2nd RQC

Quality for Manufacturing Competitiveness

12th February 2019, Pune

3rd RQC

Manufacturing Excellence for Increasing Productivity & Competitiveness

27th March 2019, Jaipur

QUALITY COUNCIL OF INDIA

QCI Creating an Ecosystem for Quality

QUALITY INDIA

A QCI PUBLICATION

January-March 2019

Dear Friends

It is indeed a pleasure to touch base with our stakeholders through this issue of Quality India. During this quarter we organised two Regional Quality Conclaves in collaboration with Confederation of Indian Industry (CII) and The Federation of Indian Chambers of Commerce and Industry (FICCI) at Pune and Jaipur respectively.

The primary objective of these Conclaves was to share the technological advancement and best quality practices on process, products and services in the manufacturing sector with special reference to future developments in the automotive sector. The aim was also to showcase the next generation developments in the automotive and allied sectors through expert talks and case-presentations. It also provided an opportunity to discuss and identify policy measures, best manufacturing/operational practices to be followed for sustainable growth of the manufacturing sector. These Conclaves witnessed encouraging participation of delegates from various segments of manufacturing.

Besides our focus on manufacturing, quality in healthcare has been one of the priority sectors in our country. It gives us immense pleasure to share that QCI has launched a new web portal -- Healthcare Organizations' Platform for Entry-Level Certification (HOPE), which will revamp entry-level certification process for HCOs/SHCOs. In order to maximize the impact, NABH has partnered with several organizations like IMA, PSAIIF, AHPI for spreading awareness about the process.

One of the other top priorities of the government has been the road infrastructure in the country. Today at present, India is constructing 26.9 kms per day (FY 2017-18). Ministry of Road Transport and Highways (MoRTH) launched Annual Awards for National Highway Projects. This was an initiative to recognise companies which performed exceptionally well and delivered finest quality services during the construction, operations, maintenance and tolling stage of highway development.

QCI, in association with MoRTH, developed a rigorous assessment framework and process roadmap to identify and award the best performing companies in the highway development sector. We followed two rigorous rounds of assessment: desktop and on-site. The applications were scrutinised by officials from MoRTH, NHAI, NHIDCL and QCI to check the validity and propriety of the information submitted by the applicants.

On-site assessment was conducted at project-sites across India by trained assessors and professionals of QCI. A standardised operational procedure was developed for each award category which included travelling across the length of the highway checking various parameters, surveying toll plazas and conducting interviews with project heads and key officials. A cellular device, app-based technical platform was used to conduct the field survey where geo-tagged and time stamped photographic evidence was collected for each parameter.

QCI is working on several other ambitious plans to usher in a quality era aimed at overall development of the country and we expect the cooperation of all the stakeholders in these endeavours. Thanks!

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

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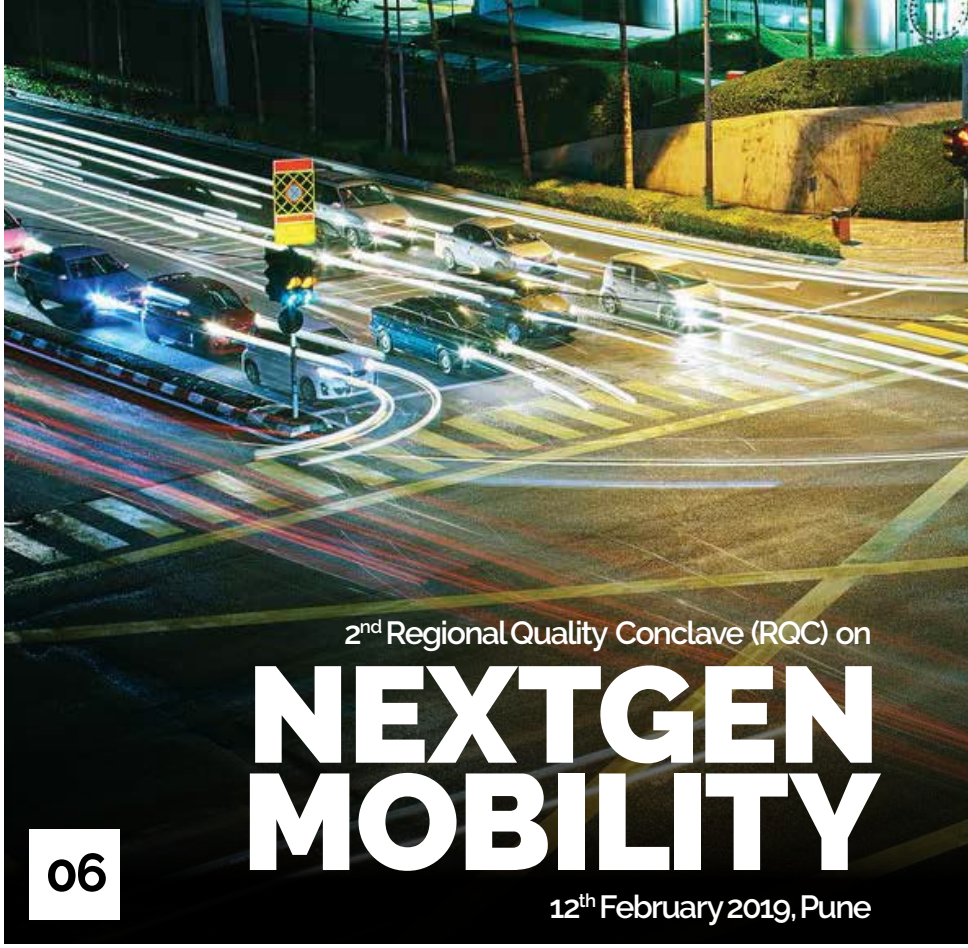

MEMBERS WRITE

Editorial Team:
Sanjay Singh
Anam Qureshi
Shalini Mukherjee

Designed By:
Nidhi Batra

2nd Regional Quality Conclave (RQC) on

NextGen Mobility

12th February 2019, Pune

*Quality Council of India (QCI), in collaboration with Confederation of Indian Industry (CII), organized the 2nd Regional Quality Conclave (RQC) on **NextGen Mobility** on 12th February 2019 at Hotel Hyatt Regency, Pune.*

The primary objective of this Conclave was to share the technological advancement and best quality practices on process, products and services in the manufacturing sector with special reference to future developments in the automotive sector. The aim was also to showcase the next generation developments in the automotive and allied sectors through expert talks and case-presentations, and the challenges these bring to India in meeting the quality expectation of the global customer. During the programme, QCI-D.L. Shah awards were also distributed to the organizations recognizing their quality contribution to the sector.

The Conclave was divided into 4 technical sessions, namely:

Product NextGeN: Breaking Technology Barriers through Disruptive Innovations

Process NextGeN: Ushering the Digital Manufacturing Frameworks

Service and Diagnostics: Creating the Ultimate Customer Experience

The Evolving Standards Ecosystem: Setting Extreme Quality Benchmarks

> "Trends such as autonomous features and vehicle electrification, and smart manufacturing frameworks are bringing together technology suppliers from wide areas such as information technology, big data analytics, communication networks, artificial intelligence, IoT, process automation and aggregation

Session 1

Product NextGeN: Breaking Technology Barriers through Disruptive Innovations was chaired by Mr. Nitin Nair, Head Automotive Vertical, Siemens India Ltd with speakers including Mr. S A Sundaresan, Vice-President, EV & eMobility Solutions, Ashok Leyland Ltd; Mr. Ramakrishna Donakonda, Bosch Automotive Electronics India Pvt. Ltd.; Mr. Anmol Kaul, Product Manager, Siemens PLM.

Session 2

Process NextGeN: Ushering the Digital Manufacturing was chaired by Mr. Gautam Dutta, Siemens India Ltd with speakers including Mr. Krishna Bhojkar, Volkswagen-Skoda; Mr. Vikas Swami, Kuka Robotics India.

Session 3

Service and Diagnostics: Creating the Ultimate Customer Experience was chaired by Mr. Prasanna Patwardhan,Chief Managing Director, Prasanna Purple Mobility Solutions Pvt. Ltd.; Mr. Sirish Batchu, Vice President, Ather Energy; Mr. Rajan Goyal- Regional Service Manger Western region, Siemens; Mr. Dattaraya Navalgundkar, Director - Kirloskar C4i4 Lab.

Session 4

The Evolving Standards Ecosystem: Setting Extreme Quality Benchmarks was chaired by Mr. Ramesh Koregave, Director, Strategic & International Business- Quality Austria Central Asia Private Ltd.; Mr. Prabhas Surana, Assistant Vice President, Academy Division, TUV SUD South Asia; Mr. V. Manjunath, Underwriters Laboratories Inc.; Mr. Kedar Apshankar, Director, Stud Craft (India).

The Conclave witnessed participation of around 250 delegates from various industrial segments, including manufacturing, mainly automotive and electronic equipments, etc. as well as from service industries.

Left to Right: Manoj Belgaonkar, Head- Project Management and Quality Management, Siemens Ltd.; Mr. Pradeep Bhargava, President – Mahratta Chamber of Commerce Industries and Agriculture (MCCIA), Pune; Mr. K. C. Mehra, Former Chairman, NBQP- QCI; Mr. Anupam Kaul, Senior Counsellor, CII; Mr. Avik Mitra, Principal Advisor, NBQP, QCI; Mr. Hari Taneja -D.L. Shah Trust for Applied Science, Technology, Arts and Philosophy, Mumbai

Inaugural Session

In the Inaugural Session, a video message of Shri Subhash Desai, Hon'ble Minister of Industries, Maharashtra State Government, conveyed the significance of automotive sector and the vital role this sector is going to play in the development of nation. Mr. Sunil Mathur, Chairman, NBQP also shared his thoughts on the significance of the theme of Conclave through his video message. The dignitaries present in the Inaugural Session included Ms. Rashmi Hemant Urdhwareshe, Director, ARAI; Mr. Pradeep Bhargava, President – Mahratta Chamber of Commerce Industries and Agriculture (MCCIA), Pune; Mr. Hari Taneja -D.L. Shah Trust for Applied Science, Technology, Arts and Philosophy, Mumbai, and Mr. K. C. Mehra, Former Chairman, NBQP- QCI.

Glimpses of

2nd Regional Quality Conclave (RQC)


NBQP


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NBQP
NEXTGEN
SIEMENS


SIEMENS


NEXTGEN
MOBILITY
Regional
Quality
Conclave
12 February 2019, Pune

Session 1

PRODUCT NEXTGEN – Breaking Technology Barriers Through Disruptive Innovation

Chaired By: Mr. Nitin Nair, Head Automotive Vertical, Siemens India Ltd.

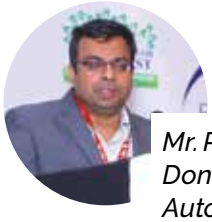
Left to Right: Mr S. A. Sundaresan, VP-EP and eMobility Solutions, Ashok Leyland Pvt. Ltd..; Mr .Ramakrishna Donakonda, BOSCH Automotive Electronics Pvt. Ltd.; Mr Nitin Nair, Head Automotive Vertical, Siemens India Ltd. and Anmol Kaul, Product Manager, Siemens PLM

Topic 1: Challenges and Emerging Solutions for Adoption of Zero Emission Vehicles in India

Mr. S A. Sundaresan, VP-EV & eMobility Solutions-Ashok Leyland Pvt Ltd.

The first Technical Session was dedicated to the advancements in technology for creating breakthrough technologies in products. The focus of the talk presented by Mr. Sundaresan was on the 10 Factors that were major contributors to ZEV architecture: (1) Payload (2) Performance (3) Cost including the Initial cost, Operations, Maintenance and Life (4) Pit Shop- Frequency, Time and Ease (5) Durability (6) Reliability (7) Comfort & Ergonomics (8) Safety (9) Contingency Options and (10) Collateral Consequence - Environmental & Societal. Mr. Sundaresan gave an overview of the ZEV Architecture and highlighted the barriers in the ZEV- Zero Emission Heavy Duty Vehicles, i.e. (1) Energy Source that includes- Energy & Power Density, Thermal mgmt. etc. (2) Power Converter Systems (3) The Vehicle itself- Maneuverability, Weight, Useable Space, Noise level etc. (4) Charging Infrastructure and Quick Refilling including Battery Swapping- TAT and the (5) Energy Transmission. He spoke about these companies' strategic alliance with Sun Mobility to develop electric mobility solutions focusing on the deployment of an ecosystem built around smart batteries and network for quick interchange stations.

Topic 2: Electric Vehicles -- The India Story in the Emerging Technology Curve



Mr. Ramakrishna Donakonda (BOSCH Automotive Electronics Pvt Ltd.)

Mr. Donakonda shared his views on the milestones and planning for 2025 and 2035 for electro mobility with respect to Cost, Energy and Power Density, Recyclability, Operating Temp Range. He highlighted the factors that contribute for the Lost Cost Solutions, which remain the key for the Indian market, and which include Infrastructure, Charging Time, Limited Drive Range, Electric Supply and Cost of the Vehicle. The importance

of the Ecosystem that comprises of Batteries, Vehicle / Driver, Mobility Operations, Second Life Batteries, GRID Services, Infrastructure to enable EV penetration was also shared.

Topic 3: Quality Systems for Creating Customer Delight

Mr. Anmol Kaul, Product Manager, Siemens PLM

The focus of Mr. Kaul's talk was on the Siemens Framework that comprises of three phases- namely:

- IDEALISATION
- REALISATION
- UTILISATION

Incorporation of them within the Quality Systems to Achieve Customer Delight along with an AGILE ECO SYSTEM- that identifies, creates, develops, integrates and optimizes which is implemented for an effective and efficient results were also discussed.

Session 2

PROCESS NEXTGEN – Ushering the Digital Manufacturing Frameworks

Chaired By: Mr. Gautam Dutta, Senior Director Marketing, Siemens India Ltd.

Topic 1: Industry 4.0 Framework for Auto Sector

Mr. Gautam Dutta, Senior Director Marketing, Siemens India Ltd.

This session was on the gradual shift toward digitalization of manufacturing and related processes.

The session was conducted in an interactive mode.

Mr. Dutta emphasized on how to augment Industry 4.0 with the help of the PILLARS of INDUSTRY 4.0 and Enhance Economies of Scale.

Topic 2: Industry 4.0 in Volkswagen India

Mr. Krishna Bhojkar, Head Manufacturing Engineering, Volkswagen-Skoda

Mr. Bhojkar highlighted the steps for Introducing Digitization, which starts from the Concept to Design to Production at Volkswagen that includes regular supplies from Vendors, Manufacturing to Order, use of RFID, Big Data Monitoring, carrying out Operations through the use of Human & Robot combination / collaboration and from thereon moving to Mass Customization.

Topic 3: Taking Quality to Next Level through Robotic

Mr. Vikas Swami, Vice President Automotive Business, Kuka Robotics India

Mr Vikas Swami said that DIGITISE-INTEGRATE & OPTIMISE requires a constant process of Learning-Unlearning-Relearning. He also presented Kuka's approach that includes - (1) Being a solution provider to the AGV (Automated Guided Vehicles) through the use of Servo driven vehicles, (2) Off-Line Programming, (3) Using workforce for defining processes and next level of digitization, (4) Driving down the Cost and Optimizing it.

Session 3

SERVICE AND DIAGNOSTICS – Creating the Ultimate Customer Experience

Chaired By: Mr. Prasanna Patwardhan, Chief Managing Director, Prasanna Purple Mobility Solutions Pvt. Ltd.

Left to Right: Ms. Priyanka Maithani, Assistant Director, NBQP, QCI; Mr. Dattatraya Navalgundkar, Executive Director, C4I4 Labs; Mr. Rajan Goyal, Regional Service Manger Western Region, Siemens India Ltd.; Mr. Prasanna Patwardhan, Chief Managing Director, Prasanna Purple Mobility Solutions Pvt. Ltd.; Mr. Avik Mitra, Principal Advisor, NBQP, QCI; Mr. Sirish Batchu, Vice President, Ather Energy; Mr. Shivesh Sharma, Executive Officer Trainee, NBQP, QCI; Mr. Ashish Gupta, NBQP, QCI; Ms. Pooja Shukla, Assistant Director, NBQP, QCI.

Topic 1: Innovating the Service Experience

Mr. Prasanna Patwardhan, Chief Managing Director, Prasanna Purple Mobility Solutions Pvt. Ltd.

The third Technical Session focused on the service and diagnostic elements associated with manufacturing.

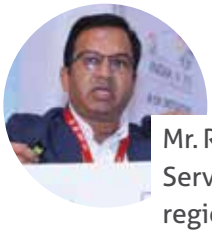
Mr. Patwardhan spoke on Enhancing Customer Service Experience through Technological Integration (Door-to-Door service, Mobile Ticketing and Smart Planning, Last Mile Connectivity, Implementing VHMS- Vehicle Health Monitoring System) Fuel Consumption, Engine Temp, Hard Breaking, Over Speeding, Torque etc, Driver Empowerment, Real Time Information etc.

Topic 2: Building a Service Infrastructure For Electric Vehicles

Mr. Sirish Batchu, Vice President, Ather Energy

Mr. Batchu highlighted the major factors that contributed towards building an effective Service Infrastructure which are - (1) Consistency of delivery across all Touchpoints (2) Use of Code for Diagnostics and predicted diagnostics and Behavioral Driving Lessons (3) Over the Air (OTA) updates, and (4) Thinking from Scratch.

Topic 3: Service Twin



Mr. Rajan Goyal, Regional Service Manger Western region, Siemens India Ltd.

Mr. Rajan Goyal explained the concept and utility of Dashboard and Real Time

Monitoring of Assets, accomplished through Analyzing, Visualizing and Monitoring with clear Rules & Queries- Do's & Don'ts Combining of the data and categorizing Request as (1) No request (2) Information (3) Important and (4) Urgent.

Topic 4: Diagnostic Tools for Predictive Quality Management

Speaker: Mr. Dattatraya Navalgundkar, Executive Director, C4I4 Labs

Mr. Navalgundkar spoke presented the Tools to overcome (a) Aging Workforce (2) High Cost Labour (3) Advanced Technology. The Model for Transformation, he said, is Visible Factory (Go & See). He presented What to measure and Dashboards and also introduced the concepts of Vital Process (Process Eng., Floor Mgmt. and Problem Solving) and Vibrant Organization (by Plant perf mgmt. & Benchmarking, Target Setting and KPI Management.

Session 4

THE EVOLVING STANDARDS ECO-SYSTEM – Setting Extreme Quality Benchmarks

Chaired By: Mr. Ramesh Koregave, Director – Strategic & International Business, Quality Austria Central Asia Pvt. Ltd.

Topic 1: Automotive Megatrends- Disruptive Changes in Technology

Mr. Ramesh Koregave, Director – Strategic & International Business, Quality Austria Central Asia Pvt. Ltd.

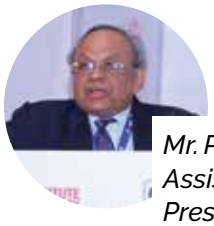
This Session focused on the emerging nature of standard and conformity assessment in the digital technology era. Mr. Koregave talked on (1) Advanced Driver Assistance System (ADAS)- with features from Level 1- Level 5, Head Up Display, Drowsiness Detection and (2) Block Chain Technology that will work in Industry 4.0 because it will turn out to the Pillar of a Whole Business and hold a key to Cyber Security Pillar.

Topic 2: Emerging Standards on Electric Mobility

Mr. V. Manjunath, Standards and Program Manager, Underwriters Laboratories Inc.

Mr. Manjunath spoke on Standards with respect to (1) EV Battery Safety Consideration- (a) BMS- Battery Management System BMS 1, BMS 2 & BMS 3, from Modules 1 to Module 6. etc. He presented situations that would arise at the time of manufacturing and In-the-Field and derived from there and what should be the Design Considerations. For example -- will the Charger recognize Aging-as with Age. Mr Manjunath also spoke about Safety Standard- (a) Hazards in High Temp and Low Temp (b) Cell Spacing- Rate of Heat Transfer, (c) Cell Matching-especially when procured from more than One or different Vendor (s) etc.

Topic 3: Standardizing the Manufacturing and Management Systems



Mr. Prabhas Surana, Assistant Vice President, Academy Division, TUV SUD South Asia

Mr. Surana presented the core elements of VDA 6.3, its benefits and overview of implementation to improve productivity to drive down the cost component.

Topic 4: Indian Standards to enable India Emergence as a Global Supplier

Mr. Kedar Apshankar, Director, Stud Craft

Mr. Apshankar presented a case study of a ZED rated company - M/S Stud Craft, manufacturers of different types of STUDS. He spoke on the Benefits of ZED Certification that accrued to his company.

3rd Regional Quality Conclave (RQC) on

Manufacturing Excellence for Increasing Productivity and Competitiveness

27th March 2019, Jaipur

Quality Council of India (QCI), jointly with The Federation of Indian Chambers of Commerce and Industry (FICCI) organized the 3rd Regional Quality Conclave (RQC) on ***Manufacturing Excellence for Increasing Productivity and Competitiveness*** *on 27th March 2019 at Holiday Inn, Jaipur.*

The primary objective of the Conclave was to discuss and identify policy measures, best manufacturing/operational practices to be followed for sustainable growth of the manufacturing sector.

> "India stands to be the 6th largest economy in world today and is expected to be 5th largest economy by the next year and Manufacturing will have a key role to play in India's growth

The Conclave had three panel discussions on 'Policy Measures to Drive Manufacturing Excellence' chaired by Mr. Shyam Bang, Chairman, FICCI Task Force on Manufacturing Excellence and National Accreditation Board for Certification Bodies (NABCB), 'Plant Maintenance, Skill Development and Vendor Development to achieve Manufacturing Excellence' chaired by Mr. K. C. Mehra, Former Chairman, NBQP and 'Sustainability and Circular Economy' chaired by Mr. C. K. Biswas, CEO, National Board for Quality Promotion (NBQP).

The Conclave witnessed participation of over 150 delegates from various segments of manufacturing such as cement, textiles & apparels, automobile, handicrafts, gems & jewellery, members of regional chambers, associations and Skill Development University.

Inaugural Session

The Conclave was inaugurated by Mr. Rajeev Kandpal, Additional Chief Executive Officer, Government e Marketplace (GeM), Government of India, in the august presence of Mr. Shyam Bang, Chairman, FICCI Task Force on Manufacturing Excellence and National Accreditation Board for Certification Bodies (NABCB), Mr. K. C. Mehra, Former Chairman, NBQP and Dr. K. L. Jain, Secretary General, Rajasthan Chamber of Commerce & Industry.

Mr. K. C. Mehra, Former Chairman, NBQP briefed the audience on Quality Council of India and its various bodies. He mentioned that quality is a journey without any destination and destination would mean seizing of efforts to achieve quality.

Left to Right: Mr. Shyam Bang, Chairman, FICCI Task Force on Manufacturing Excellence and NABCB;, Mr. K. C. Mehra, Former Chairman, NBQP; Mr. Rajeev Kandpal, Additional Chief Executive Officer, GeM, Government of India: Dr. K. L. Jain, Secretary General, Rajasthan Chamber of Commerce & Industry; Mr. C. K. Biswas, CEO, NBQP and Mr. Avik Mitra, Principal Advisor, NBQP during lamp-lighting ceremony

Mr. Mehra also emphasized that if everybody takes a pledge to make sure that their processes are quality compliant, QCI would easily succeed in its mission. Quality is a movement and should be taken forward by all our organizations and industries throughout the world.

Mr. Shyam Bang delivered the special address and emphasised on the need of achieving Manufacturing Excellence in India. Mr. Bang mentioned that Industries are producing products required by citizens thereby providing employment to workforce of the country and contributing to overall growth of the economy. However, the major challenges faced by industrial sector of the nation are low productivity of workforce and poor perception about the quality of products manufactured. He complimented FICCI and QCI for organizing a Conclave with such an apt theme.

Mr. Bang's presentation threw light on the increased share of Manufacturing in Gross Value Added (GVA) from almost 11% in 1950-51 to 17% in 2014-15 and the target to take it to 25% by 2022. The biggest challenge in the aforesaid target will be availability of skilled manpower. India stands to be the 6th largest economy in world today and is expected to be 5th largest economy by the next year and Manufacturing will have a key role to play in India's growth. According to him, Manufacturing Excellence can be achieved by four simple steps - Consistent Product Quality (developing good quality systems), Delivering on Time (ensuring that efficient logistics are in place), Competitiveness (increasing productivity) and Sustainability (developing safety systems). Mr. Bang also explained the concept of Six Sigma and its importance to be adopted in manufacturing processes along with the importance of focussing on adapting progressive management style. Also, Manufacturing GDP per person in India is very low as compared to other developing nations. He also stated that improving the performance of a production process yields much greater returns than improving the quality control systems. Mr. Bang also emphasised that "Large companies have more strength than small companies" is a myth since small firms have the strength of entrepreneurship.

Mr. Shyam Bang addressing the delegates during the Conclave

Speaking on the occasion, Mr. Rajeev Kandpal, Additional Chief Executive Officer, Government e Marketplace (GeM), Government of India, also applauded FICCI and QCI for selecting such an appropriate theme for the conclave. Mr. Kandpal emphasised that developing good quality systems is critical for the robust growth of the economy. GeM facilitates online procurement of common use Goods & Services required by various Government Departments / Organisations / PSUs and aims to enhance transparency, efficiency and speed in public procurement. Mr. Kandpal also informed that 68% of MSMEs have no digital footprint at all making it a major challenge to bring MSMEs and women entrepreneurs on board for e-market place. Other major challenges to be addressed include adoption of quality standards, responding to IoT led Manufacturing and addressing the challenges faced by online marketplaces.

Dr. K. L. Jain, Secretary General, Rajasthan Chamber of Commerce & Industry, proposed the Vote of Thanks and stated that he is hopeful that such engagements in the region will help in improving quality systems in place and would also spread the information about different schemes. He also emphasised on the importance of quality in all the sectors of economy. He also highlighted that Rajasthan has progressed a lot by focussing on the quality systems and ensuring that they are made better with time.

Session 1

Policy Measures to Drive Manufacturing Excellence

Left to Right: Mr. N. K. Jain, President, The Employers Association of Rajasthan; Mr. H. K. L. Magu, Chairman, Apparel Export Promotion Council (AEPC); Mr. Shyam Bang, Chairman, FICCI Task Force on Manufacturing Excellence and National Accreditation Board for Certification Bodies (NABCB) and Dr. Giriraj Nyati, COO, Genus Power Infrastructure Ltd

The session was chaired by Mr. Shyam Bang. The key speakers in the session were Mr. H. K. L. Magu, Chairman, Apparel Export Promotion Council (AEPC); Dr. Giriraj Nyati, COO, Genus Power Infrastructure Ltd. and Mr. N. K. Jain, President, The Employers Association of Rajasthan.

Some of the key discussion areas of the session were:

a. Short term courses on SAM should be introduced for garment factory workers. Adoption of SAM in 200 garment factories should be achieved by 2025

b. Cost is a controllable parameter out of which 30% is the cost of quality which if brought down can lead to increase in profitability. It is therefore crucial to focus on the quality systems in place

c. Quality is being on your toes all the time, and it can be very easily achieved by giving ownership and pride to all workers

d. The 4Ms of quality constitute Man (trained & skilled workforce), Material (quality raw material, stringent quality control of the material purchased), Methods (process and technology that is used for production and the workers should be familiar with the same) and Machine (continuous technology upgradation-subsidy on machines/ technology is required)

e. Skill development of the manpower continues to be the key focus area for quality promotion

f. Encouragement of women entrepreneurs in factories is essential as it would provide direct productivity benefits

g. Appropriate training must be provided to the operator for handling any faults in the machinery handled by him

h. Along with training, there is a dire need to provide more authority to the operators to make them more independent in the production process

i. Also, it is important to encourage employees to highlight any fault/ defect in the machinery/process at the earliest they notice it instead of hiding them

Session 2

Plant Maintenance, Skill Development and Vendor Development to Achieve Manufacturing Excellence

Left to right: Mr. Rajesh Malhotra, Enterprise Leader, IBM India Private Limited; Mr. Ramesh Seshadri, Joint General Manager, Production Management, L&T -MHPS Boilers Pvt Ltd; Mr. Rajeev Kandpal, Additional Chief Executive Officer, GeM; Mr. K. C. Mehra, Former Chairman, NBQP; Brig (Dr.) S. S. Pabla, President, BSDC; Mr .Subikash Chandra Roy, Senior Advisor, MACE and Mr. Pankaj Tandon, Division Head, HMSI.

The session was chaired by Mr. K. C. Mehra, Former Chairman, NBQP and the key speakers in the session were Mr. Rajeev Kandpal, Additional Chief Executive Officer, Government e Marketplace (GeM), Government of India; Brig (Dr.) S. S. Pabla, President, Bharatiya Skill Development Campus (BSDC); Mr. Subikash Chandra Roy, Senior Advisor, Maruti Centre of Excellence (MACE); Mr. Ramesh Seshadri, Joint General Manager, Production Management, L&T -MHPS Boilers Pvt Ltd.; Mr. Pankaj Tandon, Division Head (Plant Engineering), Honda Motorcycle & Scooter India Pvt. Ltd. and Mr. Rajesh Malhotra, Enterprise Leader, IBM India Private Limited.

The key discussion areas during the session were:

a. Capacity building needs of an organization are generally overlooked. There is a need to pay attention to such needs since the return on such investment is always positive

b. Generally, the workers operating machines in factories are not trained about their maintenance. This poses a problem during the breakdown of machinery. The existence of a Skill Development Campus in Rajasthan is a distinguished opportunity for the training of workforce. During skill development process the focus should be on quality rather than on quantity

c. Working with direct suppliers does not resolve all the issues. Indirect suppliers are also crucial for quality maintenance

d. Maintenance is generally seen as a cost item which should ideally be viewed as an investment item. Operational excellence is biggest controllable contributor to sustainable profits

e. As per the Maintenance Maturity Model in India, we are still in preventive maintenance rather than in predictive cognitive maintenance

f. There should be an increased focus on Process Variability Management and advanced analytics

g. Honda Motorcycles & Scooters India Pvt. Ltd. follows three stages in respect to the indirect suppliers. The 1st stage being how to start a new part development with the supplier, the 2nd stage being ensuring that delivery is on time, 3rd stage being passing the practices followed with indirect vendors to their own TIER 2 and TIER 3 suppliers

h. Big Trading Houses similar those existing in Korea & Japan will help India to improve its trading capability & remove its dependence on manufacturers

i. Identification of waste, how to eliminate waste and creating low waste are crucial steps for ensuring manufacturing excellence

Session 3

Sustainability and Circular Economy

The session was chaired by Mr. C. K. Biswas, CEO, NBQP. Other distinguished speakers in the discussion were Mr. Rishi Kant Dubey, Divisional Head – Frame Division, Honda Cars; Mr. Avinash Gupta, Senior Sustainability Officer, Shree Cement Ltd. and Mr. Avik Mitra, Principal Advisor, NBQP.

Mr. Avik Mitra addressing the delegates during the session on Sustainability and Circular Economy

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

a. Sustainability & Circular Economy are two important determinants of competitiveness. Circular Economy concept functions on the "Cradle-to-Cradle" framework whereas the Linear Economy concept functions on the "Cradle-to-Grave" framework. The linear economy model is reaching its physical limit

b. The concept of Industry 4.0 and Sustainability shall merge in the coming years as these are two parallel concepts

c. Government should provide adequate support to the designs developed for manufacturing new products from recycled waste

d. There is a need to educate young engineers of the country about the circular economy concept

Talk on "Challenges in Conformity Assessment for Manufacturing"

Mr. Anupam Gupta, Senior Advisor, QCI

Mr. Anupam Gupta presented on the Challenges in Conformity Assessment for Manufacturing and explained the difference between a technical regulation and standard. Technical regulation lays down requirements on product characteristics or their related processes and production methods where compliance is mandatory. On the other hand, a standard provides for common and repeated use, the rules, guidelines or characteristics for products or related processes and production methods where compliance is voluntary (not mandatory).

The major challenges for Indian Industry include complying with the regulations imposed by importing countries, if they wish to export. The Indian products are not allowed entry if they do not comply with the regulations which are typically more stringent than Indian regulations.

Mr. Gupta summed up his presentation by suggesting that we should manufacture as per international standards, comply with domestic regulations as applicable and comply with importing country's requirements as well.

Glimpses of

3rd Regional Quality Conclave (RQC)

ZED™

ZERO DEFECT • ZERO EFFECT

Supporting India's Vision of Transforming Indian Manufacturing

@QualityCouncilofIndia @QualityCouncil qualitycouncilofindia

A successful economic development strategy must focus on improving the skills of the area's workforce, reducing the cost of doing business and making available the resources business needs to compete and thrive in today's global economy

- Rod Blagojevich

While India needs to develop itself as a potential game changer in the field of global manufacturing, it should realise the importance of restructuring its domestic industrial fabric to cater to international requirements. With over 66 million[1] MSME units currently operational in India, it is important to understand the key problem areas that MSME sector is facing and identify opportunities of improvement. For this to be realised and appreciated, a number of elements are needed to be factored in: Size, Capacity, Geographical location, Sector, Ease in meeting compliance requirements, requirement of capital to meet technological needs, etc. A single holistic plan to address the needs of the MSME sector, Zero Defect Zero Effect (ZED) has been developed, which not only focusses on improving and restructuring the current aspects of the enterprises but also on the sustainability component of the MSME ecosystem.

ZED, as a model, has been carefully developed, taking into account the suggestions of industry chambers and associations, government bodies and other relevant stakeholders. The framework has been designed in such a manner that it is easy for MSMEs to understand and work upon. It is a first-of-its-kind domestic model, which has been developed for the micro, small and medium enterprises, which form the backbone of Indian economy. One of the key aspects which differentiates ZED as an improvement model vis-à-vis other existing models is that it focusses heavily on measurement. The 50 parameters have been designed in such a manner that each aspect of improvement in systems and processes can be measured and compared with industry benchmarks for that particular sector.

To enable MSMEs to adopt ZED and embark upon the journey of responsible manufacturing, Ministry of MSME launched a scheme called 'Financial Support to MSMEs in ZED Certification Scheme'. Quality Council of India (QCI) has been instrumental in carrying out the scheme pan-India, reaching out to many MSMEs through awareness programmes and capacity building programmes. So far, more than 22000 MSMEs have been registered under the scheme.

So far, following key aspects have been touched upon under the ZED Scheme:

Creating awareness among MSMEs

So far, over 25000 MSMEs pan-India have been apprised on the ZED model and the components under the ZED Scheme through Awareness Programmes. MSMEs have been briefly explained about the 50 parameters covered in the ZED model. They have also been made aware of the various stages to be completed under the ZED scheme before getting a ZED rating. Regular feedback of MSMEs have also been collected from each awareness programme.

Creating a pool of Master Trainers, Assessors and Consultants

To carry out the process of conducting Awareness Programmes, a pool of Master Trainers has been created through 5-day Master Trainers' Training (MTT) programmes. These Master Trainers are then asked to conduct awareness programmes to apprise MSMEs of the concepts under ZED model and the ZED scheme. Similarly, a pool of Assessors has been created through 5-day Assessor Training (AT) programmes. These assessors then, through accredited Rating Agencies, carry out the ZED Site Assessment of the MSMEs that enrol under the ZED Scheme. On similar lines, Consultants have been trained on the ZED model and certified as ZED consultants. These consultants help the MSMEs in carrying out the gap analysis of the MSMEs having undergone ZED Site Assessment. They also do the handholding of those MSMEs enabling them to move higher up the ZED maturity ladder (Bronze<Silver<Gold<Diamond<Platinum) It is to be noted that all Master Trainers, Assessors and Consultants undergo an examination after the completion of 5-day training programme. Only those who clear the exams with minimum passing marks qualify to become ZED certified Masters Trainers, Assessors and Consultants respectively.

Enabling MSMEs to measure quality

The ZED Assessors are asked to capture and record a set of data points for each MSME at the time of Site Assessment. Those MSMEs are asked to measure data against the same data points after a period of every six months and a comparison is made to identify the degree of improvement for each of these aspects. ZED is thus enabling MSMEs to measure the data points like safety score, defect rate, emission rate, etc.

[1] *MoMSME Annual Report, 2018-19*

Promoting digital outreach

The ZED Scheme has been designed in a manner to promote 'ZERO EFFECT' on environment. Hence, all the steps under the scheme (Registration, OSA, DA and SA) are carried online. This has promoted the vision of digital outreach pan-India, making MSMEs embrace the digital infrastructure, and also building a data-driven ecosystem while promoting quality and competitiveness.

Government incentives to MSMEs

So far, QCI has signed MoUs with 13 State Governments, out of which, 8 states have included ZED in their respective industrial policies. These states have started providing incentives across various aspects for encouraging MSMEs to adopt ZED. Other states are also expected to include ZED in their industrial policy soon.

Financial support and encouragement to ZED rated MSMEs

QCI has signed MoUs with 2 leading banks: State Bank of India (SBI) and YES Bank, for providing concession on interest rates and processing fees to ZED rated MSMEs.

This has been instrumental in driving MSMEs towards ZED as they are now being benefitted by reduced interest rates, as an encouragement to adopt ZED.

Promoting environmental compliance among MSMEs

As part of ZED, each MSME is asked to provide their Central Pollution Control Board (CPCB) category: Red, Orange, Green and White. This is duly checked during the process of Desktop Assessment (DA) and Site Assessment (SA). Any aberration found pertaining to environmental compliances are brought to the notice of the MSMEs and they are asked to seek compliances from the State Pollution Control Board before registering for ZED Site Assessment. This has been pivotal in driving the MSMEs towards the path of environmental compliance.

ZED is an important cog in the wheel towards driving the MSME ecosystem towards sustainable and responsible manufacturing. As a principle, ZED maturity model makes MSMEs embark upon the journey of holistic continual improvement, which will enable Indian manufacturing sector to become robust and globally recognisable. We are witnessing a period of paradigm shift in the manufacturing sector and the changes to achieve the vision of ZERO DEFECT ZERO EFFECT have just begun.

ZED- The Change Begins!

-Team ZED

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Future of E-Learning in a Developing Nation like India

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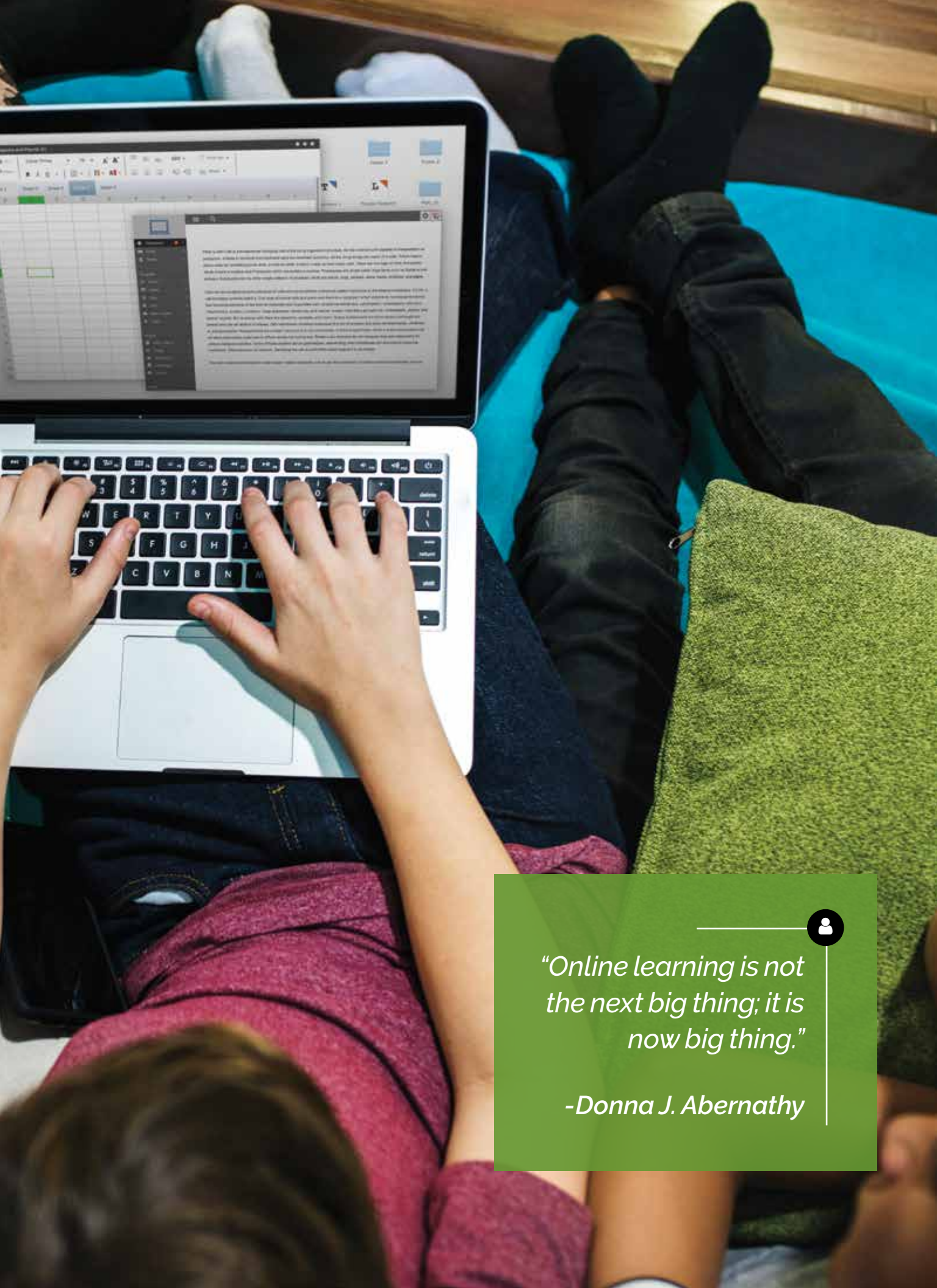

"Online learning is not the next big thing; it is now big thing."

-Donna J. Abernathy

Promoting eLearning in a developing nation sounds like a paradox as countries lacking in proper infrastructure are trying to support a state-of-the-art which is a symbol of technological advancement. This idea is what eLearning challenges to overcome.

Over the years, the robust growth in the internet ecosystem has made internet accessible and affordable. According to the reports of Kantar IMRB, India is expected to witness a rapid growth of 627 million internet users in 2019, driven by rapid internet growth in rural areas. Such enormous expansion acts as a catalyst for the eLearning to grow.

As evolution is constant, the face of education system has undergone a substantial transformation over the years. The traditional classroom-based learning has been metamorphosed into learning which is fast, online and self- motivated. With the rapid improvement in the accessibility to internet in our country, the future of eLearning stands bright.

Adoption of eLearning in the education system brings several advantages, the noteworthy being its feasibility. The cost associated with the traditional method of learning is high. The large amount of money is dispensed off on infrastructure, study materials and other related requisites in comparison to one-time cost attached to online learning. An internet connection, affordable laptops /PC and deployment of Learning Management System (LMS) are what all required to access from gamut of education material.

Another advantage is that it has an enormous outreach. In a country like India, which has varied landscapes and difficult terrains, it suffers from deficient highway systems to transport people from remotest areas. So, accessibility to best possible learning resources from in and around the world provides users a room to maneuver. A subject expert need not necessarily have to teach in a class of a few students but can reach out to millions through interactive sessions with students thousands of miles away.

Quality education is a human right and in a country like ours which has largest youth population, it is expected to provide an affordable and acceptable education to see its economy soar in coming years. There are very few premier institutes with limited seats, so most of the youths are not able to receive same quality. Also, admission in public schools, which impart quality education, can only be afforded by affluent section. Ministry of Human Resource Development (MHRD) has initiated a platform for eLearning where students and working professionals are offered courses free of cost. The objective is to take the best of the teaching resources to all, including the most disadvantaged ones. Thus, penetration of eLearning in the system will bridge the gap by providing standard platform to one and all.

An eminent feature of online learning is its ability to provide personalized attention to all the students which is a drawback in schools and universities as the pupil-teacher ratio is imbalanced. The inclusion of technology helps in keeping up with the new developments in various fields of study every day as these changes cannot be incorporated in defined syllabuses of schools or universities. Further, a typical classroom learning which has boring hour-long sessions will be transformed into an interactive, fun- fulfilled environment.

Besides education, skill development is the focus of our nation at this hour. Various schemes have been started by government to strengthen skills to enhance employability and to withstand

the increased competitiveness from foreign markets. Several universities are offering skill-based credit courses to their students through online courses. eQuest, eLearning division of organizations like Quality Council of India (QCI), has tied up with various universities and institutes extending credit and non-credit courses on various disciplines like environment, education, healthcare, laboratories' quality and technology with some of the popular courses being total quality management, manufacturing competitiveness, project management etc. to amplify skills and increase employability through industry oriented skill development programmers. This will eventually be an effective way to fill the demand and supply in the Indian industries.

Another distinguishing factor is that it increases the flexibility and independence of the users. Professionals who are competitive and are focused on keeping their skills updated with the evolving time can study courses of their interest whenever they can. There is no timeline or a specific center to study which makes it easier for the users. It also cuts the time spent on commuting to reach the destination which clearly means saving a lot of time and money.

The fascinating aspect of online learning is that it is interactive and has stunning graphics. It is a known fact that any knowledge which is imparted using videos can be retained well than books or lectures. Its interactive nature keeps the user interested and focused. The visually stimulating graphics further strengthen the understanding of terms and other related theories. Also, the user has an advantage to rewind the course matter as many times according to her/his convenience which is not possible in a classroom setting. Another feature which adds to advantage is that the course material can be accessed at all times. In plain words, it can be accessed 24X7.

eLearning has plethora of advantages that will make this industry in India a prolific one. India is reported to be the second largest market after the US. According to the report of KPMG, it is projected that by 2021, there will be 9.6 million users of online education.

However, technology is just an enabler and it is the responsibility of the humans to make the best use of it. The advantages and disadvantages of this technology and the outcome of this interventions solely depends on how it is being used and handled. Despite this, the advantage of integrating technology in education shall reap better results considering the era of digitization we live in. This method of learning shall raise the level of literacy, provide quality education, and empower people by decreasing socio-economic disparities.

Project Planning and Implementation Division (PPID)

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National Highways Awards for Excellence - 2018

Developing road infrastructure in the country has been a top priority of the government. Today at present, India is constructing 26.9 kilometers per day (FY 2017-18). Building on this vision to further strengthen highway infrastructure in the country, Hon'ble Minister of Road Transport and Highways, Shri Nitin Gadkari launched Annual Awards for National Highway Projects on 6th August 2018. This was an initiative to recognise companies which performed exceptionally and delivered finest quality services during the construction, operations, maintenance and tolling stage of highway development.

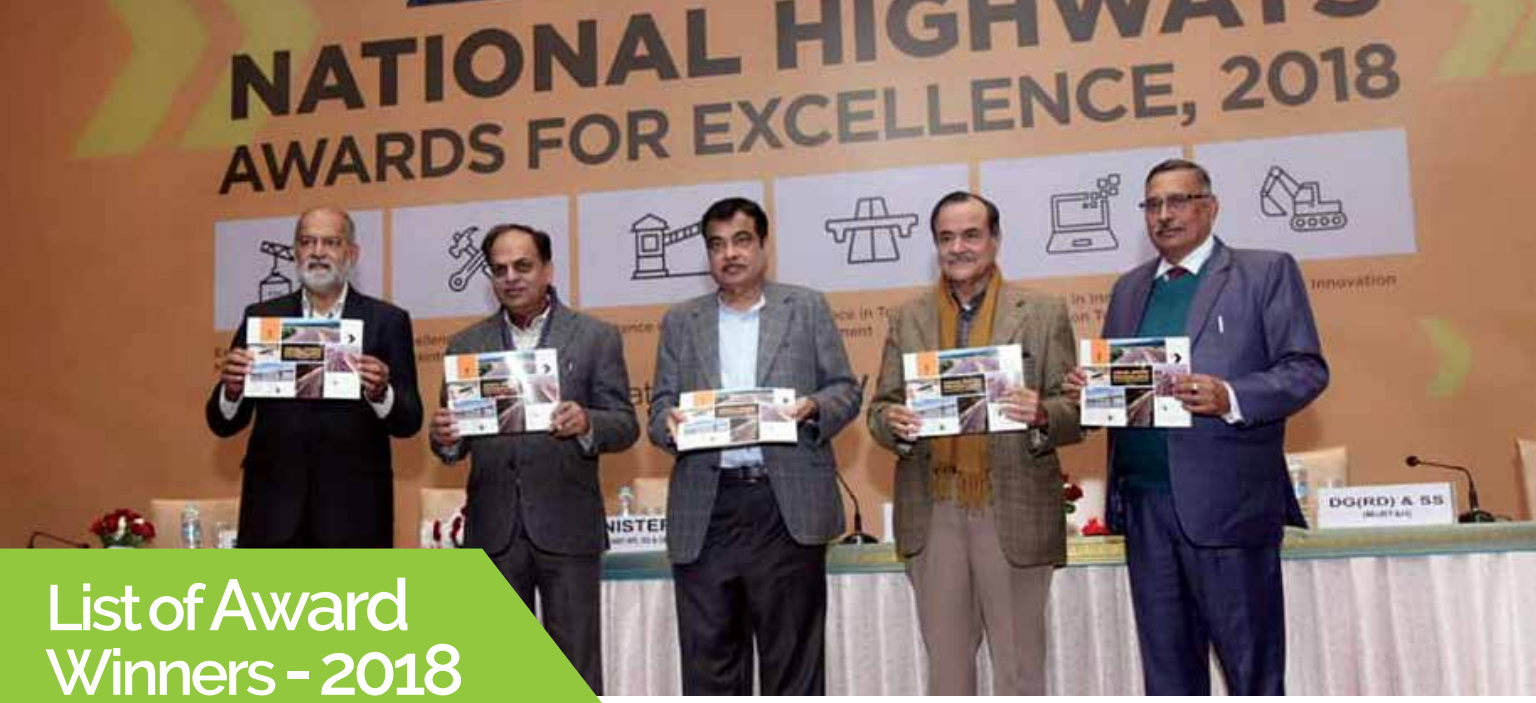
MoRTH in association with Quality Council of India (QCI) developed a rigorous assessment framework and process roadmap to identify and award the best performing companies in the highway development sector. The awards were designed across five categories, recognizing excellence in Construction Management, Operation and Maintenance, Toll Plaza Management, Highway Safety and Innovation. These awards were further customised based on the mode of implementation, terrain and construction technique. Under these categories, the projects were assessed on objective and quantifiable parameters. The assessment process was modelled on best international and national awards programs in the construction sector, insights from sector experts such as MoRTH and NHAI Officials, industry leaders and academicians, and detailed review of the official codes & guidelines. Applicants were invited to nominate themselves on an online application portal designed by NIC. Over 107 nominations were received across five categories in the one-month long nomination period. For every nominated project, the companies submitted a unique application with supporting documents.

This was followed by two rigorous rounds of assessment: desktop and on-site. In the first round, 84 valid applications were scrutinised between September 24th to October 7th 2018, by officials from MoRTH, NHAI, NHIDCL and QCI to check the validity and propriety of the information submitted by the applicant. Documentary evidence was checked to validate the performance and compliance levels. Following this, a unique score was assigned to each nominated project to draw up the first shortlist of 57 projects. The Screening Committee reviewed the assessment process and approved the shortlisted projects in each award category.

In the second round, an on-site assessment was conducted between October 25th to November 17th 2018, at project-sites across India by trained assessors and professionals of QCI. The purpose was to corroborate submitted data and evaluate performance indicators for on-ground reality. A standardised operation procedure was developed for each award category which included travelling across the length of the highway checking various parameters, surveying toll plazas and conducting interviews with project heads and key officials. A cellular device, app-based technical platform was used to conduct the field survey where geotagged and time stamped photographic evidence was collected for each parameter. This data was checked in real-time by the central team of QCI on the back-end of the platform. The findings on the field were used to corroborate scores assigned to each project. Final scores were computed to shortlist the top 36 projects. These results were validated by the Screening Committee.

A special three member, independent Jury Committee, comprising of Shri. Jagdish Khattar, Shri. AV Sinha, and Shri. LK Joshi was constituted to deliberate upon the selection of final winners. Through this selection process, MoRTH has found some exceptionally well-constructed and managed highway projects in a wide range of locations and geographies. Stakeholders across the board, ranging from ROs, PIUs, Concessionaires, Contractors and Supervision Consultants went the extra mile to make the efforts requisite to bring the idea of the annual awards program into fruition. The Awards for Excellence programme shall continue to highlight the significant strides made in construction, operation, management and innovation in highways projects across India for the years to come.

- MoRTH Team



List of Award Winners - 2018

S. No.	Category	Final Award Winners
1a	Excellence in Construction Management (PPP)	**Gold:** Oriental Structure Engineers Private Limited Nagpur - Saoner – Betul Section **Silver:** Dilip Buildcon Limited Guna – Biaora Section
1b	Excellence in Construction Management (EPC)	**Gold:** Oriental Structure Engineers Private Limited Eastern Peripheral Expressway Package V **Silver:** Shel Assignia JV Bankura – Purulia Section
2	Excellence in Operation and Maintenance	**Gold:** NK Toll Road Limited Namakkal – Karur Road **Silver:** Western Andhra Tollways Limited Jadcherla - Kotkatta Bypass
3	Excellence in Highway Safety	**Gold:** Nirmal BOT Limited Kadthal – Armoor Section **Silver:** LT Interstate Road Corridor Limited Palanpur – Swaroopganj Section
4	Excellence in Toll Plaza Management	**Gold:** Baharampore Farakka Highways Limited Shibpur Toll plaza
5	Innovation	**Gold (Construction Technology):** Chetak Enterprises Limited Dasna – Hapur Section **Silver (Construction Technology):** IL&FS Transportation Networks Limited Chenani – Nashri Tunnel **Gold (Design):** Sadbhav Engineering Limited Eastern Peripheral Expressway Package I **Silver (Design):** Ashoka Buildcon Limited Rupnarayan bridge, NH-6

Decoding Indian Healthcare Ecosystem

Akanksha Verma, Management Trainee, QCI

"A healthy nation is a wealthy nation"; Healthcare is a fundamental right for every citizen and is determinant for people's happiness and well-being. Healthier nations are known to have a better economic progress when compared to unhealthier nations, as the welfare of the people is directly proportional to the productivity of its citizens.

With India's current population today being over 1.3 billion, the healthcare system in India is believed to be at crossroads. There has been a perceptible progress in healthcare ecosystem of India with evident reduction witnessed in the polio rates, mortality rates in children, and reduced rates in infectious diseases such as HIV/AIDS. However, there is still an immense scope for reforms in the healthcare system.

Some of the major issues that prevail in Indian healthcare system are: the lack of infrastructure and mode of financing, especially in the rural parts of India. The government hospitals in rural parts have dearth of resources in terms of shortage of rooms, beds and medical supplies.

Statistics[1] indicate that 63% of primary health centers did not have an operation theatre and 29% lacked a labor room, community health centers were short of 81.5% specialists – surgeon, gynecologists and pediatricians. These problems also beget due to the insufficient monitoring of the funds and resources provided by the government.

Another obstacle existent in the healthcare sector is low penetration of health insurance in India, due to low income levels and unawareness in rural areas, where nearly 70% of the population resides. Furthermore, the healthcare information system in India is weak and fails to rectify the asymmetry of information that exists at multiple levels that affects policy makers, insurance companies and hospital management.

According to the Global Burden of Disease Study[2] (GBD) published in the medical journal ***The Lancet***, among 195 countries, India ranked 145th in 2016 in terms of the Healthcare Access and Quality (HAQ) index. 32 causes considered amenable to healthcare comprise the HAQ Index[3], scored on a scale of 1-100, representing a range of health service areas: vaccine-preventable diseases; infectious diseases and maternal and child health; non-communicable diseases, including cancers, cardiovascular diseases, and other non-communicable diseases such as diabetes; and gastro intestinal conditions from which surgery can easily avert death.

Despite a leap in India's rankings from 153 in 1990 to 145 in 2016, India's performance was underwhelming relative to its BRICS peers (Brazil, Russia, China and South Africa). However, India was analogous to China based on state-wise disparity in health access and quality. For example, in India, Goa and Kerala scored more than 60 HAQ index points whereas Assam and Uttar Pradesh scored below 40 points. Similarly, in China, there was a disparity of 43.6 points between the states of Beijing and Tibet.

According to the research-based studies on the uneven HAQ index between the states of China and India, it was reckoned that large variations were due to the lack of access to health facilities, such as, infrastructure and medical technologies. Also, ineffective provisions of healthcare standards across each state within the country played a role in the disparity. Even though, there exist disparities between the states in China, it has tremendously improved its rankings

[1] *Budget 2018: India's Healthcare Crisis Is Holding back National Potential*
Swagata Yadavar ;January 30, 2018
https://www.indiaspend.com/budget-2018-indias-healthcare-crisis-is-holding-back-national-potential-29517/

[2] *India 145th among 195 countries in healthcare access and quality – The Times of India*
http://timesofindia.indiatimes.com/articleshow/64283179.cms?utm_source=contentofinterest&utm_medium=text&utm_campaign=cppst

[3] *Asystematic analysis from the Global Burden of Disease Study 2016 in The Lancet 391(10136) · June 2018.*
https://www.researchgate.net/publication/326169162_Measuring_performance_on_the_Healthcare_Access_and_Quality_Index_for_195_countries_and_territories_and_selected_subnational_locations_a_systematic_analysis_from_the_Global_Burden_of_Disease_Study_2016

from 108th in 1990 to 48th in 2016. China's government allocated a 6% of its GDP on health in 2016[4] and is further expected to increase it to 7% by 2020 while India spent only 1.4% of its GDP on health in 2018. This is one of the major reasons for China outperforming India.

At a time when a lot of focus has been laid on the access and availability of healthcare in India, it is equally important to evaluate the quality of the health services. India must invest in its facilities, with an objective to improve its framework of healthcare quality. Accordingly, there have been promising developments in healthcare which will prove to be the game-changers in the forthcoming years. One such quality oriented development is the Entry-Level Certification of the Healthcare Organizations, carried out by the National Board for Hospitals and Healthcare Providers (NABH). The standards developed by NABH are accredited by International Society for Quality in Healthcare (ISQua) in consonance with the global benchmarks of healthcare. NABH certification provides an assurance of quality and care with an emphasis on patient safety.

In light of developments by the present government, a major step was in 2018, by launching the Ayushman Bharat National Health Protection Scheme (AB-NHPM). The scheme aims to provide a defined benefit of cashless health insurance coverage of Rs 5 lakh per family in accordance with the Socio-Economic Caste Census (SECC) 2011. Presently, the number of beneficiaries of health insurance[5] has crossed over 20 lakhs and is aimed to cover about 40% of the population in the coming months. Under this scheme, the empanelled hospitals are encouraged to focus on quality by getting the NABH-certification. This step will not only help them to inculcate a quality culture but will also provide financial incentive.

In hindsight, the perception of people has started to change about healthcare services in regard to quality and safety. Although, a sea of challenges remains ahead of us, an attempt to strengthen the links between the healthcare providers, healthcare insurance and public, India is going to witness real progress in healthcare in the coming times.

[4] *China's Healthcare Reforms Underscore Market Growth by Dezan Shira & Associates https://www.china-briefing.com/news/health-care-reforms-underscore-market-growth-china/*

[5] *Health Minister reviews the progress of Ayushman Bharat-PMJAY as number of beneficiaries cross 20 Lakh; Published on April 20, 2019.https://www.apnnews.com/health-minister-reviews-the-progress-of-ayushman-bharat-pmjay-as-number-of-beneficiaries-cross-20-lakh/*

Quality Initiatives Transforming Airports in India

Tanya Handa, Management Trainee, QCI

Air transport has doubled in size during the last fifteen years and continues to expand potentially at a faster rate. The demand for air commute has intensified the need for more facilities and safety for the passengers. Therefore, the need to measure the quality level of the airport infrastructure facilities and airside safety has surfaced. Several initiatives have been taken by the Ministry of Civil Aviation towards the betterment of air commuters such as UDAN (Ude Desh Ka Aam Nagrik) and RCS (Regional Connectivity Scheme), which aim to facilitate affordable regional air connectivity, apart from the launch of an upgraded version of AirSewa 2.0 web portal (a digital platform for air passengers) and the release of a policy, Digi Yatra (a biometric-based digital processing of passengers at airports) among others.

Airports Authority of India (AAI), the mainstay of Civil Aviation in the Country, initiated a better passenger-centric system prioritising cleanliness status, safety, solid waste management and single-use plastic ban. AAI in 2017-18, engaged Quality Council of India (QCI) for conducting a third-party assessment of 20 airports (Phase –I) on pre-determined terminal building facilities and services. In 2018-19, QCI was commissioned to conduct the assessment for 34 AAI airports (Phase –II) across the country; the scope was broadened by the evaluation of terminal building cleanliness standards and airside safety. The assessment involved the examination of airport terminal building on the parameters of maintenance and management of luggage trolleys, traffic and queues, management of records and cleanliness amongst others, based on Standard Operating Procedures (SOPs) as outlined by AAI.

Based upon the findings of the Phase - I assessment, it was found that there was still scope of improvement for passenger centric services and infrastructure facilities. Thereby, the need to initiate the Phase – II of the assessment was commenced, to bridge the gap between the hindrances and to broaden the spectrum of improvements with the help of detailed insights. The airports were ranked individually on their performance on the pre-defined parameters as well as the airside safety assessment. The common objective was to rank the airports while evaluating and awarding them on the cleanliness and safety criteria, to help strengthen their passenger-centric approach. The assessment was executed by the alliance of QCI and AAI officials. The performance of each airport has been benchmarked across the areas of evaluation and the awards provide the requisite motivation for individual airports to reach the apex standards.

Another focus of the assessment also revolved around monitoring the compliance of Ban on Single-Use Plastic at 34 Airports. The results were found encouraging and based on the outcomes of the assessment, all the 34 AAI Airport Terminals are declared as Single-Use Plastic Free.

As a part of this assessment, an additional category was included for gathering the qualitative aspects based on new, innovative and eco-friendly practices adopted by the individual airports. It captured best practices such as incinerators, bio-gas plant, compost plant, special facilities for PWDs, bottle crushing machine, baby bassinet, child care room, airport radio station, art galleries, indoor air-purifying plantation among others.

To create a clean and safe eco-system amongst AAI airports, it was decided to felicitate the best performing airports with the 'Clean & Safe Airport Awards' in three categories based on the passenger footfall on recurring basis. The awards were given away to AAI Airports and teams by Dr. Guruprasad Mohapatra, Chairman, AAI. The highest scoring airports in the 3 categories of passenger footfall i.e. Less than 5 million, 1.5 - 5 million and More than 5 million, were Vadodara, Chandigarh and Kolkata respectively.

The government realized that the necessity for Third-Party Assessments for airports is vital as it provides an unbiased and legitimate outlook on the recorded observations. Apart from the existing parameters of airport terminal infrastructure services and facilities, it is also recommended to inculcate environment-friendly ideas in airports as it serves as a platform to a large passenger traffic for spreading awareness about the eco-friendly ideas and innovative techniques.

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Conducting periodic Fire Drills, which is a requirement in NABH accredited hospitals, help the hospitals in reducing the casualties in unfortunate incidences of fire. NABH- National Accreditation Board for Hospitals and Healthcare Providers
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Quality Council of India
Posted by Shalini Chaurasia Mukherjee
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In order to enhance employability, QCI and @GLA_Mathura ink an MoU today. GLA University recognises QCI for capacity building interventions in the form of learning activities while using the eQuest platform. #ShineOn @QCIelearning @AdilZainulbhai @RavPSingh @DoC_GoI


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NABH accreditation for hospitals simplified and digitalised
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ZED @ZED_QCI · 25/02/19
Dept. of Industries & Mines, Govt. of Gujarat & @QualityCouncil signed MoU in the presence of Principal Secretary-Industries and Commissioner-MSME to take ZED forward in the State. @PMOIndia @minmsme @girirajsinghbjp @DIPPGOI @CimGOI @CMOGuj @vijayrupanibjp @AdilZainulbhai
Mohit Singh


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Government of UP and 9 others


QCI @QualityCouncil · 05/03/19
The first program on IMA HBI - NABH Pre-Accreditation Entry-Level Certification Awareness Workshop was conducted successfully at Coimbatore by IMA TNSB Coimbatore Branch NHB(Nursing Home Board) on 10th Feb 2019. @Director_NABH @MoHFW_INDIA @moayush @AdilZainulbhai @RavPSingh


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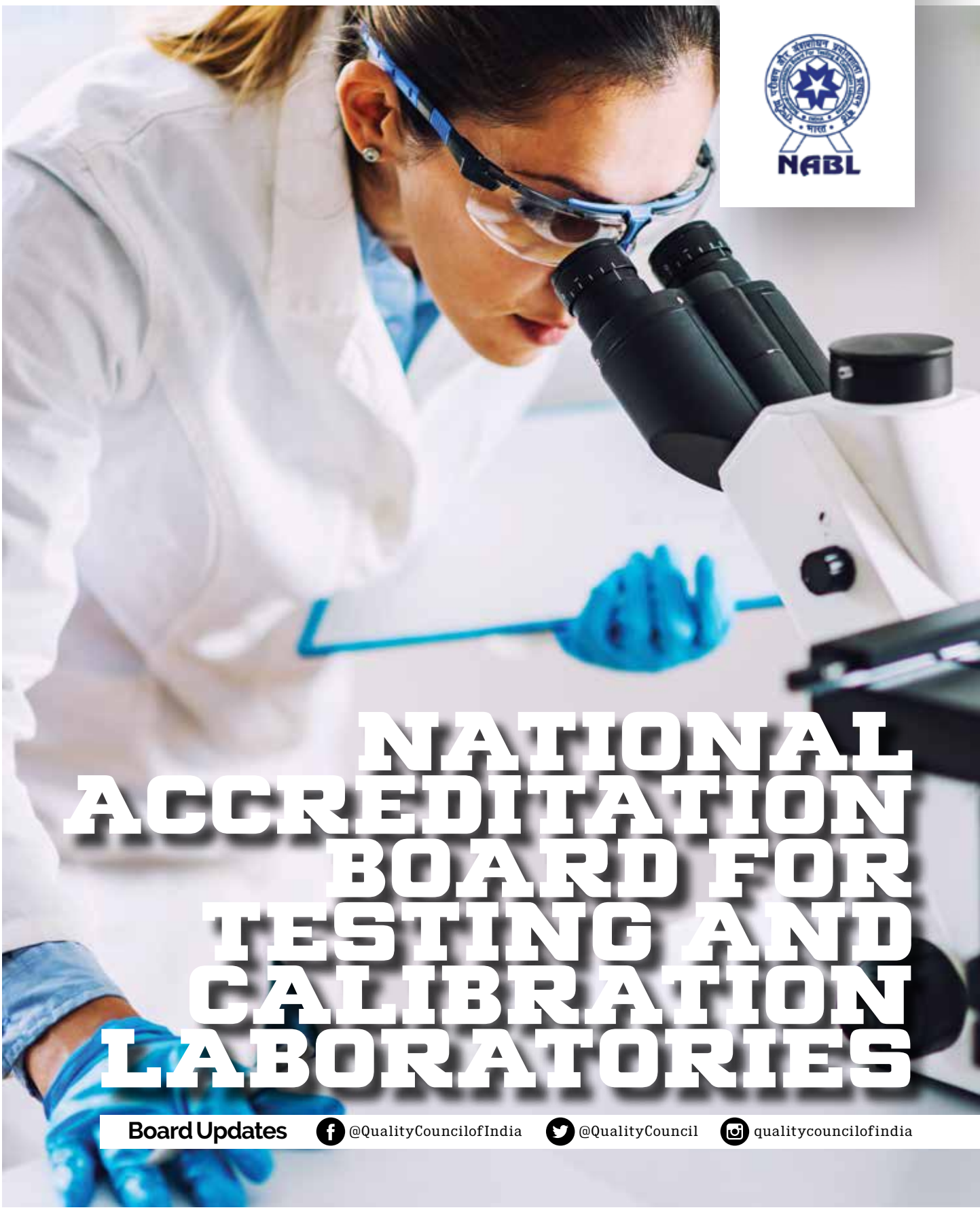


NATIONAL ACCREDITATION BOARD FOR TESTING AND CALIBRATION LABORATORIES

Board Updates @QualityCouncilofIndia @QualityCouncil qualitycouncilofindia

Signing of MoU

NABL, QCI signed MoU with Medical Device Directorate (Imed), Iran

NABL, QCI signed a Memorandum of Cooperation with Iran Medical Device Directorate (IMED), Ministry of Health and Medical Education, Iran on 16th March 2019 at Tehran.

The MoU aims to encourage the laboratories cooperating with Directorate to approach NABL for gaining accreditation as per ISO/IEC 17025.

Launch of New Accreditation Scheme

Quality Assurance Scheme for Basic Composite Medical Laboratories (Entry-Level)

With an intent to penetrate rural India and strengthen healthcare infrastructure in the country, NABL launched Quality Assurance Scheme for Basic Composite Medical Laboratories (Entry Level) on 4th February' 2019 during its 3rd Strategic Meet held at Ranthambore.

International Awareness-Cum-Training Courses

Awareness-Cum-Training Courses, Kingdom of Saudi Arabia

NABL conducted two Awareness-cum-Training courses on 'NABL's Laboratory Accreditation and ISO/IEC 17025:2017' at Jeddah and Al-Khobar, Kingdom of

Saudi Arabia (KSA) on 5th January 2019 and 7th January 2019 respectively. As an upshot to the efforts made, applications for accreditation from Kingdom of Saudi Arabia are being received by NABL.

The purpose of conducting these courses was to sensitize laboratories about NABL accreditation and upgrade their understanding on ISO/IEC 17025:2017.

Awareness-cum-Training Courses, Nepal

With the support from PTB, Germany, NABL conducted a two-day awareness-cum-training courses on 'NABL's Laboratory Accreditation and ISO/IEC 17025:2017' at the following places:

Department of Food Technology & Quality Control (DFTQC), Kathmandu on 25th-26th February'2019. The course was attended by 32 officials from DFTQC, NBSM & Forest Research & Training Centre, PTB, Kathmandu, Nepal

Department of Plant Resources (DPR), Kathmandu on 27th-28th February'2019. The course was attended 33 officials from DPR, NBSM, MoICS, NPRL, NML, RETS, SMTQ, Kathmandu, Nepal

Participation in the APAC Evaluation of ENAS, UAE

NABL official participated as a Team Leader in the initial APAC evaluation of Emirates National Accreditation System (ENAS), UAE (United Arab Emirates) during 26th-31st January'2019.

National Awareness Programs

Awareness program in association with IGS Local Chapter, Indore

NABL, in association with IGS Local Chapter, conducted an awareness program on 28th January 2019 at Indian Institute of Technology (IIT), Indore. The program was attended by a total of 17 representatives from IGS and associated laboratories who were familiarised with NABL Accreditation process, policies and guidelines associated with the current ISO/ IEC 17025:2017 standard.

Symposium on Medical Devices-Compliance with Quality Standard, Hyderabad

One-day Awareness program on Accreditation of Medical Devices Calibration as per ISO/IEC 17025 was held on 15th February 2019 at Hyderabad. The target audience for the program was from Laboratories, Equipment Manufacturers, Healthcare Sectors/ Hospitals, Government Organisations/ Regulators, Manufacturers Association etc.

The program focused on the Technical requirements for Medical Device Calibration in the country. Significance and benefits of Accreditation to the field was also

deliberated upon. Director, NABL briefed the participants about the achievements of NABL and appealed all the participants to be proactive and derive maximum benefits from the awareness program.

Awareness in MSME Support and Outreach Programme

To benefit the domestic market and enhance export, the Central Government had launched a 100-day program to support and outreach MSMEs in order to strengthen these units financially and enhance the quality of their products.

In this regard, NABL conducted a series of 23 programmes from December 2018 to February 2019 in various districts of the country. These programs have benefitted MSMEs of diverse sectors like Automotive Components, Leather, Handloom, Food Processing, Electrical Equipment, Pharmaceuticals, Agricultural Products, Bamboo, Tea, Handicrafts etc.

NABL-FSSAI Awareness program on NABL accreditation as per ISO/IEC 17025:2017, Delhi

In the year 2017, NABL in association with FSSAI had conducted four awareness programs on “NABL accreditation as per ISO/IEC 17025:2005 and NABL criteria” addressing all state food testing laboratories in different zones of India (North, South, East and West).

For the smooth transition and implementation of laboratory management system as per the revised version of ISO/IEC 17025:2017, NABL plans to conduct awareness programs to familiarize these state food testing labs. The first program in this line was held on 12th March 2019 at Delhi which was attended by 35 participants from state food testing laboratories (Jammu & Kashmir, Rajasthan, Uttar Pradesh, Punjab and Delhi).

Conferences/ Seminars

10th International Conference on Advances in Metrology, New Delhi

NABL participated in 10th International Conference on ‘Advances in Metrology-2019;AdMet-2019’ held at CSIR-National Physical Laboratory (NPL), New Delhi from 18th to 22nd February 2019. The participants were apprised about benefits and importance of NABL Accreditation, its international linkages and present accreditation scenario around the world.

India International Bullion Summit, Mumbai

NABL participated in 'India International Bullion Summit’ organized by ‘The India Bullion and Jewellers Association Ltd.’ at Mumbai from 14th & 15th March 2019. The sessions deliberated on NABL accreditation and the challenges faced by Gold/Silver testing laboratories in obtaining NABL accreditation.

The event witnessed an active participation from Refiners, Jewellers, Assaying & Hallmarking centres, Commodity Exchanges, Govt. Regulators, Jewellery designing students etc. who got benefitted.

Training

Training Program on 'General requirements for the Competence of Testing and Calibration Laboratories'

Five-day Assessors training courses as per ISO/ IEC 17025:2017 were held as per below details:

16th-20th January'2019 at Gurugram

13th-17th March'2019 at Gurugram

Training Program on 'General Requirements for the Competence of Reference Material Producers as per ISO 17034'

Three-day training programs as per ISO 17034 were held as per below details:

13th-15th February'2019 in Delhi

20th-22nd February'2019 in Mumbai

06th-08th March'2019 in Chennai

NABL Strategic Meet

NABL organised its 'Third Strategic Meet' at Ranthambore from 3rd- 4th February 2019. The Meet was graced by Dr. R.P. Singh, Secretary General, QCI along with Mr. Anil Relia, CEO, NABL.

The leaders shared their visionary ideas and deliberated on ways and means to overcome the challenges anticipated in the execution of these ideas.

Brain storming was carried out on the expected stature of NABL in another five years wherein different strategies to foster NABL growth were conversed upon.

A major accomplishment of the Meet was the launch of new voluntary scheme- 'Quality Assurance Scheme for Basic Composite Medical Laboratories (Entry-Level).'

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)

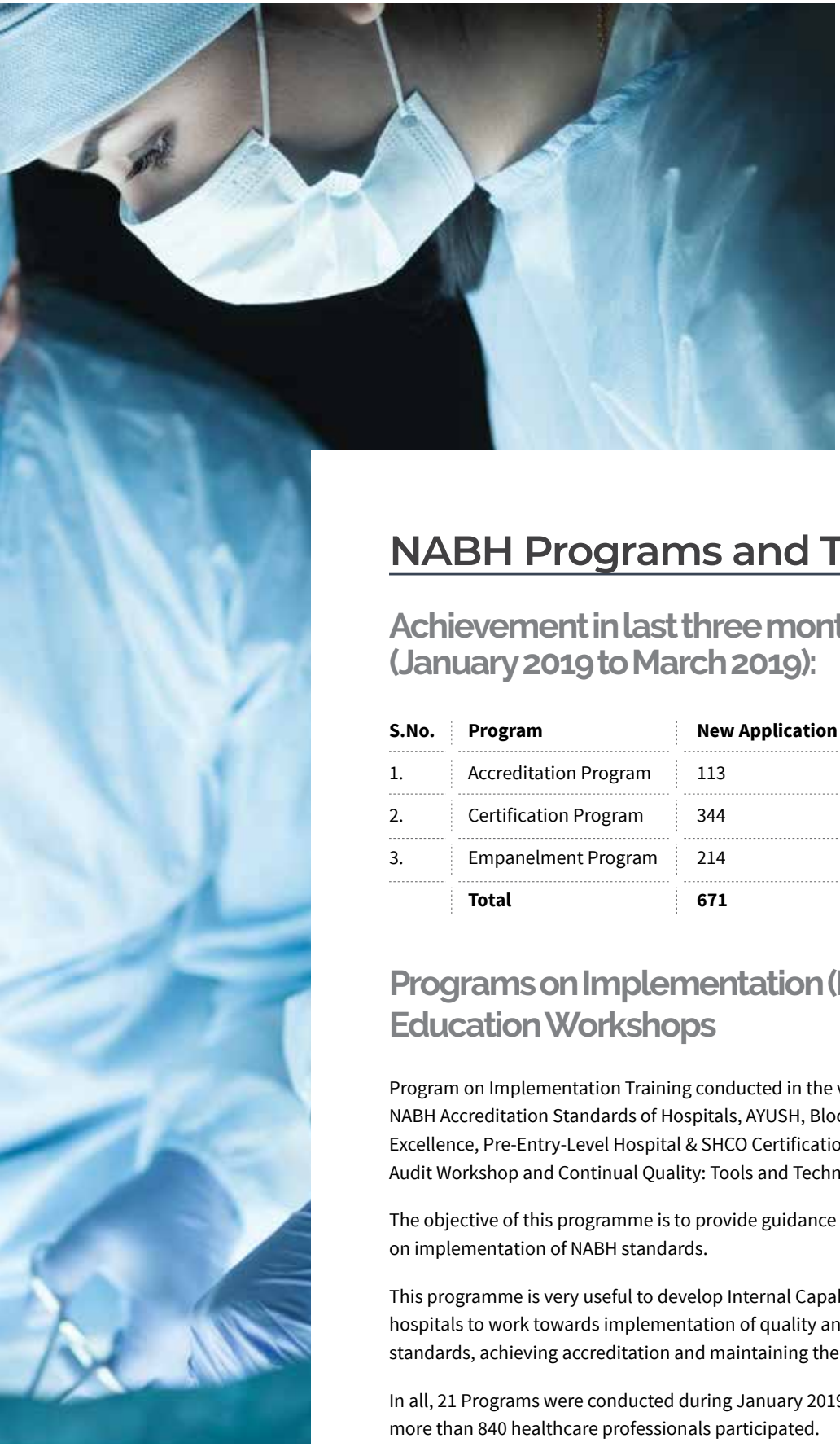
For further details please contact:

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

NATIONAL ACCREDITATION BOARD FOR HOSPITALS AND HEALTHCARE PROVIDERS

Board Updates @QualityCouncilofIndia @QualityCouncil qualitycouncilofindia



NABH Programs and Trainings

Achievement in last three months (January 2019 to March 2019):

S.No.	Program	New Application Received	Accreditation Granted
1.	Accreditation Program	113	124
2.	Certification Program	344	507
3.	Empanelment Program	214	114
	Total	**671**	**745**

Programs on Implementation (POI) & Education Workshops

Program on Implementation Training conducted in the various cities on NABH Accreditation Standards of Hospitals, AYUSH, Blood Banks 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 to develop Internal Capability within the hospitals to work towards implementation of quality and patient safety standards, achieving accreditation and maintaining the same.

In all, 21 Programs were conducted during January 2019 to March 2019 wherein more than 840 healthcare professionals participated.

NABH Participation in AYUSH Arogya Fair at Haridwar from 8th to 10th February 2019

NABH participated in the event organized by Confederation of Indian Industry (CII) in association with Ministry of AYUSH, Government of India, and Government of Uttarakhand, State Arogya Fair – Comprehensive Health Fair on Ayurveda, Yoga & Naturopathy, Unani, Sowa-Rigpa, Siddha & Homoeopathy from 8th-10th February 2019 at Rishikul Ground, Haridwar.

Haridwar State Arogya 2019 was organized with the objective to promote, propagate and showcase strengths and potential of Indian Systems of Medicines, the research and development efforts in this sector and create awareness about remedies available in AYUSH to the general health problems and integrate the Indian medicinal systems with mainstream healthcare delivery structure.

The State Arogya Fair attracted participation from leading AYUSH Hospitals and Drug Manufacturers, Healthcare Products Manufactures, Health Food Producers, Medical Practitioners, Hospitals, Clinics, Research Institutes, Health Fitness Systems. Naturopathy Centers, Lab Equipment & Machinery, State & Central Government Departments.

NABH participation in the fair has given a wonderful platform for promotion of AYUSH & Panchakarma Clinic accreditation.

The fair was widely promoted through print media, Central and State Government Department offices, Healthcare Centers, Publications and received good attendance from senior members of Medical Industry, Distributors, Suppliers, Retailers, Medical Practitioners and the residents of Haridwar and neighbouring cities, towns in large numbers.

Haridwar State Arogya 2019 has promoted our AYUSH program in Uttarakhand. After participation, NABH received new applications including 400-beded Yog Gram Naturopathy Hospital of Patanjali Unit. And expecting to get few more applicants from the state of Uttarakhand.

NABH Participation in Unani Conference at Vigyan Bhawan, New Delhi from 11th to 12th February 2019

NABH participated in the event organized by Central Council for Research in Unani Medicine (CCRUM), a two-day National Conference on Unani Medicine as part of celebration of 3rd Unani Day from 11th & 12th February 2019 at Vigyan Bhawan, New Delhi.

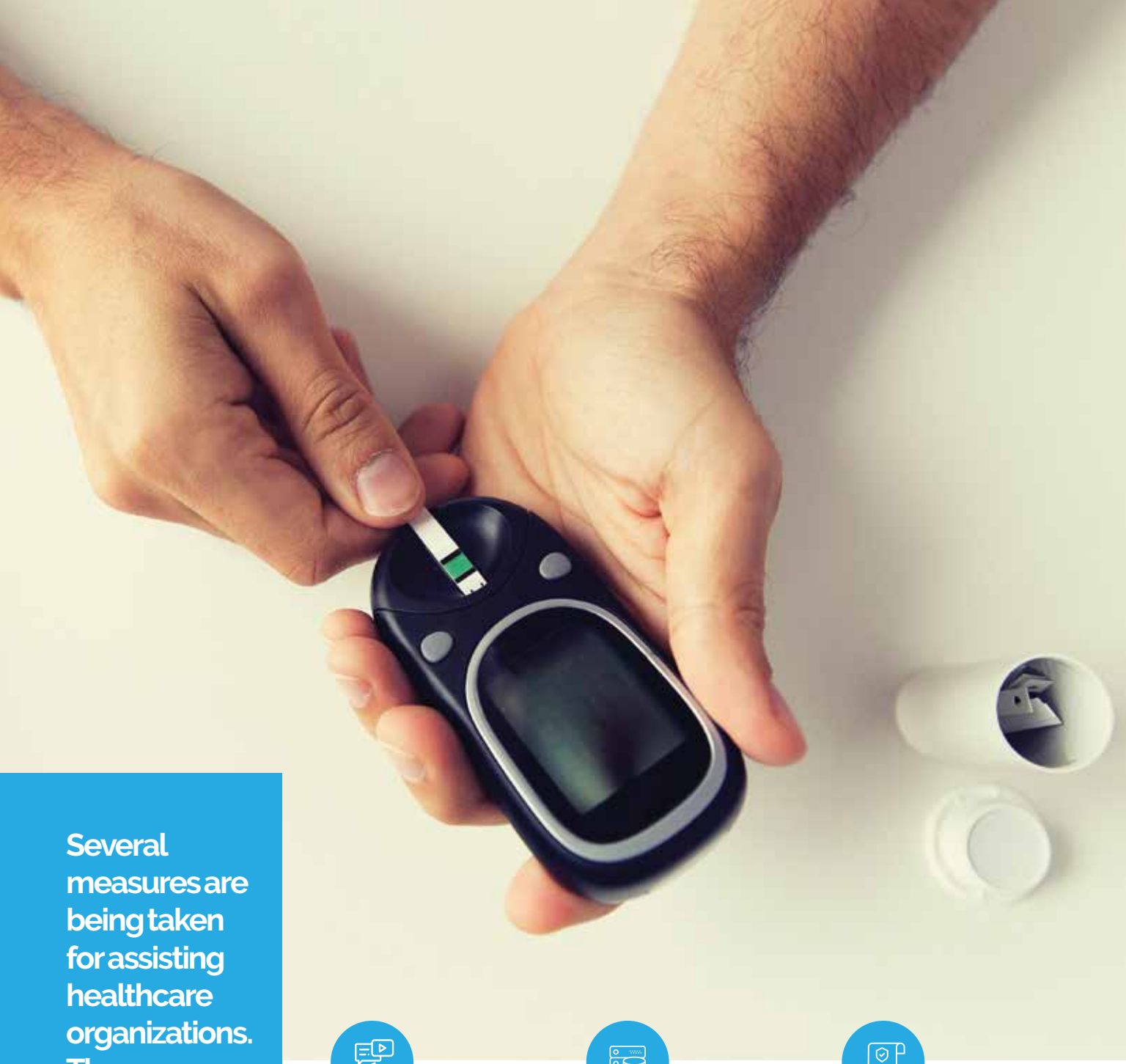
The theme of the conference was “Unani Medicine for Public Health” which aptly highlighted the important role played by Unani medicine in public health.

NABH participation in this event has helped the Unani Accreditation Program to receive better clarity to the applicants of Unani Hospital accreditation. After our participation in the event, we have received applications from Unani National Research Institute Patna, Under CCRUM, and Ministry of AYUSH. And other 5 applicants are expected in near future.

Certification by NABH ensures that the HCO/SHCO has met prescribed quality standards for patient safety, infection control, quality of healthcare facilities etc. as per the standards set by NABH

New Web Portal 'HOPE' Launched for Entry-Level Certification Program

QCI has launched a new web portal, Healthcare Organizations' Platform for Entry-Level Certification (HOPE). This portal will revamp entry-level certification process for HCO/SHCO. The whole process includes registration, documentation and fee submission which will be carried out on HOPE portal and a parallelly developed mobile application. It is a multifarious platform for certification process of healthcare organizations with complete information about the simplified certification process, requirements and compliances.



Several measures are being taken for assisting healthcare organizations. They are:

Awareness Creation: HCOs will be informed about the certification process, requirements, and compliances through direct engagements and awareness workshops, details of which will be available on the portal.

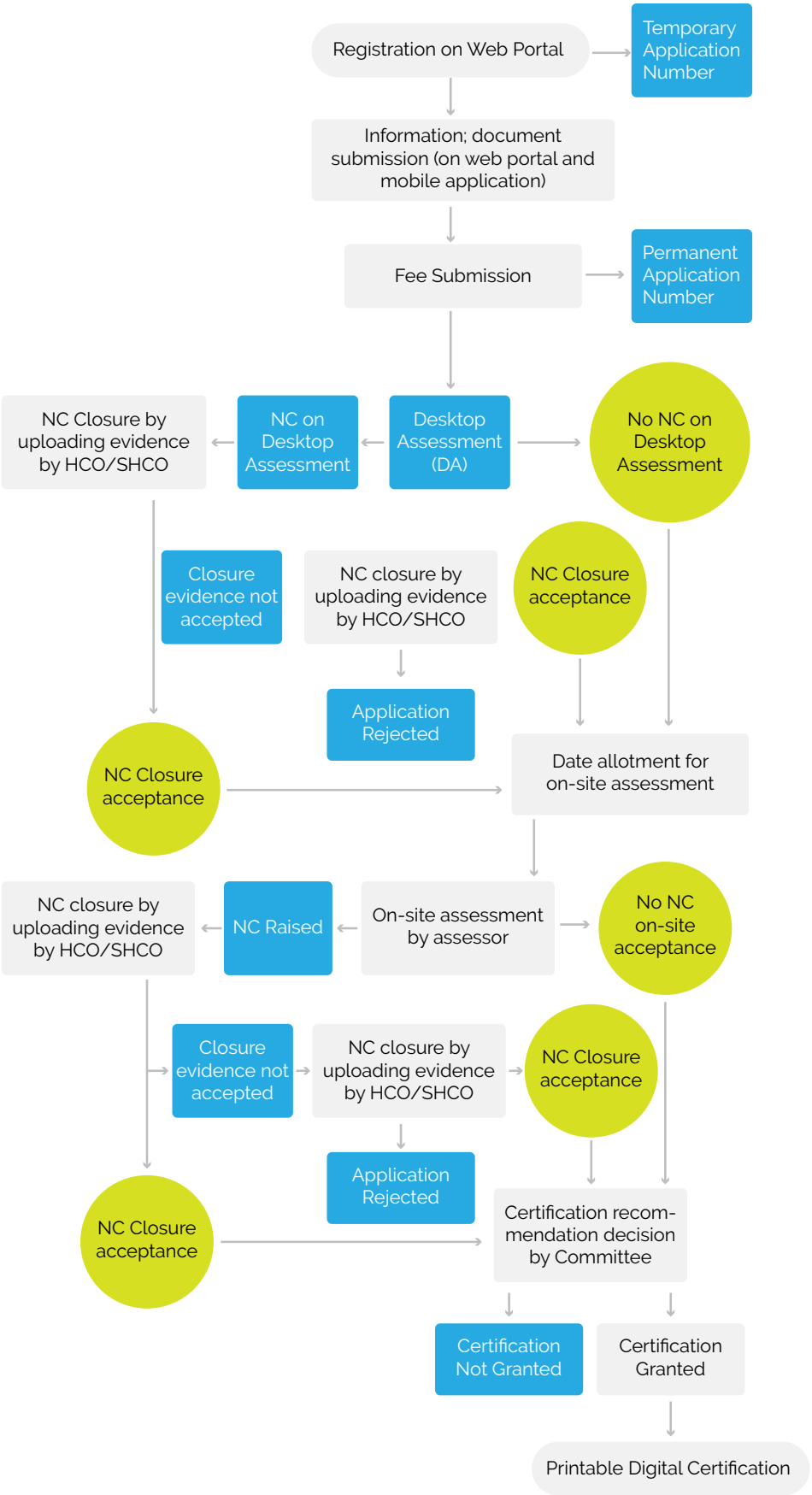
Technology usage to ensure transparency: The complete registration process will be carried out on the HOPE portal and mobile application for directly uploading geotagged and timestamped evidences required for compliance.

Continuous Handholding: To make the certification process swift and smooth, assistance will be provided to HCOs in the form of guidebook, multiple videos, articles and blogs and helpline support for clarification and easy understanding.

The Certification Process

A revised process has been created to simplify the certification process and help more healthcare organisations to become a part of the NABH network. Since NABH ensures high quality of care and patient safety, the objective of this certification process is to build a quality culture at all levels and across all the functions of healthcare organisations.

The picture shows step-wise process in details:



Continual Quality Improvement: Tools and Techniques Workshop at New Delhi on 6th January 2019

Training Program on Implementation of Hospital Accreditation Standard 4th Edition at Symbosis Institute, Pune from 4th to 6th January 2019

Training Program on Implementation of Hospital Accreditation Standard 4th Edition at Charnok Hospital, Kolkata from 12th to 14th January 2019

National Conference at Bombay Hospital, Indore on 16th January 2019

Training Program on Implementation on Blood Bank Accreditation Standard at Jaipur from 19th to 20th January 2019

NABH Stall for Promotion of AYUSH Accreditation Program at State Arogya Fair, Haridwar from 8th to 10th February 2019

Clinical Audit Workshop at Mumbai on 6th January 2019

Training Program on Implementation on Pre Entry Level Accreditation Standard at Kochi from 16th to 17th February 2019

Assessor Training Course on Pre-Entry-Level Accreditation Standard at New Delhi from 15th to 17th February 2019

Healthcare Organizations' Platform For Entry-Level Certification (HOPE)

Dr. Manu Gupta, Accreditation Officer, NABH, QCI

In order to extend the benefits of Insurance to the poorest of the poor, National Accreditation Board for Hospitals and Healthcare Organizations (NABH) -- the constituent body of Quality Council of India -- has simplified the entry-level certification process. The revamped process has been launched through a new HOPE portal, ***https://hope.qcin.org/pages/index*** , called Healthcare Organizations' Platform for Entry- level **(HOPE)** certification. Leveraging the importance of technology, the revised version is digitalized, with a user friendly interface. In addition, the revamped version includes a mobile application, for directly sharing geo-tagged and time-stamped evidences required for compliance to the standards. Hence, with the introduction of this revised system, real-time data can be uploaded through mobile application, which will help in data validation during the assessment stage only.

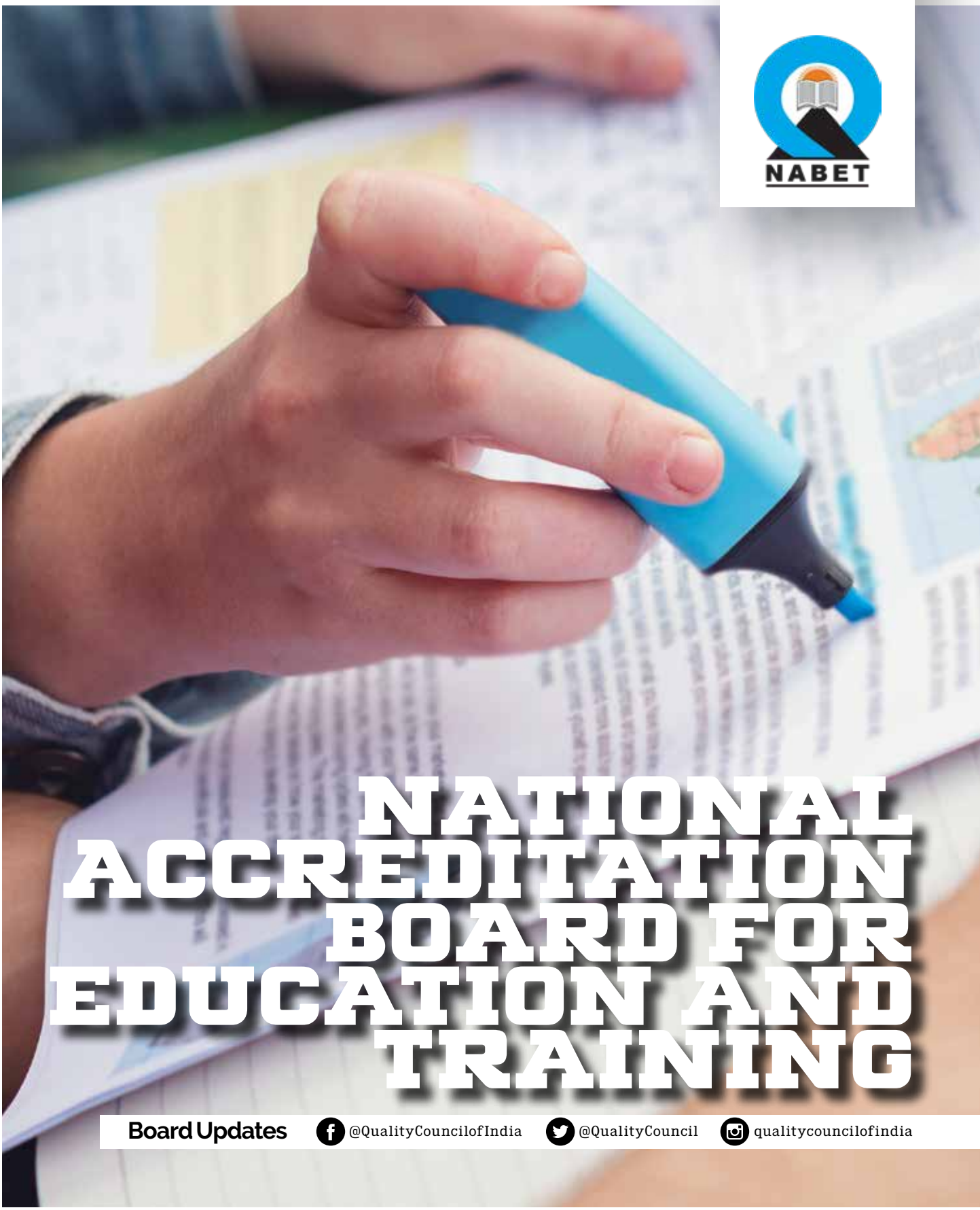
In order to maximize the impact, NABH has partnered with several organizations like Indian Medical Association (IMA), Patient Safety and Access Initiative of India Foundation (PSAIIF), Consortium of Accredited Healthcare Organizations (CAHO) for spreading awareness about the process.

To ensure active participation of healthcare organizations, various activities have been initiated including conducting nationwide awareness workshops, call centre support to hospitals through an active toll-free number and also provide email support during the assessment process. In addition, various innovative mechanisms like assisting hospitals through certified consultants, who can guide them through the entire process in a cost-effective manner. A knowledge bank is also created, which is useful in guiding hospitals of the step-by-step certification procedure.

The updated version, **HOPE**, will help in improving Quality of Care by expanding the coverage to a wide range of hospitals across the country including smaller and larger healthcare organization, as NABH accredited hospitals have more benefits over non-accredited hospitals. The technology-enabled system will help more than 20,000 hospitals to achieve insurance regulations associated both with Insurance Regulatory Authority of India (IRDAI) and Ayushman Bharat scheme, with a more simpler and faster certification process in a time bound manner.

Household pocket expenditure has been a critical public health challenge; the catastrophic expenditure not only has impact on families, but also prohibits them in availing quality healthcare services. Therefore, the revamped system of HOPE will help even the smaller hospitals to adapt the certification route to achieve quality standards in a simplified and efficient way.

HOPE is not just confined to certification of HCOs/ SHCOs but also enables them to comply with quality protocols, improve patient safety and the overall healthcare facility of the organization



NATIONAL ACCREDITATION BOARD FOR EDUCATION AND TRAINING

Board Updates @QualityCouncilofIndia @QualityCouncil qualitycouncilofindia

Assessment and Evaluation

Comprehensive Assessment and Evaluation of Schools under Delhi Government & other allied agencies

The School Development Index (SDI) was a comprehensive evaluation of all schools of Delhi leading to 'quality assurance' & 'quality sustenance' in school education. The exercise involved the evaluation of 5537 schools across Delhi from November 2018 to May 2019. This index was an aggregate of four themes as categorized under the Safety and Security Index, Teaching and Learning Index, Social Inclusion Index and Parent Participation Index. The theme of Safety and Security aimed to cover the aspects of physical, medical, emotional, social, hygienic and sexual safety of the child in the school premises. The theme of Teaching and Learning covered the aspects of teaching-learning resources, teacher professional development and learning outcomes. The theme of Social Inclusion considered the integration of students from Economically Weaker Sections (EWS) and Disadvantaged Groups (DG) studying in schools while Parent Participation Index covered the aspect of School Management Committee (SMC) and Parent Teacher Meeting (PTM) across schools.

School Development Index was administered by a Project Management Unit (PMU) established at the headquarters of NABET, QCI. The PMU was divided into seven verticals, viz., Onboarding, Capacity Building, School Mapping, School Evaluation, Debriefing, Parent Interviewing and Data Analysis. The process began with the empanelment of Certification Assessment Bodies (CABs) and screening of candidates based on a pre-defined eligibility criterion followed by a rigorous round of interviews by education experts at QCI. QCI has conducted interviews of more than 2000 candidates and shortlisted more than 1500 candidates for the evaluation. These shortlisted candidates then attend a five-day capacity-building workshop beginning with a two-day in-classroom orientation, followed by a two-day hands-on training, and concluded with an extensive debrief session. The candidates were finally selected based on their performance in the workshop. QCI conducted 56 capacity building workshops between November 2019 to April 2019, leading to the creation of 343 teams, each comprising one Lead Assessor and two Junior Assessors, for field evaluation. These teams were then mapped with schools, distributed assessment kits, and readied for evaluation of schools, under the process of School Allocation. A cadre of 25 skilled Management Trainees were also engaged to hand-hold and supervise the assessors during the field evaluation. During the 2-or-3-days evaluation, these MTs were in constant touch with the team resolving doubts and motivating them. QCI also established a team of shadow observers who visited 40% of schools every day to ensure quality and accuracy in the data.

Management Trainees at the PMU managed and motivated assessors

After the completion of evaluation, the process of debriefing was conducted wherein the teams assembled at a central location to return their old assessor kits, collect new ones and discuss their queries and challenges from the exercise. It also served as a platform to revise concepts and pass on new information. Throughout the three phases of school evaluation from December to April, QCI conducted more than 120 sessions at various locations.

Debrief Session: Conducted by Management Trainees, assessors shared and assimilated experiences

As part of the exercise, contact details of parents were also collected to understand the experience of parents about their child's school. It also served as a mechanism to gauge feedback and verify information collected from the school. An experienced team of 30 interviewers was empanelled for carrying out the interview process. Till April 2019, over 65,000 parents were approached by the team. The SDI exercise concluded with the process of Data Analysis which comprised cleaning, streamlining and presenting trends of the data. A six-membered team was created for the process. Validations were put in the data to streamline it, while more than 30 questions have been selected to present trends. In close association with DCPCR, this team later analysed the 360+ data points received from the field according to the conceptual framework.

Till 18 February 2019, evaluation of 4060 schools were completed, and Quality Council of India, in collaboration with DCPCR, commemorated the milestone with a celebration at Delhi Haat, Janak Puri on 24 February 2019. Mr. Manish Sisodia, Deputy CM and Education Minister of Delhi, and Dr. R. P. Singh, Secretary General of QCI, joined the programme as Chief Guest and Guest of Honour, respectively. Calling the exercise a wave of "transparency" and "accountability" in the school education system in the city, Mr. Sisodia said, "We are getting really positive feedback from government schools as well as private schools about such assessment, in contrast to the initial fear about the same. Leave alone states, very few nations across the world have the courage to establish an assessment of their schools."

The project was initiated in November 2018 and till date, evaluation of all schools was completed spread over three phases. The team is currently engaged in data analysis and publication of report.

From left: Dr. R. P. Singh, Secretary General, QCI; Mr. Manish Sisodia, Deputy CM, Delhi; Mr. Ramesh Negi, Chairman, DCPCR; Mr. Anurag, Member, DCPCR and Ms. Madhu Ahluwalia, Project Director, graced the programme

Activities of Accreditation Division of NABET

Workshops/Trainings

NABET conducted an awareness programme on ISO 21001:2018 Standard at Hisar (15th Feb 2019) and New Delhi (27th Feb 2019)

NABET conducted awareness programmes on ISO/IEC 17024:2012 Standard at Mumbai (29th Jan – 31st Jan 2019) and New Delhi (28th Feb – 1st March 2019)

NABET Accreditations

During the quarter Jan – March 2019, NABET has granted new accreditation to CABs operating certification of persons as per ISO/IEC 17024 :2012 Standard as follows:

- The Assessor Guild
- TÜV SÜD South Asia Pvt. Ltd.
- Bureau Veritas International Doha LLC

Activities of EIA Division

Meetings with SEIAA/SEAC of various states

Meetings with Chairman and Members of SEIAA/SEAC Assam, Madhya Pradesh, Rajasthan and Gujarat were held on ***29th January 2019, 15th February 2019, 6th March 2019, and 26th March 2019***, respectively, wherein issues related to the quality of EIA report being prepared by QCI-NABET accredited EIA consultant organisations were deliberated upon. CEO/Sr. Director and Asst. Director from QCI-NABET attended the meetings.

Cluster: Nashik Industrial Components and Equipment Manufacturers Cluster 2 (DPG4)

CASE STUDY

Lean Design for Manufacturing

Unit: Preeti Engineering Works

CEO: Mr. Priyesh Panicker

LMC: AB Associates

Case Definition

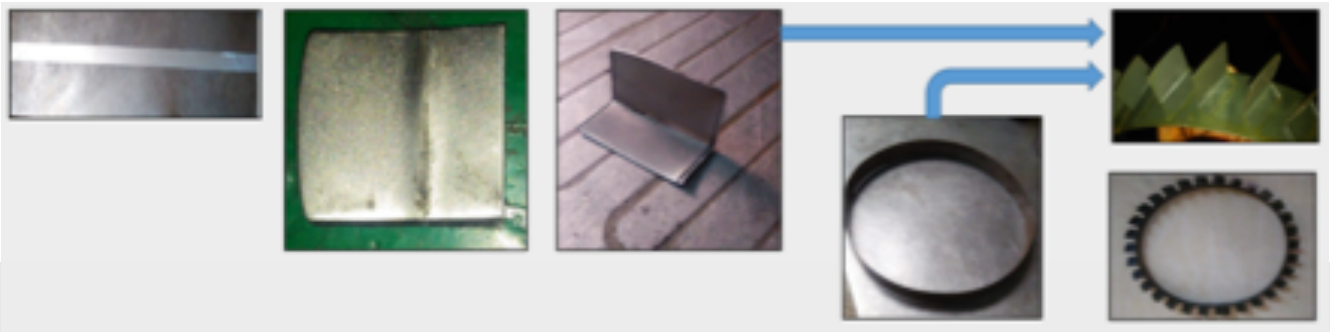
- Preeti Engineering Works manufactures product called finned ring
- Monthly requirement is 300 Nos.
- Part in consideration goes into Air Cleaner Housing as shown below

Problems faced

- Multiple time-consuming manufacturing processes
- Poor on-time delivery
- Excess material movement
- Chances of rejections/ rework
- Chances of product failure at customer end due to improper spot weld
- Operator fatigue
- High cost of manufacturing

Process 'before' improvements

SHEARING	BLANKING	BENDING	ROLLING & SPOT	FIN SPOT WELD
Strip shearing for fins M/C: Shearing Manpower: 1	Blanking to make pieces strip M/C: Press Manpower: 1	Bending to make fins from blanks M/C: Press Manpower: 1	Rolling the strip & spot weld M/C: Rolling & Spot Weld Manpower: 1 Spot Weld- 2 Nos.	Welding fins on to the roller strip M/C: Spot welding machines Manpower:1 Spot Weld: 64 Nos.



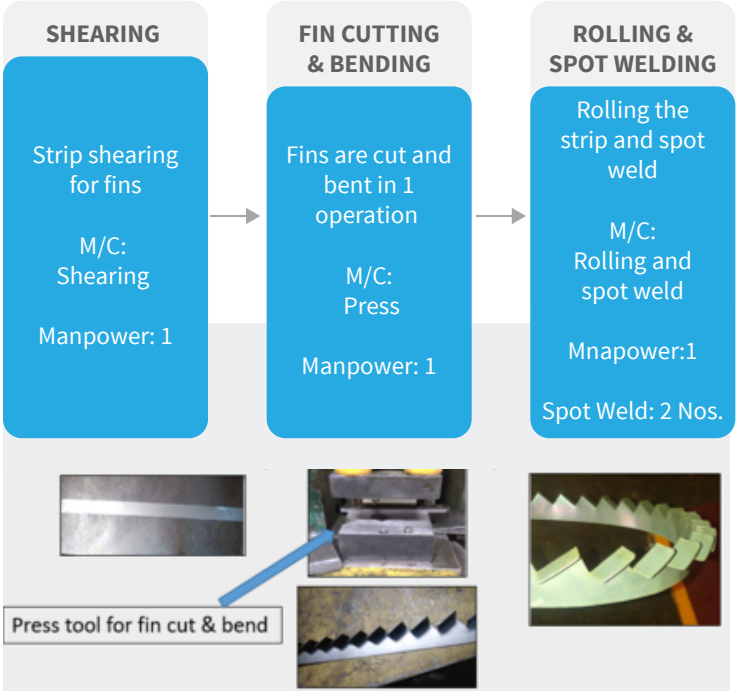
Analysis

- Manufacturing process was lengthy with multiple processes involved
- Batch processing led to excess handling and transportation
- Job involved too many spot welds (66 per job)

Solution

- Based on Lean Principles, new part design was proposed to the customer
- Lean Design process was incorporated to ensure 'Design for Manufacturing'
- Focus was on to reduce the number of processes, batch size, manpower required, equipment required and chances of rejections and rework
- Small specialized tool was made which took care of cutting and bending
- Customer approved the samples after testing functionality

Process 'after' improvements



Number of processes Reduced from 5 to 3

Number of components in final product reduced from 33 to 1

Number of Spot Welds reduced from 66 to 2 per job

Number of Spot Welds reduced from 66 to 2 per job

Benefits from the project

Lean Wastes addressed

- Motion
- Excess transportation
- Inventory
- Overproduction
- Overprocessing
- Waiting
- Defects

Improvement achieved in

- On-time delivery
- Customer responsiveness
- Drastic improvement in lead time
- Eased production planning & Control

Tangible results

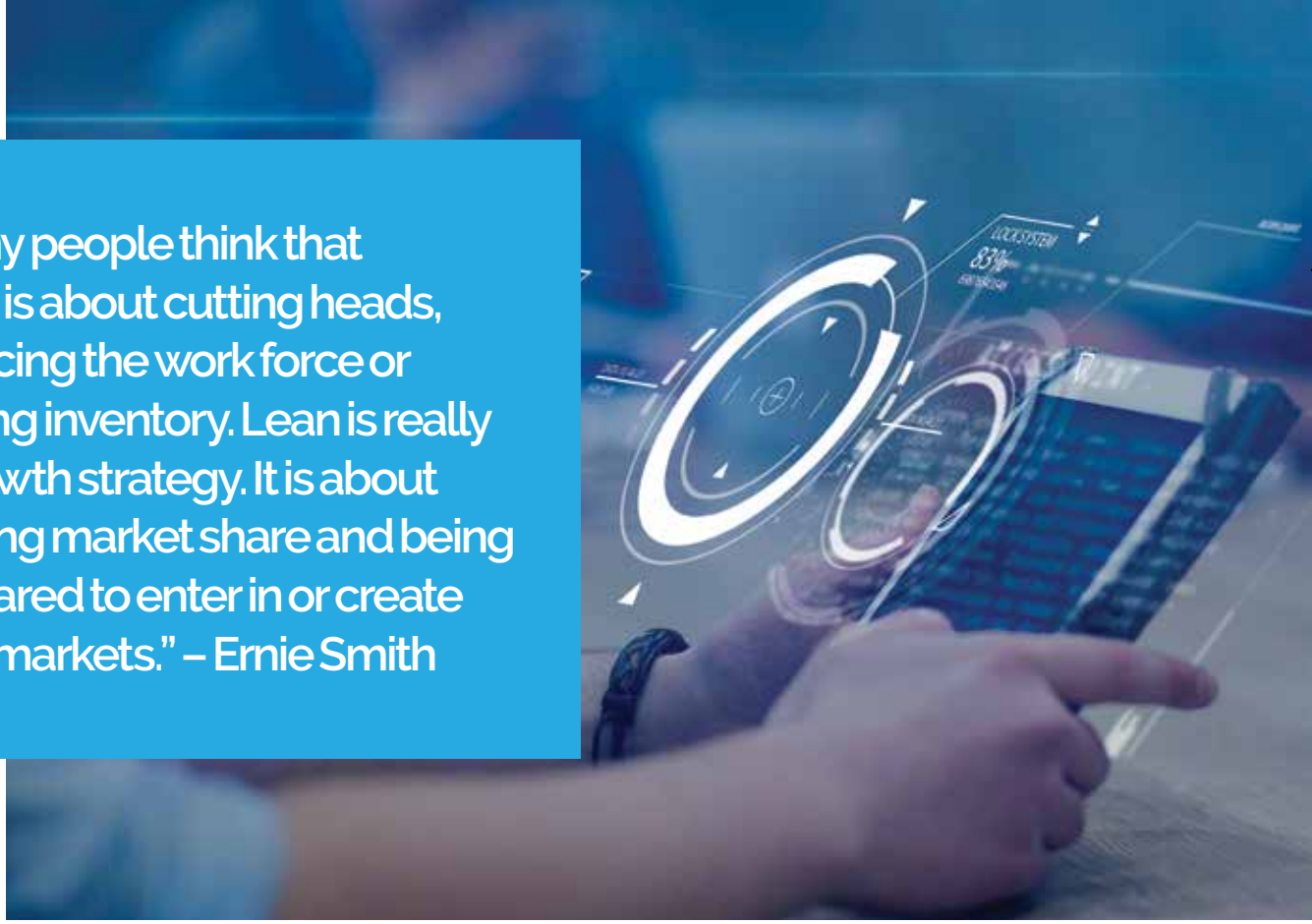
Old Process

Sr. No.	Process	Time for 100 Number in Hr.
1	Strap Shearing for fins	0.5
2	Fins Blanking	8
3	Fins Bending	8
4	Strap for round cutting, rolling & Spot Welding	0.5
5	Spot Welding fins on strap (For 1 fin strap)	8
Total Time required		**25**

Total operators required: 3

New Process

Sr. No.	Process	Time for 100 Number in Hr.
1	Strap Shearing for fins	0.5
2	Fins Blanking, Fins Bending	8
3	Spot Welding fins on strap (2 Spots)	1
Total Time required		**9.5**



"Many people think that Lean is about cutting heads, reducing the work force or cutting inventory. Lean is really a growth strategy. It is about gaining market share and being prepared to enter in or create new markets." – Ernie Smith

Total operators required: 2

Financial Savings

		Old Process		New Process	
Sr. No.	Process	RS Per stroke	RS per 100 fins strap	RS Per stroke	RS per 100 fins strap
1	Strap Shearing for fins	0.15	15	0.15	15
2	Fins Blanking	0.15	450	0.15	450
3	Fins Bending	0.15	450		
4	Strap for round cutting, rolling & Spot Welding	1	100	-	-
5	Spot Welding fins on strap	9	900	0.25	25
Total		10.45	1915	0.55	490
Monthly Requirement of Fins; 300 no's		5745		1470	
Total expenses for the year in rupees		68940		17640	
Time saving for 100 fins mfg. in rupees		135000 (25 hrs, 3 Men)		34200 (9.5 hrs, 2 Men)	
Total		**203940**		**51840**	

Total Saving = 203940 – 51840 = 1,52,100 INR Per year

Open Industry 4.0 Alliance

Dr. Indrajit Bhattacharya , Director, NABET, QCI

The **Open Industry 4.0 Alliance** (announced at Hannover Messe 2019) is a group designed for technology suppliers and end-users of all sizes to collaborate around **an open framework from which to deliver interoperable technologies and services—with the aim of accelerating industry's digital transformation.**

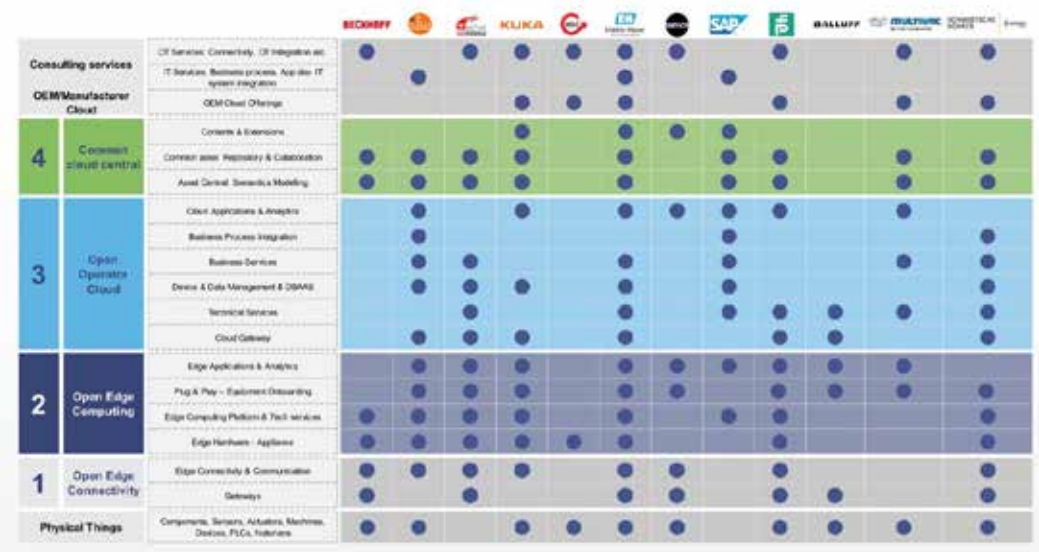


Figure 1 : Denotes each place along the four layers of the OI4 framework to which each technology supplier applies

Operators of factories and warehouses perceive that large automation vendor led alliances or platform initiatives lack the support from smaller, competitive equipment builders, making them reluctant to hand over operational data to their mega vendor.

Multi-vendor alliances and partnerships have been a clear trend across the industrial automation sector in response to high levels of end user interest in pursuing various IIoT (Industrial Internet of Things) and Industry 4.0 initiatives to digitize their operations. These partnerships are arising out of the realization that no one or two companies can offer everything the market needs when it comes to digitization.

Despite all the interest in IIoT and Industry 4.0 from end users and the growing array of alliances to support it, there remains a certain level of reservation among end users to take the step.

There has been a slow adoption of Industry 4.0 as no large manufacturing companies want to cope up with an ecosystem of multiple cloud systems—and there is no one cloud system available that can do it all today. These users want a simplified interface between the different systems they need. They want us—industrial technology suppliers—to build Application Programming Interfaces (APIs) between different systems; **definitely a requirement for an interoperability solution.**

To address this market reality, Hilscher, along with Arvos GmbH, Balluff, Beckhoff, Endress+Hauser, Gebhardt Fördertechnik, IFM , Kuka, MultiVac, Pepperl+Fuchs, SAP, Schmidtsche Schack, Samson, and Wika Alexander Wiegand have formed the Open Industry 4.0 Alliance (OI4).

Although the alliance is originating in central Europe, the intent is to take the alliance global. The alliance is focused on the interoperability of the members' products and services, as well as on applying those technologies to digitize end user operations. End users and OEMs are invited to join the alliance to avail themselves of the interoperability efforts conducted by member suppliers.

The main goal of the alliance is to take existing solutions and make them interoperable to speed up adoption of Industry 4.0. This alliance is based on using existing technologies to execute on end users' specific digital plans.

To do this, OI4 members have designed a framework consisting of four layers connecting the physical assets on the plant floor to OI4's central "Open Manufacturers Cloud Platform.

Layer One is "Open Edge Connectivity" where widely used industrial communication protocols such as OPC UA, HART, Profibus/ Profinet, Modbus, EtherCat, and others reside. This protocol layer can be connected via OPC UA, MQTT, TCP/IP or other networking options to **Layer Two—"Open Edge Computing"**—where OI4 member and customized apps, along with edge hardware, reside in a containerized enterprise computing platform. OI4's secure cloud-to-edge connector connects **Layer Two to Layer Three—"Open Operator Cloud Platform"**—where cloud accessible versions of OI4 member and customized apps are positioned. These apps are accessible via OI4's open API and integration services. **Level Four is OI4's "Common Central Cloud,"** which houses a central asset repository and associated asset intelligence network.

This framework provides a "common understanding for what end-to-end data semantic models mean for security, how to publish digital assets in central repository, and how to build the APIs for every level of the framework into a customer's manufacturing operations.

OI4 stresses that this framework is essential to addressing end user concerns about moving forward with any digitization initiative. The major concerns of end users are revolving around "easy onboarding of assets, with common data semantics across the user's own edge and Industry 4.0/ IIoT cloud platform;

and enabling a seamless bi-directional collaboration with multiple asset vendors for content and data. **Currently, if a customer invests in Industry 4.0/ IIoT Solutions from different vendors on different platforms, the burden to face the challenges described above must be carried by the customer alone.**

The OI4 framework is designed to overcome these challenges for both end users as well as technology suppliers by establishing an open, agreed-upon framework from which to deliver interoperable technologies and services.

With its open framework and focus on the end user—regardless of size—OI4 seeks to allay the concerns fostering industry inertia around digitization

The operators of factories, plants, and warehouses perceive that large automation vendor led alliances or platform initiatives lack the support from smaller, competitive equipment builders, making them reluctant to hand over operational data to their mega vendor. On the other hand, the mid-market alliances are not creating sufficient impact due to lack of global go-to-market capabilities and limited adoption. The ambition [of the alliance] is to focus on jointly creating customer value. With its open framework and focus on the end user—regardless of size—OI4 seeks to allay the concerns fostering industry inertia around digitization.

Figure 1 above denotes each place along the four layers of the OI4 framework to which each technology supplier applies. This makes it easy for end users and OEMs to visualize what members offer what technologies to close the gaps in their digitization effort.

The intent is not for OI4 members to rule the relationship between customers and their solutions, but to create API links between the customer-specific cloud and the OI4 cloud applications above it.

The customer decides what data leaves their cloud environment. The alliance's egalitarian pricing model, is designed to encourage high levels of end user participation in the alliance. Founding members and participating members pay a set fee to join. For users, however, the cost is aligned to their revenues, so it does not preclude smaller companies from joining.

Reference : Automation World - David Greenfield , Director of Content/Editor-in-Chief, on May 2, 2019

An Overview and Importance of Supply Chain Management

Dr. S K Mishra (Head)[1], Supriya Singh (Executive Assistant)[2], Saurabh Singh (Junior Associate)[3]
Research Analysis and Capacity Building Division, QCI

Preface

A supply chain is a system of organizations, people, activities, information and resources involved in moving a product or service from supplier to customer. Supply chain activities involve the transformation of natural resources, raw materials and components into a finished product that is delivered to the end customer. In sophisticated supply chain systems, used products may re-enter the supply chain at any point where residual value is recyclable. Supply chains link value chains and supply chain performance is all about integration i.e., integration of strategy, processes, organization and information systems.

Overview

Supply Chain Management encompasses the planning and management of all activities involved in sourcing and procurement, conversion and entire logistics management activities. Importantly, it also includes coordination and collaboration with channel partners, which can be suppliers, intermediaries, third-party service providers and customers. In essence, supply chain management integrates supply and demand management within and across the companies. Supply Chain Management is an integrating function with primary responsibility for linking major business functions and business processes within and across companies into a cohesive and high-performing business model. It includes all of the logistics management activities noted above as well as manufacturing operations. It drives coordination of processes and activities with and across marketing, sales, product design, finance and information technology.

"Nevertheless, forecasts (or plans, if you prefer) are important management tools when some methods are applied to reduce uncertainty"

A typical supply chain begins with the ecological, biological and political regulation of natural resources followed by the human extraction of raw material. Several production links are embedded in the system (e.g., component construction, assembly and merging) before moving on to layers of storage facilities of ever-decreasing size and increasingly remote geographical locations so as to finally reaching to the consumers.

History of Supply Chain Management

1960s

Inventory Management Focus, Cost Control

1970s

BOM & MRP - Operations Planning

1980s

MRPII, JIT - Materials Management, Logistics

1990s

SCM - ERP - "Integrated" Purchasing, Financials, Manufacturing, Order Entry

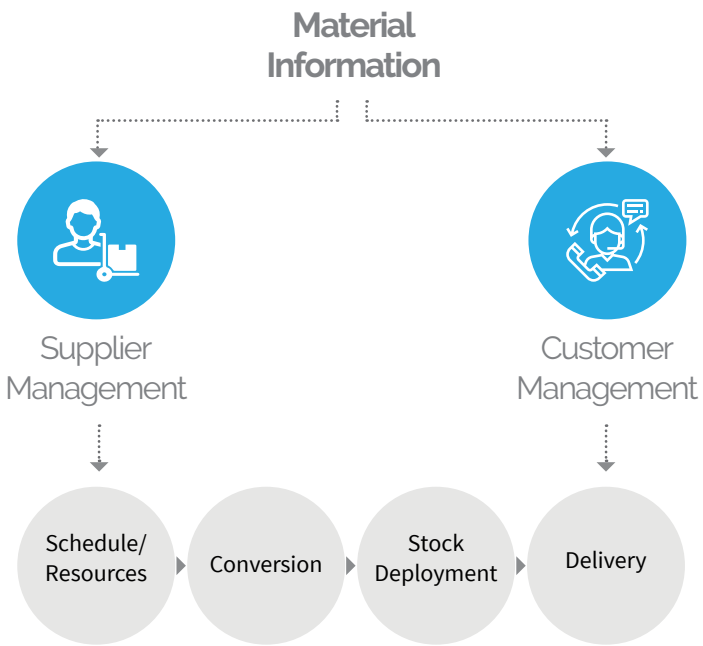
2000s

Optimized "Value Network" with Real-Time Decision Support; Synchronized & Collaborative Extended Network

Modelling

There are a variety of supply chain models, which address both upstream and downstream elements of supply chain management commonly abbreviated as SCM. The SCOR (Supply-Chain Operations Reference) model developed by a consortium of industry and the non-profit Supply Chain Council (now part of APICS) became the cross-industry de facto standard defining the scope of supply chain management. SCOR measures total supply chain performance. It is a process reference model for supply-chain management, spanning from the supplier's supplier to the customer's customer. It includes delivery and order fulfilment performance, production flexibility, warranty and returns processing costs, inventory and asset turns, and other factors in evaluating the overall effective performance of a supply chain.

Broadly, Supply Chain may be described as the strategic management of activities involved in the acquisition and conversion of materials to finished products delivered to the customer. It leads to business process integration.



The Importance of Supply Chain Management

It is well known that supply chain management is an integral part of most businesses and is essential to company success and customer satisfaction.

Boost Customers Service

- Customers expect the correct product assortment and quantity to be delivered.
- Customers expect products to be available at the right location (i.e., customer satisfaction diminishes if an auto repair shop does not have the necessary parts in stock and can't fix your car for an extra day or two)
- **Right Delivery Time –** Customers expect products to be delivered on time (i.e., customer satisfaction diminishes if pizza delivery is two hours late or Christmas presents are delivered on December 26).
- **Right After Sale Support –** Customers expect products to be serviced quickly (i.e., customer satisfaction diminishes when a home furnace stops operating in the winter and repairs can't be made for days)

Reduce Operating Costs

- **Decreases Purchasing Cost -** Retailers depend on supply chains to quickly deliver expensive products to avoid holding of costly inventories in stores any longer than necessary. For example, electronics stores require fast delivery of 60" flat-panel plasma HDTVs to avoid high inventory costs.
- **Decreases Production Cost-** Manufacturers depend on supply chains to reliably deliver materials to assembly plants to avoid material shortages that would shut down production. For example, an unexpected parts shipment delay that causes an auto assembly plant shutdown can cost heavy per minute and millions of dollars per day in lost wages.
- **Decreases Total Supply Chain Cost-** Manufacturers and retailers depend on supply chain managers to design networks that meet customer service goals at the least total cost. Efficient supply chains enable a firm to be more competitive in the market place.

Improve Financial Position

- **Increases Profit Leverage-** Firms value supply chain managers because they help in controlling and reducing supply chain costs. This can result in dramatic increases in firm profits.
- **Decreases Fixed Assets-** Firms value supply chain managers because they decrease the use of large fixed assets such as plants, warehouses and transportation vehicles in the supply chain.
- I**ncreases Cash Flow-** Firms value supply chain managers because they speed up product flows to the customers. For example, if a firm can make and deliver a product to a customer in 10 days rather than 70 days, it can invoice the customer 60 days' sooner.

Societal Roles of SCM

- **Ensure Human Survival-** Humans depend on supply chains to deliver basic necessities such as food and water. Any breakdown of these delivery pipelines quickly threatens human life. For example, in 2005, Hurricane Katrina flooded New Orleans, LA leaving the residents without a way to get food or clean water. As a result, a massive rescue of the inhabitants had to be made. During the first weekend of the rescue effort, around 2.0 million meals and 6.5 million liters of water were delivered.
- **SCM Improves Human Healthcare-** Humans depend on supply chains to deliver medicines and healthcare. During a medical emergency, supply chain performance can be the difference between life and death. For example, medical rescue helicopters can save lives by quickly transporting accident victims to hospitals for emergency medical treatment. In addition, the medicines and equipment necessary for treatment will be available at the hospital as a result of excellent supply chain execution.
- **Protects Humans from Climate Extremes-** Humans depend on an energy supply chain to deliver electrical energy to homes and businesses for light, heat, refrigeration and air

conditioning. Logistical failure (a power blackout) can quickly result in a threat to human life. SCM is found to be helpful in protecting such failures.

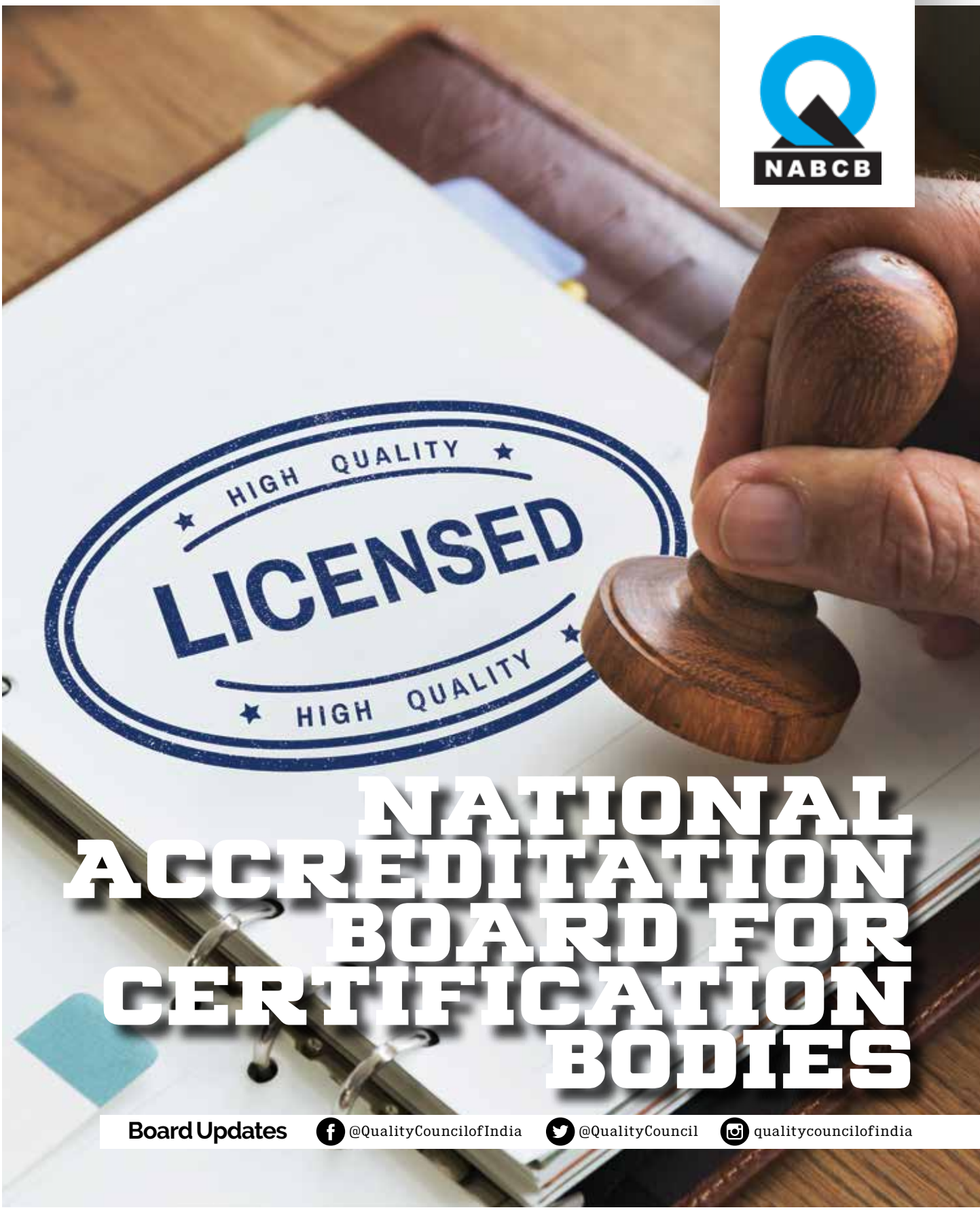
- **Improve Quality of Life-** Foundation for Economic Growth – Societies with a highly developed supply chain infrastructure (modern interstate highway system, vast railroad network, numerous modern ports and airports) are able to exchange many goods between businesses and consumers quickly and at low cost. As a result, the economy grows. In fact, the one thing that poorest nations have in common is no or a very poorly developed supply chain infrastructure.

- **Creates Job-** Supply chain professionals design and operate all of the supply chains in a society and manage transportation, warehousing, inventory management, packaging and logistics information. As a result, there is creation of many jobs in the supply chain field.

- **Reduce Pollution-** Supply chain activities require packaging and product transportation. As a by-product of these activities, some unwanted environmental pollutants such as cardboard waste and carbon dioxide fuel emissions are generated. As designers of the network, supply chain professionals are in a key position to develop more sustainable processes and methods.

- **Opportunity to Decrease Energy Use:** Supply chain activities involve both human and product transportation. As a by-product of these activities, scarce energy is depleted. Supply chain professionals have the role of developing energy-efficient supply chains that use fewer resources.

"Supply chain management implements and protects Cultural Freedom and Development"



NATIONAL ACCREDITATION BOARD FOR CERTIFICATION BODIES

Board Updates @QualityCouncilofIndia @QualityCouncil qualitycouncilofindia

Accreditation Schemes

NABCB launches Accreditation Scheme for ISO 14065

NABCB launched a new scheme to accredit Greenhouse Gas (GHG) Validation & Verification Bodies (VVBs) as per ISO 14065 - Green House Gases (GHG) - "Requirements for greenhouse gas validation and verification bodies or other forms of recognition" on 26 Jan 2019 which would support India's climate change action plan and specifically the intent of Ministry of Civil Aviation to join the International Civil Aviation Organization's (ICAO) international scheme, CORSIA in 2019. Directorate General of Civil Aviation, Government of India has mandated the use of NABCB accredited Verification bodies as per ISO 14065 for CORSIA scheme empanelment.

The scheme will operate using relevant requirements defined in:

ISO 14064-3:2006 Greenhouse Gases - Part 3: Specification with guidance for the validation and verification of greenhouse gas assertions

IAF MD-6:2014 - IAF Mandatory Document for the Application of ISO 14065:2013

ISO 14066:2011 Greenhouse Gases - Competence requirements for greenhouse gas validation teams and verification teams and BCB 165 Accreditation Criteria for Greenhouse as Validation and Verification Bodies (VVBs)

The relevant documents related to GHG accreditation can be downloaded free of cost from the NABCB website nabcb.qci.org.in

2 applications have been received from VVBs since the launch of the scheme.

NABCB undergoes successful APAC peer evaluation

NABCB underwent a Peer evaluation by the Asia Pacific Accreditation Cooperation (APAC) for ISO 17024:2012, the applicable standard for accreditation of personnel certification bodies and for the transition to ISO 17011:2017, the applicable ISO standard for accreditation bodies. The weeklong peer evaluation commenced on 11th March 2019 and was conducted by one-member team comprising of APAC peer evaluator, Mr. Pu-Hsien Li (Bruce Li) from Taiwan Accreditation Foundation (TAF), Taiwan.

The evaluation was concluded successfully with no Non-conformities and 01 Concern and NABCB is likely to be admitted as MRA signatory in the forthcoming joint APAC annual meetings in June, 2019, to be held in Singapore which will make personnel certification by NABCB accredited PrCBs, internationally equivalent.

From the International Arena

NABCB expands its footprint to Dubai

NABCB granted its first accreditation in Dubai to M/s Prime Certification & Inspection LLC for FSMS (Food Safety Management Systems) certification including FSSC 22000 and Product Certification.

NABCB has already granted accreditations in various countries including Nepal, Bhutan, Bangladesh, Mauritius, UK, Qatar and Nigeria.

NABCB attended dialogue in Bhutan by Ministries for Economic Affairs, Bhutan

Mr. Anil Jauhri, CEO NABCB attended a high-level dialogue on accreditation in Bhutan graced by their Minister for Economic Affairs H.E. Lynopo Loknath Sharma. In his concluding address, the Hon'ble Minister recognized NABCB's support to Bhutan Standards Bureau (BSB) and Bhutan Agriculture and Food Regulatory Authority (BAFRA) and advised that conformity assessment bodies in Bhutan should seek NABCB accreditation.

MoU with ANSI National Accreditation Board (ANAB) and United Accreditation Foundation (UAF), USA

NABCB signed MoUs with the ANSI National Accreditation Board (ANAB), USA, as well as with the United Accreditation Foundation (UAF), USA, members of APAC and IAF, on 14th Feb 2019 for cooperation in the area of accreditation of conformity assessment bodies, and other areas of mutual interest.

Both the signed MoUs were presented to the Ambassador of USA at a dinner hosted by the Department of Commerce (DoC) for the US delegation during the India-USA Commercial Dialogue held on 14th Feb 2019, in the presence of CIM Hon'ble Minister for Commerce & Industries and other dignitaries.

First International Conference on Cybersecurity & Data Protection Regulatory Compliance for India

Testing Inspection and Certification Council India (TIC India), an association representing independent third-party verification organizations, organised the first International Conference on Cybersecurity & Data Protection Regulatory Compliance for India on 15th March 2019 at Hotel Taj Mansingh, New Delhi. The conference was organized with support from Quality Council of India (QCI) and the National Accreditation Board of Certification Bodies (NABCB).

The summit provided an opportunity for industry and regulators to deliberate on the critical need for Cyber Security, and Data Protection, understand global best practices and adopt robust compliance program that is testable, technical criteria which is transparent, traceable, repeatable, and reproducible. The event presented a platform for all the stakeholders, including TIC industry, to come together and learn from the global experts and brain-storm on the future steps for India to address this imperative issue.

Padma Bhushan Dr V K Saraswat, Member, NITI AAYOG; Dr. Gulshan Rai, National Cyber Security Coordinator, National Security Council Secretariat; David Epperson, CIO, Cyber and Infrastructure Security Agency (CISA), Department of Homeland Security, Federal Government of USA; Mr. Anil Jauhri, CEO, NABCB and Suresh Sugavanam, Chairman, TIC Council, India Chapter were among some of the eminent experts who shared their views during the conference.

From the National Arena

UP Govt. Recommends NABCB Accreditation or Endorsement for MSME Financial Incentive

UP Govt has announced financial incentive scheme for promoting quality among MSMEs in which certifications either under NABCB accreditation or for schemes endorsed by NABCB occupy a vital place. The notification dated 15th Feb 2019 is available on NABCB website.

NABCB participates in Special Standards Conclave held in Mumbai on 7th-8th Feb 2019

The Special Standards Conclave organized by the Department of Commerce was held in Mumbai on 7th and 8th February 2019. NABCB along with other organizations was a partner in the Conclave. Mr. Adil Zainulbhai, Chairman, QCI spoke in the Inaugural Session in which Commerce Secretary was the chief guest. Mr. Anil Jauhri, CEO, NABCB made presentations on technical regulations and role of medical devices during Special Standards Conclave. Ms. Sashi Rekha, Director NABCB also delivered a talk on the role of accreditation and its international equivalence and emphasized that the goal of accreditation is "Tested, Inspected or Certified Once and Accepted Everywhere'.

Regional Standards Conclaves

The 11th Regional Standards Conclave organized by the Department of Commerce was held at Lucknow on 4th Jan 2019. Ms. Sashi Rekha, Director NABCB; Mr. Ajay Sharma, Joint Director, NABCB and Ms. Seema Shukla, Assessor, NABCB, attended the Conclave and made presentations on Challenges in Standards and Conformity Assessment, International Equivalence of Accreditation and its Benefits and Guidance on selection of Credible Certification Bodies, respectively.

The 12th Regional Standards Conclave was held in Bhubaneswar on 1st Feb 2019. Mr. Shyam Sunder Bang, Chairman, NABCB addressed the participants in the Inaugural Session of the Regional Standards Conclave. Mr. Anil Jauhri, CEO, NABCB; Ms. Sashi Rekha, Director NABCB and Mr. Kona Madhusudan, Assessor, NABCB made presentations on Challenges in Standards and Conformity Assessment, International Equivalence of Accreditation and its Benefits and Guidance on selection of Credible Certification Bodies, respectively. Regional Standards Conclaves are organized by the Department of Commerce and NABCB is a partner in the Conclaves.

Awareness Programme on Accreditation for Medical Devices

NABCB, jointly with the Drugs Control Department, Govt. of NCT of Delhi, organized an Awareness Programme on Accreditation of Medical Devices Certification on 2nd Feb 2019. Approx. 130 delegates from industry and officers from State/Central Drugs Control authorities attended the programme. The programme was inaugurated by Sri Satyendra Jain, Health Minister, Govt. of NCT Delhi. Mr. Satyendra Jain in his address emphasized that there is a need in the country to create a quality mark for all products including medical devices of Indian origin and market the same internationally. Mr. Shyam Sunder Bang, Chairman, NABCB in his address in the Inaugural Session expressed that it is essential to support the efforts of regulators by ensuring quality, using accredited organizations in the fast growing healthcare business.

During the Inaugural Session, Mr. Anil Jauhri, CEO NABCB emphasized that there is a paradigm shift now and regulators are increasingly relying on third-party accredited bodies for verifying compliance to regulations and the same has been adopted in the Medical Devices Rules, 2017.

Dr. Aparna Dhawan and Mr. Mrutunjay Jena, both Joint Directors at NABCB, delivered talks on International equivalence of accreditation and Process of accreditation for MD QMS. Ms. Sashi Rekha, Director NABCB informed the participants about risks of using unauthentic certificates in medical devices.

NABCB conducts Awareness Programme for DGQA Officials

NABCB conducted an awareness programme for officials of Directorate General of Quality Assurance (DGQA) on Conformity Assessment processes, and Accreditation and its international equivalence on 25th March 2019. The speakers for the sessions included Ms. Sashi Rekha, Director, NABCB and Dr. Aparna Dhawan, Joint Director, NABCB. The programme was attended by over 40 senior officers of DGQA and the NABCB accreditation process and its benefits

were explained along with the differences between the requirements for inspection and certification.

NABCB Certification Bodies' Meeting

NABCB held a one-day meeting with certification bodies on 25th March 2019 at Mumbai. The purpose of the meeting was to discuss the certification related issues with the CBs and resolve the same. There were discussions about different issues being faced by CBs. The participants were briefed about the features of the newly launched accreditation portal of NABCB.

NABCB Inspection Bodies' Meeting

NABCB held a one-day meeting with applicant and accredited Inspection Bodies (IBs) on 26 March at Mumbai. NABCB holds annual meeting with inspection bodies to discuss and deliberate on issues being faced by IBs and NABCB. There was participation of 70 representatives from Inspection bodies. The participants were briefed about the features of the newly launched accreditation portal of NABCB. Officials from DGQA and the Bureau of Energy Efficiency (BEE) were also invited to deliver talks on their requirements for accredited inspection bodies to be used by their organisations. Changes in NABCB accreditation procedure were highlighted during the meeting. The meeting resulted in discussion on various issues with inspection bodies during which responses were provided to a number of queries raised by IBs.

NABCB participates in Clinlab Conference

Ms. Vani Bhambri Arora, Deputy Director, NABCB participated in the ClinLab Conference held on 21st-22nd Feb 2019 at Pragati Maidan, New Delhi. She explained about the need for conformity assessment and made the audience aware about unauthentic certificates being used in the market. She emphasized the need for industry to ensure that they are being certified for conformity assessment standards only through accredited conformity assessment bodies. Representatives of Drug Controller General of India (DCGI) and National Accreditation Board for Testing and Calibration Laboratories (NABL) as well as from hospitals also made their presentations at this conference.

Consumer Awareness Programmes

NABCB conducted a Consumer Awareness Programme on Quality in Products and Services in collaboration with the Consumer Coordination Council (CCC) at Bengaluru, Karnataka on 6th March 2019. The speakers in the programme included Mr. Ajay Sharma, Joint Director NABCB; Mr. B. M. Haneef, Assessor, NABCB and Mr. B. R. Ravishankar, Lead assessor, NABCB. The programme was attended by over 50 participants.

On 26th March 2019, NABCB conducted another Consumer Awareness Programme at Gurugram, on Conformity Assessment and Accreditation and its benefits, in association with Consumer Coordination Council (CCC). Dr. Aparna Dhawan, Joint Director, NABCB and Ms. Sona Sinha Sharma, Assessor, NABCB were speakers for the programme. NABCB plans to conduct more such programmes across the country jointly with the Consumer Coordination Council.

Our Media Coverage

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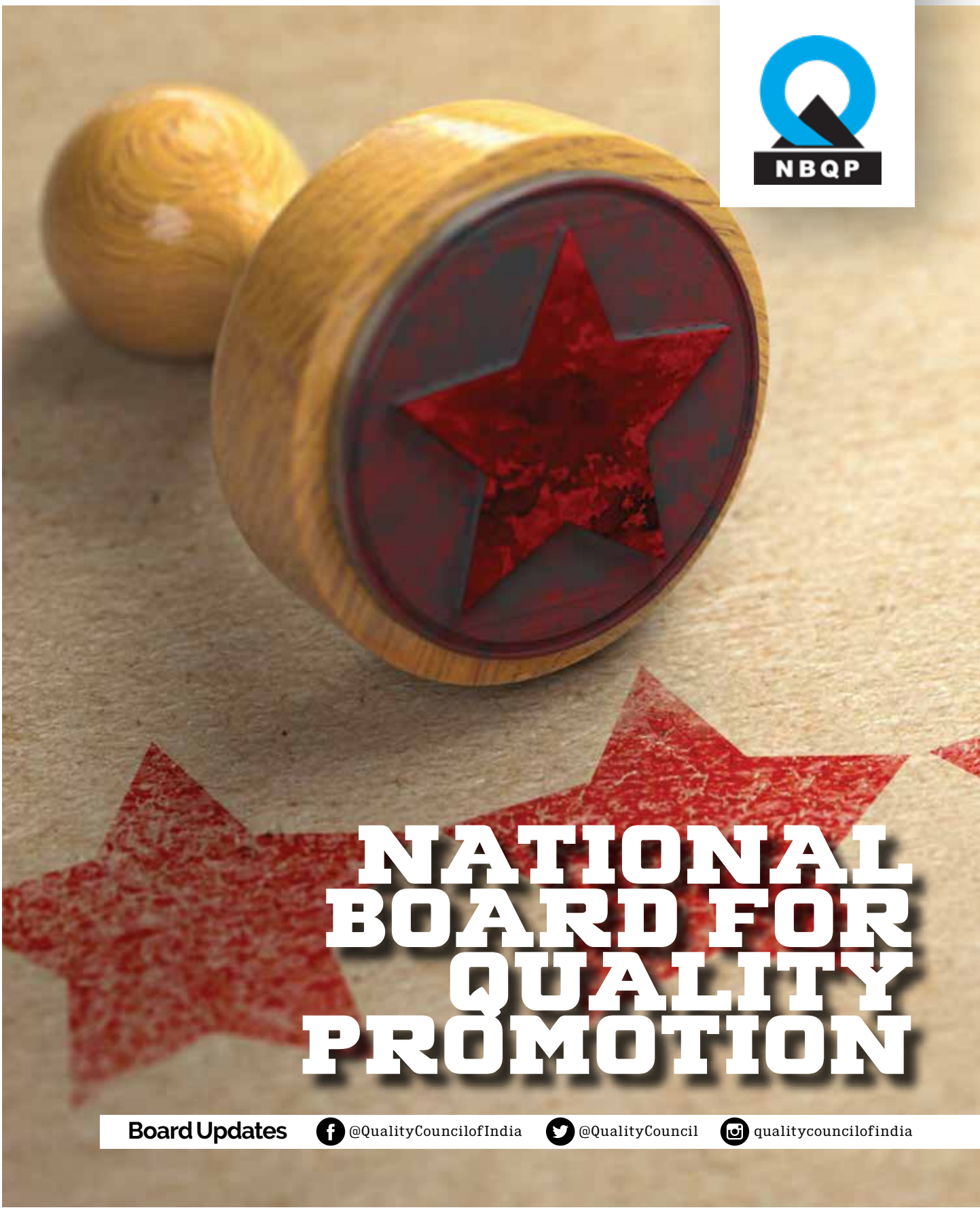

NATIONAL BOARD FOR QUALITY PROMOTION

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NBQP Updates January 2019 – March 2019

STEPS (Scientific Tools for Effective Problem Solving)

Date: 10th-11th Jan 2019

Venue: National Productivity Council, New Delhi

About the Program

The "Problem Solving Techniques" program enabled people to identify, analyse & find appropriate solutions to problems leading to continual improvement in quality of all business & manufacturing processes using Basic 7 QC Tools.

Organized problem-solving methods utilize a variety of quality tools for problem analysis. STEPS are proven scientific management tools, which are basic and easy to understand. Different from traditional method of teaching the tools, this 2-Day program focused on building skill for interpreting the results and solving problems rationally, scientifically and effectively.

2-Day Program on Managing Production Problems & it's Impact on profits

Date: 29th-30th Jan 2019

Venue: Bhiwadi Manufacturers Association, Bhiwadi, Rajasthan

About the Program

The program focussed on the identifying the potential threats in the cyber space. A hands-on experience for the participants so as to understand a few concepts w.r.t Myths vs Reality of Computer Frauds. The innovation in investigating Digital Forensic to achieve efficiency and effectiveness. This program was attended by 28 participants.

2-Day Program on Competing through Data Analytics - A Step towards Manufacturing Excellence

Date: 8th-9th Feb 2019

Venue: Quality Conference Hall, New Delhi

About the Program

The purpose of this program was to give the participants a hands-on MS Excel from the beginner to an intermediate level. It was a 2-day program where in the attendees were exposed to the usage of shortcuts and related tools in MS Excel. This included many exercises the faculty distributed among the participants and derived the analysis from the given data using statistics and reasoning. The program was attended by 30 participants.

Energy Management System as per ISO 50001

Date: 18th Feb 2019

Venue: National Productivity Council, New Delhi

About the Program: 1-Day Awareness Program on ISO 50001:2018 Energy Management System and its requirements. The objectives of the standard were:

- Assist Organisations in making better use of their existing energy-consuming assets
- Promote energy management best practices and reinforce good energy management behaviours

- Provide framework for promoting energy efficiency throughout the supply chain
- Facilitate energy management improvements for greenhouse gas emission reduction projects.

1-Day awareness program on Food Safety Management System as per ISO 22000 (In-house) at Shaheed Rajguru College of Applied Sciences for Women, Delhi University

Date: 6th March 2019 (Batch 1) and 15th March 2019 (Batch 2)

Venue: Shaheed Rajguru College of Applied Sciences for Women, Delhi University, Delhi

About the Program

The program focussed on the concepts of Food Safety aligning itself with the ISO 22000: Food Safety Management Systems. The students were taken through each clause of the standard w.r.t safety of a consumer and exercises were carried out in groups in order to find the lacunae in Food and Feed Industry. The program was conducted in 2 batches each comprising of 30 students along with 2 faculty members.

Medication Safety and Documentation errors in Hospitals and Healthcare Organizations

Date: 15th March 2019

Venue: SATS Academy, Kolkata

About the Program

As per a study in the United States, preventable medical errors are considered to be the third leading cause of death of patients.

Medication errors (including wrong drug, dose, patient, route of administration and documentation) are major causes of inpatient morbidity and mortality.

The purpose of complete and accurate patient record documentation is to foster quality and continuity of care. It creates a means of communication between providers and the consumers. Documentation errors can lead to compromised healthcare delivery and endanger patient safety. Right Documentation is the essential part of patient care affecting all aspects of treatment.

Quality Does Matter!

Pooja Shukla, Assistant Director, NBQP, QCI

The ultimate goal for any business is to make profit. Making profit, however, is not possible without customer satisfaction. According to Kotler & Keller, Customer Satisfaction is "a person's feeling of pleasure or disappointment which resulted from comparing a product's perceived performance or outcome against his/her expectations". In other words, Customer Satisfaction is a function of perceived performance and buyers' expectation.

This definition of Customer Satisfaction echoes with the definition of quality. The ISO definition of quality is "Degree to which a set of inherent characteristics fulfils requirements".

The successful organizations understand the power of quality in garnering high customer satisfaction and therefore they have made quality an integral part of their businesses. Today's era of internet and globalization have made the business environment more dynamic than ever and therefore quality becomes one of the most important strategic tools to remain competitive and profitable.

This definition of Customer Satisfaction echoes with the definition of Quality. The ISO definition of quality is: "Degree to which a set of inherent characteristics fulfils requirements."

"Quality is remembered long after the price is forgotten"

The key reasons why quality must be an integral part of every business are:

Customer

This is the most obvious reason for building quality into the business systems. It is the customer who is the reason for any business to exist. Without customers wanting your products or services, your business would not survive. It is, therefore, essential for the business to ensure customer satisfaction which is directly correlated with the quality of the products and services.

As it is the consistency of quality that helps to meet customer expectations, it directly contributes to a higher customer satisfaction, keeping the organisation ahead of the competition. The Gucci Family Slogan sums up the importance of quality for customer satisfaction: ***"Quality is remembered long after the price is forgotten."***

Brand Equity

According to Investopedia, Brand equity refers to a value premium that a company generates from a product with a recognizable name when compared to a generic equivalent and the businesses can create brand equity for their products by making them memorable, easily recognizable, and superior in quality and reliability. "***Quality is more important than quantity" - Steve Jobs***

Unless the products and services are superior in quality and reliability, creating a brand equity would be impossible even if all kinds of marketing and PR campaigns are put in place. Organisations with a high brand equity command higher premium, customer loyalty and in turn add to their competitiveness. A case in point is Apple Inc. which has a great brand equity built on the pillars of quality, design and innovation. In words of Steve Jobs, ***"Quality is more important than quantity. One home run is much better than two doubles".***

Competitive Advantage

Building quality into the organizational culture can confer competitive advantage to the organization. By inculcating quality culture in their organizations and supply chain, companies like Toyota, Apple and GE have achieved unbeatable competitive advantage. A quality culture not only elevates positive customer perception but also results in high employee satisfaction and pride. Embedding quality in your organizational processes and systems, therefore, will significantly enhance your organization's ability to compete.

Profits

Making profits is the ultimate goal of every business and quality plays a vital role in achieving this goal. An organisation with a poor quality struggles to manage its operations and fails to build a reputation taking a hit on the bottom-line. On the other hand, a quality focussed organization is able to reduce its costs making more money than its competitors. An organization cannot make enough money to survive for long if it doesn't integrate quality into its fabric.

Quality is, therefore, a pre-requisite for consistently delivering quality products and services to its customers leading to a higher customer satisfaction, a great brand equity and an edge over the competition while enhancing the ability of the organization to make more money and earn higher profits. In other words, Quality Does Matter!

Scada Vs IoT: A Comparative Analysis

Shivesh Sharma, Executive Officer, NBQP, QCI

Introduction

Supervisory Control and Data Acquisition (SCADA) paves its path from the early 1960s and still leads in the industry, especially manufacturing sector. SCADA systems are generally used to monitor and control equipment in workshops, mainly systems that are geographically wide spread. It is proven to be more advantageous than the other technological advancements in establishing real time observation and control of the system, time-effective maintenance and cost-effective solution. It is thus more reliable, having numerous security functions (redundancy, functionality distribution etc.), that can practically make the system failure-safe eventually making it cost effective and economically feasible.

The Internet of Things, or IoT, is a system of interrelated computing devices, mechanical and digital machines, objects, animals or people that are provided with Unique Identifiers (UIDs) and the ability to transfer data over a network without requiring human-to-human or human-to-computer interaction. The IoT is also a natural extension of SCADA , a category of software application program for process control, the gathering of data in real time from remote locations to control equipment and conditions.

SCADA systems include hardware and software components. The hardware gathers and feeds data into a computer that has SCADA software installed, where it is then processed and presented in a timely manner. ***The evolution of SCADA is such that late-generation SCADA systems developed into first-generation IoT systems.***

Comparative Analysis

S No.	Parameters	Supervisory Control and Data Acquisition (SCADA)	Industrial Internet of Things (IIoT)
1	**Device Interoperability**	It lacks robustness and versatility when switched between its variants across vendors.	It communicates prima facie across a long range of devices and operates on protocols such as MQTT (Message Queuing Telemetry Transport) in order to establish programmability and networking seamlessly.
2	**System Ownership Cost**	Data is stored up to a certain extent by overwriting the most recent ones. An additional cost is borne for maintaining big data using servers with higher capacities.	Data is stored on cloud irrespective of its size and thus there system ownership cost reduces for companies.
3	**Insights from Data**	There is a limitation in analysing the historic sets of data as it doesn't reveal the contextual information of the same.	The IIOT, on the other hand, applies data processing and machine learning algorithms to bring out the best possible efficiencies from devices eventually predicting maintenance needs minimising sudden equipment failures from its assets.
4	**Scalability**	Since the system is not storing and analysing data, hence it becomes difficult to get perceptive reports from a centralised system of devices located at a remote location.	Since the data is stored on cloud, hence the data can be accessed, gathered & analysed from anywhere hence eliminating the constraint of data sharing.
5	**Standards and Protocols**	Data gathering in SCADA systems is done using Open Platform Communications (OPC). It relies on Distributed Component Object Model (DCOM) technology that only runs on the Windows platform, which can be a major drawback.	IIoT brings standardization of networks, sensors, and data gathering and uses OPC Unified Architechture to enable real-time device communication within different devices and sensors from ensuring security of data by using protocols such as SSL and HTTPS.

COBOTS : Another milestone in Industry 4.0

Industry 4.0 applies principles such as interoperability, information transparency through technical assistance & decentralised decisions involving machine and human interactions. One of the most prominent examples of one such machine & human interaction is that of COBOTS acronym for Collaborative Robots. A COBOT is a robot intended to physically interact with a human in a shared workspace. With the concept of robots developed in the early 20th century with its own limitations and challenges, we have reached a point where the invention and application of not less than decade old COBOT is shaping Industry 4.0 and adding variants to it.

Conclusion

The IoT is an assemblage of various modern technologies that are working together in harmony to form a network of devices that are constantly connected.

The impact that the IoT will bring to the industry is referred to as the next industrial revolution, often known as Industry 4.0 which is a combination of cyber physical systems eventually resulting in 'SMART FACTORY' across the board.

NABET

National Accreditation Board for Education and Training

NABET Accreditation Scheme for Hospital Healthcare Consultant Organization (HAH-CO)

As we all are aware that Insurance Regulatory and Development Authority of India (IRDA) has notified that "All such providers offering cashless services for allopathic treatment shall meet with the pre-accreditation entry-level standards laid down by National Accreditation Board for Hospitals and Healthcare Providers (NABH) or such other standards or requirements as may be specified by the Authority from time to time --- Ref. Notification: IRDA/HLT/REG/CIR/146/07/2016 dated 29.07.2016."

Many more Hospitals & Healthcare Organisations are planning for NABH accreditation/certifications. A need is felt for the accredited Consultant Organisations(COs) to help the healthcare organisations in understanding the accreditation process, documentation, implementation and application development etc.

For detail you may please visit the link for the Accreditation scheme for Hospital and Healthcare Consultant Organisations:

http://nabet.qci.org.in/skill-training-services-division/accreditation-criteria/consultant-organisation

For any further information or clarification, please feel free to contact us. We will be happy to serve you.

Dr. Hari Prakash (Director, NABET, Quality Council of India)

ITPI Building, 6th Floor, 4-A, I P Estate, Ring Road, New Delhi - 110002, India
Work: +91-11-2332-3416 – 20, Extension No. 129 | Fax: +91-11-2332-3415 | www.qcin.org

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Healthcare Associated Infections: A Threat to Patient Safety

Dr. Rahul S. Kamble, Consultant Microbiologist & Infection Control Officer, Lilavati Hospital & Research Centre, Mumbai

"Bacteria often find their way into patient's bodies through the lines and tubes that doctors use to deliver drugs and nutrition."

-Consumer Reports. America's antibiotic crisis

Healthcare-associated Infection (HAI) is a serious patient safety issue, as it continues to occur, and leads to morbidity, mortality and escalating healthcare expenditure. World Health Organization (WHO) estimates HAIs to occur among 7-12% of the hospitalized patients globally, with more than 1.4 million people suffering from infectious complications acquired in the hospital at any time.

If you know how to prevent infections, you know how to protect patients from most adverse events

Many preventive measures have been recommended which include:

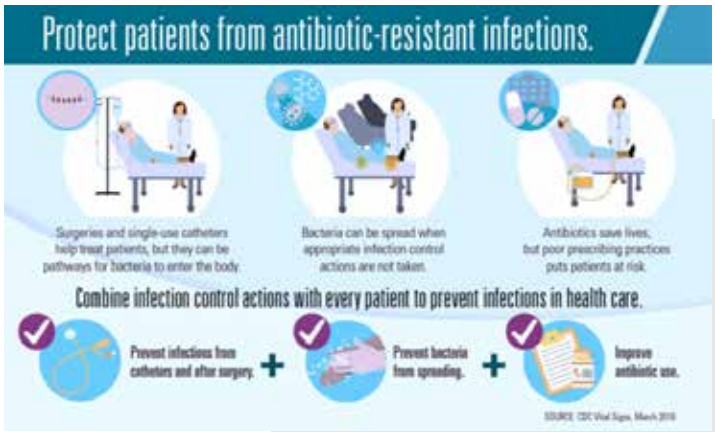
1. Elimination of endogenous healthcare associated pathogens to reduce oropharyngeal, intestinal and skin colonization
2. Use of methods to prevent cross contamination and to control various sources of healthcare associated pathogens that can be transmitted from patient to patient or from personnel to patient
3. Use of antibiotic prophylaxis in post-operative and high risk patients

The Joint Commission established the National Patient Safety Goals (NPSGs) in 2002 to

address specific areas of concern with regards to patient safety. Goal 7 was created to address healthcare personnel education and compliance with hand hygiene and the inclusion of healthcare-associated deaths and disability as sentinel events, requiring root cause analysis and follow-up. This NPSG was substantively expanded upon in 2009 to include patient education regarding multidrug-resistant organisms and patient and family engagement in patient safety related to HAIs. Additionally, this goal requires facility implementation of evidence-based practices to prevent device and procedure-associated infections.

The WHO World Alliance for Patient Safety has chosen the prevention of healthcare associated infection as the first Global Patient Safety Challenge. The WHO launched the first Global Patient Safety Challenge in 2005 and introduced the '5 moments of hand hygiene' in 2009 as an attempt to reduce the problem of healthcare associated infections. In order to prevent healthcare associated infections, a high level of hygiene is essential, which includes practicing 5Cs in patient care.

The 'National Health Policy' (2017) addresses antimicrobial resistance as one of the key issues and prioritises development of guidelines regarding antibiotic use, the over-the-counter use of antibiotics, restricting the use of antibiotics as growth promoters in livestock, and pharmaco-vigilance including prescription audit inclusive of antibiotic usage in the hospital and community. Hospital based programs dedicated to improving antibiotic use, commonly referred to as Antimicrobial Stewardship Program (AMSP) have been found helpful in improving the quality of patient care and safety through increased infection cure rates, reducing treatment failures, and increasing the frequency of correct prescription for therapy and prophylaxis.



Medicolegal aspects related to HAI

Healthcare associated infection is the infection that occurs in a patient in whom it was not present or incubating at the time of admission to the hospital. The very definition of HAI implies a potential for medicolegal problems. Healthcare providers owe a legal duty of care to their patients. They must exercise the degree of care and skill that could reasonably be expected of a normal, prudent practitioner, and they also have an ethical obligation to act in the best interest of patients. Similarly, healthcare organizations have a duty not only to establish necessary systems and protocols to promote patient safety, but also to take reasonable steps to ensure that the healthcare staff complies with systems, protocols, policies, and procedures.

Patients also owe a duty to comply with all medical instructions both during hospital stay and afterwards. In a malpractice lawsuit, a patient may be held responsible for contributory negligence, if the patient did not comply with the medical instructions, resulting in harm related to HAI. For example, if a patient failed to receive recommended

follow-up treatment to change wound dressings, or did not take recommended antibiotic medications, a court may determine that the patient is entitled to reduced quantum of compensation or even no compensation at all.

In a malpractice lawsuit with allegation of harm suffered as a result of HAI, the complainant may be required to prove that a reasonable healthcare provider / hospital would have foreseen the likelihood of such harm in the absence of certain steps necessary to prevent the infection, and that the healthcare provider / hospital failed to foresee the impending harm, and take the preventive steps. Healthcare providers and hospitals will be held liable for failing to implement adequate infection control measures where such a failure resulted in harm to the patient. The evaluation for negligent conduct in this context is measured against the behaviour of a reasonably competent healthcare provider/ hospital in a similar position.

An intentional failure to implement adequate infection control measures may indicate that the hospital or hospital managers concerned had either 'actual' or 'eventual' intention not to implement such infection control measures. In cases where 'actual' or 'direct' intention is present, the wrongdoers decide not to provide certain infection control measures and know that this is wrong. On the other side, in cases where 'eventual' intention is present, the wrongdoers subjectively foresee the likelihood of harm to patients if adequate infection control measures are not implemented and do not care whether or not such harm occurs, i.e. they act with reckless disregard for the consequences of such failure. In the context of HAIs, what constitutes reasonable practices and protocols may be a moving target during an outbreak, particularly as infection prevention measures are revised to reflect new evidence about disease virulence, transmission routes, and key control methods. In many areas of practice, courts often look to guidelines or standards of practice to determine the legal standard of care. If a patient has been harmed or exposed to risk of harm, providers have a duty to disclose that information to the patient or family. When errors have occurred, or when some risk of harm exists, there must be hospital policies available to guide disclosure of patient identifiable health information to regulatory authorities, accrediting bodies, or other government agencies. Greater awareness needs to be created so as to highlight the potential legal implications of HAI.

MEMBERS WRITE

E-Governance System for Indian Education Institutes & Universities

Dr. R. K. Gupta, Professor, Department of Mechanical Engineering, Manipal University, Jaipur

Today's environment accreditation and ranking is the necessity for educational institutes as well as universities. To sustain its quality in education, e-governance model is the integral part of an education system. However, to sustain and maintain this standard, an e-governance system is necessary in today's fast-changing environment. E-governance is a proven and effective tool to cater and provide information in real time to all stakeholders such as students, parents, faculty, alumni, industry, management, government and regulatory bodies. This is a high priority agenda to improve governance using Information and Communication Technology (ICT). E-governance is a flow of information between stakeholders, education institute to all stakeholders, education institute to accreditation and ranking agencies. Proper and successful implementation of e-governance makes it possible to get their work done online and offer better delivery of reports to accreditation and ranking agencies with documentary evidence of various parameters related to Planning & Development, Administration, Financial Management, Student Administration & Support, Examinations, and Academics as asked by different accreditation and ranking agencies. All these reports are useful for further policy and decision making.

E-governance system will save time and energy to collect and disseminate information so that all stakeholders can work effectively. It provides efficient method of storing and retrieval of information in real time, processing information for making decisions fast and judiciously. It provides an efficient way to maintain and report data required by various accreditation/statutory regulatory authorities'/ approval agencies. These systems are designed for reducing manual effort required from various stakeholders in the academic, research, student engagement processes. Transparency and accountability can be established at the micro level when a data-driven system is established to drive effectiveness across a large university system.

In the e-governance system different platforms are being used to collect day-to-day information that is eventually required for Planning & Development, Administration, Financial Management, Student Administration & Support, Examinations, and Academics and generate reports to apply as asked by governing and regulatory bodies. Since it takes considerable amount of time and effort to manually generate reports for these functions, quality of decision making and submissions to regulatory bodies is challenged. The use of such online system makes the current disparate systems into one cohesive system as well as streamline and develop a platform to offer possibilities for stakeholders, Accreditation & ranking agencies to leverage and share best practices. Also, develop stable management information system and a powerful communication system for internal and external users. Such system gives the dedicated centralized online portal, administrative benefits, real time information extraction and report generation as per the accreditation & ranking agencies. Developing and implementation of single platform will make better decision making process, follow- up of responsibilities became easy, increase the efficiency, reduces duplication as well as complexity in data collection, preparation of reports in real time, single window service for stake holders, easy online information and submission of forms and payment, stake holders get connected to the each other more easily, equal opportunity to access to information, leads to significant reduction of transaction costs, time, space, and manpower and better transparency in the system. While implementing e-governance system education institute face challenges by use of different modules difficult to manage the information system, Inaccurate source of information and lack of coordination among various stake holders but implementation of such system increase the efficiency of the institute manifold.

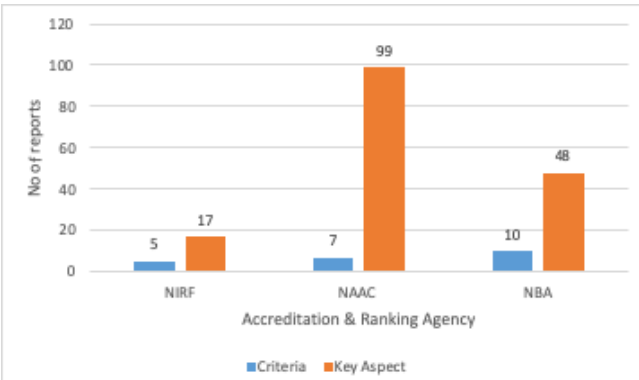


Fig. 1: Comparative reports generation for NIRF, NAAC & NBA

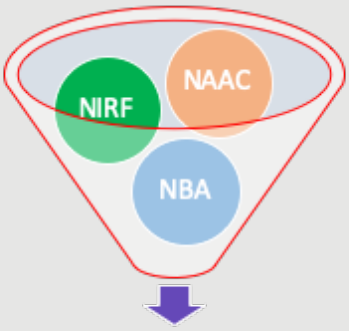


Fig. 2: Accreditation and Ranking

MEMBERS WRITE

Bio-Safety Practices in Infectious Disease and Clinical Laboratories

Dr. Shivaji K Jadhav, Molecular Oncology Lilac Insights Pvt. Ltd., Navi Mumbai

Bio-safety practice is designed as per international standards to help a safe and healthy environment that adequately supports good work practices. This article is mainly focused on bio-safety practices which will provide sufficient information and guidelines that should be used in conjunction with other resources to work safely with biohazard or any infectious agents in the laboratory. It will also commit to provide knowledge for safe laboratory environment for laboratory staff, trainees and also healthcare workers. In laboratories, there are many tasks that involve numerous risks factors to the laboratory staff. Thus, any incident associated with a given microbiological hazard is probably most likely to happen in infectious laboratory. Further, bio-safety practices shall be practiced routinely to achieve the highest ethical and professional standards possible to protect the health of staff, the public, and the working environment.

Safety in laboratory work place can be achieved maximum by using equipment which includes Biological Safety Cabinets (BSCs).

The BSC is the principal device used to provide containment of aerosols generated by many infectious procedures. Regarding bio-safety and bio-security in biomedical laboratories, there is a great concern about vaccines, diagnostic tools, or therapeutic agents, some of which are made by genetic engineering methods. Safety equipment may include items for personal protection such as gloves, coats, gowns, shoe covers, face shields, and safety glasses.

The personal protective devices are always used in combination with BSC to ensure safety for lab personnel. In some situations it is impractical to work in biological safety cabinets. Hence, personal protective devices are useful which may form primary barrier between personnel and infectious materials. Examples of such activities which may include some animal studies, animal necropsy additional activities to support laboratory involving infectious organisms.

BSCs mainly used are of two types (Class II, III) in infectious laboratories. Open- fronted Class II BSCs are partial containment cabinets

that can provide significant levels of protection to laboratory personnel and to the environment when used with good safety standard operating procedures. The gas-tight Class III BSCs will also provide the highest attainable level of protection to personnel and the environment.

Bio-safety Level Requirements for Infectious Research Laboratories

As per the guidelines Bio-safety level 2 plus and BSL3 is applicable to clinical, diagnostic, research, where the work is executed with any infectious agents that may cause serious or potentially lethal disease through inhalation route exposure like (HIV, Mycobacterium tuberculosis). The laboratory personnel must receive specific training in handling infectious and pathogenic agents before he is initiating any research activities and the person should be aware of risk factors that are potentially caused by infectious agents and must be supervised by scientists competent in handling infectious agents. All procedures involving infectious materials must be conducted within the BSCs by wearing appropriate personal protective equipment by the laboratory personnel. The following standard and special safety practices, equipment, and facility requirements apply to BSL2 plus laboratory for Infectious disease.

Special Practices Implemented in Infectious Disease Laboratories

All the practices should be followed in bio-safety level 2 laboratory and should include that all the persons who are entering the laboratory must be advised of the potential hazards and should meet specific entry/exit requirements and must take prior approval from the head of the laboratory operations. It is essential to provide laboratory personnel medical surveillance and offer appropriate immunizations for infectious agents handled or potentially present in the laboratory. It is always necessary to perform sample collection and storage of samples as per SOPs to prevent risk from infectious agents to personnel. The SOPs must include decontamination protocol for any spills involving infectious materials and cleaning procedures should be implemented by staff with proper training who are equipped to work with infectious material in bio-safety laboratory. All the procedure must include equipment must be decontaminated before repair, maintenance, or removal from the laboratory. It is essential to decontaminate all cultures, stocks, and other potentially infectious materials before disposal using standard operating protocols as per guidelines.

A laboratory-specific bio-safety manual must be prepared as per the policy and guidelines and these manuals should be periodically updated with new versions if any changes are made and approved by bio safety officer. Manual must be available and accessible for all the laboratory personnel and staff, the laboratory scientist must ensure that laboratory personnel demonstrate proficiency in working and practicing bio-safety practices before working with infectious agents.

Any kind of incidents that may result in exposure to infectious materials must be immediately reported to lab supervisor and further evaluated for the risk factors and treated according to standard operating procedures described in the laboratory bio-safety manual. It is important to perform all safety procedures to minimize the creation of splashes or aerosols.

The Personal Protective Equipment (PPE) policy implements the requirements of OSHA regulations. The policy applies to the use of PPE in all laboratories practices. It is responsibility of the supervisor to access each work if hazards are present or likely to be present and requirement of the use of personal protective equipment. The supervisor should provide adequate training to each employee who is required to use PPE as per the standard operating procedures.

All bio hazardous or infectious materials should be sterilized before being washed and stored or discarded. The infectious solid waste generated in infectious laboratory should be segregated and placed in red colored bag for proper disposal. The liquid waste should be decontaminated with proper decontamination protocol as per guidelines and SOPs. Autoclaving is the preferred method of sterilization of the infectious materials, every personnel working with bio hazardous material should be responsible for its sterilization before disposal.

Bio-safety Training for Infectious Disease Laboratory

Before the initiation of work in infectious laboratory a new lab personnel must read bio-safety Manual Standards and Guidelines, and sign acknowledgment of having done so. As well, the concerned divisional Heads /Supervisors are

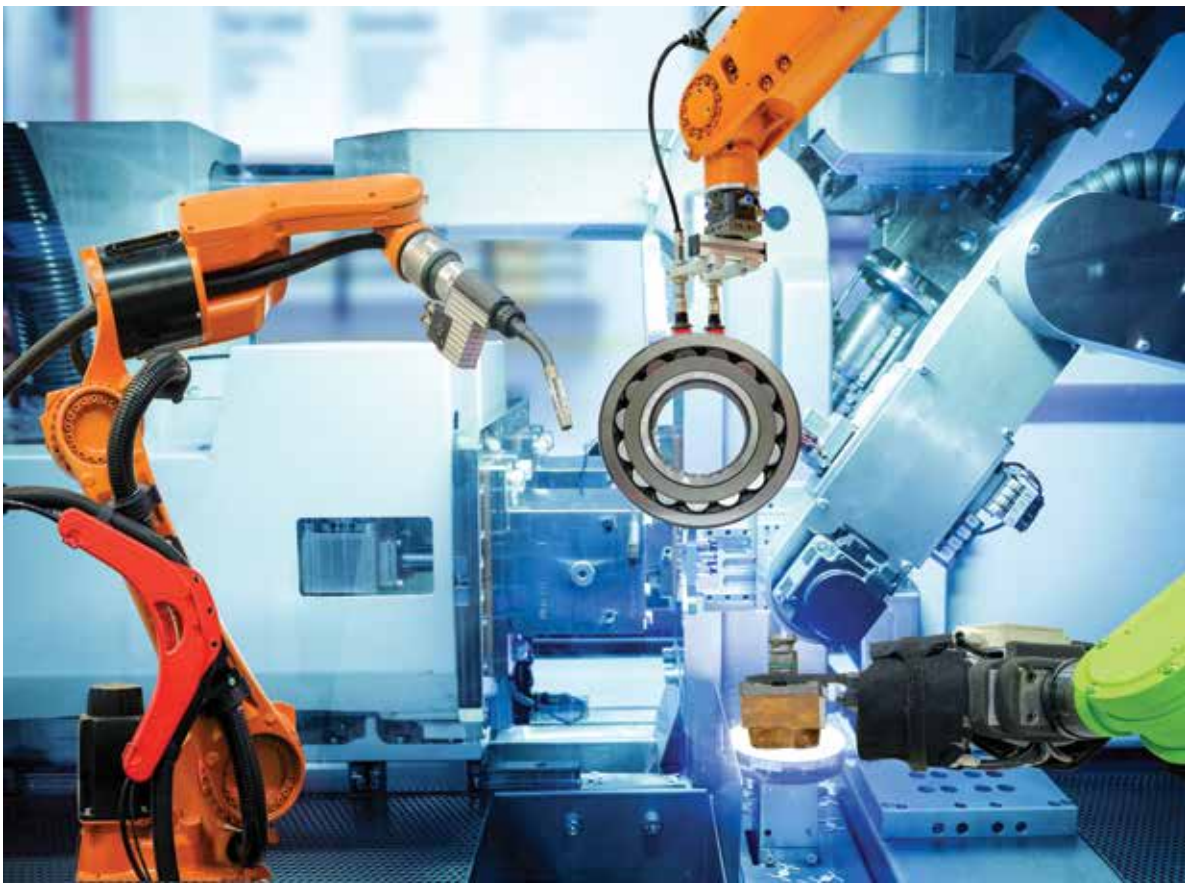
responsible for training their workers in all laboratory specific procedures as defined in the SOPs. All new staff is required to undergo bio-safety training. The staff must take refresher training every one year. Bio-safety training session might include Access/security controls, use of safety equipment in laboratory, risk factors, health hazards, safe work procedures with emergency procedures.

In the near future, advances in microbiology associated with biotechnology will increase the knowledge of infectious agents that carry novel genetic material, which has been modified or constructed through genetic engineering. Thus, new concerns in bio-security and environmental health will emerge, it is very much essential to work with infectious agents as these may also turn out to be reemerging viruses in future. Research with highly pathogenic microorganisms, like H5N1 influenza, anthrax among others, could derive into a serious biological threat to a population or even terrorism. Epidemics of pandemic proportions or improved previous research to develop bio weapons could be an uncontrollable risk for a population. To guarantee the bio-safety of laboratory staff, the potentially harmful characteristics of all infectious agents and microorganisms needs to be identified and proper precautions and guidelines to be followed working with these deadlier infectious organisms to prevent risk of acquiring infections with occupational exposure and to protect the scientific community from acquiring infections in modern science.

MEMBERS WRITE

Robotic Automation and Service Quality: A Contrarian View

N.Hariharan, Chief Consultant and Co-founder,
Mellior and Citius Consulting, Chennai



Can we lead our life without a mobile phone for one week? The thought seems dreadful -- most of us will not mind losing our wallets, but would very much mind losing a mobile phone!!!!

There is no doubt that technology has disrupted the way we carry out our day-to-day activities. All pervasive e-commerce giants like Amazon or Flipkart have taken a missionary zeal to change our lives in all possible ways, starting from shopping for books to groceries to household goods and electronic items.

With this increasing shift to a tech-centric ecosystem and Industrial Revolution 4.0 focusing on cyber-physical interacting systems, there is increasing interest shown by industry leaders in integrating new technology like robotic automation, Artificial Intelligence and big data analytics in operations. The word "digital" has become the new lingo for any organization, irrespective of whether it is in the manufacturing or service sector.

Let us discuss one of the technologies called **Robotic Process Automation (RPA)** and how effective it is in resolving the root cause of the any problems in business processes.

Is RPA really a great tool?

RPA can mimic any keystrokes, read data from multiple applications, send mails, post data in system of records and is really fascinating to use in operations! My journey started with using this technology across some of the key business processes.

After the initial euphoria of using RPA settled down and viewing the few benefits of eliminating repetitive manual work, it was only natural to expect that RPA will solve all the business problems. Unfortunately, there is a limitation to what RPA has to offer - a sentiment echoed similarly by industry veterans. Some veterans have even gone to the extent of declaring RPA to be dead! One industry statistic mentions that only 13% of total RPA deployed businesses, have used this tool in an integrated way across business processes.

Before we deliberate on the merits of this statement, let us first understand where RPA is effective.

Robotics automation is very effective for eliminating repetitive work or a one-time clean-up of database - say cleaning employee database or reconciling financial statements, finally downloading and uploading data. Let us go through this aspect with a simple example. Any HR function would be collecting personal details from potential associates at the time of applications, at the time of applying for a work Visa, relocating to a different country, moving to different project, and for benefits to administration at different periods of the time. From the employee's perspective, she/he is continuously required to provide the same information to different agencies multiple times. Having to fill in the same form multiple times undoubtedly frustrates the employee.

When RPA is applied to bring efficiency, each function will automate the process of sending mails and follow-up mails, allowing them to proudly declare the adoption of cutting-edge technology. Let us now assume that all different agencies following up for such personal information have automated their processes and saved significant costs.

Will the frustration of employee be removed? The answer is still a very Big No!

As we have created localized efficiency and cost savings, we have not looked at the issue from systemic view. In other words, in a standalone way, if we want to provide a band-aid or patch up work where enterprise systems are not effective, RPA comes to our rescue.

Solutions?

Instead of this piecemeal approach, we should be questioning why mailers and follow-ups are required in the first place. Can we eliminate and minimize these transactions as our mailboxes are inundated with loads and loads of e-mails every day?

Does there exist a central system that can collect all information and pass it on to all the downstream applications?

If we relook at the business problem this way, we may not require the use of RPA on such a large scale and we can still bring efficiency to the processes without a huge capital investment. RPA provides a terrific quick fix solution; it helps to extend the life of legacy systems. But it unfortunately does not provide long-term answers. So RPA that does not look at the entire value creating system is **Muda**! We cannot identify it as transforming business processes. At this juncture, we stand to miss the systemic approach and benefits of frameworks like Lean thinking or Six sigma methodology that are known to transform business processes in a holistic manner.

Lean Six Sigma is the way forward to leverage new technology in this rapidly growing world – it allows businesses to identify the integrating purpose behind introducing such automation, with an underlying focus on transforming the entire business process as opposed to merely introducing new technology for the sake of it.

The real intention is to understand and prioritize customer's needs and preferences. So it is always technology that fuels anthropology!

MEMBERS WRITE

Climate Change and Indian Agriculture

Dr. Trishna Sarkar, Assistant Professor, Department of Economics, Dr. Bhim Rao Ambedkar College, University of Delhi

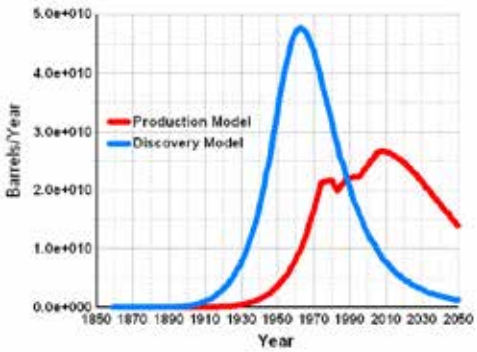
Introduction

Burning wood satisfied most energy needs until the steam-driven industrial revolution. Energy-dense coal became the fuel of choice[1]. Animals (to pull the cart)/plants (in form of charcoal and fire wood) were replaced by engines (first the coal or steam based and later on petroleum based or internal combustion) and fossil fuel respectively. Human civilization /economy shifted from natural carbon to ancient-carbon or fossil carbon. When a cart is pulled by a horse or other beast, the energy comes from the foodchain of the existing time but when a cart is pulled by an engine, which uses coal or petroleum, we essentially burn the fossil fuel. It is also known as ancient carbon. When coal /crude oil is burned it releases the carbon dioxide which has been trapped in for millions of years[2].

This trapped- in carbon has undoubtedly brought a revolutionary change in human civilization but now has become an alarming concern for human existence itself.

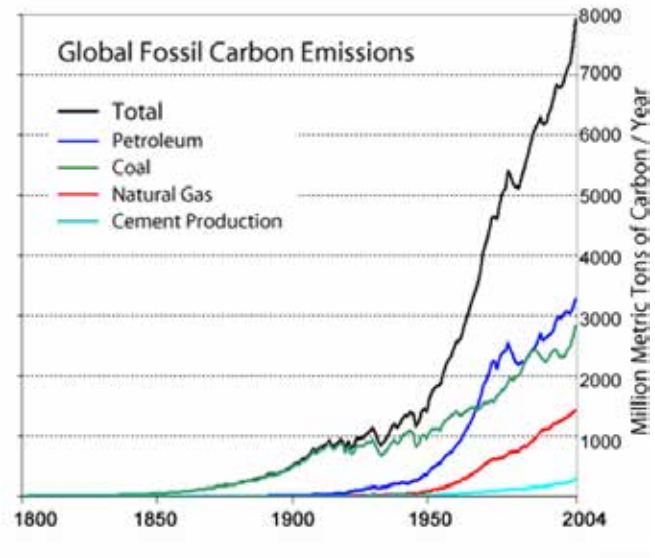
Increasing Appetite of Energy

In 2008, chemists Istvan Lakatos and Julianna Lakatos-Szabo of the Hungarian Academy of Sciences theorized that roughly 100 billion tons of crude oil has been produced since 1850[3]. World consumption of primary energy greatly increased from 3.8 billion tons of oil equivalent in 1965 to 11.1 billion tons of oil equivalent in 2007[4].

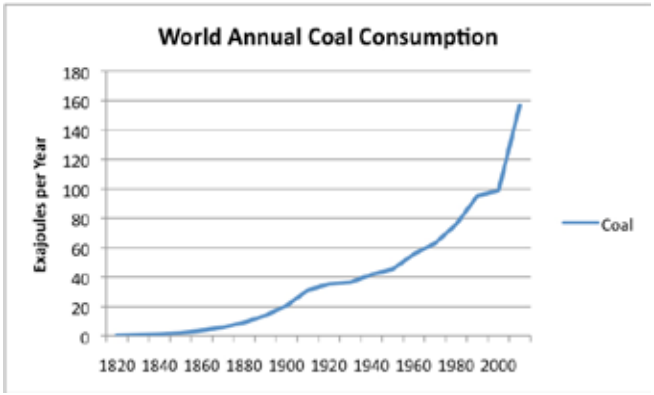


Source: *The Azimuth Project, Peak oil*

[1] *Energy and the English Industrial Revolution- E. A Wrigley-Published 28 January 2013*
[2] *The world after fossil fuel-Liz Gogerly*
[3] *Role of Conventional and Unconventional Hydrocarbons in the 21st Century: Comparison of Resources, Reserves, Recovery Factors and Technologies*
[4] *World Trade Report. WTO publications 2003*



Source: *Carbon Dioxide Information Analysis Center*



Source: *The Long-Term Tie Between Energy Supply, Population, and the Economy- Gail Tverberg*

Petroleum Dependency of Agriculture-Fuel/ Synthetic Fertilizer/ Pesticide

To get self-sufficiency in food production, we were suggested by foreign experts to introduce the new technology in agriculture also known as Green Revolution. Green Revolution was essentially the introduction of High Yield Variety Plants (HYVs). Later on activists named it high responsive variety which can be translated as a variety of the plant which produces good yield if it's provided with high dose of fertilizers, water etc.

In a nutshell, Indian agriculture shifted into 'steroid mode' and started its journey of high petroleum dependency.

Earlier we used to fulfill our irrigation need of our traditional varieties by Persian wheels (run on animal power) besides seasonal rains or monsoons. Contrary to the traditional plant varieties HYVs are water guzzlers and needed much more water. Monsoons arrived according to the seasonal cycle providing water for specific time period whereas the HYV seeds need abundant water throughout the year which could be provided by fuel driven irrigation pumpsets only. In other words, monsoons were not sufficient to the irrigation/water needs of the HYV variety. The gap was fulfilled by exploration of ground water. So, Persian wheels were discarded and replaced with petroleum run pumpsets.

One of the important products of crude oil is synthetic fertilizer. In the early 20th century, Fritz Haber invented a process that allowed for industrial scale production of ammonia. [5]Prior to that, ammonia for fertilizer came only from manure and other biological processes. Modern agriculture technique discarded the traditional practice of crop rotation and opted for mono-crops. Mono-crops not only deplete the fertility of the soil but also make plants vulnerable to the pests. But to keep the fertility of the soil we need more and more fertilizer, namely the synthetic fertilizers. To save the plants from the pests, we need pesticides, also a product of petroleum. We need petrol/ diesel/kerosene to run our plummets. Then we need coal to run the thermal power stations and so on so forth. In essence, from running farm machinery to fertilizing plants, agriculture is one of the largest users of petroleum based products.

First it was the industries, i.e. the secondary sector of the economy, and now the agriculture (primary sector) also becomes entirely dependent on the fossil fuels or burning of ancient carbon.

Net Effect –The Co_2 Production

Roughly 100 billion tons of crude oil have been produced since 1850.

According to Riegel's Handbook of Industrial Chemistry

1 liter of Petrol produces ---------2.331 kg of CO_2

1 liter of Diesel produces ----------2.772 kg of CO_2

1 US gallon: 10.493 kg of CO_2

I barrel (159 liter) of Crude oil produces --------317 kg of CO_2

If we multiply it with the net crude oil production, i.e. 100 billion tons, we can get an estimate how much CO_2 we have produced just by burning the crude oil. And

[5] *Enriching the Earth: Fritz Haber, Carl bosch and the Transformation of World Food Production:2004*

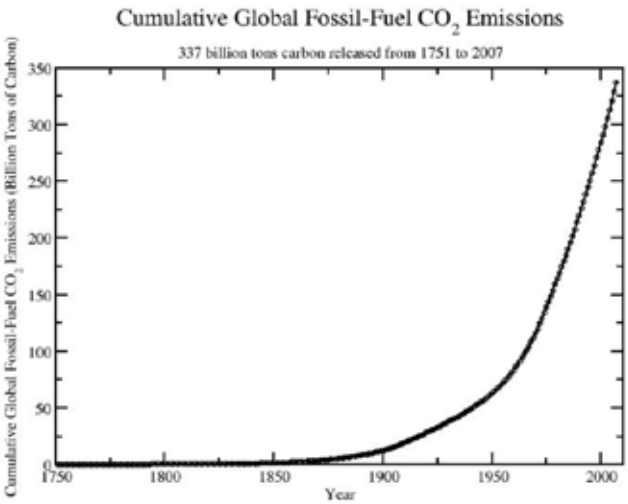
remember this huge amount of CO_2 has been produced in less than two centuries or 178 years to be precise.

Now coal. In one day we consume some 21 million metric tons of coal.

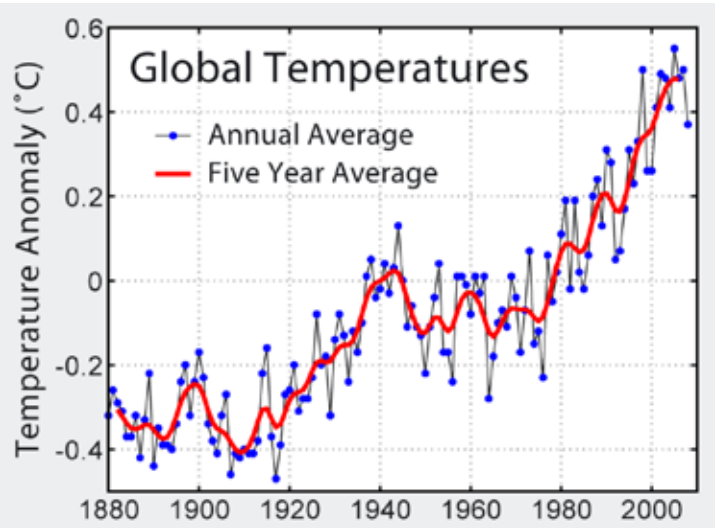
One ton of coal produces ----------2.86 tons of CO_2

Global carbon (C) emissions from fossil fuel use were 9.795 Giga tones (Gt) in 2014.

(1 Giga tones = 1,000,000,000 metric tons.)



Source: *Academic Dictionaries and Encyclopedias*



Source: *ete.cet.edu*

Green House Effect and Global Warming

CO_2 is a Green House gas and this massive production of CO_2 resulted into global warming.

Models predict that Earth will warm between 2 and 6 degrees Celsius in the next century.

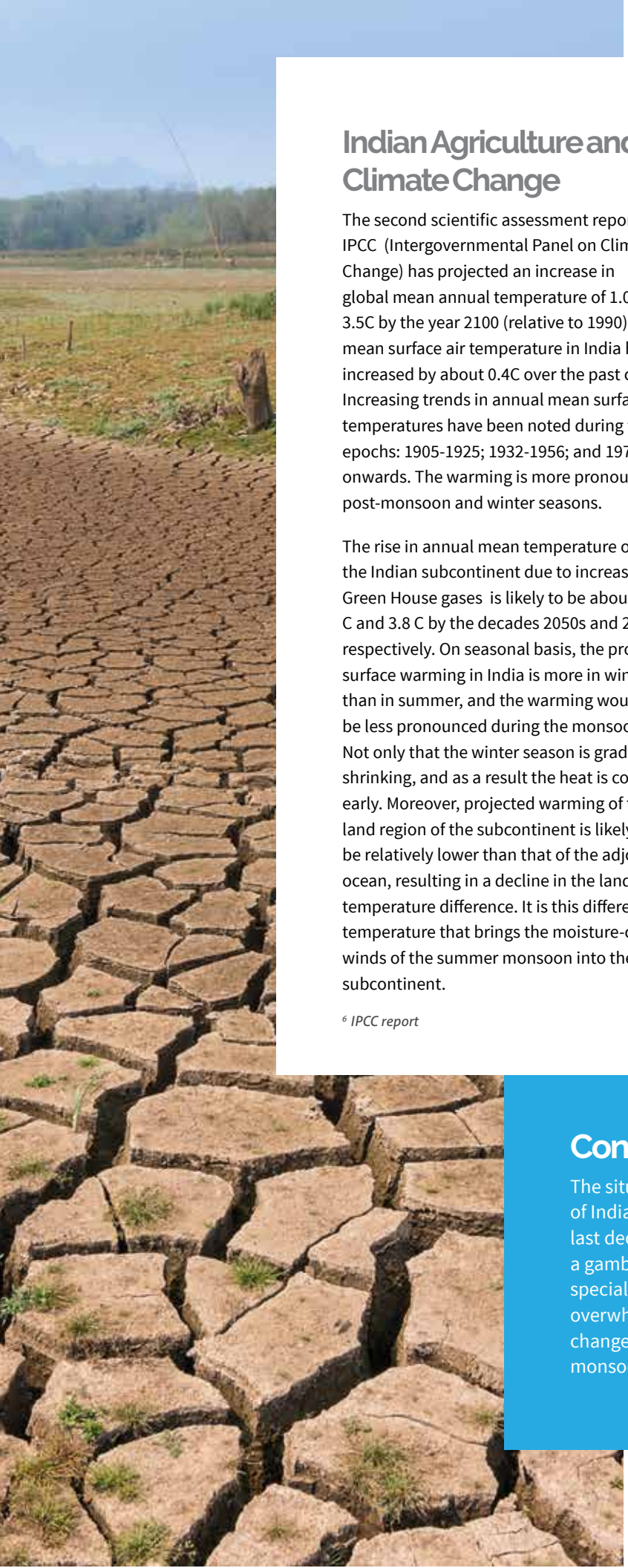
Global warming has happened at various times in the past two million years as well but it has taken the planet about 5,000 years to warm 5 degrees.

The predicted rate of warming for the next century is at least 20 times faster. This rate of change is extremely unusual.

Global Warming and Climate Change

This rapid change in global mean temperature on one hand and misbalancing the atmosphere by spewing CO_2 into the air, on the other, affects the weather patterns worldwide.

According to the scientists the ups-and-downs of Indian monsoon rainfall is likely to increase under global warming. Scientists found that a 4% to 12% variability change of daily monsoon rainfall in India is to be expected with every 1 degree Celsius of warming. Even these relatively small variations in the Indian monsoon can influence things like agricultural production and the stocks and commodities market, so a 5-10% change on top could have significant impacts. The Indian monsoon is remarkably stable as a whole, with a mean total of around 850mm in the months of June to September, and an inter annual (year-to-year) variation of only around 10% in most cases. Indian agriculture is still largely dependent on monsoons. Any small disruption in monsoon in form of erratic rains leads to erratic production finally hitting the food security in India.



Indian Agriculture and Climate Change

The second scientific assessment report of IPCC (Intergovernmental Panel on Climate Change) has projected an increase in global mean annual temperature of 1.0-3.5C by the year 2100 (relative to 1990).The mean surface air temperature in India has increased by about 0.4C over the past century. Increasing trends in annual mean surface air temperatures have been noted during three epochs: 1905-1925; 1932-1956; and 1972 onwards. The warming is more pronounced in post-monsoon and winter seasons.

The rise in annual mean temperature over the Indian subcontinent due to increase in Green House gases is likely to be about 2.7 C and 3.8 C by the decades 2050s and 2080s respectively. On seasonal basis, the projected surface warming in India is more in winter than in summer, and the warming would be less pronounced during the monsoon. Not only that the winter season is gradually shrinking, and as a result the heat is coming early. Moreover, projected warming of the land region of the subcontinent is likely to be relatively lower than that of the adjoining ocean, resulting in a decline in the land-sea temperature difference. It is this difference in temperature that brings the moisture-carrying winds of the summer monsoon into the subcontinent.

[6] *IPCC report*

In the past 100 years, the southwest monsoon has shown definite changes in the period 1961-1990 in comparison with either 1901-1930 or 1931-1960, though no consistent, long-term trend is detectable.

There is another aspect to the monsoon-global warming relationship. In the past eight years, more meteorological subdivisions have recorded excess total monsoon rainfall. The intensity of extreme rainfall events is projected to be higher, thereby suggesting the possibility of more frequent flash floods in parts of India like deluge in Rajasthan, Chennai, Kashmir , Uttarakhand to name a few. The yearly variations in monsoon rainfall over India are large enough to cause devastating floods or serious droughts.

Agriculture in India is in Catch22 situation. It is at crossroads. We have discarded the model tested and tried for last thousands of years of agricultural practices and become an integral part of fossil fuel driven -high energy based economy. Green House gas emission is a necessary evil of this system. Green House gas causes the global warming and eventually the climate change and erratic patterns of monsoons. Thus erratic or failed monsoon will make us more dependent on the petroleum for irrigation which will further add the CO2 in the atmosphere which will in effect increase the global warming which will further add up the disruption in the monsoon.

Conclusion

The situation is grave and will make agriculture sector of India more vulnerable. The use of fossil fuels over the last decades have been so rapid that it has almost played a gamble with climate and its effect on different sector, specially agriculture. Had this consumption to meet the overwhelming greed of profit been slower, the climate change would not have been so drastic and so its effect on monsoon would have not disrupted the agriculture of India.

Now the time has come to realize some very basic things like countries are geographical entities or the regions separated by imaginary lines of borders on the surface of the earth. These lines or the boundaries are always subject to redraw. Our political history is all about drawing and redrawing of lines on the map but one thing we must not forget that there is something which is innate. There are certain things which we got 'naturally,' for example the topography, the weather and the climate etc. Our existence as a species is the story of how we adapt ourselves with the climate we are given with. This interdependence and adaptation comes through thousands of years of coexistence.

We have a collective wisdom of agricultural practice for some thousands of years. It's proven to be not only sustainable but efficient as well. Like any other part of the world Indian subcontinent also witnessed droughts, food scarcity and famines but history shows that droughts, famines in India is more an outcome of political economics, the colonial policies to be precise and not an outcome of climate.

We were convinced that there was something wrong in our traditional knowledge and dictated to adapt an agricultural practice which is proven to be disastrous not only for our climate in general but our agriculture in specific.

THE WAY AHEAD

Our traditional wisdom says that all living and non-living things are interdependent and inter connected. It says that all living beings are made up of 'Pancha-tatvas' (Five elements). The imbalance of these panchtatvas are essential not just for our environment but for our existence also.

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There are 3 levels of the Award:

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Eligibility Criteria for the Award

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There are 3 levels of the Award:

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For any queries, please contact:

Ashutosh Kumar
Mail at : ashutosh.kumar@qcin.org
Call at :011- 23323415/23321274/75 ext. – 306/305
Mob: 9625132098 , 8800891834

Priyanka Maithani
Mail at : priyanka.nbqp@qcin.org
+91-11-2332-3415, 1274, Ext: 305

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For futher details, please contact: **Ms. Anam Qureshi** - anam.qureshi@qcin.org | +91 9899514911
Ms. Shalini Mukherjee - shalini@qcin.org | +91 9999195426

Quality Council of India
Institution of Engineers Building, IInd Floor, 2 - Bahadur Shah Zafar Marg, New Delhi - 110002, India.
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NBQP is one of the five constituent Boards of QCI. The "Professional Membership Scheme" is one of the initiatives which is being operated by the NBQP in order to make "Nationwide Quality Movement" a reality, as well as integrate the organizations, institutions and individuals working in the field of quality.

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Best Regards,
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For any membership related queries, you may connect:
Ms. Kokila Gaur / Mr. Kushal Kanwar

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Quality Austria Central Asia Private Limited
52B, Okhla Industrial Area, Phase III, New Delhi 110 020, Tel.: +91 11 46465100 Fax: +91 11 46465101
Email Id: marketing@qacamail.com Website: www.qualityaustriacentralasia.com