he stressed the need for using accredited conformity assessment services in automotive industry and updated about the benefits of same.

NABCB Participated in Steering Committee of Yoga Certification Board

Mr. Rajesh Maheshwari participated in the 2nd Meeting of the Steering Committee of Yoga Certification Board held at Isha Yoga Center, Coimbatore on 10th Feb 2020. The meeting was held under the chairmanship of Yoga Guru Baba Ramdev. NABCB is actively involved in certification scheme of Yoga professionasl.

NABCB participates in National Consumers Convention

NABCB organized Consumer Awareness Programmes in partnership with Consumer Coordination Council (CCC) in different cities. Participants were informed about Voluntary Standards and Regulations, Role of accreditation, Product and Systems Certification and Complaint handling. NABCB participated in the 12th National Consumers Convention organized by CCC on 11th January 2020 in Lucknow. Mr. Rajesh Maheshwari was the Guest of honour and participated in the Session on – "Quality in Products and Services." He discussed issues related to consumers, importance of quality and informed ways in which quality of products can be verified. Mr. Ajay Kumar Sharma briefed the participants about the significance of Voluntary Standards, Complaint Handling Process and Systems Certification. The programme was attended by more than 60 participants.

NABCB is a part of executing World Bank Funded Project for Capacity Building of Ethiopian National Accreditation Office

The Government of Ethiopia (GoE) received financing from the World Bank Group (WBG) to implement the National Quality Infrastructure (NQI) Development Project. The objective of the project is to improve the delivery of quality assurance services to enterprises. Accreditation boards of QCI-NABCB and NABL have been granted the project for Expansion of Accreditation scope and Training & capacity building programme of ENAO through the twinning arrangement.

As a first step of the process, 6 teams comprising of 16 QCI experts visited ENAO, Ethiopia from January 2020 to March 2020 to conduct the Gap Analysis.

The Gap Analysis report provides a comparison of current status against the requirements and actions to bridge the gaps for implementation of the ISO/IEC 17011, AFRAC, IAF, ILAC, relevant ISO standards and local regulatory requirements for various accreditation programs under this project.

A systematic approach shall now be deployed to plug the identified gaps. Document preparation, imparting classroom training and on-site mentoring to human resources involved in accreditation activities of ENAO shall be taken up in a phased manner.

The ultimate aim of the project is to prepare an integrated documentation system of ENAO for the establishment of internationally recognized services in various accreditation programs as per the objectives of the project.

Capacity Building for South African Development Community Accreditation Service (SADCAS)

NABCB conducted a 1-Week Attachment Training for staff of South African Development Community Accreditation Service (SADCAS) on accreditation schemes for inspection, management systems, and product certification from 13th-17th January 2020 at New Delhi. The training involved briefing on different schemes requirements and process followed for grant of accreditation.

National Board for Quality Promotion

NBQP

NBQP Updates

Workshops on Importance of Implementing Energy Management Systems ISO 50001:2018

Date: 19th Feb 2020 (Vizag) | 12th Mar 2020 (New Delhi) | **Venue:** Vizag & New Delhi

About the program: To sensitize stakeholders and spread awareness about 'Benefit of adopting ISO 50001:2018 Energy Management Systems standard among PAT industries', two regional workshops were organized by Bureau of Energy Efficiency, Ministry of Power along with National Board for Quality Promotion, QCI being the Technical Partner.

The objective of this program was to familiarize the existing & new Designated Consumers of Bureau of Energy Efficiency (BEE) on Energy Management Systems ISO 50001:2018, its requirements & its importance. The DCs were explained the entire process on how BEE/QCI are implementing Energy Management Systems in 10 Designated Consumers of various sectors and the advantages of implementing the same.

Case Studies were presented by officials of the Designated Consumers, where the implementation of Energy Management Systems was completed by QCI. The DCs explained their journey towards EnMS implementation, benefits of implementing the EnMS Standard, challenges faced & the potential savings that will be achieved by them by Dec 31,2020 or Mar 31,2021.

NBQP Celebrates Quality Month

Global quality community usually celebrates November as the Quality Month. The World Quality Month provides a platform for acknowledging the efforts & accomplishments of Quality and all who work to make it happen. The objective is to promote quality and innovation culture with emphasis on sharing of knowledge, innovation, best practices etc.

Like every year,

NBQP/QCI also celebrated November - 2019 as the World Quality Month by organizing a series of online competitions like:

- Poster Making,
- Kaizen Implementation,
- Slogan Writing,
- Quality Quiz
- Essay/Quality Success Story
- Photography competition
- A report on Quality Month celebration at your organization

Each year a theme is adopted around which the online events are based. This year the theme was "Improving Quality of Life: Harnessing Green Initiatives". These activities were spread out throughout the month enabling a large number of organizations and quality professionals from across the sectors to participate. Some of these competitions received a good response from all across the country.

Contributed by: Shruti Gupta

* Jan To March 2020

Quality Month Competition Winners - 2019

Poster Competition

S.No.	Winners Name	Organization Name
1	Mounika Challapalli	Nagarjuna Hospitals Ltd.
2	Mythili Dadi	Nagarjuna Hospitals Ltd.
3	Anitha	A.J. Hospital & Research Centre
4	Dr. Mareena	Pushpagiri Medical College Hospital
5	Atul Kumar Bhushan	Ganga Care Hospital Ltd.
6	Poster 1	Arkray Healthcare Pvt Ltd.
7	Poster 2	Arkray Healthcare Pvt Ltd.

Essay Competition

S.No.	Winners Name	Organization Name
1	Dr. Kavita Krishnan	Value Added Corp. Services
2	Kirubasankar V	Giesecke & Devrient MS India Pvt. Ltd.
3	Dr. Anal Panchal	Sterling Hospital
4	Chaitali Hajare	Envirocare Labs Pvt. Ltd.
5	Shruti Shukla	Student

Photography Competition

| S.No.	Winners Name	Organization Name
1	R.N. Raturi	M/s Tata Motors Ltd.
2	Umarani L, Abirami P, Sowmiya M, Pushpam, Vijaya D	PSG Hospitals
3	Shankey	Sarvodaya Hospital
4	Dr. Geeta Fulari	Sankara Eye Foundation
5	Vijay Kumar Parashar	Johnson Matthey Chemicals India Pvt. Ltd.

Kaizen Competition

S.No.	Winners Name	Organization Name
1	Dipen Gada	Rajalxmi Industries
2	Jani Basha Shaik	Bharat Heavy Electricals Limited
3	Siji Mathew	St. Joseph's Hospital
4	Bijoy Johnson	Baby Memorial Hospital
5	Rajeev Pancholi	Lava International Ltd.
6	Mahek Yadav	Student
7	Ranjana Yadav	Aadishakti Foundation
8	Sandip Patel	Axalta Coating Systems India Pvt. Ltd.

Quiz Competition

S.No.	Winners Name	Organization Name
1	Diwakar Kumar	Bharat Heavy Electricals Limited
2	Anna Samuel	Kanchi Kamakoti Childs Trust Hospital
3	Sowmyachandy	Kanchi Kamakoti Childs Trust Hospital
4	Aniket Desai	Johnson Matthey Chemicals India Pvt. Ltd.
5	Anurag Naik	Johnson Matthey chemicals India Pvt Ltd.
6	A.Thirumurugan	A.P Travels
7	Balaji	ICF
8	Karthiga	Billroth Hospital
9	Manoj	Expeditors International

A report on Quality Month Competition at your Organization

S.No.	Winners Name
1	Ramesh Hospital
2	St. Joseph's Hospital
3	Aster Medcity
4	Lucas TVS Ltd.
5	M/s Greaves Cotton Limited
6	Sankara Eye Foundation
7	Lava International Ltd.
8	Johnson Matthey Chemicals India Pvt. Ltd.
9	All India Institute of Medical Sciences
10	Gleneagles Global Health City
11	Dhanekula Institute of Engineering and Technology
12	INDOCOOL Composites Private Limited
13	Baby Memorial Hospital
14	Ashok Leyland
15	Sanjiv Bansal Cygnus Hospital
16	Axalta Coating Systems India Pvt. Ltd.
17	Tata Motors Limited
18	Sardar Vallabhbhai Patel Institute of Medical Science
19	Kirloskar Pneumatic Company Limited
20	Capitol Hospital
21	Shri B D Mehta Mahavir Heart Institute
22	IDMC Limited

Advance Manufacturing with Quality, Innovation & Technology Interventions

20th December 2019 | Hotel Radisson Blu, Rudrapur
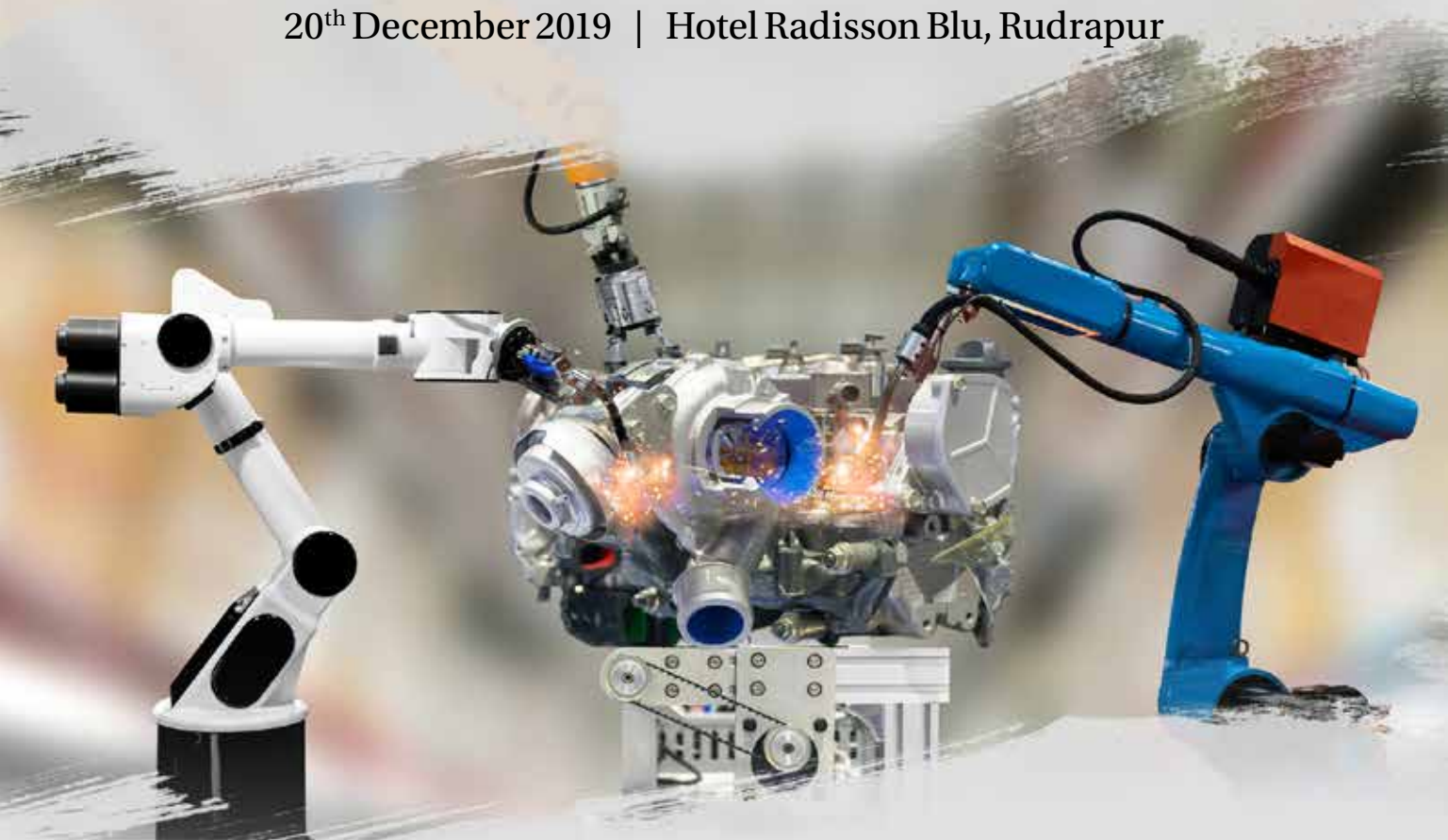
Quality Council of India (QCI) and PHD Chamber of Commerce and Industry (PHDCCI) jointly organized the 11th Regional Quality Conclave on the theme "Advance Manufacturing with Quality, Innovation & Technology Interventions" on 20th December 2019, at Hotel Radisson Blu, Rudrapur.

The objective of this Conclave was to create awareness about significance of quality culture in businesses, deliberate on how organizations could continuously improve and innovate and share the technological advancement like Industry 4.0 and predictive maintenance.

Experts shared insights on quality enhancement in the manufacturing sector with special reference to Industry 4.0 with the delegates. The deliberations were meant to help SMEs, Entrepreneurs and Industry in improving quality.

Inaugural Session

Chief Guest Shri Faggan Singh Kulaste, Union Minister of State, Ministry of Steel, GOI

The Government is committed to improve the quality of manufacturing sector. Safety and quality will be given topmost priority. We would co-ordinate with organisations like QCI and PHDCCI to make the manufacturing sector aware about the importance of innovation, good quality products and services. He invited suggestions from all sectors and ensured that Govt. will certainly try to implement the valuable suggestions.

Dr. Jatinder Singh, Director, PHDCCI

- Objective of nationwide series of conclave is to sensitize SMEs to adopt the facets of quality in manufacturing hailing from automobiles, pharma, textiles, electronics, logistics & supply chain and others with a special reference to Industry 4.0

- Currently, the manufacturing industry contributes 16% in total GDP which can be enhanced, if the industry abides by quality controls

Mr. C. K. Biswas, CEO, NBQP

- 'Make in India' initiative led India on the path of becoming the hub for Hi-Tech manufacturing

- India is expected to rank amongst the top three growing economies and manufacturing destinations of the world by the year 2020

- Government of India has implemented Make in India as core policy initiative to encourage and accelerate growth of India's manufacturing sector

- Quality Control is emerging as a global challenge. The industry is primarily focusing on production and ignoring quality standards. This is one of the reasons; due to lack of quality, the industry is losing orders

- Uttarakhand has a high sense of technology, labour, investment power but needs to maintain a balance between pricing and quality

Mr. Rajeev Ghai, Co Chairman of Uttarakhand State Chapter of PHDCCI

- This will not only help in creating the awareness but also bring confidence in performing well in market by adhering standard quality parameters

Mr. Neeraj Khairwar, DM, Udham Singh Nagar

- Uttarakhand Govt. is promoting entrepreneurial ecosystem in the state

- To make our enterprise globally competitive we need to develop an innovation-driven MSME through quality enhancement

- ODOP is being copied by different states so that the quality of MSME can be improvised

- Many big groups like Tata, Bajaj, Ashok Leyland participating in the Conclave are inspiration for many MSMEs present in the state

Mr. Anal Vijay Singh, Plant Head, TATA Motors, Rudrapur

- The Industry 4.0 technologies are bringing synergic relationship between big corporate and its vendors

- Digitization of SMEs is essential and inevitable

- The corporate world is also trying to catch up with the change which new technologies are bringing in the industries' working environment

- This kind of interventions and facilitation by Apex body like QCI and Govt. are a welcome step

- TATA Motors focuses on current and future auto technologies to enhance the look and feel of vehicles and to boost the overall driving experience of customers

Mapping Organization's Route to Quality

Mr. Avik Mitra, Principal Advisor, NBQP

- The foundation for route to quality lies in product improvement, process improvement, and people-based improvement

- Critical success factors for quality depend on strategies to fully optimize processes, technology and workforce capacities which is the factor of people, leadership and quality culture

Dr. B.P. Kathel, former Director - HR & IT, Petroleum India International - ONGC

- Innovation is key to the sustenance of MSME in fast-converging global markets

- Inducing a creative and innovation-driven work culture will ensure active participation and contribution by each and every employee

- The ideas can be extracted from any levels of the corporate hierarchy

Mr. Parush Kumar, Dy Mgr. Engineering, BHEL-Rudrapur

- The high level of quality & reliability of BHEL products is due to adherence to international standards by acquiring and adapting some of the best technologies from leading companies in the world including General Electric Company, Alstom SA, Siemens AG and Mitsubishi Heavy Industries Ltd., together with technologies developed in its own R&D centres

- Most of its manufacturing units and other entities have been accredited to QMS (ISO 9001:2008), EMS (ISO 14001:2004) and OHSAS (18001:2007)

- BHEL is an integrated power plant equipment manufacturer and one of the largest engineering and manufacturing companies of its kind in India engaged in the design, engineering, manufacture, construction, testing, commissioning and servicing of a wide range of products and services for core sectors of the economy, viz. Power, Transmission, Industry, Transportation (Railways), Renewable Energy, Oil & Gas, Water and Defence with over 180 products offerings to meet the needs of these sectors

- Sustained Quality enhancement is essential for global competencies. BHEL also has a widespread overseas footprint in 78 countries with cumulative overseas installed capacity of BHEL manufactured power plants nearing 10,000 MW

- The Industry 4.0 future is filled with both exciting opportunities & gruelling challenges

Mr. Prakash Ranjan, Manager SCM, The Vending Company

- Phased development of the innovative work culture in MSME environment to ensure quality delivery

- Benefits of ZED for Organization route to quality through product, processes and people-based improvements

Digital Transformation for Smart Manufacturing

Mr. Anil Taneja, Regional Director, PHDCCI

- Need to identify the research gaps between current manufacturing systems and Industry 4.0 requirements

- To draw Ind. 4.0 Strategy, it's important to understand the research gaps between the current Industry scenario & Ind.4.0 scenario as foreseen by researchers

- Popular Technologies (4.0), Autonomous robots, Big data & Analytics, Augmented reality (AR), AI, additive manufacturing, cloud computing, cyber security, IoT, system integration, and simulation

- There are basically 2 design principles of 4.0 : Interoperability, and Consciousness

- Companies all over the world are expecting to dramatically increase digitisation over the next five years

- According to International Yearbook of Industrial Statistics 2016- published by UNIDO with its ranking going up by 3 places, India has now been ranked 6th among the world's 10 largest manufacturing countries

Prof. Akshay Dvivedi, Department of Mechanical & Industrial Engineering, IIT Roorkee

- Highlighted Gaining Competitive Edge through Industry 4.0 and talked about the revolution that Industry 4.0 is heading towards

- Industry 4.0 is the subset of the fourth industrial revolution

- The fourth industrial revolution encompasses areas which are not normally classified as industry, such as smart cities for instance

- Industry 4.0 describes the trend towards automation and data exchange in manufacturing technologies and processes which include Cyber-Physical Systems (CPS), the Internet of Things (IoT), Industrial Internet of Things (IIoT), cloud computing, cognitive computing and Artificial Intelligence.

Ms. Nitika Khandelwal (IAS), Adl Director, Uttarakhand Skill Development Mission, Govt. of Uttarakhand

- The skill mission of the state is focused on facilitating modern-day technological exposure to the youth through ITIs

- The govt. is working towards upgrading the ITI facilities and redefining the curriculums as per the modern-days needs of the industry

- Wider industry consultations are also key points of agenda in this respect

Leadership and Engagement Strategies for Sustaining Innovation and Quality Culture

Mr. Ashok Singh, Vice President, Mahindra & Mahindra (SIIDCUL, Rudrapur)

- Highlighted the role of HR in Organization Culture Building

- The key to a successful organization is to have a culture based on a strongly held and widely shared set of beliefs that are supported by strategy and structure

- When an organization has a strong culture, three things happen: Employees know how top management wants them to respond to any situation, employees believe that the expected response is the proper one, and employees know that they will be rewarded for demonstrating the organization's values

- How the quality in shape of organizational culture can be improved

Mr. Anil Mohgaonkar, Vice President, Bajaj Auto Ltd., Rudrapur

- How to sustain Quality Culture

- Explained BAL's strategy of Brand Strengthening by Deep differentiation, Global Outlook and Cost Control, which has made BAL "The World's Favourite Indian"

- BAL, being the leading motorcycle exporter of India, has always focussed on achieving the Customer delight by Setting new Standards for quality thus moving strongly towards achieving World Class Quality (WCQ)

- Explained proven systems from BAL's manufacturing plants, which helps in establishing controls and sustenance of set standards of 4Ms

- While systematic process controls focussing on Input, Process and Output reduce variations, machines with Autonomation (JIDOKA) produce Zero Defect

- Vendor quality systems focussing on 3Ps (Can't Procure, Can't Produce, Can't Pass) help to achieve 100% DOL supplies

- By Cherishing our people through many Yutori Kaizens we create a committed workforce with high morale which has become the base of all these achievements

- At the end he explained about the concept of Furi Kaeri which tells us to stop and look back for; what we got, what we need to do more and How we are going to do it.

Mr. Suman Kumar Jha, GM Corporate Quality Corporate Assurance, Patanjali Ayurved Ltd

- Industry 4.0, is a transformation that makes it possible to gather and analyze data across machines, enabling faster, more flexible, and more efficient processes to produce higher-quality goods at reduced costs

- Advanced digital technology is already used in manufacturing, but with Industry 4.0, it will transform production. It will lead to greater efficiencies and change traditional production relationships among suppliers, producers, and customers

- In an Industry 4.0 context, the collection and comprehensive evaluation of data from many different sources

- Simulations will be used more extensively in plant operations to leverage real-time data and mirror the physical world in a virtual model, which can include machines, products, and humans

- With Industry 4.0, companies, departments, functions, and capabilities will become much more cohesive, across-company, universal data-integration networks evolve and enable truly automated value chains

- Industry 4.0 means that more devices—sometimes including unfinished products—will be enriched with embedded computing (IoT)

- Industry 4.0 solutions give manufacturers the ability to predict when potential problems are going to arise before they

actually happen. Without IoT systems in place at your factory, preventive maintenance happens based on routine or time. In other words, it's a manual task

- With IoT systems in place, preventive maintenance is much more automated and streamlined. Systems can sense when problems are arising or machinery needs to be fixed, and can empower you to solve potential issues before they become bigger problems

- Predictive analytics allow companies to not just ask reactive questions like, "what has happened?," or "why did it happen?," but also proactive questions like, "what is going to happen," and, "what can we do to prevent it from happening?"

- These type of analytics can enable manufacturers to pivot from preventive maintenance to predictive maintenance

Upskilling for Advanced Manufacturing

Discussion Agenda: Contemporary organizations understand the importance of skill enhancement to thrive in the competitive times of today. Currently the landscape of work is changing very rapidly that needs upskilling to embed them into the workplace. Industry 4.0 offers huge opportunity that requires a skilled and adaptable workforce.

Ms. Smita Agarwal, Dy Director, Uttarakhand Skill Development Mission, Govt. of Uttarakhand

- She gave her views on Enhancing Skills for a New Quality Paradigms in Academics. She stated that new paradigms of Education 4.0 are E-Learning Tools (Learning, anywhere any time), Personalized Learning/ flipped learning, Outcome Based Education, Project Based Learning, Hands on experience on the field, Simulation and Data Analytics.

Mr. Kunal K Ganguly, Asso. Professor Operations Management & Decision Sciences, IIM Kashipur

- Industry 4.0 is more than just technology. The human resource could be probably even more important in times of industry 4.0. The three categories of skills that are required are:

  - Technical skills, e.g. install and operate IT devices: RFID-tags, tablets or automatic guided vehicle (AGV)

  - Transformation skills (e.g. propose and realize changes in all threWe stages of the production system; learn to adapt transformation principles in their home plants)

  - Social skills (e.g. team work, knowledge transfer, knowledge acquiring, collaboration for synchronization of processes and delivery dates and analyzing defects) (Schallock et al., 2018)

- He presented Case of Learning factory in Germany

- He also presented about the "Didactical Approach of learning"

- On Digital Transformation and Intelligent Automation in Tourism and Agriculture he stated that within the next 5 years, Tourism 4.0-related technologies such as: cloud computing, mobile internet, robotics, artificial intelligence, autonomous vehicles and even 3D-printing are expected to have a considerable impact on global tourism workforce (World Economic Forum, 2016). Cognitive abilities and systems-related skills are becoming increasingly vital, within a social-skill-focused tourism education and training.

- Application of Internet of Things, Cloud Computing, sensors enabled networks, robotics, and Artificial Intelligence (AI) in agriculture will have a huge impact. Precision agriculture, in combination with more productive crop varieties/livestock and the use of decision support systems to foster evidence-based decision-making, can lead to the smarter use of inputs with greater rewards.

Mr. Arun Sharma, Manufacturing Upskilling Expert , Founder & CEO, SubMasteryEdtech (P) Ltd.

All business activities will have an positive impact of adopting industries 4.0 like shifting of traditional manufacturing to industries 4.0 manufacturing will include

- Transition of rigid and manual process to agile and automated process

- Standardization to personalized and customized products

- Large factories at centralized locations to small factories at decentralized locations

- Preventive maintenance to predictive maintenance with continuous machine conditions monitoring

- From stock-based planning to predictive and dynamic planning

- Individual machines to connected machines to optimize production

- From low and indirect client relationship management to high and direct engagement of clients

Some jobs may become just irrelevant. However, as we have witnessed in each industrial revolution – Many MORE new jobs will be created! So, we'll require a reskilling of existing personnel and new skill set trainings needs to be planned.

These are the area where skill need to be improved:

- Automated Production (Robots, Humanoids & machines)

- Big Data (action based on historical data to optimize production)

- Predictive Maintenance (continuous machine monitoring)

- Smart Transportation system (automated transport of raw material / final products)

- Predictive Maintenance (Continuous machine monitoring)

- Networked Supply Chain (monitoring and sharing of data in the supply chain)

- 3D Printing (making of complex parts without assembly)

- Connected Machines (Machines connected with each other to optimize production)

Other than above hard skills, there is a need to develop personal skills in the following areas

- Decision Making
- Communication Skills
- Working in team
- Adaptability and ability to change
- Complex Problem Solving

Mr Chinmay Roy, Head Technical Services, Tata Motors

- He talked about about Creating & Sustaining a Quality Culture in your Organization which may become a Role Model for others
- He focused on How TATA Motors is making Quality a Way of Life within the Organization and also with the vendors

Mr. Bharat Bhushan, Industry Consultant & Advisor, National Council Member, Bharat Niti

He talked on Skill Enhancement for developing expert personnel for industry where he shared his views on how to go about skill enhancement, which are as follows:-

- A person should continuously look for ways to develop his or her skills, abilities and competencies to enhance performance. Through effective skill enhancement, one become more capable, competent and confident in oneself and performs better
- Skill enhancement program should be goal specific in order to develop "core-competencies"
- By way of Re skilling and Up skilling
- He also brought focus on need for quality enhancement in the upskilling of the traditional skills imbibed and inherited from generations. He pointed out the use of CSR funds in this respect

Vote of Thanks

Mr C. K. Biswas, CEO, National Board for Quality Promotion, QCI

- QCI thanked audience for wonderful participation, all the speakers, media representatives, and staff from PHDCCI, QCI
- Objective of the program is to bring excellence in manufacturing which can be achieved by minimizing human intervention as quality hampers with human intervention
- To lead nationwide quality movement in India by involving all stakeholders for emphasis on adherence to quality standards in all spheres of activities primarily for promoting and protecting interests of the nation and its citizens
- Need of up skilling the current manpower as per the demand of new technology

MARK OF EXCELLENCE

National Accreditation Board for Hospitals and Healthcare Providers (NABH) is a constituent board of Quality Council of India (QCI), set up to establish and operate accreditation programme for healthcare organizations.
NABH has been established with the objective of enhancing health system & promoting continuous quality improvement and patient safety. The board while being supported by all stakeholders, including industry, consumers, government, has full functional autonomy in its operation.

NABH provides accreditation to hospitals in a non-discriminatory manner regardless of their ownership, size and degree of independence.

International Society for Quality in Healthcare (ISQua) has accredited NABH. The approval of ISQua authenticates that NABH standards are in consonance with the global benchmarks set by ISQua.

Vision
To be apex national healthcare accreditation and quality improvement body, functioning at par with global benchmarks
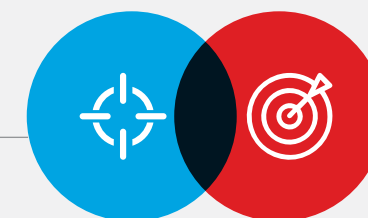
Mission
To operate accreditation and allied programs in collaboration with stakeholders focusing on patient safety and quality of healthcare based upon national/ international standards, through process of self and external evaluation

NABH Activities

NABH Accreditation Programs

NABH offers accreditation to Hospitals, Blood Banks, Eye Care, SHCOs/ Nursing Homes, OST Centers, CHCs/PHCs, AYUSH Hospitals, Wellness Centers, Medical Imaging Services, Dental Centers, Allopathic Clinics, Ethics Committees and Panchkarma Clinics

NABH Certification Programs

NABH offers certification to Medical Laboratories, Nursing Excellence, Emergency Departments, Medical Value Travel Facilitator (MVTF), Pre-Accreditation Entry Level for Hospitals, Pre-Accreditation Entry Level for SHCOs

NABH International

NABH has started its operations overseas under NABH International (NABH I). It offers all accreditation programs as being offered in India. The program is unique as in addition to the accreditation standards it requires compliance with local regulatory requirements

Training & Education

NABH conducts Education/Interactive Workshops, Awareness Programmes and Programmes on Implementation (POI)

For further details please contact:
National Accreditation Board of Hospital and Healthcare Providers Quality Council of India

5TH Floor, ITPI Building, 4A, Ring Road, IP Estate, New Delhi-110002, India
Ph.: 011-42600600; **Fax:** 23323415; **Email:** helpdesk@nabh.co; **Website:** www.nabh.co
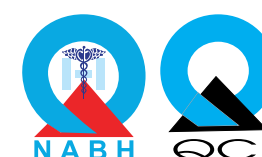
Leveraging Quality for Manufacturing Competitiveness

23rd January 2020 | Taj Gateway , Kochi

Q uality Council of India (QCI) jointly with FICCI organized the 12th Regional Quality Conclave (RQC) on Leveraging Quality for Manufacturing Competitiveness on 23rd January 2020 at Taj Gateway, Kochi. The primary objective of the Conclave was to discuss quality systems and practices to achieve competitiveness in the manufacturing sector. The Conclave

witnessed presentations and discussions on strategies that drive global competitiveness in quality, role of innovative designing, smart technologies and personnel excellence driving quality in manufacturing.

The Conclave had four sessions on "Quality to Achieve Global Competitiveness", "Role of IIoT in Quality", "Quality by Design" and

"Driving Quality through Personnel Excellence".

The Conclave witnessed participation of over 130 delegates from various segments of the industry such as skill development centres, engineering, consultancy, Rubber industry, IT firms, pharmaceuticals, FMCG, etc.

Inaugural Session

Mr. C K Biswas, CEO, NBQP briefed the audience on Quality Council of India (QCI) and the role of its various bodies. He also mentioned that from 2018, QCI started coming up with Regional Quality Conclaves with the intent of reaching out to people instead of people reaching out to them. At the macro level, quality enablers refer to good leadership skills, good people management, effective policies & strategies and resource management which is vital for technologically advanced processes. Industry has seen transformation from Industry 1.0 (Steam Engine) to Industry 4.0 (automation) where machines are monitoring data to remain ahead of time.

Mr. M Khalid, State President, The Kerala State Small Industries Association (KSSIA), encouraged MSME sector to participate in this budding opportunity and establish themselves with the help of various state government policies. He spoke about Investment Promotion Facilitation Act, online portal for ease of doing business, from licencing to certification, single window will be there. He also clarified some aspect of Industry Protection Act and promoting Small Scale Industry via developing quality competitiveness among themselves. He encouraged SSIs to develop and perform par excellence on International Quality standards in order to establish and flourish not just domestically but globally.

Mr. Shyam Bang, Chairman, FICCI Task Force on Manufacturing Excellence and NABCB addressing the delegates

Mr. Deepak L Aswani, Chairman, FICCI Kerala State Council mentioned Import substitution to be a way of going ahead rather than importing high quality goods. Newer processes of manufacturing needed to be developed and promoted and only by inculcating these technologies India can become number one Start-Up Space. Our good Human Development Index can make up for industry corridors, clusters, ports and open opportunities to Global Village. He spoke about IT into manufacturing, defining the future. He expected Industry 4.0 to improve Indian Quality conditions and thanked FICCI & QCI to organize the conclave.

Mr. Shyam Bang, Chairman, FICCI Task Force on Manufacturing Excellence and NABCB delivered the theme address and emphasised on the need of manufacturing quality products in India. Mr Bang mentioned that manufacturing is a crucial sector for our economy as it provides employment to both skilled and unskilled labour force and therefore the theme chosen for the conclave has a great relevance. The approach

today is to improve quality systems in the country and make it globally competitive. Manufacturing in India must grow at a faster rate than GDP growth rate. We must build credibility, consistent production quality should be maintained, efficient logistics arrangement, compliance to international standards would lead to higher productivity.

He stated that manufacturing industry must support suppliers. Supply chain is very important aspect of manufacturing. According to Mr Bang, the only way we can control our trade deficit is by increasing exports and for providing a push to exports, it is essential to manufacture quality products.

Mr. Santosh Koshy Thomas, Managing Director, Kerala Industrial Infrastructure Development Corporation (KINFRA) spoke about the importance of quality over price of the products. There is a need to interlink wisdom of people and wisdom of data to realize full potential of quality. He spoke about various developments in cochin and around which can help in utilizing the optimum domestic capacity. Cochin-Bangalore Industrial corridor with an area of approx. 1700 acres will be the upcoming opportunity for Kerala MSMEs to tap into along with Petrochemical plant at cochin.

Mr. Santosh Koshy Thomas, Managing Director, Kerala Industrial Infrastructure Development Corporation (KINFRA) delivering keynote address

Quality to Achieve Global Competitiveness

The session was chaired by Mr K Harikumar, Managing Director, The Travancore Cochin Chemicals (TCC) Limited. The key speakers in the session were Mr Rajeesh Nair, Group Manager - Quality, Apollo Tyres Ltd; Mr. Ke S Ramakrishnan, DGM -Marketing & Management Representative- ISO, Indian Rare Earths Ltd and Mr Sanjoy Bhattacharyya, Factory Manager (Mysore), Hindustan Unilever Limited.

Some of the key discussion areas of the session were:

a. There are two types of Quality – Product and Service Quality. Product quality includes dimensions like Performance, Features, Reliability, Durability and Safety. Service Quality includes dimensions like Speed of

Left to Right: Mr. Ke S Ramakrishnan, DGM -Marketing & Management Representative- ISO, Indian Rare Earths Ltd; Mr. K. Harikumar, Managing Director, The Travancore Cochin Chemicals (TCC)Limited; Mr. Rajeesh Nair, Group Manager - Quality, Apollo Tyres Ltd and Mr. Sanjoy Bhattacharyya, Factory Manager (Mysore), Hindustan Unilever Limited

Response, Facilities, etc.

b. Quality Management is the process of overseeing all tasks that are involved in maintaining desired level of excellence. Retaining both quality design and functionality is the key factor of an organization

c. Maintaining the competitive spirit is crucial for any business to get long-term profits. Few components which make an organization more competitive are Proper planning, Value creation, Customer service, Management of Financials, etc.

d. The costs of poor-quality account for 10 to 20 % of a company's overall costs, hence reducing the costs associated with poor quality is mandatory for companies that hope to compete in the global marketplace

e. Global competitive environment requires organizations not only to compete in their ability to enter new markets and achieve economies of scale but also

in their ability to effectively administrate knowledge flows in an information-based economy.

f. Only those companies who can produce world-class quality can compete at international level. It is extremely important for a country's business to be able to compete globally. When they are not able to do so, jobs are lost and the quality of life in that country declines correspondingly

"Role of IIoT in Quality"

The session was chaired by Mr. Deepak L Aswani, Co-Chair, FICCI Kerala State Council & Managing Partner, M/s. Lachmandas& Sons and the key speakers in the session were Dr. Balasubramaniam Somasundaram, Digital Transformation Consultant, Siemens India; Mr. Joseph T Cyriac, Managing Partner, Jocyt Aerospace and Mr. Gopinath V Gopalakrishnan, Assistant General Manager, Site Quality Head, NeST SFO Technologies Pvt. Ltd – Electronics Division.

The key discussion areas during the session were:

a. How IoT has spurred the rapid evolution of ideas and accelerated the tech world's capability to make digital ecosystems of the future, a present-day reality. The practice of mining data from the sensors that make up an IIoT ecosystem is what ushers forth and shapes a brave new world full of technologies that automate processes, expedite progress, connect industries, and ultimately, improve overall quality

Mr. GV Gopalakrishnan, Assistant General Manager, Site Quality Head, NeST SFO Technologies Pvt. Ltd – Electronics Division addressing the delegates. Left to Right: Mr. Deepak L Aswani, Co-Chair, FICCI Kerala State Council & Managing Partner, M/s. Lachmandas& Sons; Mr. Joseph T Cyriac, Managing Partner, Jocyt Aerospace and Dr. B Somasundaram, Digital Transformation Consultant, Siemens India

b. There is a need to make industrial processes more flexible. There should be customized products with variable batch sizes should come down to one

c. Flexible industrial processes will enhance performance and lifecycle optimization. Greater customization is proposed with increased demands on productivity

d. Automation and IoTization of Industrial process will help in faster development by 15%, shorter commissioning by 98%, greater customization and higher availability by 10%.

e. According to a study by VDMA industry association digitization proves increased productivity and shorter development cycles

f. According to Siemens and Singapore economic development board, following are the major indicators for readiness index: Vertical Integration, Horizontal

Integration, Integrated Product Lifestyle, Shop floor, Enterprise, Workforce L&D, Leadership Competency, Inter- & Intra Company, Strategy Governance

g. Growing volumes of data in the digital transformation are opening new productivity potential and greater flexibility both in terms of new cutting-edge technology and software programs

h. According to Project Management System ERP, Production Planning Tool, Process Preparation Tool and Asset Management Tool are some of the important new age techniques for managing Man, Machine, Material and Method

i. Products made from smart manufacturing requires DFM and DFT Analysis

Quality by Design

The session was chaired by Mr. C K Biswas, CEO, NBQP and panellists were Mr Jayendra Nattar, Manager-Operations Quality, Nokia Solutions Networks Pvt. Ltd., Chennai; Mr. Abhilash Zacharias, Assistant General Manager (Ship building-outfitting), Cochin Shipyard Ltd & Mr. Charles Paul K J, Senior Manager, Cochin Shipyard Ltd.

Some of the key recommendations/ discussion areas are as follows:

a. A suggestion to explore possibilities of using LNG/CNG in place of Acetylene was mooted

b. CSL approached M/s BPCL with the idea of conducting a feasibility study on using LNG/CNG in place of Acetylene. In response, M/s BPCL informed that they had conducted a similar study in Indian Railways. Subsequently BPCL made a presentation at CSL on the study they had conducted at Railways which also included other M/s BPCL M/s BPCL study they had conducted at Railways which also included other aspects of using Natural Gas for cutting applications.

c. CNG is safer compared to LPG since CNG is lighter than air and hence no accumulation in floor level in case of accidental release.

d. CNG can be used for all steel cutting applications presently being done at CSL and can replace Acetylene.

e. Storage of LNG in Cryogenic tank was discussed.

Left to Right: Mr. Jayendra Nattar, Manager-Operations Quality, Nokia Solutions Networks Pvt. Ltd., Chennai; Mr. C K Biswas, CEO, NBQP; Mr. Abhilash Zacharias, Assistant General Manager (Ship building-outfitting), Cochin Shipyard Ltd. and Mr. Charles Paul K J, Senior Manager, Cochin Shipyard Ltd

f. Encouragement for quality by design from Design Phase and it matures till Production Trials to have easy, error-free & effective Volume Manufacturing Process.

g. Nokia implements smart manufacturing process through running a screw program where products are scanned serial number wise, powered in sequence, loaded and fixed. Then, errors are monitored and rectified via scanning at MES and auto corrected simultaneously to MES.

Session 4

Driving Quality through Personnel Excellence

The session was chaired by Mr. Shyam Bang, Chairman, NABCB and FICCI Task Force on Manufacturing Excellence. The key speakers in the session were Mr. M K Ramachandran, General Manager (FS&E, PSM & QMS), BPCL Kochi Refinery; Dr D K Shrivastava, Head - Quality

Management Capability Centre (QMCC), L&T Power and Mr. Paul Abraham, AVP- Operations, Agappe Diagnositc Ltd.

Some of the key discussion areas of the session were:

a. In order to ensure personnel excellence at their manufacturing facilities undertake a number of Internal as well as External Trainings. Internal trainings include Technical Refresher Trainings, Skill Assessment, Parent Company Training etc

b. Substantial shift has been noticed from declining labour hours to

Left to Right: Mr. Jayendra Nattar, Manager-Operations Quality, Nokia Solutions Networks Pvt. Ltd., Chennai; Mr. C K Biswas, CEO, NBQP; Mr. Abhilash Zacharias, Assistant General Manager (Ship building-outfitting), Cochin Shipyard Ltd. and Mr. Charles Paul K J, Senior Manager, Cochin Shipyard Ltd

emerging new tasks of operation

c. Key Imperatives for driving quality through personnel excellence are considered as: Management of Integration of Technology in the Workplace Building, an agile and personalized learning culture, enhancement of the workforce experience, establishing metrics for valuing human capital

d. Redundancy should be replaced by reskilling and redeployment; Job automation should be considered as job reinvention and businesses should consider inclusion of viable & scalable capital human metrics

e. To shape people strategy for fourth revolution following are necessary: Holistic employee experience, learn it all mindset, lifelong learning culture, continuous digitally enabled learning and self-driven learning

f. Four core values for personnel excellence are based on TREC: Trust, Respect, Excellence and Care among employees.

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QUALITY | SAFETY | WELLNESS

Sustainable Strategies for Make in India, Digital India and Smart Manufacturing

28th February 2020 | Hotel Swosti Premium, Bhubaneswar

Quality Council of India (QCI) and PHD Chamber of Commerce and Industry (PHDCCI) jointly organized Regional Quality Conclave on the theme "Sustainable Strategies for Make in India, Digital India and Smart Manufacturing" on 28thFebruary 2020, at Hotel Swosti Premium Inn, Bhubaneswar.

The objective of this Conclave was to create awareness about sustainable strategies for smart manufacturing, deliberate on how organizations could continuously improve and innovate and share the technological advancements in Industry 4.0 and digital transformation.

The Conclave was an important step to sensitize MSMEs in Odisha on the aspects of quality consciousness of production process. The conclave was attended by over 210 delegates from top organizations from Odisha.

Key Discussion Points

Dr. Jatinder Singh, Director, PHDCCI

- There is increasing pressure on organizations to be agile and nimble to respond to continuous change while providing quality products and services that delight customers

- Over the last few decades quality and productivity have surfaced as a major area of concern for businesses

- Best Quality Practices is a system of shared values, beliefs and norms that focuses on continuously improving the quality of products and services

- Having the right set of skills in quality team is the foundation for building a strong quality department that will allow developing robust quality processes

Mr. C. K. Biswas, CEO, National Board for Quality Promotion, QCI

- Quality should be an integral part of the organizational culture and should be infused with the employees' DNA

- Smart manufacturing is a technology driven approach that utilizes IIOT or internet connected machinery to monitor the production processes so when the machines are networked with each other through IOT they will be able to communicate better with each other

- The goal of smart manufacturing is to identify opportunities for automating operations using data analytics to grow flexibility, productivity and quality for quantum jumps in manufacturing performance

- Both digital and smart manufacturing support Make in India program launched by honorable Prime Minister of India with the objective of increasing GDP and employment

Dr. H P Kumar, Former Chairman & Managing Director, National Small Industries Corporation (NSIC)

- In order to achieve the target of $5 trillion GDP we have a long gap and we need out-of-the-box strategies to jump to these growth parameters

- Make in India has been running over the last five years, but there is very slow growth in terms of the contribution of manufacturing towards the GDP

- Manufacturing is one the factors which will give thrust to our GDP, so it has to be dully taken care of

Mr. T. Ramchandru, (IAS retd), Former Principal Secretary, Department of Industries, Govt. of Odisha

- Sustainability is the essence of the entire human kind. Unless sustainable development becomes main agenda of industry, we will not exist after 100 years

- Quality and sustainability should be a way of life. Achieving the sustainable development requires partnership of government, private sector, civil society and citizens alike to ensure that resources for future generations are not compromised

- Appealed all entrepreneurs that one should innovate if we will not then we will perish. Do not copy-paste, internalize and understand it

Dr. Arun Kumar Panda (IAS), Secretary, MSME, Govt. of India

- We have arrived at the time where the government has to felicitate people who come to invest

- Earlier we used to go to the technology but now technology has come to us so we must use that technology

- Quality and Standards go hand-in-hand. Only Quality matters in the market and by maintaining it we can compete in the global market

- Many initiatives targeted at technological advancement, skill development and job creations are being implemented across various MSME clusters throughout the country

- MSME faces multiple challenges like access to finance, cutting edge technology and asymmetry of information

- Until and unless the farmers income is doubled and micro, small and medium enterprises become strong it will be very difficult to attain a 5 trillion dollar economy

- We need to invest in MSMEs for their technology up gradation, in the ability to adopt technology, the ability to group together, ability to have market access, credit access

- Ministry of MSME has introduced the Zero Defect Zero effect policy. There are several incentive structures for manufacturing industries who abide by the environmental norms and cause zero waste of natural resources

Shri. Tusharkanti Behera, Hon'ble Minister of State, Independent Charge, Electronics & IT, Sports & Youth Services, Govt. of Odisha

- The vision of IT & Electronics department in Odisha is to use information technology and electronics to transform Odisha into an innovation and knowledge-based society

- The IT & Electronics department is playing a huge role is making the Chief Minister's 5 T agenda successful

- Government of Odisha has been following a methodical approach by preparing industry trade policies like ICT policy, E-governance road map, promotion strategy, IT procurement procedures, and guidelines and following them closely to create an ICT enabled environment to enable citizen centric services delivery as well as boosting productivity and efficiency

- We must be ready to implement emerging technologies like Internet of Things, machine learning, block chain etc to comply the industry 4.0 revolution

- For sustainable growth of industries manufacturing quality is very much essential and important

Conventional to Smart Manufacturing

Dr. S K Rath, Director (Personnel) Odisha Mining Corporation Ltd

- In the mining sector the transition is happening to a low carbon economy because mining industry is currently responsible for 4 to 7 % of greenhouse gas emission globally

- All mining companies are facing the challenge from the community when they start the business as they have to obtain the social license to operate

- It is important to align workforces. When new technology is introduced the challenge on the HR front is to make sure that the skill sets of old employees are updated so that they embrace the new technology

Dr. H P Kumar, Former Chairman & Managing Director National Small Industries Corporation (NSIC)

- Make in India can only happen when there are large numbers of new enterprises established in the country

- If we want to take Make in India program forward and achieve 5 trillion economy, we have to set up new business enterprises

- Funding support is very important. Government of Odisha provides 25% capital subsidy upto one crore

Dr. S K Sahoo, Director Incharge, MSME DI, Bhubaneswar

- MSME DI implements the schemes formulated by the

ministries and development commissioner's office

- Government of India has introduced a scheme Zero Defect and Zero Effect (ZED) which helps develop an Ecosystem for Zero Defect Manufacturing in MSMEs

- Government of India is taking multiple initiatives for digital manufacturing to help the MSME sector

Dr. S K Kar, Chief of Quality, Consultancy and MSME Service Divn, Central Tool Room & Training Centre, Bhubaneswar

- Technology is not smart unless it is sustainable

- In the evolution of manufacturing we find there is traditional manufacturing which was taken over by lean manufacturing, green manufacturing where the product is eco-friendly, and the future generation manufacturing that will emerge it will be sustainable manufacturing

- In this era the MSMEs should be prepared on their focus area to make their process and product sustainable

- Communication is very important as it creates engagement community an alignment of the organization.

Dr. Suman Bhatacharya, Director, School of Career Advisory & Head, Next Gen Learning, KIIT University

- Digital as a concept is not new to anyone, in manufacturing industry digitization started almost 15 years back when ERP as a technology was adopted

- Earlier business used to drive the technology but now technology is driving the business

- As a manufacturer one needs to start thinking to have IOT enabled product so that it can be connected and used by multiple people

Dr. R N Behera, Former Director, NIC, Bhubaneswar

- Basic structure of digital India is digital infrastructure as a utility to every citizen

- Basic requirements for any manufacturer are high speed

internet, mobile phone banking, and safe and secure cyber space

- Seamless integration across all departments is also very important

- Digital literacy is also required. Empowerment and education of citizens is also important

Digital Tools for the Future Businesses

Dr. Jatinder Singh, Director, PHDCCI

- In this digital revolution, Partnerships and Co-Creation is the greatest partnership of all time. There has to be convergence of humanity and technology. Using digital technologies, we have to innovate new ways of collaborating, communicating and co-creating

- The ability to staff, manage and lead increasingly automated organizations will become an important competitive differentiator

- Digital assets and capabilities are the part of new balance sheet. These assets and capabilities, both hard and soft, are increasingly becoming pertinent for innovation and disruption.

Mr. Ashwini Rath, MD, Batoi Systems Pvt Ltd

- There are three stages of business processed, first is supply chain and

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28th February 2020 | Hotel Swosti Premium, Bhubaneswar

logistics. Second is manufacturing and third is customer relationship or distribution

- It is said as industry 4.0 is implemented people are losing jobs but essentially, we are creating jobs; with industry 4.0 the skilling will be a bit different but it will create more jobs

- Technology offers a new layer of software which simplifies operations and enables feedback loops across manufacturing lines for quality manufacturing

Mr. Chinmyananda Padhi, Director, M/S Udyate Technologies Pvt Ltd, Bhubaneswar

- Every century had improvements and had eased our lives. Earlier it was the people who took the decision, we used to do the data procession inside our mind and took the decision through our experiences and our learning's but now the same is being done by technology

- Industry 4.0 has already started with big organizations.

Organizations have invested billions in adopting industry 4.0. Now we are focusing to implement industry 4.0 even in small organizations

Dr. Anupam Gayen, Senior Branch Manager, NSIC, Bhubaneswar

- The MSME sector in India is the backbone of the Indian economy and one of the prime drivers of employment

- Lack of understanding and knowledge about digital tools for communication has resulted in only 34% of Indian MSMEs adopting digital means for interaction with employees, customers and suppliers

- 70% of MSMEs cited lack of knowledge and guidance in using digital tools.

- In general ICT applications have become essential for any enterprise that has to sustain in a global environment

Implementation and Design for Industry 4.0

Mr. Sibasis Maity, Former Managing Director, Central Tool Room & Training Centre, Bhubaneswar

- The concept of industry 4.0 evolved from Germany, the mindset of SMEs regarding it is very costly in implementation and small-scale industry cannot afford it. It is a challenge for the Government to change the conception of these sectors

- The new startups can take the advantage of these industrial revolutionary technologies, as it is very cost effective

- Connectivity, IOT, PLC, Software are some of the basic essentials required in automation.

- Industry 4.0 can improve the quality, productivity, minimize investment and also can broaden the scope of the product. With automation, it is possible to analyze the big data within very less time

Mr. Sanjeev Mohapatra, Director, Anand Industrial Gases Pvt Ltd.

Stakeholders' engagement is a process by which the organization involve people who are directly involved in

the company's decision. They are also reliable source of exchanging information

- Mutual respect, trust are essential ingredients in Stakeholders' engagement

- Stakeholders are important parts of the company; without them it is very hard to run the industry

Mr. J K Rath, Chairman (FICCI & UCCI) MSME Committee Bhubaneswar & Director, Mechem Industries Pvt. Ltd., Bhubaneswar

- Collaboration between man and machine is essential in industry 4.0

- Cognitive ability of man plays a major role in industry, where machines lack

- Starting from recruitment, HR Personnel can take advantage of the automation tools to serve the industry better

- Industry 4.0 is not going to take the jobs but there is need to modify the nature of jobs and preparedness of manpower

Mr. Ashutosh Kumar, Mentor, Startup Fellowship

- MSMEs and Startups have huge potential in employment generation and contribution to the overall economic growth of the country.

- The changing nature of market requires up gradation of industry, products, machines and also manpower

- GOI should create active facilitation centers for MSMEs

- Production must comply with market need and also the form of marketing

Mr. C K Biswas, CEO, National Board for Quality Promotion, QCI

- Without Innovation and Collaboration we cannot prosper in the days to come

- Cyber security is very important because the more data you put up the more vulnerable you are to getting hacked

- It is getting clear that Industry 4.0 initiative will create more jobs

- Digital tools are not expensive but we should know which all digital tolls are required and we should apply them judiciously

- There are capabilities in the startups but we need to discover it

- With industry 4.0 hardware and software implementation we are trying to productivity as well as the predictivity of the system

- The foundation of any quality improvement is to develop a quality culture or mindset within the organization and integrate it throughout the company

Summation & Vote of Thanks

Members Write

Dr. Dhrubajyoti Bhattacharjee

Research Fellow in the Indian Council of World Affairs, New Delhi

Rahul Giri

Department of Economics, Delhi School of Economics, University of Delhi

Defending the Indian Coasts – India-Israel Joint Cooperation

India has been long known for its maritime strength and post-independence has always stressed on strengthening its maritime security, identifying the pivotal role of the coast guards and Indian Navy. The total length of the Indian coastline can be divided into two parts: mainland which is approximately 5,422.6 kms and island territories which is approximately 2,094 kms (which includes Andaman and Nicobar Islands and Lakshwadeep Islands): 7,516.6 kms remains to be the total coastline of India.

Along with the large geographical landmass it represents, along with its Exclusive Economic Zone, India sits centrally at the crossroads of trans-Indian Ocean routes. Most cargo ships that sail between East Asia, America, Europe and Africa pass through Indian territorial waters. Especially, after the 2008 Mumbai terrorist attacks, multiple steps have been taken and many initiatives adapted to strengthen the coastlines. By adapting two phases and with the estimated expenditure of around Rs. 2,000 cr, a Coastal Security Scheme (CSS) was augmented with plans to build more Coastal Police Stations (CPSs) and surveillance infrastructure which would be completed by 2020. Within the frameworks of the National Command Control Communication Intelligence (NC3I) programme to help counter potential infiltration from terrorists and pirates, eight coastal radars have been set up.

In the process of protecting its coastlines, the government has been taking initiatives to bring in the latest technology for strategically enhance its surveillance capabilities and ability to counter activities that remains detrimental to national security. In the growing India and Israel cooperation, coastal protection and surveillance has slowly started gaining prominence. Along with other defence cooperation, India and Israel has jointly developed the modified Barak 8 surface-to-air missiles (SAM) which can neutralize airborne threat including aircraft, helicopters, anti-ship missiles, and UAVs as well as ballistic missiles, cruise missiles and combat jets. A $630mn contract was signed between the two countries in May 2017. This will facilitate to supply air and defense missile systems for four ships of the Indian navy, which will be deployed to defend the Indian coastlines. The project will be jointly carried out by Bharat Electronics Ltd and Israel Aerospace Industries as part of India's "Make in India" policy.[1]

Controp Precision Technologies Ltd, an Israeli company, has been playing a major role in developing systems that can perfectly perform the protection of the coastlines throughout the world. It is already assisting the Indian defence forces by providing hundreds of FTA Optronic Sensor Systems, a day/night optronic sensor system, for providing day/night anti-aircraft protection by means of the advanced automatic air tracking system, along with thermal imaging cameras. CONTROP has also supplied dozens of FOX thermal imaging cameras to a large Public Sector Undertaking (PSU) systems' integrator in India, as part of the new Naval Fire Control Systems Programs. These FOX thermal imaging cameras, which include Controp's proprietary Continuous Zoom Lens, have been interfaced with a Weapon Station and with Fire Control Radar.[2]

Controp has signed a cooperation agreement with system integration company Defsys Solutions Pvt. Ltd. of New Delhi, for the production and marketing of Controp's devices in India in March 2016 under the "Make in India" initiative. Dror Sharon, president and CEO of Controp stated: "Controp has been active in India for more than 10 years…There is a significant need in India for our extremely popular intruder detection systems and camera payloads, which their unique technology characteristics make them good value for money solutions. We see the Indian market as strategic and with huge potential. We are very much ready to transfer knowledge and production to local industry". He further stated: "The company has very advanced manufacturing facilities that will allow us to produce our products in India and thus meet the 'Make in India' policy promoted by the Indian government."[3]

Not only through technology, Israel and India have adapted people-to-people dialogue in the process of strengthening each other's' security infrastructure. In March 2017, the Centre for Human Security Studies (CHSS), in association with the Andhra Pradesh Police, organised a workshop which was attended by delegates from Israel along with six other nations and strategic and academic think tanks from India. The sole topic of discussion was the security of the Andhra Pradesh coastline, which is at the forefront of the state government's agenda under the set of maritime security policies called Mission 974.

There are areas where Israel and the companies that have developed in the protection of coastlines, can assist India in this initiative. Mentioned below are some of the systems developed by Israeli companies, which might be useful for the Indian Coast Guards and Security Forces, in the future.

The Katana unmanned surface vessel has been used for missions including protection of exclusive economic zones, including - harbour security, patrol of shallow coastal and territorial waters, surface and electronic warfare and offshore platform protection (plus oil rigs, pipelines, and more). Katana includes autonomous navigation, collision avoidance, advanced control system and is equipped with various payloads (including electro-optical), communication systems, radio (Line of Site, LOS, or NLOS), radar and optional weapon systems.

The SPIDER LR Long Range remain very-long range observation system (V-LOROS), which incorporates a 1,400mm IR camera with continuous optical zoom lens, a daytime 1,000mm camera and a laser range finder (LRF). The SPIDER LR is part of a family of EO/IR intruder detection systems and was designed to provide extended performance capabilities for very long-range applications. In addition to observation capabilities, the system provides panoramic scanning and automatic intruder detection. The SPIDER is a Long-Range Observation System (LOROS), and has also been deployed for mobile area surveillance and 24/7 force protection overseas. In addition, the SPIDER is used worldwide for automatic intruder detection in other important applications including security of borders, coastlines, seaports and harbours, airports, critical infrastructures and more.

Along with the SPIDER observation system, there is the CEDAR Compact Electro-Optical Intruder Detection System, which is a highly sophisticated electro-optical Day/Night Panoramic Intruder Detection System, which automatically detects intruders while scanning a desired wide area or section. The scan sector may be selected in both azimuth and elevation axes, whereby the wide dynamic range is provided by an accurate motorized Pan and Tilt Unit. The CEDAR System operates in a panoramic Scan Mode for multiple intruder detection as a primary mode of operation, and may be switched to full Observation Mode for detected target recognition and identification. A state-of-the-art continuous optical zoom for both the CCD and the FLIR cameras provides a powerful tool for target recognition and identification while in Observation Mode.

The SPIDER and CEDAR systems are proven for securing coastlines from intruders by detecting swimmers, small boats and more. The systems provide a virtual fence over the water as they automatically detect intruders from the sea before they reach the defined boundary. The recognition, identification and tracking of intruders from the sea are keys to protection and directing of security forces to the exact location.[4]

With the strengthening of relations, multiple avenues of cooperation have opened up, which significantly stresses on initiatives taken by people of both the countries. Catering to mutual geo-political sensitivities, India and Israel can work together in strengthening regional and multilateral forums, building peace, and stability in each other's regions and beyond.

[1] Israel Aerospace Industries gets $630 million Indian navy contract, Reuters, May 21, 2017, http://www.reuters.com/article/us-aerospace-israel-india/israel-aerospace-industries-gets-630-million-indian-navy-contract-idUSKCN18H06T (accessed on October 27, 2017)

[2] "CONTROP to Supply Optronic Sensor Systems to the Indian Army", Israel Defence, March 22, 2016, http://www.israeldefense.co.il/en/content/controp-supply-optronic-sensor-systems-indian-army (accessed on October 27, 2017)

[3] Hod Hasharon, "Defsys to Manufacture Controp Products in India", Photonics, March 22, 2016, https://www.photonics.com/Article.aspx?AID=58481 (accessed on October 27, 2017)

[4] Bharat Verma, "Homeland Security", Indian Defence Review, vol. 24, January March 2009, p. 103

Saurabh Turakhia

The Times Are Disruptive. Can We Be Creative?

The Olympics has been cancelled only four times -- once at the time of the First World War, twice when the Second World War was going and now, during the Coronavirus pandemic. Clearly, the globe, the connected globe is facing an unprecedented crisis. Several nations are in lockdown, job uncertainty looms large, businesses are struggling to come up with continuity plans and nations are wondering how much stimulus package will be adequate to kickstart economies. However, can we change the perspective to see if this crisis can present us with a new order, a new perspective on how we can approach our professional lives? Everyone in the world may be confined to homes, but everyone is connected, virtually. The internet is a silver lining in such times that enables us stay updated and

even use the platform for meaningful purposes. Coursera has opened up its courses to educational institutions and made them available for free. Counsellors are conducting their sessions through video conferencing, so are professionals. Many have finally got the time to access their huge libraries and read the books they have purchased over the years. Families are spending more time together. This may just be the right time to consider if technology can redefine new ways of functioning as 'Work from home' will be the norm for short term. Can we think of virtual events? Can thought-leaders reach out to their followers through videos? It is happening, in small ways. How will educational institutes realign themselves to the reality of no physical attendance? Teachers are sharing worksheets

and notes online. Can the same technology be used by professionals to train people remotely? Will remote healthcare to the extent possible, gain significance? Will we see 'Healthcare-first innovations', going forward? Will movies be launched online? Maybe the low-budget ones, will, for the internet audience has peaked, as everyone finds it the best way to de-stress. Netflix and OTT platforms are seeing a rise in subscriptions. This is the time for ideas, ideas that promise to take us through these troubled times with assurance and hope. This is the time for reinvention as we wake up to new realities and realise that in a world filled with so many disruptors, perhaps nature turned out to be the biggest disruptor.

Pradeep Paranjape

Lean Manufacturing Consultant,
Consultant Business
Improvement - QCI/NBQP

Business Revival Panch Sutras for SMEs
Some important tips for Business after Lockdown

Leadership

You are the Soul
You should be seen on battleground
Take the biggest cut yourself
Ooze out confidence

Finance

Priority to restoring business cycle of Order to Cash
Catch 22: Moratorium or Interest
Be informed on Govt./ Bank Schemes.
Use them for Working capital management.
Inventory is money locked up, make it move
Essentials first

People Management

Try & reduce stress on people
Simple schemes like providing food-grains, easy advances, out of turn prizes
Be fair to all & you should be seen fair to all

Operations Management

Money Generating Sutra
Convert all WIP to products & ship out
Process many small quantity orders
Treat suppliers as your extended family
The more the cycles the more is the surplus/profits
Use TOC, Flow, JIT concepts

Customer Focus

Look for small quantity, smaller conversion time - many orders
Keep them informed – Good or Bad
Time to Win Trust by being Reliable, Responsive, Positive
Focus on urgent critical orders

For a running business, a sudden stop is like a crash. It can be imagined if a train running at 100 kmph is stopped applying sudden brakes. Often it derails.

The Coronavirus has done exactly the same. The earlier we accept the derailment, the better will be our preparedness for getting it on tracks. The history is full of examples of human resilience & human grit. Like in

a boxing match, often the winner is the one who gets going after a knockdown punch.

So, the first sutra of 'Leadership' comes into play. The leaders of the organization should be at the battleground leading their troops. Yes, it is important that a Leader is seen on the battleground 'Calling Customers', 'keeping high morale of the workers', 'Always available – present for mishaps',

Tracking Suppliers, & most importantly 'Managing Finances'. It is not easy to keep composure, patience but these are unusual testing times. Many of you should remember your old days when you built this organization. This is not a brick and mortar structure; it has a soul – which is you.

This is a classic case of constraint management. So many requirements from all sides and depleted, meagre

resources in hand. The one who can prioritize better & channelize them properly will find it easier in shortest possible time.

One primary requirement of a leader is that he should be fair to all and should also be seen fair. As an example, he should be taking the biggest cut to start with.

The next sutra is of 'Operations Management'. Operations create Value in the organization. Unless the value creating cycle of our business is re-established, unless the rolling is started, money generation will not start.

You may be having some stocks, some unfinished businesses. Try and complete them as soon as possible. The money may not come immediately because the other side is equally in shambles, but by this way your rolling can start in the first week itself. Some amount in receivables can be very handy for bankers.

Then you should be choosy in selection of orders. Reach out to cash rich customers, inform them you are up & running. There will be always some urgent, super urgent orders. Attract these orders and complete them with all your efforts on time and error free. This is your test. If you can be a dependable supplier in trying times, it will be etched in the memory of your customers.

Alignment with your suppliers is crucial in this phase. Help them, guide them, take smaller ones under your wings for some time.

I suggest do not take big orders. Take many smaller ones so that you can adjust & re-adjust deliveries in this supply chain nightmare.

Now this is the time to put in practice what you have learnt over the years.

TOC- Theory of Constraints – Identify your bottleneck & only schedule the bottleneck. The rest will fall in place automatically.

Creating Flow in Operations – Material should remain in factory for the shortest possible time.

JIT – Buy only what is required & when it is required. Make only what can be shipped out….

Pareto Analysis to understand efforts verses contribution.

Always keep some reserve capacity for urgent requirements

Kindly remember the Order to Cash cycle must be completed to generate surplus or profits. The more the cycles the more is the surplus. Perhaps you will be happy to realize the new approach of faster turnaround is the greatest gift of Coronavirus.

The third Sutra is of 'Finance'. It is a Catch-22 situation. You can use moratorium in various payments but by paying heavy interests in future. You will have to carefully study the available resources and come up with a least damaging solution.

Please make sure your priority is restarting of business cycle. Raw Materials, Supplier Payments, Electricity, Transporters, Workers, Tools, Consumables are all essentials for a manufacturing unit. Similarly, office, communications, permits will be essentials for services.

The typical response by Governments to a crisis is 'Easy availability of Money'. Be informed of various schemes, make use of it to quickly re-establish your business in shortest possible time so that you can pay back the money at the earliest.

Working Capital Management perhaps holds the key to revival. This has a

direct connection with inventories in hand. Smaller lot sizes, faster inventory rotations can reduce the stress on Working Capital. This is the test of your reserves. Also, a test of how you can convert your locked down inventories to cash.

The fourth Sutra of 'Customers' Focus' is the engine of your business. It brings you orders. Travel may not be possible in near term but one-to-one connection on Zoom or Video Calling is. Take the stock of the situation. Check who has woken up early, who is streamlining quickly. Your CRM data can tell you who are good paymasters. Be after them. Look for urgent smaller quantity orders for a few months. Expect your delivery performance to be only 50% in current supply chain mayhem. Murphy is everywhere. (Ref. Murphy's Law: Whatever can go wrong will go wrong)

In spite of all odds we have to prove our mettle. Shorter (timewise & quantity wise) but critical orders is the key to revival. This is the time when we can win the trust of our customers. Be responsive, be reliable, be positive. You should be the first to inform your customer in eventual delays. He may shout on you, but he will be prepared. You will be surprised that Coronavirus had got you so many new close friends and taken you into hitherto unforeseen businesses.

People is the business. Take care of the last person in your organization FIRST. This will take you forward by leaps & bounds. Remember everybody is stressed and our job is to reduce this stress. Simple gestures in the form of providing food grains, easy advances, out-of-turn prizes for good performance can do wonders to the morale of the people. Be fair to all. Always be positive and ooze out confidence.

It is seen that people do think. Communicate with them. Many out-of-the-box solutions are often derived on the place of work and not in the conference. It is important to harness this hidden treasure with workman and people. Use of Kaizen – Small but critical improvements supported by rewards & recognition can really change the future of your organization.

The sutra of 'Strategy' normally comes first in Stable Business Environment. But in these unusual, trying times it comes last. The current Strategy is only one – Survival, Getting Back, Standing on our own feet.

Your Vision-Mission is already spelled out. Try to be closer to it. In this revival efforts keep looking for your strengths – be it people, be it products, be it customers or different markets. You can build on these strengths later-on. Keep an open eye, open mind to look for opportunities. Think ten times before you decline customer's request. Several opportunities will come which

could be pillars of your future strategy in few months.

Always there will be two sides to a coin. We are under a lockdown on the darker side. The coin will be flipped sooner than later.

We can continue to blame our luck…… Why me? Why Us?

Or

We can take this opportunity as a starting point of rebuilding our dream business based on Six-Mantras.

When the going gets tough….the tough get going……..

Best Wishes for your Success!

Dr. R. C. Singh

Professor in Physics, School of
Basic Sciences and Research,
Sharda University, Greater Noida.

Dr. Rohit Khokher

CTO, Vidya Prakashan
Mandir (P) Ltd.

Aashish Jain

TGT, Computer Science in
Department of Education,
Government of NCT, Delhi

Artificial Intelligence: Transforming eLearning and Shaping the Future

Nobody had thought about the current COVID-19 epidemic worldwide. More than 190 countries around the world are fighting this pandemic. Most of the countries have been closed for so many days, which has affected not only everyday life of ordinary people, but also the regular study of millions of students and their professional progress. However, thanks to the entrepreneurs, academicians, engineers, and scientists who together have thought about such kind of situation and built some resources that can be accessed anytime and anywhere. eLearning solutions have made life easier not only for the students but for almost all the stakeholders of the teaching-learning process. While developing such solutions can be costly, these are the only solutions that support the teaching-learning process by providing multiple virtual tools. eLearning solutions include: online classrooms, audio-video based content, online assessments and many other tools to keep the learning process going.

There are so many eLearning solutions out there today that can help with learning, but certain problems can arise when using them. Some of the issues could be:

The cost can be so higher that one can't afford

- The teaching pace or language can be a barrier for students to learn

- Customization of content based on an understanding of one as every student is unique in their own way

- Delay in resolving queries due to the unavailability of resource persons all the time

- Interactivity to keep the interest of a learner while using the eLearning solutions

Although the cost problem can be negligent because higher education institutions or schools can subsidize these solutions for students, other problems need to be addressed. As technology has come a long way in the past few years, these problems can be solved using Artificial Intelligence (AI). AI is like human intelligence that refers to programming a machine or solution to think like a human and mimic their actions. Machine Learning (ML), a branch of AI, allows a software application not only to behave more intelligently but also to improve automatically on its own. Various algorithms are being developed to achieve this. AI and ML can address all the issues stated above and can break the barriers in the teaching-learning process. **E-learning solutions can be developed with the help of AI and ML and functions such as:**

- Personalization facility of course content for students

- 24×7 resolution of queries to the students

- Creating assessments based on students' performance

- Enhanced students' motivation with the help of effective and interesting content

Automated assessments evaluation and delivering content based on that This article builds on how to use AI or ML to develop eLearning solutions and applications that have already been developed with AI or ML.

Artificial Intelligence/ Machine Learning Modules

Artificial Intelligence, as described above, mocks human intelligence through machines or solutions, and Machine Learning is the part of AI that serves the purpose of learning and training machines or solutions that can make decisions. The solutions are fed with an enormous amount of data that uses algorithms to process that data and train on it so that whenever a new query/input is given, it is capable of taking the appropriate decision. Before we discuss the different types of ML algorithms, let us first understand the commonly used terms:

Labeled Data: a well-defined data annotated and formatted with one or multiple labels, e.g. in a labeled image dataset, an image is labeled as it is a man's photo or woman's photo.

Classification: specifying the class to which data belongs to, e.g. {True, False}, {1, 0}.

Regression: to predict the continuous values, e.g. sales of the company in a year.

The main categories of ML algorithms are as follows:

Supervised Learning

The solutions developed using such algorithms learn from the labeled training data that help predict outcomes for unforeseen data. Different supervised learning techniques used to develop solutions are: Regression, Classification, Decision Tree, Support Vector Machine, Naïve Bayes Classifiers, etc.

Unsupervised Learning

The solutions built on these algorithms use unlabeled data, work on its own to discover information, and perform more complex processing tasks compared to supervised learning. Some widely used unsupervised learning algorithms are: Clustering, Partitioning, Overlapping, Agglomerative, Probabilistic, etc.

Semi-supervised Learning

These algorithms try to classify the unlabeled data using the labeled information set. These algorithms make some assumptions about the data before processing it.

Reinforcement Learning

These learning algorithms are more complex than the others. It deals with learning via interaction and feedback, or in other words acting in an environment and receiving rewards for it. These algorithms are categorized into Value-based, Policy-based, and Model-based algorithms.

Aforesaid algorithms can be used to develop an eLearning solution based on one's requirements. There is one subset of ML that is much popular nowadays, known as Deep Learning. This learning technique is based on artificial neural networks which learn from the large amount of data processed by algorithms inspired by human brains. The term deep refers to the number of hidden layers in a neural network that learn features of the data in a so-called features hierarchy. Let's understand how this deep learning technique can help in developing eLearning solutions:

Deep Learning Framework

Deep learning models provide impactful solutions for widely spread problems like classifications, clustering, predictions, and associations etc. The commonly used deep learning models in eLearning solutions are:

- Convolutional Neural Network (CNN)

- Deep Belief Network (DBN)

- Recurrent Neural Network (RNN)

- Deep Neural Network (DNN)

These deep learning models can aid in developing eLearning solutions, as shown in the framework (figure 1).
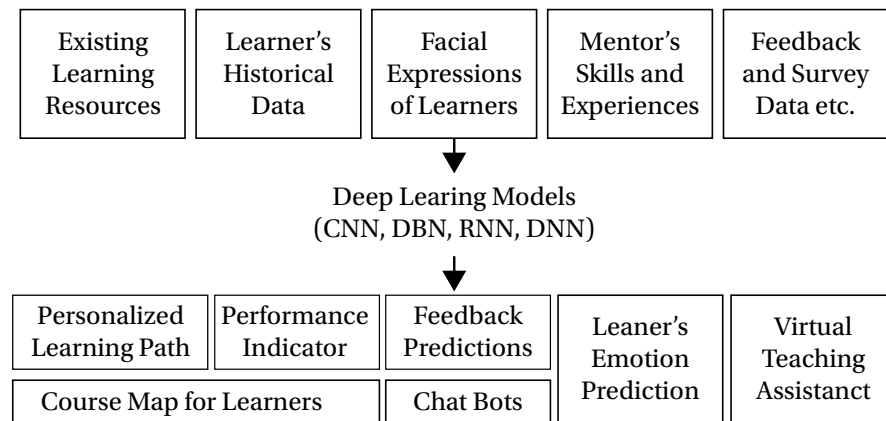
Fig. 1. Deep learning framework for eLearning solutions

Deep learning tools for eLearning solutions development

To develop an eLearning solution, it's advisable to choose a platform carefully that can fulfil all the requirements as each platform has its own strengths and weaknesses. Table 1 below summarizes some platforms for deep learning tools in e-learning applications.

Applications

Various eLearning applications have been developed using AI/ML algorithms. Some of them are listed below:

Domoscio's web and mobile application: It contains user-friendly interfaces to create, edit, and distribute learning content. The web application is the entry point for users and communicates with the existing learning environment: LMS, learning portal, quiz platform, virtual classroom, etc. Domoscio's eLearning platform consists of its adaptive learning, learning consolidation, and learning analytics solutions. One can visit https://domoscio.com for more information about it.

Sense education: This is the kind of solution that helps the learner to learn on their own pace with valuable feedback from their instructors timely, helps instructors to evaluate the assessments and provide feedback in lesser time and enhance the interactions with the learners and helps the administrators to maintain educational excellence while ensuring their economic sustainability. One can go to https://www.sense.education/ to know more about it.

Wildfire: One of the unique kinds of tools that convert your text document, videos, PowerPoint, etc. content to active learning content. The content may contain links to some outside websites like Wikipedia, YouTube, Ted Talk, etc. to enhance one's learning experience. More information about this tool can be accessed via http://www.wildfirelearning.co.uk/.

Schoology: This application can help a learner from kindergarten to 12th grade. The learning approach of school students is much different from the graduate students and this application is best suited for them. This application has a pre-integration of more than 200+ tools that fulfill the need of a class. The complete details about the application can be viewed on https://www.schoology.com/.

LevelShip: This is a machine learning-based learning and talent management system that uses behavioral analysis at primary, secondary, undergraduate, and graduate levels to conduct a cognitive assessment of the students, determine optimal instructional techniques and handle education needs. More information about this tool is presented at https://www.emergingrule.com/levelship.

Chatbots or Virtual Teaching Assistant: The chatbots act as virtual assistant that answer one's queries in conversation, serve as quick reference guide, and as a knowledge management tool. The Georgia Institute of Technology has introduced virtual teaching assistant that answers students' queries with distinct and clear solutions.

Table 1: Deep learning platforms and tools in eLearning applications

Platforms & Tools	Description
Microsoft Azure	Cloud based AI applications, such as bot-based apps or image recognition
Amazon Web Services	Amazon's cloud-based AI services
ConvNet	MATLAB based convolutional neural network toolbox
Theano	Provides capabilities like symbolic API supports looping control (scan) that makes implementing RNN's easy and efficient
Google's Tensorflow	An open source AI library, using data flow graphs to build models and allows developers to create large-scale neural networks
IBM's Watson	Cloud-based AI services to use with Watson platform
AIaaS (AI as a Service)	Cloud-based AI tools and algorithms for the eLearning development
Keras	Theano based deep learning library
Apache Singa	Open source library for deep learning
Deeplearning4j	An open-source, Apache 2.0-licensed distributed neural net library in Java and Scala

Conclusion and Recommendations

AI and ML are the revolutionary technologies that have changed the landscape of human civilization. These technologies have made it possible to create high-quality education accessible to everyone, anywhere, anytime. The eLearning solutions driven by these technologies can answer learner's questions, create personalized curriculums, recommend resources, and evaluate assessments. Changes in education have long been a popular view that may need to be adjusted to improve outcomes. Using these technologies, several e-learning platforms offer customizable courses that help students get the most out of their education.

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