

www.qcin.org



**Quality Council of India**

Creating an Ecosystem for Quality

# QUALITY INDIA

A QCI PUBLICATION  
APRIL-JUNE 2018



## WORLD ACCREDITATION DAY

A Global Initiative to Raise  
Awareness on Accreditation

Life is  
precious.  
Safeguard it.



Our Technology Resources:



- Fully Automated Laboratory • Digital X-Ray • Tread Mill Test
- Pulmonary Function Test • Digital E.C.G. • Echocardiogram
- Colour Doppler Scan • Mammography • NCV • EEG



NABL & CCI  
CERTIFIED  
LABORATORY



Dear Friends,

Every year, World Accreditation Day (WAD) is celebrated around the globe with national events, seminars and workshops, providing an opportunity to explore how accreditation can help deliver a safer world.

World Accreditation Day is a global initiative which is jointly established by International Laboratory Accreditation Cooperation (ILAC) and International Accreditation Forum (IAF) with an objective to raise awareness on the significance of accreditation.

Every year this Day is celebrated on 9th June across the world. The theme designated for WAD 2018 was “Accreditation: Delivering a Safer World.”

This year World Accreditation Day was celebrated in India by our Constituent Boards –NABL, NABET and NABC. With a view to spread the value of accreditation in the different regions of the country, WAD 2018 was simultaneously celebrated in four cities namely New Delhi, Kolkata, Pune and Bengaluru.

WAD-Delhi 2018 was graced by dignitaries like Prof. S. K. Joshi, Chairman, NABL; Dr. D. K. Aswal, Director, NPL, Dr. S. K. Saxena, CEO & Director, EIC and Senior Officials of BIS, DCGI, FSSAI, MoHFW. I was also fortunate to be a part of these celebrations.

Accreditation is considered as a tool to assure quality of products and services. During the seminar, the guest speakers deliberated upon the collaborative approach of Government, Regulators, National Meteorological Institute, National Standards Body and other stakeholders with the Accreditation Bodies for ensuring quality and safety across sectors affecting citizens’ well-being like healthcare, food, water, sanitation, pharma, construction sector etc. Audiences were apprised about the accomplishments and initiatives in new/ emerging areas being taken up by QCI for the betterment of society.

The seminars in all cities witnessed remarkable participation from various stakeholders uplifting our spirits to give our best. I sincerely thank our stakeholders for their consistent support and cooperation in making this event a great triumph every year.

I hope organisations will use accreditation as a tool to assure quality of products and services to every consumer in India, so that we can progress on the ladder of quality with confidence and trust.

Thanks,

**Dr. Ravi P. Singh**

**Secretary General**

Quality Council of India (QCI)

# Contents

## 1.

9 June, 2018

06

### World Accreditation Day 2018

*A global initiative, jointly established by International Laboratory Accreditation Cooperation (ILAC) and International Accreditation Forum (IAF)*

## 2.

ZED

### Sustainable Development Goals (SDGs) & ZED

The Sustainable Development Goals (SDGs) were born at the United Nations Conference on Sustainable Development in Rio de Janeiro in 2012

## 3.

14 eQuest

### Widening Footprints of eQuest: Manufacturing Competitiveness is now live on SWAYAM

## 4.

18 NABL Updates

### National Accreditation Board for Testing and Calibration Laboratories

Accredited 2,697 Testing Laboratories, 823 Calibration Laboratories and 946 Medical Laboratories

# 5.

---

NABH Updates 49

---

## National Accreditation Board for Hospitals and Healthcare Providers

745 healthcare organisations accredited and 856 healthcare organisations certified

# 6.

---

NABET Updates 51

---

## National Accreditation Board for Education and Training

185 Environmental Impact Assessment (EIA) Consultant Organisations accredited



# 7.

---

NABCB Updates 55

---

## National Accreditation Board for Certification Bodies

Granted 89 accreditations under Certification Bodies Program; and accredited 43 Inspection Bodies

# 8.

---

NBQP Updates 59

---

## National Accreditation Board for Quality Promotion

50 Departments/ Ministries obtained technical services for implementing QMS (ISO 9001)

**Editorial Team:**

Sanjay Singh, Anam Qureshi, Shalini Mukherjee

---

**Designed By:**

Nidhi Batra



# WORLD ACCREDITATION DAY

*Accreditation: Delivering a Safer World*

World Accreditation Day (WAD) is a global initiative, jointly established by International Laboratory Accreditation Cooperation (ILAC) and International Accreditation Forum (IAF) with an objective to raise awareness on the significance of accreditation

*Every year this Day is celebrated on 9<sup>th</sup> June across the world to communicate the value of accreditation.*

This year WAD 2018 was organized in India by Constituent Boards of Quality Council of India (QCI) i.e. National Accreditation Board for Education and Training (NABET), National Accreditation Board for Certification Bodies (NABCB) and National Accreditation Board for Testing and Calibration Laboratories (NABL). This year, World Accreditation Day was celebrated simultaneously in four cities viz-a-viz New Delhi, Kolkata, Pune and Bengaluru.





**The theme for the WAD 2018 was  
“Accreditation: Delivering a Safer  
World”**

Messages of Mr. Anil Relia, CEO NABL; Mr. Anil Jauhri, CEO NABCB; Mr. Manish Jindal, CEO, NABET and Dr. R. P. Singh, Secretary General, QCI referring to the importance of accreditation were shared with the participants.

In Bengaluru, the Inaugural Session was graced by Mr. B S Kumar, Director, ETDC, Bangalore and Dr. Sivakumar Babu, President, IGS, Professor, IISc, Bangalore. Mr. B S Kumar formally inaugurated the event and emphasized on the impact accreditation and certification make on the safety of electronic and sensors utilities. In the Special Address, Dr. Sivakumar Babu talked about the support offered by accreditation framework to ensure safety in construction and other ways of improvement in achieving quality in the country. Inaugural Sessions were followed by Technical Sessions that were graced by eminent speakers from Government, Regulators, Industries and various other associations.



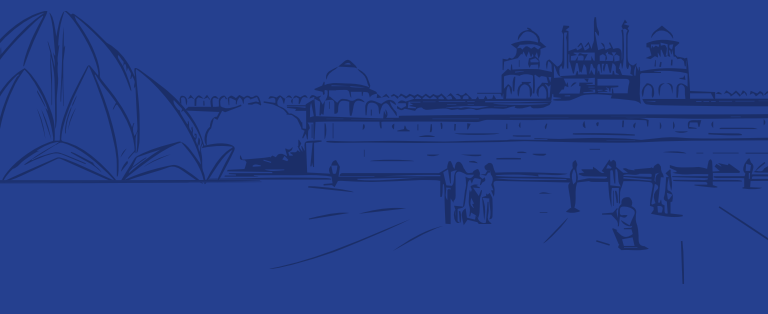
# World Accreditation Day 2018

## Delhi

In Delhi, we had the privilege of presence of Prof. S.K. Joshi Chairman, NABL; Dr. R.P. Singh, Secretary General, Quality Council of India (QCI); Mr. C B Singh; Additional Director General (ADG), Bureau of Indian Standards (BIS); Dr. D. K. Aswal; Director, National Physical Laboratory (NPL) during the Inaugural Session.

The event in Delhi was formally inaugurated by Prof. S.K. Joshi. During the Inaugural Address, Prof. S.K. Joshi briefed about NABL's accomplishments and initiatives in new/ emerging areas of recognition of sample collection centers/ facilities of accredited medical testing laboratories, Integrated Assessments, Accreditation Scheme for Medical Device Calibration etc.

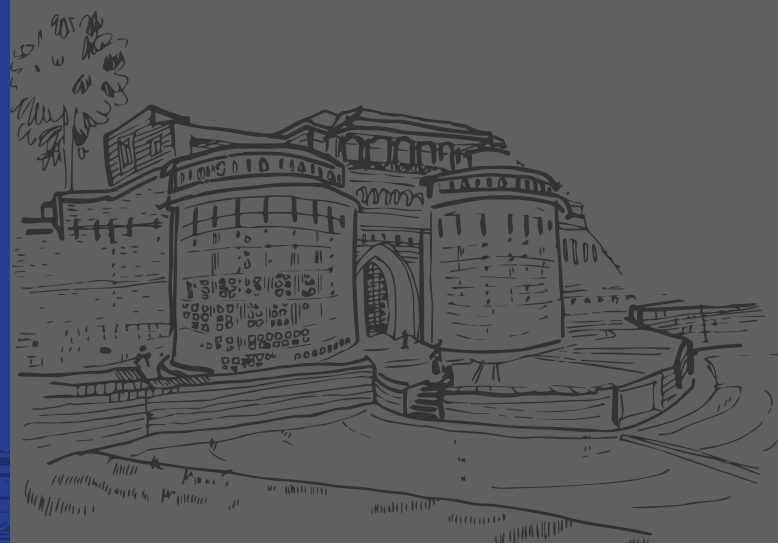
In the Keynote Address, Dr. R. P. Singh appreciated the participation of the Accreditation Boards, National Standards Body, National Metrology Institute and other stakeholders for their collaborative approach in influencing people to follow the standards for a consistent quality in the society which can make the world a safer place to live in. Mr C. B. Singh, briefed about the role of standards published by BIS for consistently safer applications. Dr. D.K. Aswal, in his Special Address stressed on the role of National Metrology Institute in development and establishing the traceability in medical device calibration.



## Pune

In Pune, the Inaugural Session was graced by Mr. Shivaji Desai, Jt. Commissioner, Food and Drug Administration (FDA), Maharashtra and Dr. Satish Umrikar, Director, Water & Sanitation Support Organization (WSSO), Maharashtra.

Mr. Shivaji Desai formally inaugurated the event and deliberated upon the need for NABL accreditation in conformity assessment bodies of the country to attain quality thereby meeting the safety standards and goals.





## Bengaluru

In Bengaluru, the Inaugural Session was graced by Mr. B S Kumar, Director, Electronics Test & Development Centre (ETDC), Bangalore and Dr. Sivakumar Babu, President, Indian Geotechnical Society (IGS), Professor, IISc, Bangalore.

Mr. B S Kumar formally inaugurated the event and emphasized on the impact of accreditation and certification on the safety of electronic and sensors utilities. In the Special Address, Dr. Sivakumar Babu talked about the support offered by accreditation framework to ensure safety in construction and other ways of improvement in achieving quality in the country.

Inaugural Sessions in all regions were followed by the Theme and Technical Sessions that were graced by eminent speakers from Government, Regulators, Industries and various other associations. The guest speakers urged on the importance of tested, calibrated, inspected and certified products and services in the global market. The speakers elaborated and endorsed the importance of safety and quality in the major sectors of an economy that impact citizen's safety like healthcare, food, water, sanitation, pharma, construction sector etc.

The event was attended by key stakeholders e.g. Commercial and Industrial Laboratories, Medical Laboratories, Research Laboratories, Standards and Conformity Assessment Bodies, Regulators and Scheme Owners, Proficiency Testing Providers (PTP), Reference Material Producers (RMP), user organizations, technology providers as well as subject experts.

## Kolkata

In Kolkata, the Inaugural Session was graced by Mr. U. Thanu, Director General, National Test House (NTH), Kolkata; Mr. Vishnu Gupta, Deputy Director General (Eastern Region), Bureau of Indian Standards (BIS), Kolkata; Ms. Godhuli Mukherjee, Commissioner of Food Safety (West Bengal) and Prof. Sadhan K. Ghosh, Dean, Jadavpur University.

Prof. Sadhan K. Ghosh formally inaugurated the event and discussed about the journey of accreditation in India and stressed on the competency and integrity of internal and external auditors to meet the quality requirements in accreditation or certification.

In the Keynote Address, Mr. Thanu addressed the participants about the need of Integrated Assessment (BIS Product Certification Audit & Laboratory Accreditation) and emphasized laboratories to follow the prescribed Standard procedures.

In his Special Address, Mr. Vishnu Gupta, deliberated upon the theme 'Accreditation: Delivering a Safer World' and stated that safety can be ensured through implementation of Standards. Ms. Godhuli Mukherjee, stressed upon the importance of food safety and updated the participants about NABL accreditation being a pre requisite for a food testing laboratory to be recognized by FSSAI.

The event in all regions witnessed an overwhelming participation from our stakeholders, making it evident that accreditation is gaining more and more acceptance and recognition amongst the quality fraternity in the nation.



# When quality experts meet- *Redefining Quality*







# Glimpses of the Day











# 2.

## Sustainable Development Goals (SDGs) & ZED

*The Sustainable Development Goals (SDGs)  
were born at the United Nations Conference on  
Sustainable Development in Rio de Janeiro in 2012*



@QualityCouncilofIndia



@QualityCouncil



qualitycouncilofindia

---

## *The objective was to produce a set of universal goals that meets the urgent environmental, political and economic challenges facing our world*

---

The SDGs are a bold commitment to finish what we started, and tackle some of the more pressing challenges facing the world today. The SDGs are unique in that they cover issues that affect us all. They are ambitious in making sure no one is left behind. More importantly, they involve us all to build a more sustainable, safer and more prosperous planet.

*A pursuit of recognition as a high-quality producer of goods and services requires a unique standards architecture and corresponding physical infrastructure.*

A default mechanism of technical regulation should rely upon voluntary adoption of standards. However, in several areas a prescriptive approach is necessary, particularly where it touches upon the safety and preservation of human, animal and plant life.

With **Zero Defect Zero Effect (ZED)** initiative, the concept of quality has taken a holistic change from a tool for compliance to a source of competitiveness. Operationally, it is meant to evolve from a total dependency on inspection of the final product to correct defect, to a proactive process of enablers of quality like quality planning, product and process designing, optimum processes, efficient resource management, effective outsources activities and breakthrough outcomes. Additionally, along with the focus on the quality of products and services, some emphasis must be given on the elimination of environment through the adequate planning of pre-production, maintenance activities, post-production and environmental effects. Overall, the focus is on sustainable development.

Let us know more on how ZED is in close alignment with the SDGs and the steps to be taken by India as a whole to achieve these goals.

## **Affordable and Clean Energy (Goal 7 of SDG)**

Between 1990 and 2010, the number of people with access to electricity has increased by 1.7 billion, and as the global population continues to rise so will the demand for cheap energy. A global economy reliant on fossil fuels, and the increase in

emission of Greenhouse Gases is creating drastic changes to our climate system. This is impacting every continent.

Efforts to encourage clean energy have resulted in more than 20% of global power being generated by renewable sources as of 2011. Still one in seven people lack access to electricity, and as the demand continues to rise there needs to be a substantial increase in the production of renewable energy across the world.

Ensuring universal access to affordable electricity by 2030 means investing in clean energy sources such as solar, wind and thermal. Adopting cost-effective standards for a wider range of technologies could also reduce the global electricity consumption by households and industry by 14%. This means avoiding roughly 1,300 mid-size power plants.

## **India and Goal 7**

India is projected to be a significant contributor to the rise in global energy demand, around one-quarter of the total. According to 2013-14 figures, the total installed capacity for electricity generation in India registered a compounded annual growth rate of 7%. However, as of 2015, 237 million people in India do not have access to electricity. The government's National Solar Mission is playing an important role in the work towards renewable energy, and interventions in rural electrification and new ultra mega power projects are moving India towards achieving universal energy access.

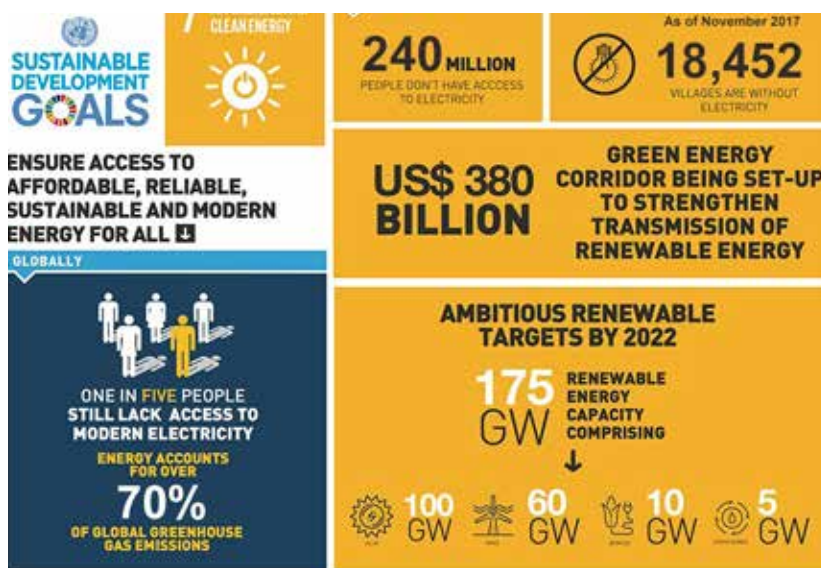
**Some of the targets set by India to achieve the goal are as follows:**

By 2030, ensure universal access to affordable, reliable and **modern energy services**

By 2030, **increase substantially the share** of renewable energy in the global energy mix

By 2030, **double the global rate of improvement** in energy efficiency

By 2030, enhance international co-operation to facilitate access to clean energy research and technology, including renewable energy, energy efficiency and advanced and cleaner fossil-fuel technology, and promote investment in energy infrastructure and clean energy technology



ZED as a model aims at developing energy consciousness among MSMEs. Several manufacturing sectors are energy consuming and small enterprises eventually run out of business because of lack of affordability of energy costs. ZED handholds and guides such organisations to adopt energy-saving measures without incurring heavy cost. The Zed model aligns itself with the SDGs and aims to correct this enormous imbalance by ensuring everyone has access to affordable, reliable, and modern energy services by the year 2030. The Zed model not only contributes to world-class innovation, but also leads to reduced costs and enhancement of efficiencies of the industries. It enables the MSMEs to expand energy access, which is crucial to enhance energy efficiency and to invest in renewable energy.

Since Asia has been the driver of progress in this area, expanding access at twice the rate of demographic growth presents an opportunity to meet the SDG goal on universally accessible, efficient, clean, and reliable energy sources and services. 72% of the increase in energy consumption from modern renewable sources between 2010 and 2012 came from developing regions, including parts of Asia (including India). Therefore, ZED, our indigenous model is positioned to be a game changer in alignment with the global objectives by making Indian industries more competitive while being responsible towards impact on the environment and usage of natural resources.

## Responsible Consumption and Production (Goal 12 of SDG)

Achieving economic growth and sustainable development also requires that we urgently reduce our ecological footprint by changing the way we produce and consume goods and resources.

Agriculture is the biggest user of water worldwide, and irrigation now claims close to 70% of all freshwater for human use.

The efficient management of our shared natural resources, and the way we dispose of toxic waste and pollutants, are important targets to achieve this goal. Encouraging industries, businesses and consumers to recycle and reduce waste is equally important, as is supporting developing countries to move towards more sustainable patterns of consumption by 2030.

## India and Goal 12

The issue of resource use is vital for the country. While India is home to 17.5% of the world's population, it has only 4% of global water resources. The generation of waste and pollutants also poses a challenge. India is the fourth largest emitter of Greenhouse gases and is responsible for 5.3% of global emissions. However, in October 2015, India made a commitment to reduce the emissions intensity of its GDP by 20-25% from its 2005 levels by 2020 and by 33-35% by 2030. On 2nd October, 2016 India formally ratified the historic Paris Agreement.

Some of the targets set by India to achieve the goal are as follows:

By 2030, **substantially reduce waste generation** through prevention, reduction, recycling and reuse

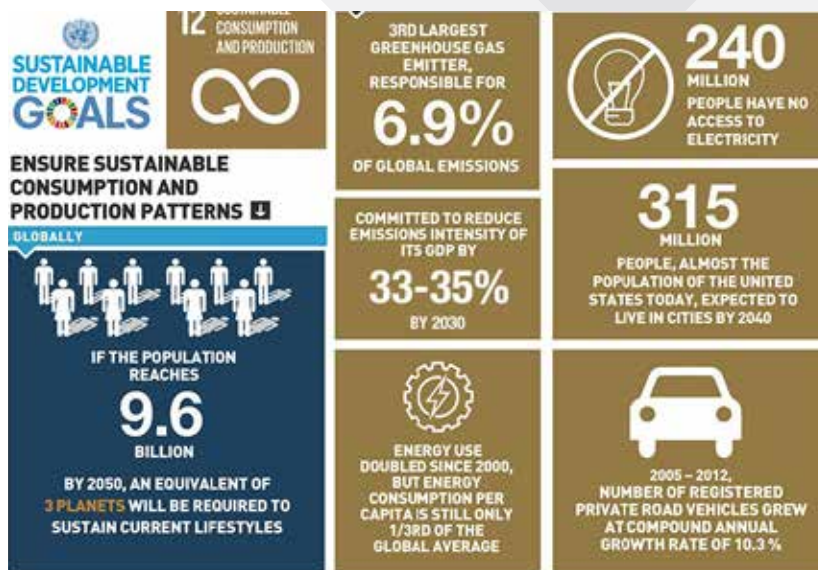
Encourage companies, especially large and transnational companies, to **adopt sustainable practices & to integrate sustainability information** into their reporting cycle

Promote public procurement practices that are sustainable, in accordance with national policies & priorities

By 2020, **achieve the environmentally sound management of chemicals and all wastes throughout their life cycle**, in accordance with agreed international frameworks, and significantly reduce their release to air, water and soil in order to minimise their adverse impacts on human health and the environment



Despite progress in recent years, there is a growing need of promoting resource and energy efficiency, sustainable infrastructure, and providing access to basic services, green and decent jobs and a better quality of life for all. The ZED model will not only help achieve overall development plans, but also reduce future economic, environmental and social costs, strengthening economic competitiveness. Additionally, it will involve a new global partnership between business, consumers, policy makers, researchers, scientists, retailers, the media, and development co-operation agencies and would eventually help achieve requisite benchmarks and compliances, and also confirm uniformity across quality and standards, turning quality into the core value proposition and opening major new opportunities for competitive advantages. This will require a systemic approach and co-operation among actors operating in the supply chain, from producer to final consumer. It will involve engaging with consumers through



awareness raising and education on sustainable consumption and lifestyles, providing consumers with adequate information through standards and labelling and engagement in sustainable public procurement.

**3%**

Only 3% of the world's fresh water is potable and humans are using it faster than nature can replenish it

**US \$120 Billion**

If people everywhere switched to energy efficient lightbulbs, the world would save US\$120 billion annually

**20%**

One-fifth of the world's final energy consumption in 2013 was from renewable sources

**1.7 Billion**

Between 1990 and 2010, the number of people with access to electricity increased by 1.7 billion

**1 in 7**

If people everywhere switched to energy efficient lightbulbs, the world would save US\$120 billion annually

**60%**

Energy is the dominant contributor to climate change, accounting for around 60% of global Greenhouse Gases emission

**40%**

Adopting stronger efficiency standards could reduce global electricity consumption by households and industry by 14%

**3 Billion**

More than 40% of the world's population, 3 billion people rely on polluting and unhealthy fuels for cooking

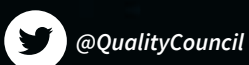
**20%**

Globally, as of 2011, more than 20% of power is generated through renewable sources



3.

Widening  
Footprints of eQuest:  
**Manufacturing  
Competitiveness is  
now live on SWAYAM**





*Governments, companies and start-ups are collectively changing the landscape of learning and development in India. In this backdrop, the Union Government is bringing Digital India into practice by engaging various leading institutions under the ambit of the SWAYAM. In the last couple of years, we have witnessed a profound change in the way we learn where eLearning is playing the role of an enabler*

As an eLearning initiative of the Ministry of Human Resource Development (MHRD), Government of India, SWAYAM is strengthening the eLearning ecosystem in India.

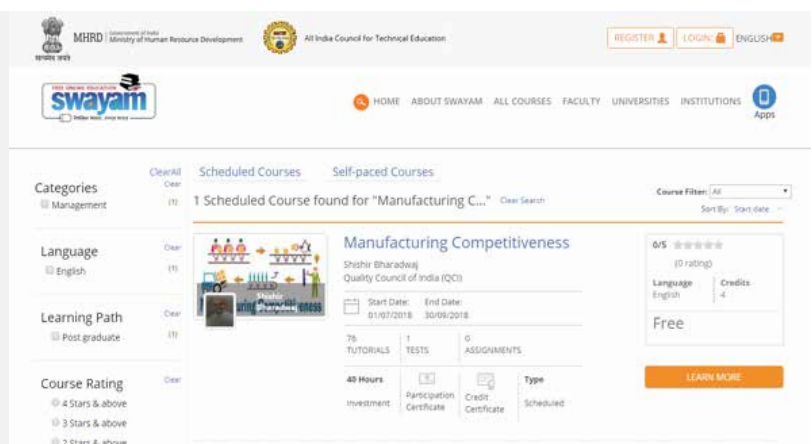
SWAYAM is an indigenously developed platform for online courses which focuses on learners from School (9th to 12th) to Post Graduate level. In this backdrop, Quality Council of India (QCI) partnered with SWAYAM to provide skill-based courses at the national level. Consistent with this goal, eQuest’s eLearning course “Manufacturing Competitiveness” is now live on the SWAYAM’s Platform. Under the collaboration, QCI is a Principal Investigator (PI) and working with IIM Bangalore which is a national coordinator for the MHRD initiative. IIM Bangalore reviewed and approved our eLearning course “Manufacturing Competitiveness”. As our course is running successfully at the SWAYAM platform, we are getting overwhelming responses from the learners.

QCI conceived and started its eLearning platform- eQuest to become a catalyst in enhancing employability and bridging the capacity gap in India. Equipped with the blended learning model, eQuest’s learning system lets the learners know how much they learned and where they are in the course. It enables employers and organizations to track the course completion status. It plays an important role in evaluating the learning. eQuest courses meet the requirements and the needs of the learners which include learning objectives, delivery methods, assessment, and interaction. eQuest is running a wide range of courses in categories like Quality, Healthcare, Laboratories, Environment, and Agriculture & Food Safety.

In India, eLearning space is witnessing an impressive growth. The next five years are expected to present immense growth opportunities for all categories in the online education space as the study elsewhere stated. Under the guidance of our Secretary General, QCI inked several MoUs with leading institutions to enhance employability and capacity building while using the eQuest platform. Under the aegis of the institutional cooperation, we are working with several institutions to prepare eLearning courses on our core areas. Our Quality Management course is running successfully in various leading institutions as Credit Programmes and many institutions are willing to introduce such courses in their curriculum. As the Government of India has approved UGC (Online Courses) Regulations, 2018, eQuest is well-equipped to garner such opportunities in the eLearning and we are going to collaborate with institutions like IITs, NIITs and the Sector Skill Councils to reach a wider audience.

### Snapshot of Our Course at SWAYAM Platform:

- Course: **Manufacturing Competitiveness**
- Course Language: **English**
- Course Category: **Management**
- Learning Path: **Post-graduate**
- Course Length: **40 Hours**
- Weekly Time Commitments: **6 Hours**
- Credits: **4**



For more detail, please visit: <http://www.equest.co.in>

Course Link: <https://swayam.gov.in/courses/4689-manufacturing-competitiveness>

# Guidance on Selection of Certification Body

---

## Introduction

One of the most well-known and widely used and implemented International Standards is ISO 9001, which specifies requirements for quality management system. It is used worldwide by businesses and organizations large and small, in public and private sectors, by manufacturers and service providers, in all sectors of activity. Primarily, the standard, if implemented, benefits in many ways internally as well as with external stakeholders including customers. Today there are also a number of other management system standards which the organizations are implementing. Some of the examples are ISO 14001 for environment management system; ISO 22000 for food safety management system, ISO 27001 for information security management system, ISO 50001 for energy management system.

Today it is widely used by different stakeholders, as a tool for judging fundamental capability of any organization for meeting customer requirements. This is the reason why most organizations decide to have their management systems independently audited and certified as conforming to the standards. Both organizations and its clients believe that an independent confirmation of conformity through certification adds value.

As a result, in most of business transactions the clients insist on the organization they are dealing with to have ISO 9001 certification as a prerequisite.

## Why do organizations that have implemented ISO 9001 (and other management system standards) go for certification?

Many times it is the reverse situation. Organizations implement and get certified for variety of reasons such as:

- Customer preferences and expectations – Large numbers of customers have started to expect as a minimum certification to ISO 9001 standard. As a result, it is now becoming a requirement of the relevant market

- Contracts make it a precondition that the organizations (suppliers of goods and services) are certified to ISO 9001 and other relevant management system standards such as ISO 14001
- Regulators either make it as one of the mandatory requirements for meeting the regulation or recognize it as reasonable assurance of meeting regulatory requirements. Examples of these are: certification to OHSAS 18001 recognized by Goa Govt, or certification to ISO 13485 (QMS for Medical devices) which may be considered by Drug regulator for reduction in man-days of its audit
- Management decision that they would like to implement and get certified to ISO 9001, the standard for quality management system and any other relevant management system standard for reasons such as having systems driven operations, having effective control on business processes, etc

## Let us first understand certain fundamentals

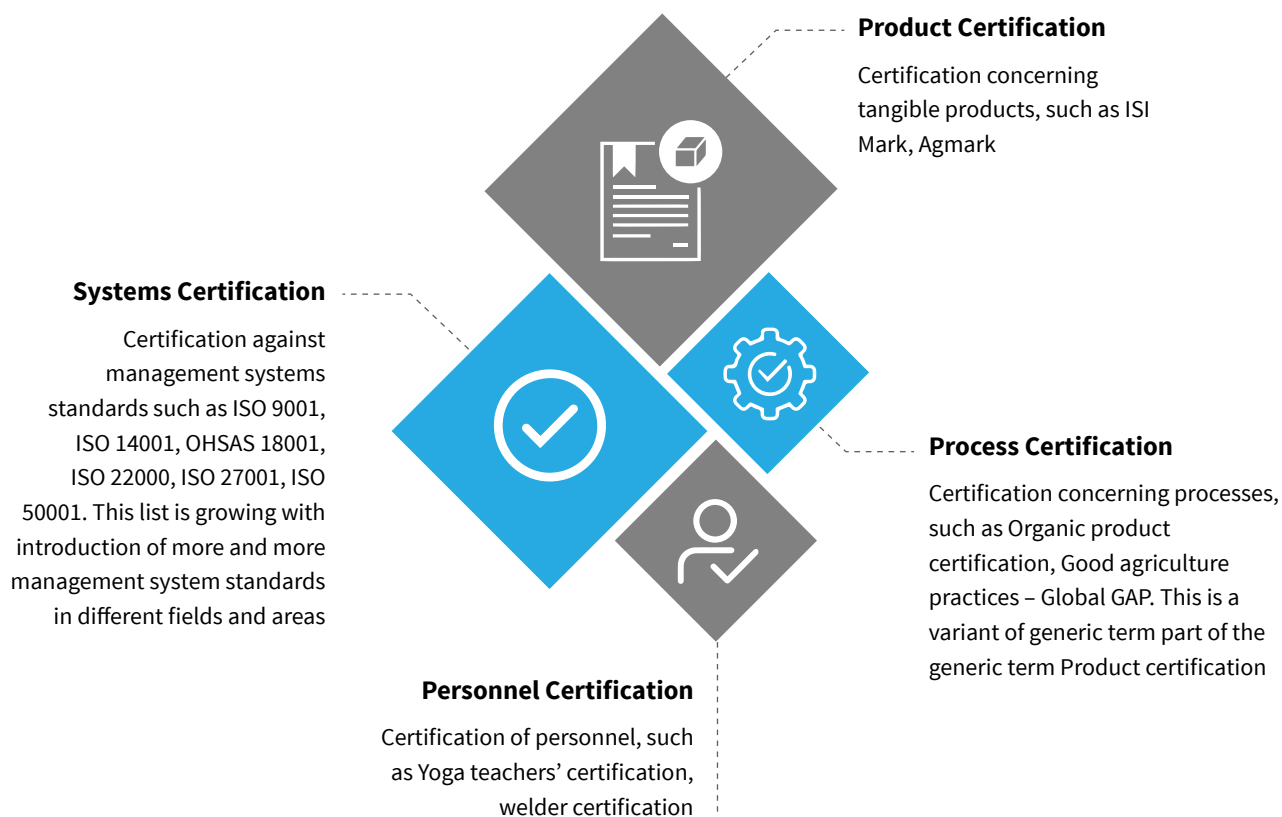
### What is certification?

It is the provision by an independent body of written assurance (a certificate) that the product, service or system in question meets specific requirements.

The international definition as given in clause 5.5 ISO/IEC 17000: 2004 is:

Third-party attestation related to products, processes, systems or persons.

## There are different types of certifications as given below:



### What are benefits of certification?

- Certification by definition is carried out by an independent third party body
- It provides assurance to stakeholders about implementation of management system, especially the system certification schemes
- It enhances the organization's ability to meet customer and regulatory requirements and provides means of demonstration of the same
- Written assurance by a third party (certification body) enhances customer confidence
- It ensures availability of a mechanism for resolution of Customer Complaints

### Who carries out certification?

Bodies which carry out certification are called Certification Bodies.

Considering the requirements as stated earlier, these are essentially third party conformity assessment bodies. Third party would mean that they need to be independent bodies, independent of organizations being certified and its customers.

### Who can set up a Certification Body?

Currently there are no regulations governing Certification Bodies and there is no legal bar for setting up a Certification Body and hence any one can set up a Certification Body.

It can be a proprietorship or a partnership company; a society; a private or public limited company.

It can be commercial organization set up for profit or a not-for-profit organization, a governmental or private or a nongovernmental organization.

Generally all that is needed is people and documentation, unlike a laboratory, no equipment or technology is required except IT tools.

## How does one distinguish an authentic certification body?

Under the circumstances as stated earlier, it would actually become very difficult to make an effective choice.

May be a governmental body would generate more confidence, but then in a field of implementing regulations etc, there have been issues with governmental bodies; hence, one would not be very sure how they will fare in the field of certification.

In respect of private bodies also one could be wary because generally they are known to allow pure profit motives to govern their operations. So how would they operate when an organization pays them money for getting audited may be one of the concerns?

So, may be one would choose based on name in the market or a brand image.

Today the only means to distinguish certification body based on objective basis is based on accreditation.

## What is accreditation?

Accreditation is the formal recognition by an independent body, generally known as an accreditation body that a certification body operates according to a standard(s) which is generally an international standard(s).

### **The international definition as given in clause 5.6 ISO/IEC 17000: 2004 is:**

Third-party issue of a statement of attestation (based on a decision following review, that fulfilment of specified requirements has been demonstrated) related to a conformity assessment body (certification body in this case) conveying formal demonstration of its competence to carry out specific conformity assessment tasks.

The key words in the above definition are “competence” and “specific conformity assessment tasks.” It is important to note that recognition of competence is the principal objective of accreditation and such recognition is for specific tasks. Further, the aspects of third party imply important relevance on impartiality.

Accreditation body is an authoritative body that performs accreditation. Although the accreditation body may be governmental, semi-governmental or private, the authority of an accreditation body is generally derived from government.

## How do the certification bodies get accredited?

Accreditation of certification bodies is carried out based on an international standard. For example, in case of certification bodies involved in ISO 9001 certification, to get accredited they are required to implement their systems in accordance with an international standard ISO/IEC 17021-1: 2015 and any other specific standard such as ISO/TS 22003 for Food Safety Management System. They are assessed against these standards by the accreditation bodies for the purpose of accreditation.

The detailed requirements specified in an accreditation standard are generally based on certain principles which flow from the objectives of accreditation. ISO 17021-1: 2015 is based on following principles:



### **Impartiality**

Being impartial, and being perceived to be impartial, is necessary for a certification body to deliver certification that provides confidence. Impartiality and competence are the two main pillars on which the accreditation requirements are based.



### **Competence**

Competence of the personnel of the certification body in all functions involved in certification activities is necessary to deliver certification that provides confidence.



### **Responsibility**

Responsibilities of both the parties (CB and its clients very important). The certified client, and not the certification body, has the responsibility for consistently achieving the intended results of

implementation of the management system standard and conformity with the requirements for certification. The certification body has the responsibility to assess sufficient objective evidence upon which to base a certification decision. Based on audit conclusions, it makes a decision to grant certification if there is sufficient evidence of conformity, or not to grant certification if there is not sufficient evidence of conformity.



### **Openness**

A certification body needs to provide public access to, or disclosure of, appropriate and timely information about its audit process and certification process, and about the certification status of any organization, in order to gain confidence in the integrity and credibility of certification.



### **Confidentiality**

To gain the privileged access to information that is needed for the certification body to assess conformity to requirements for certification adequately, it is essential that a certification body does not disclose any confidential information.



### **Responsiveness to complaints**

Parties that rely on certification expect to have complaints investigated and, if these are found to be valid, should have confidence that these complaints will be appropriately addressed and that a reasonable effort will be made by the certification body to resolve them. Effective responsiveness to complaints is an important means of protection for the certification body, its clients and other users of certification against errors, omissions or unreasonable behaviour. Confidence in certification activities is safeguarded when complaints are processed appropriately.



### **Risk-based approach**

Certification bodies need to take into account the risks associated with providing competent, consistent and impartial certification. Risks may include, but are not limited to, those associated with objectives of audit; sampling used in the audit process; real and perceived impartiality; legal, regulatory and liability issues; misleading statements by the certified client.

The certification body is required to implement all the requirements specified in the standard which are based on the above principles and it is assessed for the same by the accreditation body for the purpose of getting accredited.

The accreditation body is also required to establish its internal systems in accordance to an international standard. The criteria for accreditation bodies are specified in ISO/IEC 17011:2004. As accreditation bodies are at the top of the confidence pyramid, there is no higher level body to assess their conformity with the requirements. Instead, accreditation bodies from different countries have formed multi-lateral agreements through which they carry out peer assessments on each other. This is done under the aegis of International Accreditation Forum (IAF), which addresses the requirements for certification body. IAF establishes multilateral recognition arrangements (MLAs) between its global accreditation body members in order to reduce risk and increase confidence by ensuring that an accredited certificate may be relied upon anywhere in the world.

## **Significance of accreditation**

The certificate issued by a certification body which has been accredited by an accreditation body which is an IAF MLA signatory for the scope covering the certificate should be acceptable anywhere in the world under the principle of international equivalence.

This is a very significant reason for making an appropriate choice of a certification body.

## **Why the need for issuing a guidance on “selection of a certification body”**

As already elaborated in the previous sections of this article, management system certification, especially the quality management system certification to ISO 9001 standard is very popular worldwide and almost every organization goes for it for variety of reasons, many of them external such as the organization's customer either expects it or demands it by making it a precondition for contract.

When an organization implements its management system and wishes to get it certified, it will need to make choice of the certification body to certify the same. Today there are large numbers of certification bodies in market, vying with each other to carry out the certification at competitive/lowest prices. However, the organizations need to make a wise choice to get maximum benefit out of certification, both internally (having



better systems) and externally (to ensure customer confidence as well as international equivalence). However, there are worldwide concerns about quality of certifications, especially ISO 9001 certifications. These are elaborated in subsequent sections.

## Issues in certification

**1. Lack of Impartiality:** As stated in earlier sections one of the important pillars of certification is impartiality. However, this is one of the main issues that affect confidence in certification.

- a. There already exists an inherent conflict of interest in certification. A certification body is a service provider as well as an evaluator.
- b. Integrity and ethics are an issue in India. The client (applicant/certified organization) is primarily interested in a certificate and since he does not find any value addition through certification he is happy to receive the certificate without any audit or a minimal audit at the lowest possible cost and the certification body is more than happy to oblige.
- c. NABCB has a record of penalizing about 20 certification bodies, which includes; 12 suspensions, 11 cancellations, 2 applications rejected, almost all on account of malpractice. Typical issues observed are – all auditors not going on site, technical experts not going on site, audit days reduced as against those reported on paper. Another very significant impartiality issue observed is certification body having nexus with consultants, thereby creating a major conflict of interest situation.
- d. As a part of requirements for impartiality management certain prohibitions have been specified in the standard (ISO/IEC 17021-1: 2015) such as a certification body cannot certify another certification body for its quality management system and it cannot provide management systems consultancy and internal audits. Further, in respect of other impartiality threats, a certification body is required to carry out identification and analysis of risks related to conflict of interest. Fundamental to all this is all likely risks to be declared and analyzed and in case the risk is observed to be unacceptable, the certification body shall not certify that client. However, during its assessments NABCB came across many cases where significant risks to

impartiality had not been declared and the certification body was continuing to certify even where the risks were unacceptable. For example, a case where the CB owner's wife and son were running a management system consultancy company. After this fact was discovered, NABCB cancelled the accreditation of the CB, since this was considered a clear violation of one of the most important requirements of the accreditation standard.

**2. Use of Franchisees (including subcontractors/marketing associates):** This was observed to be a very common business model followed by many of the certification bodies (Indian as well as foreign), to be able to create an outreach across India. Outsourcing of activities covering certification processes to another body is permitted under the accreditation standard for management system certification (ISO/IEC 17021-1: 2015), under certain conditions. However, it was observed that the franchisees/outsourced bodies of certification bodies were carrying out activities in blatant violation of the conditions specified, such as:

- a. Decision for grant of certification was being carried out by the outsourced bodies/franchisees, which is not permitted as per the standard.
- b. Franchisees are not authorized to issue certificates. However, in many cases of Indian franchisees of foreign certification bodies were observed to be issuing certificates here without knowledge of their principals. One certification body chief in India was jailed for carrying out such activity, which was termed as fraud.
- c. Marketing associates/agents – Appointment of bodies called marketing associates/agents, for carrying out marketing activities, is observed typically among Indian CBs who are located in one part of India and want to do business all over India. However, it was observed during investigations that many of these were consultants and fully managed the clients including consulting and certification. For all practical purposes, they acted as a certification body and were connected to the bona fide certification body only for the purpose of issuing an accredited certificate. Many times they would collect the fees from the client and pass on a portion of it to the certification body as commission. If, as a client one does have any communication whatsoever from the certification body concerned, then the client needs to suspect something irregular is happening and needs to ask questions.

d. Based on the information about all these issues, International Accreditation Forum had set up a task force to ensure increased control over franchisees and has published *IAF MD 23:2018 Control of Entities Operating on Behalf of Accredited Management Systems Certification Bodies* which is effective from May, 2019.

**3. Declaration of certificates:** One of the essential requirements that all accreditation bodies follow as a measure of effective control over the activities of the certification bodies accredited by them is the declaration of certificates issued. They require, as part of their contract with the certification bodies, the certification bodies to make a periodic declaration of the certificates granted under their accreditation. At an interval defined by the respective accreditation bodies, the accredited certification body is required to provide complete information regarding organizations granted accreditation, including the scope of certification. If any certificate is not declared, that certificate is not considered valid.

- a. NABCB requires submission of a quarterly statement. If it is observed that any particular certificate has not been declared, it is considered a serious lapse and depending upon the seriousness, scale of such lapse or the reasons given for the same, penal action amounting to cancellation of accreditation may also be considered.
- b. In many cases a foreign buyer requires the certified organization to submit the certificate at the time of contracting process and in cases of doubts or complaint, write to the concerned accredited body for confirmation of the certificate. If the accreditation body discovers that certificate had not been declared, it would invariably disown the certificate and start investigation for issuance of unauthorized certificate with accreditation body logo. But as far as the certified organization is concerned it will be left holding an invalid certificate and most likely to lose the contract with the buyer. Many such instances have come to light, generally concerning foreign accreditation bodies operating in India. Invariably when the supplier is from India, the certificate is forwarded to NABCB. In case the certificate is issued under foreign accreditations, NABCB forwards those certificates to the respective accreditation bodies for authentication. As per NABCB's records, in most case such certificates have been disowned by the relevant accreditation bodies.

**4. Accredited or unaccredited certificates:** To have an accredited or an unaccredited certificate or an accredited certificate from a certification body which has been accredited by an accreditation body which is an IAF MLA signatory, is a choice that an organization has to make while making a choice of the certification body. Because all types of certificates would be available in the market, following aspects should help in making the right choice:

- a. In light of what is stated earlier, today an unaccredited certificate or an accredited certificate from a certification body which has been accredited by an accreditation body which is not IAF MLA signatory, will have little meaning, since it will not fetch them an international equivalence.
- b. It is not sufficient that the certification body of choice is accredited. It is important to check that its accreditation scope includes the technical sector of your organization. The certification bodies are accredited scope wise. Typically there are 39 IAF scope sectors - Food, Pharma, Construction, Metals, Chemicals, etc. Based on assessment of the certification body's competence these scopes are included in its accreditation certificate. Hence, it is important to review the accredited scopes of the certification body. This information is normally available on the accreditation body's website.
- c. Certification body may claim that it is accredited by an accreditation body which has its systems in compliance with ISO/IEC 17011. However, this is just a claim. Currently, IAF signatory status is the only available means to confirm International equivalence. Even being just a member of IAF is not sufficient. Further, some certification bodies are observed to be putting an IAF logo in the unaccredited certificates issued by them. This is a violation because IAF logo can be used on the certificate only by those certifications bodies which are accredited by accreditation bodies that are IAF MLA signatories and in addition have entered into a contract for use of IAF logo.
- d. Hence, the best choice would be to choose a certification body which is accredited by an accreditation body which is IAF MLA signatory. The list of such accreditation bodies can be obtained from IAF website [www.iaf.nu](http://www.iaf.nu). It should also be confirmed that the accredited certification body chosen has the relevant sector in its scope of accreditation. This information is normally available on the accreditation bodies' website.

- e. Some of the certificates as examples of issues described above are enclosed as annexes to this article.

#### 5. Apart from the national accreditation body of India

National Accreditation Board for Certification Bodies (NABCB), other accreditation bodies based in other countries (Foreign) are also in operation in India. Although it can be stated that NABCB is in competition with them, NABCB cooperates with many of them in a bid to ensure quality of assessments. NABCB has MoUs with number of such bodies – DAKKS of Germany, RvA of Netherlands, UKAS of United Kingdom; ANAB of USA; CAI of Czech Republic; SAS of Switzerland, COFRAC of France; IAS of USA, etc. Many of them only rely on assessments done by NABCB and do not undertake assessments in India like DAKKS and UKAS.

However, the responsibility for maintaining controls and oversight is theirs and there are physical and other constraints for the same:

- a. The accreditation bodies that are located in foreign land and do not have offices in India, are unable to exercise same oversight as they would exercise over the certification bodies located in their own countries, since it is expensive to fly out auditors to India.
- b. Many of the certification bodies in India operate as franchisees of foreign certification bodies operating under accreditation bodies based in their own countries and are declared as non-critical locations. As a result they are never assessed by the accreditation bodies. So, virtually there is no independent (third party) oversight over their activities.

6. **Standards for certification:** In a bid to increase their client base, the certification bodies are observed to be creating more market by hard selling certifications to standards which are not amenable for certification, such as guidance standards. Only specifications or requirement standards suitable for certification. Further, certification to these standards usually results in unaccredited certificates. However, these facts are never told to its prospective clients. Some of the examples are given below:

- i. ISO 10002 on complaints handling
- ii. Codex standard on HACCP
- iii. ISO 26000 on Social responsibility
- iv. ISO 31000 on Risk Management

It's not technically correct to certify against these standards and yet certification bodies do.

7. **Measures taken by NABCB:** Based on its experience in the field, NABCB has introduced certain measures to ensure that the certification bodies it accredits abide by and continue to abide by the requirements of the standard they accredited against and also the terms and conditions of their agreement with NABCB and to ensure, that they do not indulge in malpractice.

- **Validation audits**

These are visits by NABCB assessment teams directly to the certified clients. These were started in 2007 as a result of complaints that certificates were being given without audits. The purpose of these visits was to verify if audits actually took place as per the requirement specified in the accreditation standard and also to ascertain if the organizations certified were deserving of the certificate that they received. Based on the visits, a number of certification bodies ended up getting suspended. This practice of conducting validation audits still continues based on certain triggers such as complaints, information received during NABCB assessment of certification bodies, etc. It is very helpful in detecting malpractice. In fact, it has now become an international practice based on a guidance document established by IAF and referenced in ISO 17011 as well as a tool for accreditation bodies.

- **Checking antecedents of owners of the certification body**

After coming across instances of the certification bodies having connections with consultancy companies through their relationships (personal or related bodies), NABCB has started checking antecedents of the owners of the CB. It is now taking declarations about affiliations of the shareholders, directors and their family members.

- **Hiring of private detective agency**

In cases of applicant certification bodies, the information about them is available on NABCB website. All stakeholders and general public are free to provide any adverse information known to them to NABCB. Based on information received or complaints or knowledge of any past history of the owners, etc, NABCB also has provision for engaging private detective agencies for gathering evidence. If any incriminating evidence is made available, the application is liable to be rejected. In fact, in few cases this action has been taken in the past.

- **Awareness creation**

In association with the Industry bodies and consumer organizations, NABCB regularly conducts Industry as well as Consumer Awareness Programmes to industry and consumers about accreditation and related issues.

**8. What is a certified/applicant organization entitled to**

Organizations seeking accreditation/ already certified organizations also need to be alert to malpractices, irregularities being conducted by certification bodies, because the certified bodies will be the ultimate losers due to the actions of certification bodies. They may be left holding a certificate which is not valid or does not fetch them international equivalence and as a result they may even lose a big contract or an order. There have been examples where exporters have had their certificates rejected overseas and advised to get them endorsed by NABCB which we were unable to since these were unaccredited. As an applicant or accredited organization, you are entitled to certain documents from a certification body initially and after every audit. Organizations should insist on the same. These are:

- a. An agreement for certification services duly signed by the certification body. Do not accept an agreement signed by some other organization on its behalf.
- b. Audit plan for each audit – Starting from the initial audits (carried out at application stage) the organization is entitled to an audit plan for every audit

that is conducted by the certification body. As per the accreditation standard the certification body is required to carry out stage 1 and stage 2 audits before certification and there- after yearly surveillances and a recertification audit before the end of validity period in case the organization applies for recertification.

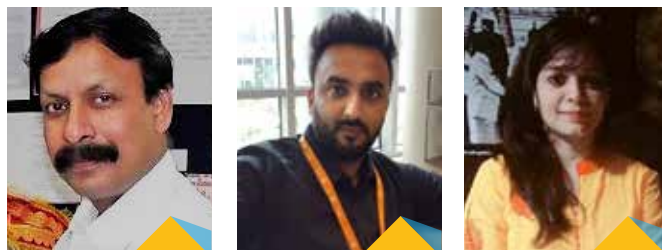
- c. Audit team composition – The audit plan should give details of what activities will be audited and the audit team composition. Organizations being audited are entitled to get additional details about auditors, to assess if there is any conflict of interest and they have a right to raise objection giving justification, to any member of the audit team in case any conflict is envisaged.
- d. Nonconformities and Reports for each audit conducted – Organizations are entitled to get in writing the non-conformities raised and the audit report, after every audit conducted by the certification body.
- e. Certificate issued by the certification body with all details like date of issue, expiry, scope, name and address etc. Since the organizations are expected to choose an appropriate certification body, accredited by an accreditation body which is signatory to IAF MLA, the certificate should contain the accreditation body logo along with the certification body logo.

## Suggested Steps

*As part of its due diligence exercise, organizations desirous of getting certified can follow following steps:* .....



# Interacting Nanotechnology -It is Interesting!



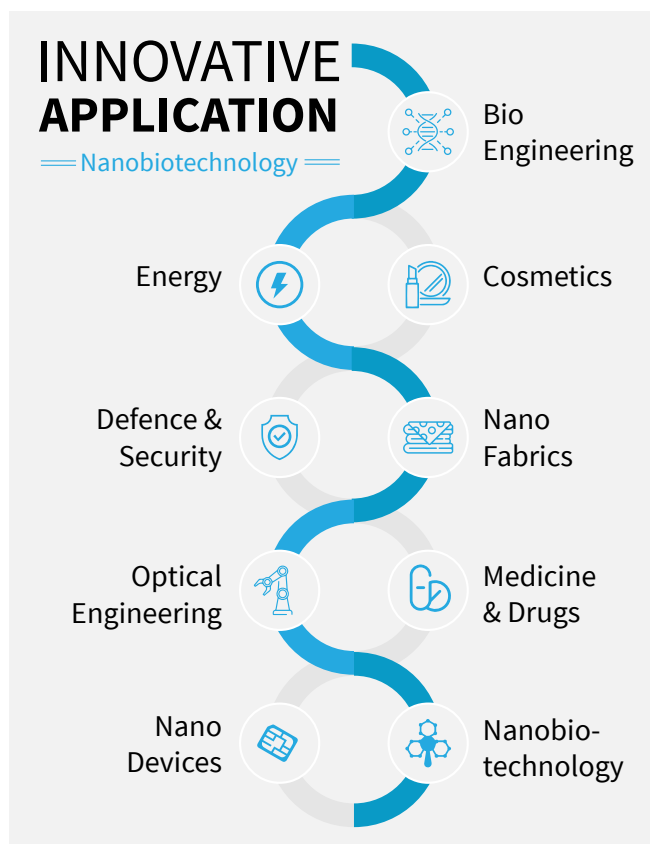
**Dr. S K Mishra** Head  
**Mr. Saurabh Singh** Junior Associate  
**Ms. Supriya Singh** Executive Assistant  
Research Analysis and Capacity Building Division, QCI

The world of Nanotechnology is fascinating and it has attracted considerable attention in the last few decades. With support of unprecedented funding, Nanotechnology is emerging as a revolution in industrial sectors. Most recently, the additive manufacturing in Industry 4.0 is the sector which accommodates the Nanotechnology very extensively. It is a general consensus that the word Nanotechnology is very complex and subject is too wide to venture into. However, on the other hand, contrary to the belief, this field is so interesting that one can involve himself/herself from the very beginning of basic understanding of science and technology. Simple elaboration of Nanotechnology follows as **“The design, characterization, production and application of structures, device, and systems by controlled manipulation of size and shape at the nanometer scale (atomic scale) which may produce new structures, devices and systems with at least one novel/superior characteristic or property”**. It is thus may be introduced as “Revolution of Endless Possibilities”.

## History of Nanotechnology

Feynman Lecture (1959)- “There is Plenty of Room at the Bottom” provided the vision of exciting new discoveries if one could fabricate materials/devices at the atomic/molecular scale.

The term “Nanotechnology” was originally coined by Norio Taniguchi in 1974. However, famous scientist **K. Eric Drexler** developed the concept of Nanotechnology and revealed molecular Nanotechnology as one of the paradigm areas of research. In 1979, Drexler encountered Richard Feynman’s (1959) talk “There is Plenty of Room at the Bottom”. The term “Nanotechnology”, as coined by Norio Taniguchi in 1974, was unknowingly appropriated by Drexler in his book **Engines of Creation** published in 1986. Drexler’s vision of nanotechnology is often called “Molecular Nanotechnology (MNT)” or “Molecular



Manufacturing,” and Drexler during the course of his investigation also proposed the term “Zetta Tech” which never became popular.

Conventionally, Nanotechnology implies building things from the bottom having atomic precision involved during manufacturing. Based on Feynman’s vision of miniature factories using nanomachines to build complex products, advanced Nanotechnology appeared for positionally-controlled mechanochemistry which is guided by molecular machine system.



In the early 2000, the subject further grew with rapid pace and became a hot cake for debate among public and scientists with lots of controversies. Numerous prominent debates about its potential implications were exemplified by the Royal Society's report on Nanotechnology. The report contained the feasibility of the applications of Nanotechnology for mass consumer application. Several governments then moved to promote fund for research in Nanotechnology. In India, Department of Science and Technology, which is the funding body of Ministry of Science and Technology, started programs like NSTI to make Nanotechnology popular in the country.

- e. Nanocrystal: A solid particle that is a single crystal in the nanometer range

Any change in the size of particle can lead to different physical and chemical properties. The following properties significantly vary with change in size of the particle:

1. Optical properties
2. Band gap
3. Melting point
4. Specific heat
5. Surface reactivity

One of the well-known examples of Nanotechnology-based product is Carbon Nano Tube (CNT). CNT is a tubular form of carbon with diameter as small as 1 nm. Its length varies from few nm to microns. CNT exhibits extraordinary mechanical properties. The Young's modulus is over 1 Tera Pascal and thus it is as stiff as diamond. The tensile strength is ~ 200 GPa. CNT can be metallic or semiconducting. The electrical conductivity is higher than copper. Electronic properties can be tailored through application of external magnetic field, application of mechanical deformation and many other factors. CNT is excellent field emitter and having high aspect ratio. It has small tip radius of curvature which is ideal for field emission. Other chemical groups can be easily attached to CNT either to its tip or sidewall. This process is called functionalization. CNT also bears a very high current capacity ranging 107-109 A/cm<sup>2</sup>.

India is the third largest country in the world in terms of research publications and second in terms of patent filing in the field of Nanotechnology. Nanotechnology scientists and Technocrats are extensively working in many reputed laboratories to convert some of the innovating works and intellectual properties into useful products which can meet to the need of societal requirements.

## History of Nanotechnology



### Richard P. Feynman

“There's Plenty of Room at the Bottom”  
Why cannot we write the entire 24 volumes of the encyclopaedia Britannica on the head of a pin?  
Nobel Prize in Physics 1965

### Norio Taniguchi

First used the term  
“nanotechnology” in a 1974



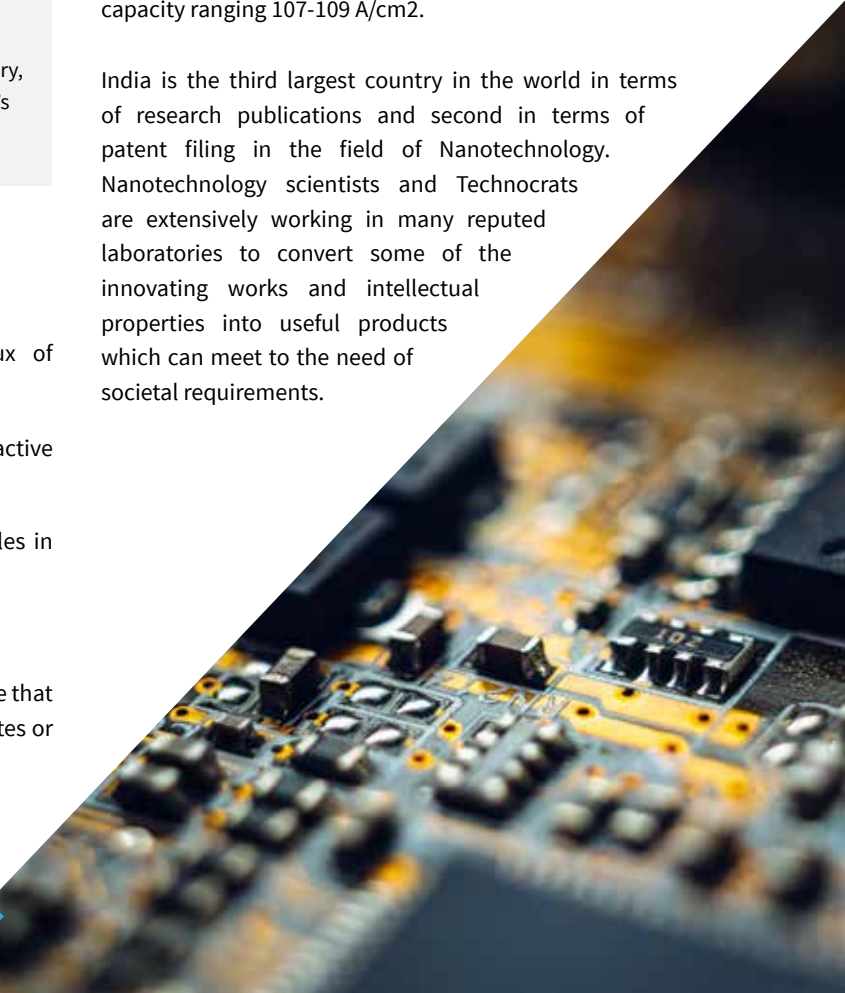
### K. Eric Drexler

Gives the idea of Molecular Machinery,  
Manufacturing, and Computation in 1980's

## Nano Size and Size Dependence of Properties

One needs to know some basics to understand crux of Nanotechnology/ Nanoscience from the very beginning.

- a. Cluster: A collection of units (atoms or reactive molecules) of up to about 50 units
- b. Colloids: A stable liquid phase containing particles in the 1-1000 nm range.
- c. A colloid particle is one such 1-1000 nm particle.
- d. Nanoparticle: A solid particle in the 1-100 nm range that could be non-crystalline, an aggregate of crystallites or a single crystallite



# Rail Swachh 2018

In continuing efforts towards monitoring the progress of the mission and promoting healthy competition among railway stations, the Ministry of Railways, in 2018, assigned the third survey for ranking of the same 407 A1 and A category stations to Quality Council of India. QCI conducted the survey by using the same methodology as the one prepared in 2017 by QCI in consultation with Ministry of Railways.

In order to assess the cleanliness and sanitation of stations in a holistic manner, a four-part survey was designed, comprising of the following:

## Process Evaluation

The first part of the study involved assessment of processes related to cleanliness at the stations. QCI assessors observed the frequency of various cleaning activities in the main consumer interface areas.

## Direct Observation

In the second part of the assessment, the areas like Parking, Main Entry and Ticket Counter and Platforms were inspected at every station for different forms of waste, such as litter, excreta, stain and stagnant water.

## Citizen Feedback

The third part of the assessment involved collecting feedback from the passengers about cleanliness at the station. The passengers were asked questions related to the level of cleanliness in the most common consumer interface areas of the station in terms of toilet, litter, stagnant water, presence of pests etc.

## Station Manager Interview

The station managers of all the 407 stations were interviewed to understand and collect documents related to various cleanliness related processes followed at railway stations.

For the purpose of the study, the three components of the survey i.e. Process Evaluation, Direct Observation and Citizen Feedback were used for the quantitative analysis and ranking of the 407 stations. Each of the three components were given an equal weight of 33.33%. In addition to the three components, the station managers were interviewed. This was purely qualitative in nature, to collect documentation regarding upkeep of stations and to inquire about any efforts made in line with the cleanliness vision.





The final results have been compiled, analysed and submitted to the Ministry along with the summary report. The Ministry has announced the ranks and the summary report has been launched.



@QualityCouncilofIndia



@QualityCouncil



qualitycouncilofindia



# Moving a 'Traditional SME' towards a 'Smart Factory'



**Dr. Indrajit Bhattacharya**  
Director, NABET

***NABET has been implementing Lean Manufacturing Competitive Scheme (LMCS) in MSME since 2014, driven by MoMSME. The Completed clusters in the Lean journey have realised a productivity enhancement of upto 27%; however, it is observed that integrating Lean and Industry 4.0 (I4.0) can lead to productivity enhancements of 40% and beyond. A data-driven production in our manufacturing practices is therefore imperative to stay globally competitive by establishing a 'Smart Factory'***



Figure 1 Intelligent manufacturing /Smart Factory enables associates to make educated decisions without unnecessary oversight; incorporates real-time data accessible from a central location as well as on the shop floor

“We’re excited about intelligent manufacturing because we truly believe that most manufacturing companies that don’t get involved in it are going to be too expensive, and their costs are going to be way too high to be competitive and sustainable,” CEO, *A Smart Factory in China*

Figure 1 Source: Lean Manufacturing and the Smart Factory; Star Rapid embraces Industry 4.0 with expanding leadership



## Lean Manufacturing Practices are critical before embarking on Industry 4.0

Seven Wastes needs to be addressed for reducing motion and intra-facility transportation by at least 50%, through 'Value Stream Mapping (VSM)'. Next, a three-pronged approach towards 'Smart Factory' envisaged is:



**Connect all equipment digitally** so that we're able to understand the performance of every piece equipment—what jobs it's running, and how the machine is performing; helping both from a quality perspective and from the perspective of maintenance, etc.



**Collate real-time data** to run the business based on the data, empowering shop floor personnel to make decisions without having to refer to management all the time.



**Venture on optimum level automation** bringing in automation that eliminates nonvalue-add, but not being too automated to lose flexibility. Finding that right balance between the automation that eliminates nonvalue-adding, but not over-automating, is the key to success.

## Key trends in Industry 4.0

- **Sensor-based tracking** of the status of manufacturing equipment, including temperature, pressure, vibration and many other profiles
- Parameters in **advanced data analytics, to predict** and order maintenance events
- Simplify supply chain by introducing **additive manufacturing (3D printing)** for low-volume spare parts
- **In-transport-visibility** of ingredients, semi-material or finished goods on the shop floor; on its way from the **supplier to the production facility**
- Horizontal integration enabling on-the-fly creation of a change ticket in product design based on quality issues in production: requesting **a change of either product design, tool design or production sequence, that resolves the issue within short period**

Putting in place the real-time intelligence and sensors at every level of the factory and production cycle, manufacturers can see everything that is going on across production lines and increase their ability to take immediate actions to increase output and quality, and thus support operational and business agility. For maximum factory efficiency, networks of plants need to be treated as exactly that – a single, connected entity that can be orchestrated as one. Facilities are no longer fixed and silo-driven but flowing with intelligence, adaptability and the ability to dynamically reconfigure.

## Critical aspects to leverage investment in Industry 4.0

Industry 4.0 is an intelligent production environment enabled by an integrated platform of enterprise data systems, the **Internet of Things (IoT) and Cloud Computing**. It provides insight into variables or anomalies that can cause performance issues, such as machine failures, bottlenecks or waste, and it is going to completely transform the manufacturing sector and fundamentally change the established relationship between the makers and consumers of products.

## Working towards perfection in manufacturing

As a concept, Industry 4.0 opens up the possibility of “perfect production” wherein the typical challenges in the manufacturing sector – machine failures, product defects, scrap – are eliminated, helping manufacturers to operate as efficiently as possible. This shift leads to manufacturers becoming so efficient that they no longer rely on low-cost country sourcing to remain competitive. By bringing production closer to their customer base they not only reduce shipping costs, slash energy consumption and lower the risks inherent in the supply chain but can also respond faster to customer demands. It's a win-win for both the manufacturer and their customers.

## The role of artificial intelligence and machine learning in Industry 4.0

Effective data management underpins one technology that will shape the future of manufacturing: **Artificial Intelligence (AI)**. The more data sets computers are fed, the more they can observe trends, learn and make decisions that benefit the organization.

This automation will help manufacturers to predict failures more accurately, detect and anticipate problems, and predict workloads.

To successfully **integrate AI and machine learning** into the workflow, manufacturers must build robust technology foundations. This means creating a purpose-built, big data architecture that can pull together data from disparate systems, such as **Enterprise Resource Planning (ERP), Manufacturing Execution Systems (MES) and Quality Management Software (QMS)**. To maximize the many opportunities of Industry 4.0, manufacturers need to build a system with the entire evolutionary journey in mind because perfect production requires collaboration across the entire supply chain.

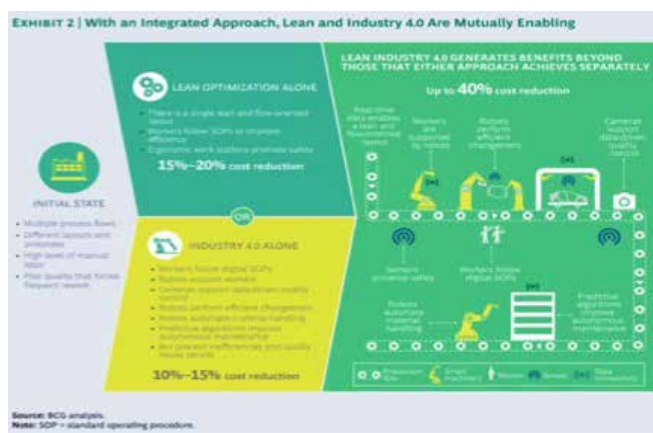


Figure 2: Lean and Industry 4.0 – Mutually enabling

### Vision for Industry 4.0: Smart Factory

The industry envisions that factories must increasingly become more customer-centric, delivering products that do more and meet better individual needs, while driving new user experiences. **Production environments must be balanced to support a production model that delivers intelligent and appropriate customization on basic uniform product design: this is the key to driving the ‘mass customization’ reality.** Through new levels of communication at every level across the factory and the manufacturing value chain, manufacturers will be able to collaborate more effectively; they will also be able to respond to competitive pressures, shortening product lifecycles, and increasing demand for product and service personalization.

Figure 2 Source: (<https://www.forbes.com/sites/willemsundbladeurope/2018/07/16/industry-40-journey-toward-perfect-production/#3838b26d4165>)

In ASEAN, the impact of Industry 4.0 could be between \$216 billion–\$637 billion a year by 2025.

Sized applications	Potential annual economic impact range, \$ billion		Potential reach in 2025, %	Potential productivity or value gains in 2025, %
	Low-end estimate	High-end estimate		
Operations management, manufacturing	75	245	50-70	5-12.5 reduction
Predictive maintenance, manufacturing	38	91	50-70	10-40 reduction in spend, 3-5 improvement in equipment lifetime, 50 reduction in equipment downtime
Farms, increase farm yield	10	23	10-30	10-25 yield improvement
Inventory optimization, manufacturing	17	41	50-70	20-30
Operations management, hospitals	40	104	0-50	20-40 reduction in time lost on tracking durable medical equipment, 250 hours a year saved for nurses
Health and safety, manufacturing	12	30	50-70	10-25
Hospitals, controlled drug reduction	5	20	20-50	80-100 reduction for applicable drugs (30-40 of all drugs)
Other <sup>1</sup>	22	55		

Figure 3: Impact of Industry 4.0 by 2025

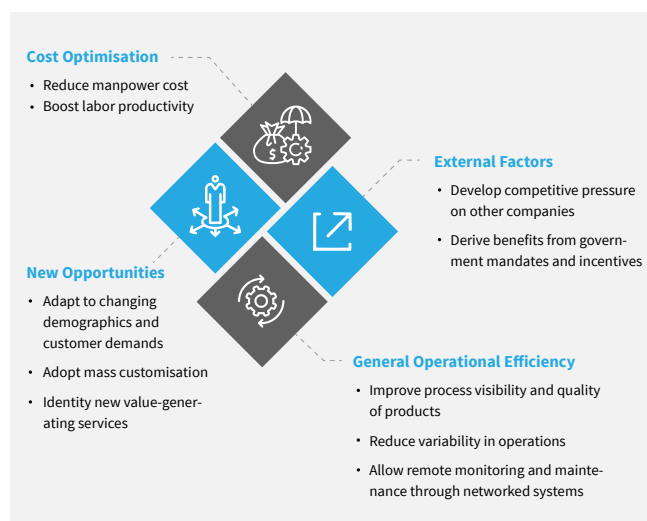
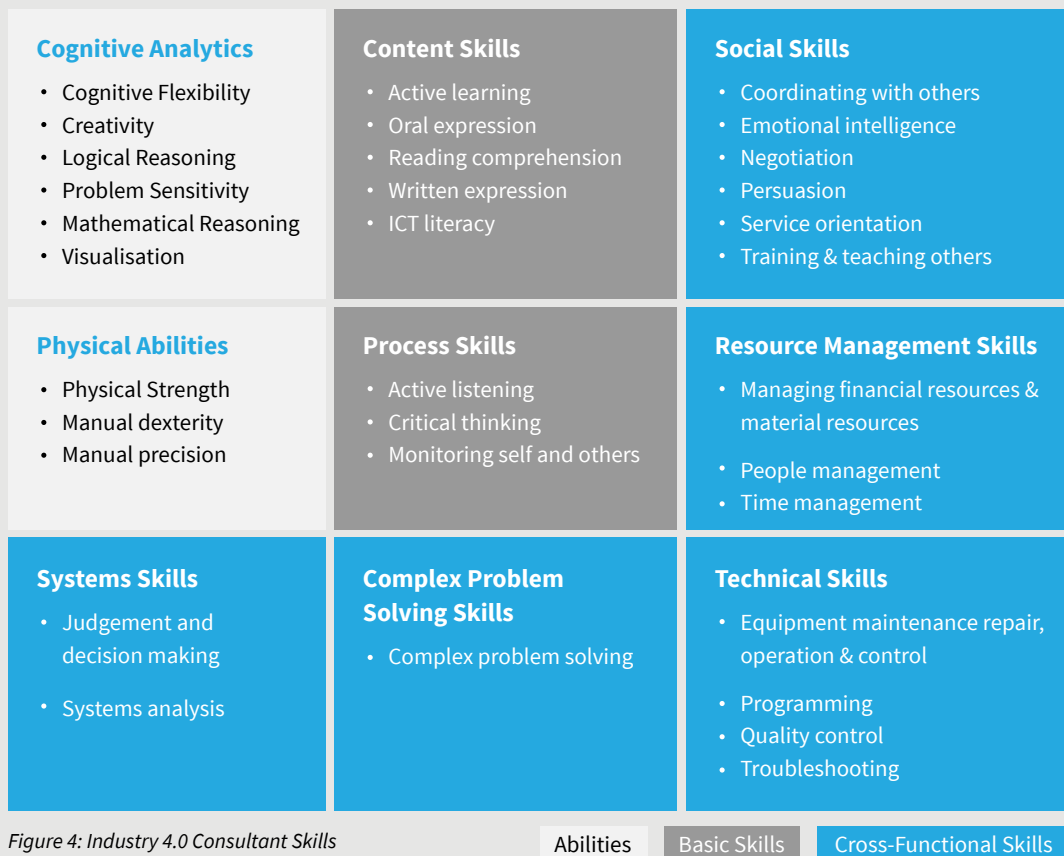


Table 1: Benefits of Implementation

## 14.0 - Consultant's Role

A 14.0 Consultant's role is paramount in taking a traditional SME on the journey to a smart factory



The 'Smart Factory' will automatically re-route work, pre-empting bottlenecks and identifying areas of underused capacity, customized production, enable predictive maintenance, and operate continuously and at unprecedented levels of efficiency. Machine information from outside specific plants will be accessible, enabling remote control of manufacturing units and services; machine controllers will be able to access user profiles; this will also enable predictive maintenance to be carried out more effectively by machine suppliers for manufacturers.

Stages	Details	Remarks
Stage - I	Assessment	Details
Stage - II	Secure and upgraded networks and controls	
Stage - III	Defined and organised working data capital (WDC)	Real time decision making
Stage - IV	Analytics (Information to Operational Benefits)	Reduced cost, improved productivity, improved customer satisfaction
Stage - V	Collaboration and optimisation	Predictive capabilities to respond faster to external events

Figure 5: Stages of Automation

Figure 5: Source: Rockwell Automation

---

# RIPANS is Certified on ISO 9001

---



**Ms. C. Lalramdini**  
Assitant Professor,  
Dept. of Nursing, RIPANS



**Mr. Amit Singh**  
Deputy Director,  
NBQP

## Regional Institute of Paramedical and Nursing Sciences (RIPANS) and the need for certification

RIPANS, Aizawl was set up by the Ministry of Home Affairs, Government of India in 1995-96 under North Eastern Council (NEC). The objective of the Institute is to create and provide adequate Paramedical man-power to the various Health Sectors of the North Eastern Region in particular and other parts of India and overseas in general. The Institute was transferred to the Ministry of Health and Family Welfare with effect from 01.04.2007. It is situated at the outskirts of Aizawl city having a separate complex of 13.2 acres.

**At present the Institute is running five Bachelor Degree Courses and one Post Graduate Course as given below:**

**B.Sc. Nursing**

**B.Sc. MLT (Medical Laboratory Technology)**

**B. Pharmacy**

**B.Sc RIT (Radio-Imaging Technology)**

**B.Sc. OOT (Optometry & Ophthalmic Techniques)**

**M. Pharma**

The courses are affiliated to Mizoram University and are recognized by Indian Nursing Council (INC), Pharmacy Council of India (PCI) and All India Council for Technical Education (AICTE).

## About Implementation

Steps of implementation involved a) Training, b) Gap Analysis, c) Documentation, d) Internal Auditor training, e) Internal Audits and Management Review. RIPANS is striving towards continuous improvement and rendering quality services in the overall medical education and healthcare development. Therefore, the competent authority at RIPANS rightly pursued the path for ISO Certification which would ensure quality and standard of the Institute and also the various services that it is rendering. Thus, RIPANS, under the leadership of the dynamic Director Dr. Chawngthanliana, along with the technical expertise of National Board for Quality Promotion (NBQP), Quality Council of India, receives full support and motivation from the Heads of the Departments. RIPANS progressed swiftly in its journey toward ISO certification. The process took about 18 months as RIPANS wanted to institutionalize culture of quality within its processes and not only a documented QMS. All along the process, Director, RIPANS played an exemplary leadership role so that every department/section remained motivated for identifying all concern areas as well as opportunities for improvement. For the implementation of QMS, RIPANS was divided into 16 sections. Each section worked tirelessly to develop the quality standards coming up with 52 SOPs and 104 formats which is still growing in size and numbers. Each section aligned in following the guidelines for proper documentation as per the SOPs and formats which resulted in an excellent documentation system.

The certification audit was carried out in the month of July, 2018 and RIPANS came out with flying colors and was awarded ISO 9001:2015 certified institute on 24<sup>th</sup> July 2018. It was a jubilant day for RIPANS and will always remain in the history of RIPANS as one of the most important milestones. RIPANS is committed to maintain the status of ISO 9001:2015 Certification and will also continue to maintain rendering systematic quality services for overall medical education, quality healthcare delivery to the society and the nation as a whole.



# Regional Institute of Paramedical and Nursing Sciences Celebration of ISO 9001:2015 Certification 14<sup>th</sup> August 2018



## Challenges faced during the journey

Bringing the concept of process standardization amongst all relevant stakeholders was a big challenge, conducting and effective internal audits was another major challenge for RIPANS. Yet another challenge was building necessary flexibility in the documented SOPs and other formats of QMS so that it remains relevant, facilitating decision making process and easy to maintain.

## Way forward

Effective internal audits and bringing process approach in audits as per the recently published Guidelines of auditing management systems ISO 19011:2018. Also with a robust system based on Plan – Do - Check - Act (PDCA) in place, RIPANS can go for implementing ISO 14001:2015. Later the two systems can be integrated to build an Integrated Management Systems (IMS). Needless to mention, NBQP will be extremely happy to associate itself with any future effort of RIPANS for any improvement initiatives.

# Our Social Media Presence







# Our Social Media Presence



Home About Photos Reviews Videos P

Home About Photos Reviews Videos P

**Quality Council of India**  
8 June · 🌐

NBQP, QCI participated in #WorldEnvironmentExpo #QualityMatters

**Quality Council of India**  
27 April · 🌐

#SuccessfullyCompleted Two-Day Course On Taguchi Method to Quickly Achieve Better Quality at Low Cost #QualityMatters. Keep following us to know more.



Home About Photos Reviews Videos P

**Quality Council of India**  
9 June · 🌐

QCI celebrating #WorldAccreditationDay #WAD2018 Accreditation: Delivering a Safer World Adil Zainulbhai NABL, NABH & Hospital consultants in Delhi, India NABCB - National Accreditation Board for Certification Bodies NABET



37 1 Comment 3 shares

📷 👤 📺 5 🌐 🔔 4 ☰



📷 👤 📺 5 🌐 🔔 4 ☰





---

# Education in the 21st Century and the Educational Organization Management System

---



**Mr. Abhinav Bajaj**  
Accreditation Officer,  
NABET



**Mr. C.S. Sharma**  
Deputy Director,  
NABET

## The Science and Sociology of Education ISO 21001:2018

The Indian education sector has been technologically stagnant for a large part of the last century. However, the sector has now at a rapid pace begun to move towards adopting technology and innovative pedagogies. The sheer volume and range of innovation in the education sector in the last ten years is unprecedented. Research and corresponding educational products and services in the field of child psychology, types of learners, new methods of instruction and the evolving face of the teaching-learning process hitherto unseen in the largely traditional Indian education scenario has proved the potential of teaching as a process to be far more engaging and immersive than previously thought so.

The efforts made thus far, albeit isolated and at times constricted by obsolete regulation and recognition mechanisms, have emboldened the belief in the possibility of rapid growth of the education and the associated education products and services industry in India. This especially comes at a time when India stares at the double-edged sword of having arguably the world's highest working age population which could either turn out to be a demographic dividend or a liability.

Owing to this, many institutions today are being forced to rise up to the challenge of serving a diverse group of learners who have very high and varied expectations from their learning environments. The institutions need to shed their elephantine nature and imbibe within them dynamic systems and processes that enable them to swiftly, effectively and efficiently evolve and reposition themselves to serve the learners of today as well as the larger societal interested parties that stand to benefit from a robust education system.

Since the last decade, a perennial need has been felt, both in international circles as well as in the Indian education sector to contrive a management system that caters specifically to the growing dynamism of the education sector. ISO 21001:2018, a standard on management systems for educational organizations, is a step in this direction. It is a stand-alone standard especially designed to serve the education sector and is a reliable doctrine that can enable any organization that imparts learning, be it (a) formal or informal education, (b) training and (c) products or services, to not only meet learner and other beneficiaries' requirements but to exceed them. It goes beyond the 7 principles established in the Quality Management System as per ISO 9001 and encompasses 11 principles, including **Social Responsibility, Ethical Conduct in Education, Accessibility & Equity and Data Security & Protection**, based on which any educational institute can achieve cohesiveness in its inter-related processes and have a unified approach towards serving the learners.

ISO 21001 focuses on the specific interaction between an educational organization, the learner, customer and other relevant interested parties. The standard therefore applies to the management system of any organization which utilizes a curriculum to provide, share and transfer knowledge. Although learners and educational organizations worldwide are the main beneficiaries from this new management system standard, all stakeholders will benefit from the output of standardized management systems in educational organizations. Examples of educational organizations include pre-school, primary, elementary, middle schools, high schools, colleges, universities, adult education, vocational education and training, tutoring or coaching centres, training organizations, education/training departments, consultants and non-formal educational service providers.

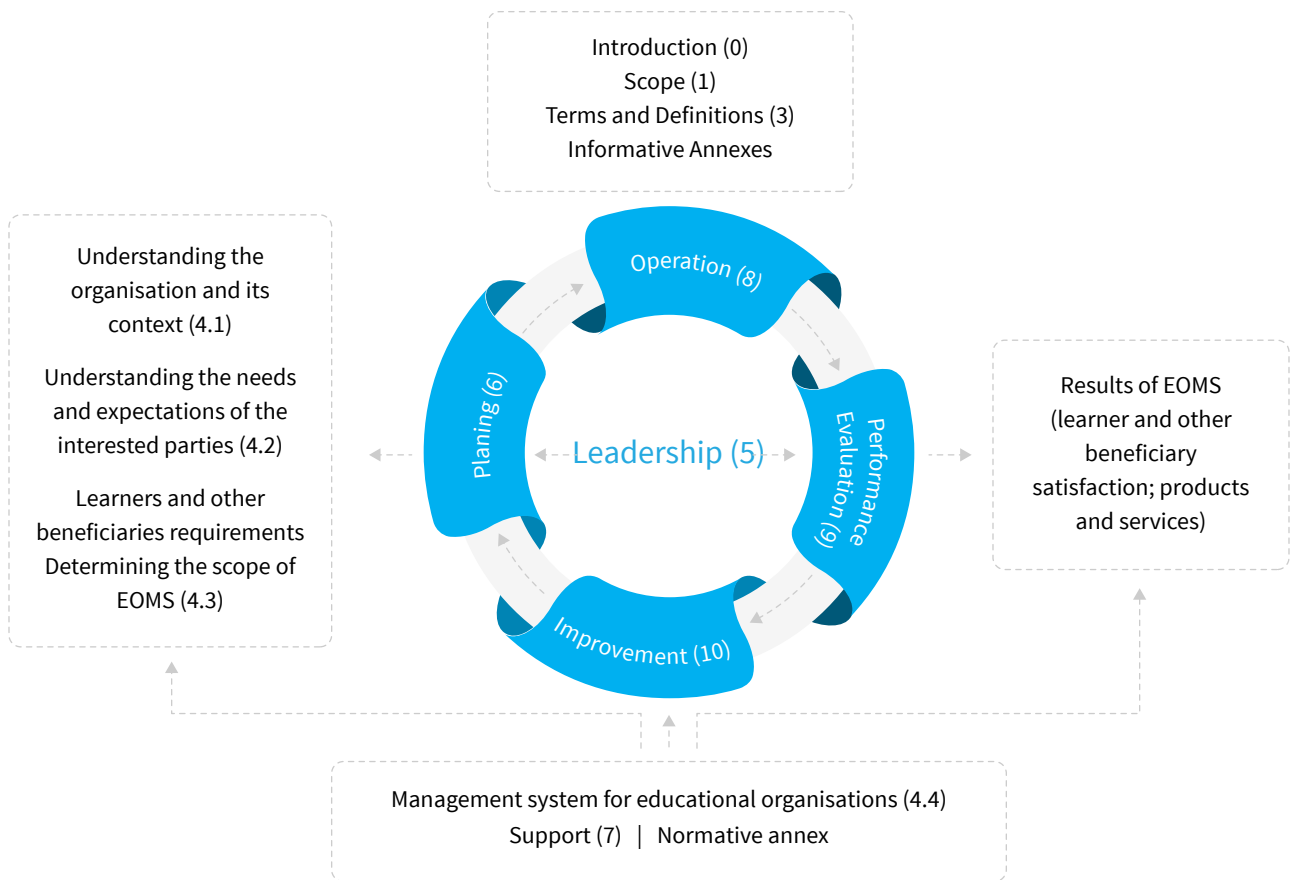


***A particular highlight of the standard is its focus on Special Needs Education and Early Childhood Education.***

A ‘Special Needs’ learner has been recognized as someone whose educational needs cannot be met through regular instruction and assessment practices. Exceptionalities recognized include: behavioural, communicational, intellectual, physical, giftedness, or other learner needs for special education with the acknowledged possibility of a learner having more than one exceptionality. The standard expounds on the requirement of a comprehensive needs analysis for learners with special needs. The standard also recognizes the need to establish proper communication channels so that the interested parties with regards to the special needs learners can receive the information they need.

Early Childhood education has been recognized as a distinct education level with its own identity. The main objective in this educational level is to contribute to the physical, emotional, social and intellectual development of children. The standard presents a need for a comprehensive approach to handling early childhood education right from the reception of the child to its hygiene as well as the Pedagogical-playful materials, equipment and spaces.

The Standard also seeks to harmonize its’ requirements with regional, national, open, proprietary, and other standards in the international framework and even illustrates how the standard can be mapped to other standards by mapping its clauses against the ***European Quality Assurance Framework for Vocational Education and Training (EQAVET)***.



## The Standard Ensures:

1. Promotion of self-learning and lifelong learning opportunities
2. More personalized learning and effective response to special educational needs
3. Consistent processes and evaluation tools to demonstrate and increase effectiveness and efficiency • increased credibility of the educational organization
4. Recognized means to enable organizations to demonstrate commitment to education management practices in the most effective manner
5. A model for improvement

## The Road Ahead

The ISO 21001:2018 standard had been much awaited in international circles and particularly in India, owing to dearth of a single harmonized internationally recognized standard for educational organizations. The standard within of itself holds great potential to provide a foundation for educational organizations to remain dynamic and sustain the volatile educational products and services ecosystem of today. The success of the standard in India shall depend on its responsible propagation among both the Certification Bodies and educational institutions and the establishing of a credible accredited certification mechanism that shall ensure its growth is both effective and continual.





**4.** Accredited 2,697 Testing Laboratories,  
823 Calibration Laboratories and 946 Medical Laboratories

## National Accreditation Board for Testing and Calibration Laboratories

NABL Updates



@QualityCouncilofIndia



@QualityCouncil



qualitycouncilofindia

April-June, 2018

45

## International Participations

### IAF/ ILAC Midterm Meetings, Frankfurt, Germany



The International Accreditation Forum (IAF) and the International Laboratory Accreditation Cooperation (ILAC) mid-term meetings were held in Frankfurt, Germany from 4<sup>th</sup>-11<sup>th</sup> April 2018.

These joint meetings offer a valuable opportunity for communication and collaboration amongst accreditation bodies, regional accreditation cooperation and stakeholders etc. CEO, Mr Anil Relia, along with NABL officials, participated in the meeting.

### SAARC-PTB Regional Kick-off Workshop, Nepal



South Asian Association for Regional Cooperation (SAARC)-Physikalisch-Technische Bundesanstalt (PTB) regional Kick off workshop was organized in collaboration with Nepal Bureau of Standards and Metrology (NBSM). The two-day workshop on the project “Strengthening regional infrastructure and co-operation in the field of quality infrastructure in SAARC” was held on 8<sup>th</sup> & 9<sup>th</sup> May 2018. The event was inaugurated by H. E. Mr. Amjad Hussain B. Sial, Secretary General, SAARC at Kathmandu, Nepal. In his Inaugural Address Mr. Sial acknowledged SAARC’s project-based collaboration with its partners, including PTB and quoted that ‘this workshop is a testimony of SAARC’s increasing engagement and collaboration with regional and international organizations’. In the workshop, NABL, India was represented by its CEO along with Director, Testing.

### APLAC Training Course as per ISO/IEC 17025:2017, Bangkok



To understand the new version ISO/ IEC 17025:2017, APLAC organized a Training Course from 8<sup>th</sup>-10<sup>th</sup> May 2018 at Bangkok. 33 participants from different economies, including three officers from NABL, attended the training course.

### 2018 APLAC/PAC Joint Annual Meetings, Kyoto, Japan



2018 APLAC-PAC Joint Annual Meetings were held from 1<sup>st</sup>-9<sup>th</sup> June 2018 at Kyoto, Japan. This year, the meetings were hosted by International Accreditation Japan (IA Japan), Information Security Management System Conformity Assessment System (ISMS-AC), Japan Accreditation Board (JAB) and Voluntary EMC Laboratory Accreditation Center- (VLAC) Japan. CEO and Directors, NABL, attended the meetings.

In view of establishing a single regional body, Asia Pacific Accreditation Cooperation (APAC), this year observed the final joint meetings of Pacific Accreditation Cooperation (PAC) and Asia Pacific Laboratory Accreditation Cooperation (APLAC) together. Key decisions, resolutions on APAC Constitution, related regulations, MRA documents as well as membership fee structure were worked upon for formation of the new entity by 1st Jan 2019.

### APLAC Evaluator Training Course as per ISO/ IEC 17011:2017



Two-day training course as per the new version ‘ISO/ IEC 17011:2017’ was held on 12<sup>th</sup> and 13<sup>th</sup> June 18 at Hong Kong for the APLAC Evaluators. CEO and officials from NABL attended the training course.

## Seminars / Awareness Programs

### 4<sup>th</sup> International Conference of Consortium of Accredited Healthcare Organizations (CAHOCON)



The 4th International Conference of Consortium of Accredited Healthcare Organizations (CAHOCON-2018) was held on 7<sup>th</sup>-8<sup>th</sup> April, 2018 at Chennai with an objective to facilitate communication amongst the stakeholders and to provide a benchmark while promoting and improving quality and safety of healthcare services provided by healthcare organizations across India.

CAHOCON is an annual conference and the theme for this year was “Timely Intervention is the key to quality”. Director, Medical; NABL chaired the laboratory session and delivered a talk on “Accreditation of Clinical Laboratories: Present and Future”. NABL officer also co-chaired one of the sessions during the event and participated in panel discussion.

### Seminar for ‘Scientific Apparatus Manufacturer & Exporters Association of Ambala Cantt (SAME)’ at Ambala



A talk was organized on ‘NABL Accreditation Process & Benefits’ for ‘Scientific Apparatus Manufacturer & Exporters Association of Ambala Cantt (SAME)’ at Ambala on 9th April 2018. Member of Parliament, Honourable Sh. Rattan Lal Kataria was the chief guest during the event. NABL familiarized the members of Association with Accreditation process and its benefits.

## Programs on Mass Metrology



NABL participated in two programs on Mass Metrology conducted by reputed manufacturer jointly with National Physical Laboratory (CSIR NPL – India) on 13<sup>th</sup> April 2018 and 21<sup>st</sup> June, 2018. The objective of these programs was to provide a platform to interact directly with the stakeholders and manufacturers.

### Training Program at ISRO, Bengaluru

NABL provided training to 50 scientists at Vikram Sarabhai Space Centre, ISRO, Thiruvnanthpuram on 16<sup>th</sup>-17<sup>th</sup> April 2018. The training was imparted on accreditation process and Electro-Technical Calibration Fundamentals And Uncertainty Estimations.

### 2<sup>nd</sup> Congress of Indian Laboratories

2<sup>nd</sup> Congress of Indian Laboratories with a theme ‘Role of Laboratory Service in Growth of Economy and Health of India’ was held on 19th April 2018 at The Ashoka Hotel, New Delhi by Association of Indian Laboratories (AOIL). NABL sponsored and actively participated in the event.

### Awareness Program on “Accreditation of Solar Modules Testing & Balance of System”



NABL organised a one-day awareness program on “Accreditation of Solar Modules Testing & Balance of System” for solar module manufacturers operating in south India at Hyderabad on 15<sup>th</sup> June 2018. The program was attended by 34 participants from solar module manufactures, EPC contractors and solar testing laboratories. The program aimed to give awareness to the solar



testing laboratories in context of the MNRE notification dated 7<sup>th</sup> Dec 2017 requiring ISO/IEC 17025 accreditation of solar testing laboratories in India.

## Trainings

### Training program for Assessors & Laboratories on transition of ISO/IEC 17025:2005 to ISO/IEC 17025: 2017

The third edition of International standard ISO/IEC 17025 (viz. ISO/IEC 17025: 2017) 'General requirements for the competence of testing and calibration laboratories' was published on 29<sup>th</sup> November 2017 by ISO Committee on Conformity Assessment (CASCO). New concept of risks and opportunities-based approach has been introduced in the standard.

For smooth transition and implementation of ISO 17025:2017, NABL conducted two- day Assessor Orientation Program followed by one-day Laboratory Awareness Program in various cities across the country.

In all, 30 Assessor Orientation Programs and 34 Laboratory Awareness Programs were conducted wherein more than 850 Assessors and 2000 laboratory representatives participated. These programs were coordinated by NABL officers. 27 assessors who were trained during the Master Trainer Program served as faculty during these courses.

### Assessor Training Course



*NABL organized Assessor Training Course as per ISO 15189:2012 from 16<sup>th</sup>-20<sup>th</sup> April 2018 at Ahmedabad*

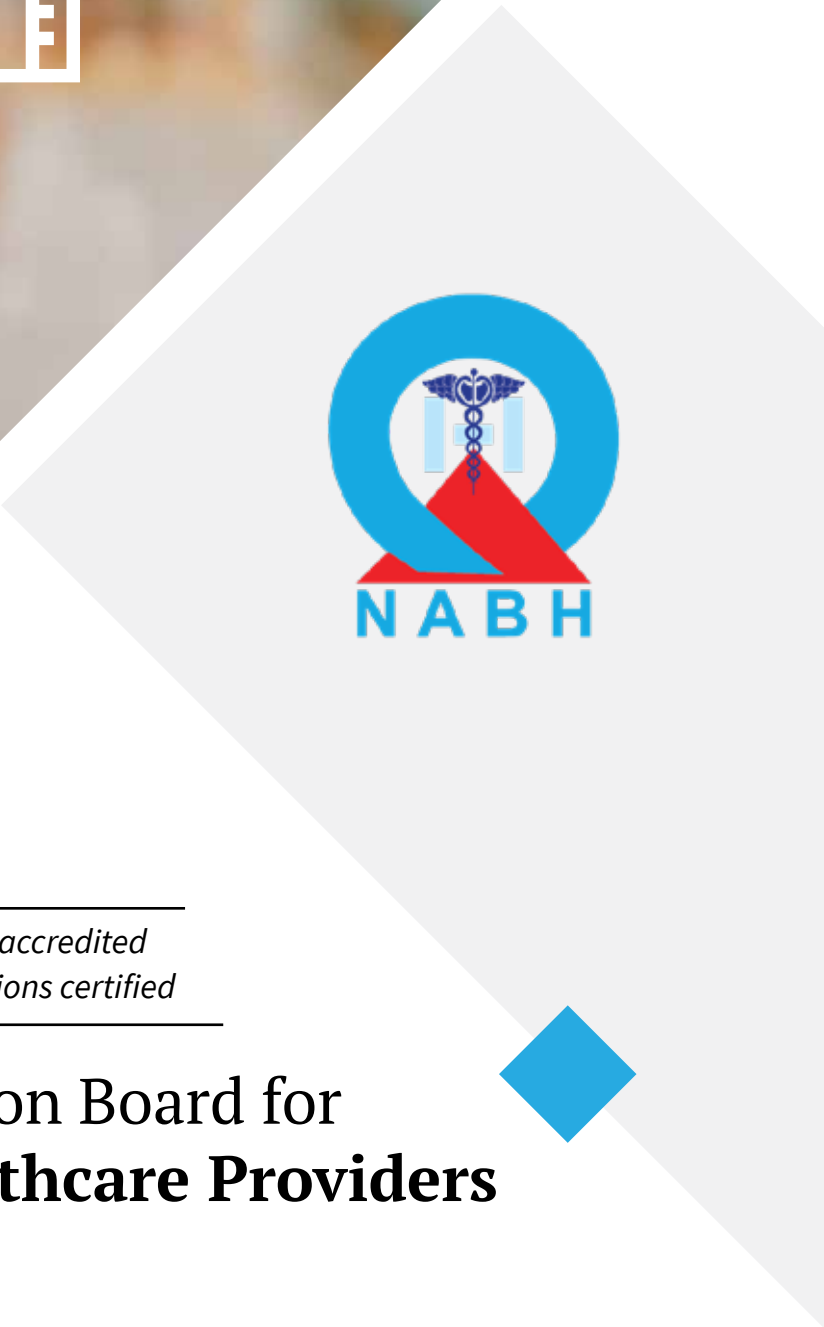


*NABL organized Assessor Training Course as per ISO/IEC 17025:2017 from 11<sup>th</sup>-15<sup>th</sup> June 2018 at Indian Rubber Manufacturer's Research Association (IRMRA), Thane, Mumbai*



*NABL organized Assessor Training Course as per ISO/IEC 17025:2017 from 25<sup>th</sup>- 29<sup>th</sup> June 2018 at National Institute of Technical Teachers Training & Research (NITTTR), Chandigarh*





**5.**

*745 healthcare organisations accredited  
and 856 healthcare organisations certified*

# National Accreditation Board for Hospitals and Healthcare Providers

NABH Updates



**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.**

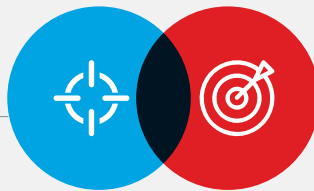
NABH has been established with the objective of enhancing health system & promoting continuous quality improvement and patient safety. The board while being supported by all stakeholders, including industry, consumers, government, has full functional autonomy in its operation.

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

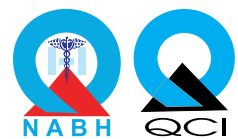
### Training & Education

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**

5<sup>th</sup> 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





**6.** 185 Environmental Impact Assessment (EIA)  
Consultant Organisations accredited

## National Accreditation Board for Education and Training

NABET Updates



@QualityCouncilofIndia



@QualityCouncil



qualitycouncilofindia

April-June, 2018

51

---

# Workshop on “GMP Compliance for Pharmaceutical Industry”

## - A Report

---



**Mr. Saurabh Arora**  
Assistant Director,  
NABET

The Indian Pharmaceutical Industry is one of the most vibrant sectors of Indian economy. The total size of the Indian Pharmaceutical Industry is about Rs 2 lakh crore, out of which exports account for nearly 55%. To ensure the quality, safety and efficiency of medicines both for domestic use and for exports, the manufacturing systems involved must be strengthened. As the number of drugs and their volume increases, the issue of quality will assume paramount importance. **Good Manufacturing Practices (GMP)** is a system for ensuring that products are consistently produced and controlled according to quality standards. It is designed to minimize the risks involved in any pharmaceutical production that cannot be eliminated through testing the final product.

**QCI-NABET** is implementing “**Lean Manufacturing Competitiveness**” Scheme of M/o MSME for building competitiveness in MSMEs since 2014. Taking the agenda of ‘Manufacturing Excellence in Industry’ forward, a two-day Workshop on “GMP Compliance for Pharmaceutical Industry” was organized by NABET along with NABL during 12-13 June, 2018. The forum provided a platform to upgrade pharma companies with latest industry trends and learn best manufacturing practices currently being adopted across the world. The Workshop was a great success and catered to a diverse set of participants ranging from representatives from Central Drugs Standard Control Organization, Directors, Quality Managers, Plant Managers, Manufacturing Supervisors, Lab Supervisors, Senior GMP auditors and Consultants.

**Dr. R. A. Singh, Director, Regional Drugs Testing Laboratory, Chandigarh CDSCO, Directorate General of Health Services, Ministry of Health & Family** was the “Guest of Honor” for the Event. He covered in detail an important session on **Good Laboratory Practices (GLP)**. GLP specifically refers to a quality system of management controls for research laboratories and organizations to try to ensure the uniformity, consistency, reliability, reproducibility, quality, and integrity of chemical (including pharmaceuticals) non-clinical safety tests; from physio-chemical properties through acute to chronic toxicity tests.

Mr. Singh also covered the 16 requirements of L1 Schedule - Good Laboratory Practices & Requirements of Premises & Equipments.

---

*“We must realize that in the pharmaceutical industry there is no margin for error & second grade quality. One must follow good laboratory practices in the laboratory to generate accurate, precise and reliable data”*

---







Inaugural Session  
address by Dr. R.P.  
Singh, Secretary  
General, QCI

## Mr Arvind Kumar Mishra, GMP expert, covered the following sessions during the 2-Day Workshop

1. Why GMP is necessary in Pharmaceutical Industry
2. International GMP guidelines related to Injectable formulations and Radio Pharmaceuticals
3. National vs. Global GMP regulations
4. Role of Quality Management System (QMS) in Pharma Industry
5. Current trends of GMP Non-compliances –Indian vs. Global Scenario
6. Current International GMP Guidelines related to Pharmaceutical Industry
7. Difference between International Regulatory Inspections and Vendor Audits
8. Difference between Regulatory Inspection and Vendor Audit
9. Areas to be covered by Inspectors during an International GMP Audit
10. Importance of Documentation
11. Role of Inspector Undertaking GMP Inspection



Mr. Manish Kumar  
Jindal, CEO-NABET,  
taking feedback from  
the participants

## Key Takeaways from the Workshop

- a. Help implement into an organization the increasing legislation and guidance on goods & services within the pharmaceutical industry
- b. Enhance the inspection and training skills of the Controlling Officers of Indian drug regulators on advanced GMP
- c. Understand the role of inter-departmental QMS controls in the entire pharmaceutical supply chain, how to effectively document and ensure that the Standards are GMP Compliant, besides continually improving the systems



Participants  
attending the 2-day  
GMP Workshop



**7.**

*Granted 89 accreditations under Certification Bodies Program; and accredited 43 Inspection Bodies*

## National Accreditation Board for Certification Bodies

NABCB Updates



@QualityCouncilofIndia



@QualityCouncil



qualitycouncilofindia

April-June, 2018

55

## QCI Signs MoU to form Indian Biomedical Skills Consortium



Andhra Pradesh MedTech Zone Ltd. (AMTZ), Quality Council of India (QCI) and Association of Indian Manufacturers of Medical Devices, (AIMED) joined hands together to form the Indian Biomedical Skill Consortium (IBSC) by signing a tripartite agreement with an aim to strengthen the biomedical skill sector in the country. The MoU was signed by Dr Jitendra Sharma (MD and CEO, AMTZ), Dr Ravi P Singh (Secretary General, QCI-in absentia) and Mr Rajiv Nath (Forum Coordinator, AIMED) in the presence of Mr Sudhansh Pant (Joint Secretary, Department of Pharmaceuticals, Government of India) and Mr Shyam Sunder Bang (Chairman, National Accreditation Board for Certification Bodies, NABCB).

The purpose of the MoU is to develop an equivalence structure based on experience, skill and qualification for the Biomedical engineering sector. This would facilitate in providing certification for trainees after methodological assessment of skills & competencies, as per norms, thereby supporting in achieving global mobility of skilled biomedical workforce from India through international equivalence partnerships.

To facilitate the skills in the sector, a large number of assessment centres are being planned across the country where competency tests would be organized and these assessment centres would eventually become personnel certification bodies accredited by NABCB as per the requirements of ISO/IEC 17024. A Certification Committee chaired by Mr Anil Jauhri (CEO, NABCB) would develop the certification system.

Certification of Indian Biomedical engineers would help hospitals and other users to recruit staff on the basis of competence and

capabilities for specific fields. Manufacturers will gain from being able to export to USA and Europe with qualified technicians to install the equipment.

## First Accreditation under Yoga scheme worldwide

NABCB accredited the FIRST personnel certification body worldwide for the Yoga scheme as per requirements of ISO/IEC 17024. M/s APMG India Certifications Pvt Ltd. Bangalore, a subsidiary of a UK based certification body, earned the distinction after successful office and witness assessments. It has been accredited for certification of Instructors (Level 1) and Yoga Teachers (Level 2) under the Voluntary Certification Scheme for Yoga Professionals of the Ministry of AYUSH, designed and till recently operated by QCI.

With this unique and first-of-its-kind accreditation in the world for Yoga Scheme, which could justifiably be considered as another milestone for NABCB, it is now aiming for IAF mutual recognition arrangement for Certification of Persons scheme this year, which would bring along the benefit that its accredited certification bodies will be considered internationally equivalent.

## Indian National Standards Strategy (INSS) recognizes key role of accreditation



Indian National Standards Strategy (INSS) recognizes key role of accreditation. The Department of Commerce organized the 5<sup>th</sup> National Standards Conclave - its annual flagship event, on 18<sup>th</sup>



and 19<sup>th</sup> June, 2018 in New Delhi. The theme of the Standards Conclave for this year was “Implementing the National Strategy for Standardization”. NABCB was one of the sponsors and knowledge partners for the Conclave as it has been, since the first Standards Conclave in 2014.



At the Conclave, the Department of Commerce unveiled the Indian National Standards Strategy after a wide stakeholder consultation and consolidating recommendations emerging from the annual Standards Conclaves beginning 2014 – the strategy recognizes the key role accreditation and third-party conformity assessment are going to play in the quality ecosystem in India to make India a leading global player. NABCB was actively involved in finalizing the strategy document. The strategy suggests development of “Brand India Label” for global acceptance. It also urges the government to work on mechanisms to support MSMEs to develop and adopt the conformity assessment route for gaining international acceptance of products.



The agenda of the Standards Conclave was based on the four pillars and twenty-three goals of the Indian National Strategy for Standardization (INSS) and was aimed at coming out with specific recommendations that will enable in building the

implementation strategy for INSS and at building awareness among all stakeholders including industry, regulators and state governments.

## NABCB signs MoU with BEE

NABCB has signed an MoU with the Bureau of Energy Efficiency (BEE) on 28<sup>th</sup> May, 2018 to provide accreditation services to support BEE’s regulatory and voluntary frameworks. To begin with, NABCB would provide NABCB accredited Product Certification Bodies who will carry out activities as Independent Agencies for Monitoring and Evaluation to support implementation of BEE’s hugely popular Standards & Labelling (S&L) Programme for star rating of electrical appliances.



## Joint Annual APLAC PAC Meeting

The joint annual APLAC and PAC meetings were held in Kyoto, Japan from 4 June 2018 to 8 June 2018. The delegation from NABCB comprised of Mr Anil Jauhri, CEO NABCB, Ms Sashi Rekha, Director NABCB and Dr Aparna Dhawan, Joint Director, NABCB. The delegation attended various APLAC and PAC technical meetings like APLAC Technical Committee, PAC information committee; APLAC and PAC Joint General Assembly. Mr Anil Jauhri also attended the few closed meetings being an Executive Committee member of PAC. Director, NABCB participated in the SANAP workshop aimed at Strengthening Accreditation Networks in Asia-Pacific (SANAP) project which is funded by the German Federal Ministry for Economic Cooperation and Development (BMZ) to assist in the development of the regional accreditation infrastructure in the Asia Pacific region. The workshop had active participation from developing and emerging economies about their expectations from SANAP 2.

## APLAC Training on ISO 17011



The international standard for accreditation bodies, ISO/IEC 17011, has been revised in 2017. To sensitize the accreditation bodies on the requirements of new standard APLAC is organising training programs. A two-day training on the changes in ISO / IEC 17011 was organised by APLAC for its peer evaluators. The program was hosted by accreditation body of Hong Kong, HKAS between 12<sup>th</sup>-13<sup>th</sup> June, 2018. The training was attended by three persons nominated by NABCB which included Mr. Abhay Pathak, NABCB Assessor, Mr. Ajay Sharma, Joint Director, NABCB and Ms. Vani Bhambri Arora, Deputy Director. The training provided an insight into revised requirements of ISO/IEC 17011 and to have an international perspective on implementation of the requirements of this standard.

## NABCB Interaction Meeting with Consultants

NABCB organized interactive meetings with consultants on 19<sup>th</sup> April 2018 at Chennai, 24<sup>th</sup> May 2018 at Ahmedabad and 25<sup>th</sup> May 2018 at Mumbai. The purpose of these meetings was to discuss the importance of NABCB accreditation in improving and maintaining quality standards across the country and to understand the issues consultants have, in recommending NABCB accredited certification to their clients. These interaction meetings were attended by 32 consultants at Chennai, 24<sup>th</sup> at Ahmedabad and 25<sup>th</sup> at Mumbai.





**8.**

*50 Departments/ Ministries obtained technical services for implementing QMS (ISO 9001)*

## National Accreditation Board for Quality Promotion

NBQP Updates



@QualityCouncilofIndia



@QualityCouncil



qualitycouncilofindia

April-June, 2018

59



# Promoting The Drive For Cleanliness

*When the results of the Swachh Survekshan 2018 were announced, the excitement and anticipation among cities was palpable – a testimony to the way the survey had captured the mind space of the cities and citizens of the country*

Given the spirit of healthy competition, that has generated among cities around Swachhata, the Government of Telangana State intended to institutionalize a holistic integrated, sustainable environment and an eco-friendly Municipal Solid Waste Management in the Urban Local Bodies of the state, in tune with the Swachh Bharat Mission launched by the Government of India and the Swachh Telangana announced by Government of Telangana State. An MoU was signed between the C&DMA and NBQP in lieu of the above.



The office of Commissioner and Director of Municipal Administration (C&DMA) is the State Mission Directorate and the Nodal Agency for the implementation of Swachh Bharat Mission.

The National Board for Quality Promotion, QCI has set up a Project Management Unit (PMU) with the C&DMA, Telangana State in order to help the state to achieve its goal. The task of PMU (a team of 5 members including 3 experts from field of Sanitation and Solid Waste Management) is to give assistance to the 74 ULBs of the state in the implementation of the detailed project reports such that they are geared up to perform their best and sustain it. The team strives to work with a holistic approach of implementation of the policies of C&DMA on a ground level and aims to leave no stone unturned to reach out to the last possible stakeholder for a successful contribution to the mission of the state.



The long-term goal of the project is to enhance the existing Municipal Solid Waste Management system and thus improve the health and standard of living of the people around. Taking small steps today to make a cleaner tomorrow. As, in the words of Mahatma Gandhi – our future depends on what we do today.

*Ms. Rashi Sawhney*

**NBQP**



# Activities Under National Quality Campaign

## Industry 4.0

(1- Day Awareness Program)

*in Faridabad*

NBQP conducted an SMS Industry 4.0 program for enhancing global competitiveness of Indian Manufacturing Organizations on 12<sup>th</sup> May

## Taguchi Method

(2- Day Certificate Program)

*in Gurugram*

NBQP Conducted a 2- Day course on Taguchi Method to achieve better quality at low cost on 26<sup>th</sup>- 27<sup>th</sup> April

## People Capability Maturity Model

(1- Day Open House Awareness Workshop)

*in Delhi*

NBQP, in collaboration with MacLead Certifications, organized a 1-Day workshop. The People Capability Maturity Model is a tool that helps organizations to successfully address the critical issues

## Glimpses of Successfully Completed Programs



*Ms. Kokila Gaur*

**NBQP**

# Project Planning and Implementation Division (PPID)

## Our Ongoing Projects

### Out-of-School Children-NCPCR

QCI is working with National Commission for Protection of Child Rights (NCPCR) to evaluate the effectiveness of the special training centers (STCs) in terms of mainstreaming of out-of-school children. QCI is in process to conduct the surveys in 150 STCs across 5 zones of India.

### Gujarat Yatradham

QCI was appointed by Gujarat Pavitra Yatradham Vikas Board (GPYVB) for the “High-end cleanliness Project” of their famous eight yatradhams that attract highest tourist footfall in Gujarat. GPYVB has engaged four cleaning agencies (with two locations allotted to each) to carry out 24X7 cleanliness in and around temple areas, roads from railway station and bus stands connecting to temple, Ghat areas etc. at the following eight locations - Ambaji, Shamlaji, Somnath, Dwarka, Palitana, Girnar-Junagadh, Dakor and Pavagadh.

### Gujarat Tourism Cleanliness Project

QCI has been engaged by the Tourism Corporation of Gujarat Limited (TCGL) as a super-monitoring agency for conducting assessment and evaluation of the “Cleanliness project” being undertaken at forty-eight identified tourist locations across Gujarat and to furnish a quarterly report based on the findings of the assessments. The performance assessment of the locations is done in 3 stages- Documentation, Direct Observation and Public Feedback; based on this a cleanliness scorecard and index have been prepared to mark these agencies as per the key performance indicators.

### Crime Victimization Survey of Delhi Police

The Delhi Police wants its citizen-centric and other services to be assessed by a third-party independent assessment body. QCI has agreed to take up this role and assist Delhi Police in assessing and thereby providing findings and analysis for improving all its services.

### Performance Rating of Concessionaires, Contractors, Consultants and Recognition for Best Performers in Highway Sector

In order to increase efficiency and transparency in the highway construction sector, MoRTH intends to implement a performance monitoring and rating system for the agencies involved in road construction and maintenance process, and further incorporate the results of the rating exercise in the procurement process for highway projects.

### SBM-ODF+ & ODF++

The MoHUA has introduced the ODF+ and ODF++ protocols for cities/towns who have been certified and recertified once as ODF. The ODF+ and ODF++ framework includes aspects such as improved access and proper maintenance of toilets (individual, community and public) and safe collection, conveyance, treatment and disposal of all faecal sludge & sewerage waste.

### Third-Party Sampling, Testing & Analysis of Coal

QCI has undertaken Third Party Sampling, Testing and Analysis of coal supplied. Tripartite agreements of volume of 90 million metric tonnes have been signed for conducting the third-party sampling, testing and analysis. QCI has already sampled 30 million metric tonnes in due course of 11 months.

### Google Toilet Locator

We are proudly working on this initiative under Swachh Bharat Mission - Urban, in which MoHUA has partnered with Google Maps to list all publicly accessible toilets across the country. The advantage of the listing on Google Maps is that the users can rate and provide rating and additional feedback of the facility. It can benefit MoHUA as well as local city administration by making general upkeep easier and complaint resolution faster.



## Swachh Retail Outlets

Swachh Retail Outlets is a sanitation assessment and grading of 4200 retail outlets across 50 cities in India under the major three Oil Marketing Companies - Indian Oil Corp. Ltd., Bharat Petroleum Corp. Ltd. and Hindustan Petroleum Corp. Ltd. The project aims to assess the progress made by the Oil Marketing Companies under Swachh Bharat Mission, identify the service level of each retail outlet and act as a trigger to motivate them to improve their cleanliness and sanitation facilities.

## Assessment of 20 Airports of India on Pre-Determined Terminal Facilities and Infrastructure

QCI conducted an independent assessment of 20 airports of India which are under Airport Authority of India on pre-determined terminal facilities and infrastructure. The objective of the project was to provide an in-depth understanding of the findings of the airports.

## Assessment of Four Support Services in 6 Medical Colleges Attached Hospitals in UP

QCI assessed the four support services at 6 medical colleges attached hospitals in Kanpur, Allahabad, Gorakhpur, Meerut, Agra and Jhansi. The assessment was evaluated on following 4 support services viz Housekeeping/Cleaning Service/Laundry Service/Sterilization/CSSD Service Bio-medical Waste Service.

## Third-Party Quality Assessment of Fast-moving Products Manufactured at Alimco, Kanpur

ALIMCO, an organization under the department of Empowerment of Persons with Disabilities, Ministry of Social Justice & Empowerment, intends to conduct Third-Party Assessment on quality and functional performance of 13 fast-moving products at Kanpur Production Site.



## Assessment of Toilet Infrastructure and ODF Verification for Uttar Pradesh

QCI is working on this initiative under Swachh Bharat Mission - Rural. An assessment of toilet infrastructure and ODF verification will be conducted under Panchayati Raj Department of Uttar Pradesh. QCI will be covering 1575 villages including 520 ODF villages across 75 districts of Uttar Pradesh.

## Quality Assessment of Erstwhile R-APDRP (UNDER IPDS)

QCI has been engaged by the Ministry of Power (MOP) to conduct quality assessment of erstwhile R-APDRP (Restructured Accelerated Power Development and Reforms Program) under IPDS (Integrated Power Development Scheme). The R-APDRP scheme started in 2008 with an aim of reducing the AT&C (Aggregate Technical and Commercial) losses of the DISCOMs and improving the quality and reliability of power by providing them with central assistance.

# An Approach to Understand a Service Delivery Model



**Mr. Arijit Bhattacharyya**  
General Manager, Technical Services, IFGL

Services are omnipresent and affect our daily lives in several different ways. Among variety of service models proposed, the Gronross Model and SERVQUAL Model are popular. The latter especially (i) identifies the gaps between the customer expectations and actual delivery of services (ii) dimensions of service quality.

In this context, it is worthwhile to consider that the extent of “human interaction” and customization (in several cases) between consumer and provider vary significantly - while ATM is fully automated, a service such as “Day Care for Babies” involve lot of human interactions. Same is true for healthcare services and educational services too. A Subway sandwich is fully customized while a local sweet shop offering “laddoo” and “gulab jamun” do not customize – consumers buy what they see. Illustration below attempts to show a possible relationship between types of services vis-à-vis customization and standardization:-



**Services in Relation with Customization and Standardization**

These experiences build up consumer expectation. Coupled with what consumers had experienced in past and what they have been told by others and service provider himself, an idea of how they can get serviced in future gets framed up.

An attempt is made here to take note of different factors affecting the quality of service delivery. Most common aspects of STEE Model (of appropriate service delivery) are:

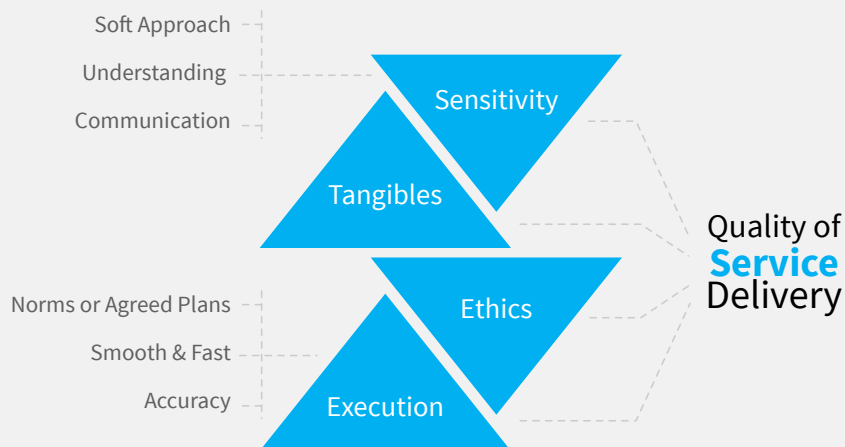
## Sensitivity

There are three sub-aspects here. First one, the service man is expected to have a *SOFT APPROACH* ; nothing loud or garrulous in terms of how he gets perceived. Deviation from accepted and standardized norms, like shabby appearance, gaudy colour clothing, impolite behavior, unpunctuality etc. will get noted as those which do not conform to *SOFT APPROACH*.

Second, *UNDERSTANDING* the consumer needs and appreciating the difficulties he faces, go a long way in planning of different services. Apart from knowing the exact needs, empathizing with consumer is helpful.

Next is quality of *COMMUNICATION*. Clear, concise answer covering estimates, product features, service features etc. get appreciated. Few like to be beaten around the bush.





## Tangibility

All tangibles connected with services influence users. Neat and comfortable waiting rooms in treatment centers, properly attired industrial repair worker with necessary tools and tackles, punctual trains with tidy compartments and clean washrooms, easily negotiable app for radio taxi etc. are examples of how related tangibles influence consumer perception. Where human interphases are involved, a well written technical report of a service man, product picture or an industrial drawing of a technical product, accurate billing, a “minutes of meeting” (MoM) with customer, office internal reports etc. are few more examples. The tangibles lay credence to delivered services.

## Ethics

When it comes to typical services like diagnosis of a patient and subsequent recommendations on treatment and repair works (anything from a white good to bulky machinery), ethics have started playing a huge role. Haven't we heard of inflated bills from healthcare providers? Or unnecessary health tests being prescribed? In case of repair works, replacement of a costly spare part seems to be the safe way out, when an actual “hands on repair” might have fixed the issue. All these bring in to focus the lack of ethics in rendering these kinds of services; total disregard of consumer in the garb of technicalities (of the subject involved) destroy consumer trust.

## Execution

Rendering a service involves three sub-aspects which influence customer satisfaction – (i) services implemented as per standard, accepted *NORMS* or an agreed *PLAN* ; changes, if any, may get deliberated and agreed upon prior to actual execution (ii) *SMOOTH* and *FAST* execution always get appreciated (iii) The degree of *ACCURACY* involved in getting the services executed. All these three sub-aspects are function of knowledge about the product or the services planned.

## References

- Dale H Besterfield, TQM, Pearson Education, 3<sup>rd</sup> edition
- Jay Heizer., Operations Management, Pearson Education 9th Ed., 2009.
- Parasuraman, A. et al. (1986) *SERVQUAL: A Multiple-Item Scale for Measuring Customer Perceptions of Service Quality*, Marketing Science Institute, Report, pp. 86-108.
- Grönroos, C. (1982) “An Applied Service Marketing Theory”, European Journal of Marketing, Vol. 16, No. 7, pp.30-41

# Media Education at Crossroads: An Academic Critique

---



**Dr. Kulveen Trehan**  
Assistant Professor, GGSIPU

Explosion of media became a salient feature of the new economic policy adopted in 1991. Interventions in communication technology in the 1990s opened up opportunities for various formats of media in the Neo-liberal India. The advent of satellite led to the arrival of globalization of television at the turn of the millennium. The print media too expanded to include launch of small, medium and local newspapers and magazines. Overall, the media scape i.e. news, entertainment, advertising and cinema saw significant expansion, diversification and growth in the last three decades. The influx of multinational corporate organizations in media industry made media business a sought after one. Media was now in need of trained and talented professionals to sustain the momentum. This need gap stirred a debate on the nature and scope of media education in India.

## Media Education in India: Its Conservative Past

After Independence, many universities started a journalism department to offer undergraduate programmes in Mass Communication. The focus, however, was on teaching journalism theory and practice; non-news content was minimalistic. The curriculum of most courses included deep insights into the news media and the freedom struggle, basic writing skills and newspaper business management. Specialized centers of learning were set up for film and electronic media. Before the thrust of globalization and liberalization, media education was limited to public funded institutions both niche and generic in nature.

## The Mushrooming Era

In the post liberal era, it all changed. Media was the most sought after academic programme. Private sector jumped headlong into

media education. Private institutes and Universities designed multiple programmes in media studies. The focus was clear: imparting professional skills to students in the field of media. Communication technology, state-of-the-art studios and equipment became the locus standi. It was to accouter them with specific skills to fit into the roles designed by the newly born media industry. The demand for professional skills in the industry saw a meteoric rise in students vying for the media courses. Media schools mushroomed all over India. Opening up of economy brought in the self-financing model in higher education.

## The Nomenclature Conundrum

BA (Journalism), BJ, MJ, BJMC, MJMC, MA (MC), MSc (Mass Communication), MMC. Different programme names were inked as curricula struggled to develop a clear line of thought. Very often, the programme name stood in contrast to the contents in the syllabus.

## Syllabus became a Contentious Issue

While the social scientists insisted upon the need to integrate cultural studies, literary schools and theories in media programmes, the practitioners scathingly disagreed. Capitalistic industry was hasty in its dismissal of social science theory. Media academicians needed to be more eclectic now. For they had to learn the art of blending political, social and economic environment in media mix without interfering with the unique nature of media studies as a discipline and a stream. The syllabus often battled hard to formulate its objectives. Media had positioned itself as a professional space in the new India. Therefore, employability must be factored in teaching, research and training.



## Pitfalls of the Self-Financing Model

Policy wise, government stopped giving grants to the new departments in the last 25 years and that resulted in starting a department or an institute in a self-financing mode, where the institution raises the funds to run the courses on its own without any support from the government. This became a double-edged sword. While one side it allowed new courses and innovative curricula, it led to attrition of quality in education. Especially in media education where infrastructure and teaching quality is a key component to the merit of any programme. Makeshift infrastructure, less qualified teaching faculty and admission to students without aptitude tests became the order of the day. Media institutes were reduced to shops selling media courses enveloped in mediocrity. This practice of churning out half trained, ill prepared students has affected the entire media discipline in the last five years. The industry vehemently expresses its disappointment at the deteriorating quality thereby increasing the gap between aspiration and achievement for the students.

## Shine off the Distinguished Media Departments

While reputed universities continue to attract media aspirants across the country, the sheen clearly seems to be waning. Government policies no longer encourage spending on research and innovation often leaving the media departments in dearth of resources. No fresh appointments have been a key factor in the stagnation of these departments. Cuts on research leads to repetitive PhD thesis devoid of fresh insight. For the academia, the funding bodies are now few and far. Research proposals beg for attention but the funds have dried up. Most universities have discontinued the faculty research grant schemes shutting down new ways of evolution in media education.

## Is it all over for Media Education in India?

While it is too early to write an obituary of media education in India, the crisis is quite grave and raging. A revival requires committed stance and steadfastness. It needs vision, mission and dedicated response to correct the course. We must envisage higher education in media entrenched in the principles of freedom, justice and equity. To prepare free and responsible media, the academia must encourage multi-disciplinarity in thought and practice.

So, should media education merely serve the industry? No, the answer is a vehement 'No.' It needs to be inclusive and not exclusive. The challenge is how to convert inclusiveness into an aspirational new order. At the outset, the political economy of media industries need to be integrated in our teaching curriculum to be able to cultivate a media perspective to events and issues. Instead of a social science approach to media education, we must introduce a media-based approach to social communication. Secondly, the media academia and industry must create mutually agreed upon guidelines to create a symbiotic relationship.

# Measurement Systems Analysis (MSA): What & Why



Mr. M K Somanathan

Head, Quality Management System,  
Ashok Leyland

*The objective of this article is to briefly explain what is Measurement Systems Analysis (MSA), its purpose, some of the fundamentals on MSA, the role of Statistics in MSA application and the benefits of having MSA in the relevant work places*

## MSA History in brief

In Indian industries, until 1990, there was no much of focus on MSA and we were keen in applying the Statistics into Manufacturing processes only, not into inspection processes. The very fact is that when manufacturing can have variations (both System cause variation, which are inevitable and assignable cause variations, which shall be removed), an inspection process will also be influenced by such variations. This was not focussed and studies until 1990.

The change came during the QS 9000 period (Quality Systems 9000, initiated and managed by Automotive Industry Action Group (AIAG), when the 3 majors of automobiles, namely Chrysler, Ford and General Motors published 7 Supplier Development Manuals at the beginning of 1990s. One among those 7 manuals was MSA manual also, which helped many organizations across the world to study and analyse their inspection process, using the statistical concepts.

When QS 9000 was replaced by ISO / TS 16949-1999 (1<sup>st</sup> Edition), which is an Automotive Quality Management Systems Standard, it mandated the MSA guidelines to be applied by Automotive also, as a part of QMS certification. This has made MSA popular and drawn the interest of many in India too.

## Purpose of MSA Studies

Measurement Systems Analysis Studies are making us to consider and analyse the variations in the measurement systems as a whole, which in turn may influence the output of an inspection process. It would be a surprise to many that approximately 30% of the variations (with reference to the total variations) are contributed by Measurement Systems alone. In simple words, what we consider as Manufacturing Sigma (in turn Process Capability results), 30% of these results are influenced by Measurement systems.

This justifies a systematic study on those Measurement Systems and putting our attempts to eliminate or at least reduce such variations. Is this easy? The answer would be 'no', but possible if we ensure the following points:

## How to start apply MSA and improve our approach?

1. Make the concerned to first get a better insight on Statistical Process Control Techniques
2. Fundamentals such as difference between Sigma and Sigma Cap to be properly understood
3. People concerned must be familiar with Statistical tables such as t-table, d2 star table and also the concepts such as SWIPE (Standard, Work Piece, Instrument, Person and Environment)
4. Familiarity with the basic concepts on MSA & the Role of Statistics in to MSA



- 5. Various methods present in MSA and when to apply which method
  - 6. Last but not the least, physically performing the Studies and computing using calculators in the beginning stage, not just depending on some Soft-wares. This will ensure the proper understanding of the MSA concepts and their application
- When the 1:10 rule on Least Count is strictly followed, is there a need for MSA studies?
  - Yes. Very much. The very idea of MSA is to know the Variations from the Measurement system satisfies the Process variations from the Manufacturing process, not comparing to the tolerances
  - Whether MSA studies are to be performed first or the SPC studies?
  - Interesting! If we need to perform MSA studies, we need the parts for study and if we have to conduct the SPC studies, we need to first ensure the fitness of the equipment for the SPC study. The simple answer would be -- both SPC and MSA shall be performed at the same time. There are 4 rules given in the 4th edition of the MSA manual, in page # 121

## Briefing on the various studies done on MSA

On Variable type inspections systems such as a Vernier calliper, Micro meter and Air gauges, stability checks are must. Studies such as Linearity, Gauge Repeatability & Reproducibility studies and Bias studies are also important to perform, as applicable.

On Attribute type inspection systems, we may perform Kappa Analysis, Effectiveness, False rate and Miss alarm studies. Grey area shall be determined through Signal detection method.

The criteria for acceptance is given in the AIAG manual and also at times customers may provide specific to them.

## Agencies involved in such MSA related studies

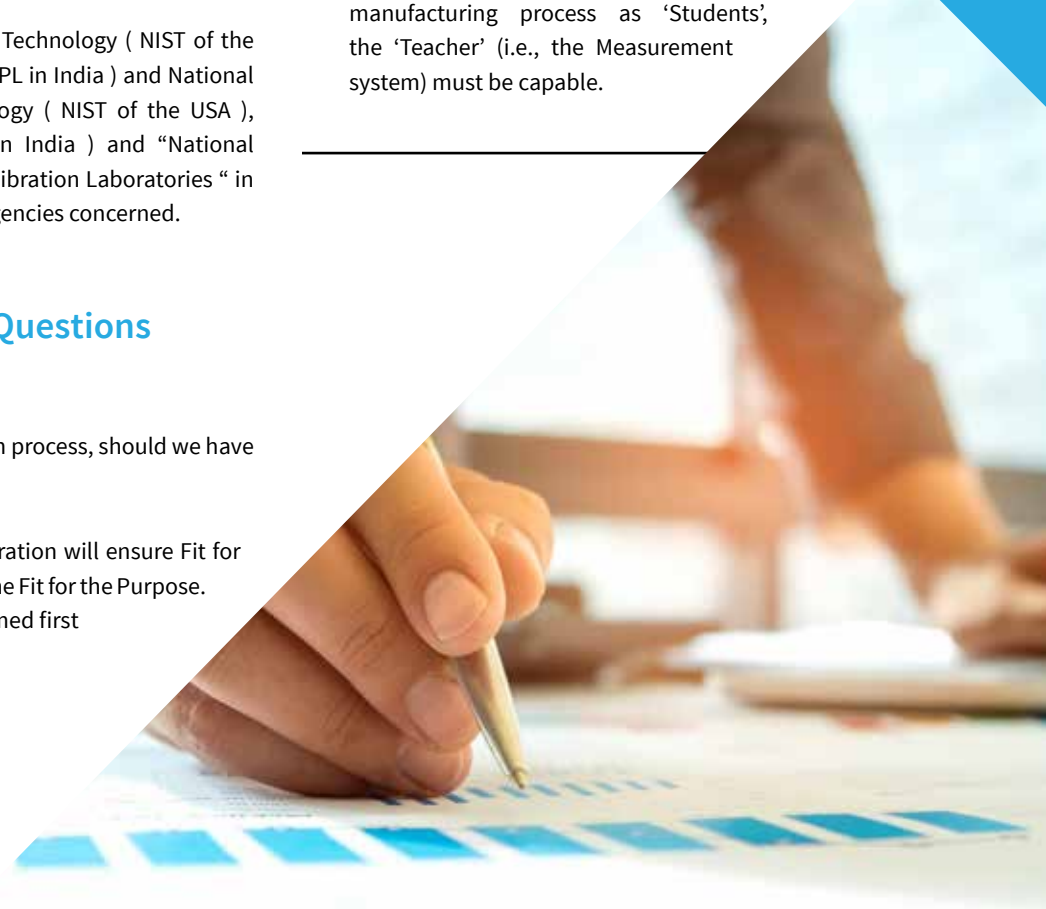
National Institution on Standards and Technology ( NIST of the USA ), National Physical Laboratory ( NPL in India ) and National Institution on Standards and Technology ( NIST of the USA ), National Physical Laboratory ( NPL in India ) and “National Accreditation Board for Testing and Calibration Laboratories “ in India, shortly known as NABL are the agencies concerned.

## Some Frequently Asked Questions (FAQs) on MSA

- When we have a Robust Calibration process, should we have to perform MSA studies also?
- The answer is ‘certainly Yes’. Calibration will ensure Fit for use and MSA will help in knowing the Fit for the Purpose. Obviously calibration to be performed first

## Conclusion

For dealing with the Variations in every manufacturing process, it is mandatory to deal with the variations present in the equipment being used for ensuring the manufacturing outputs. If we consider the components being produced from any manufacturing process as ‘Students’, the ‘Teacher’ (i.e., the Measurement system) must be capable.



# Improving the Quality of Life in India through Sustainable Urban Development



Mr. Kedar Patwardhan

Director, Sucoso Services Private Ltd.

*With the honourable Prime Minister Narendra Modi's vision of constructing 100 Smart Cities, municipal authorities across India are gearing up to re-imagine and rejuvenate urban areas under their administrative control with an aim to be a part of 'New India'. For many, it's an opportunity to reflect on the rapid uncontrolled urbanization of the past and lay the foundation for sustainable future*

With the honourable Prime Minister Narendra Modi's vision of constructing 100 Smart Cities, municipal authorities across India are gearing up to re-imagine and rejuvenate urban areas under their administrative control with an aim to be a part of 'New India'. For many, it's an opportunity to reflect on the rapid uncontrolled urbanization of the past and lay the foundation for sustainable future.

Nonetheless, given the country's unique challenges, municipal authorities will have to fight uphill battle to overcome financial, cultural, social, environmental, infrastructural, technological and resourcing hurdles before winning the smart city badge.

In the recently published City Momentum Index (CMI) 2017 by JLL, India topped the chart with 6 metro cities namely Bengaluru, Hyderabad, Pune, Chennai, Delhi and Mumbai joining the club of world's 30 most dynamic cities. On the contrary, none of the Indian cities appeared in the top 100 in Quality of Living index 2017 by Mercer. While in the United Nations Happiness Report 2017, the country fared poorly ranking 122<sup>nd</sup> among 155 countries. These numbers, essentially an alarming sign for municipal governments, are reflections of administrative insensitivity to adverse social or environmental impacts of rapid uncontrolled urbanization that has taken place in India over past few decades.

With Smart City initiatives, this situation needs to be changed as a matter of urgency to ensure long-term sustainability of Indian cities while promoting economic growth. Smart City should not just remain as a buzz word; it should become a mantra for urban development which follows democratic processes, sound environmental practices and socially progressive roadmap.

Under this backdrop, Environmental and Social Impact Study (ESIS) has acquired a strategic importance like never before in the Indian Smart City context. After all, transformation to New India will be an 'eco-socio-techno' systems change.

ESIS, along with engineering and economic analysis, provides a holistic framework for decision making in urban development context that aims to bring about stable and environment friendly economic growth through participative social change. According to the International Association for Impact Assessment (IAIA), Environmental and Social Impact Study entails "identifying, predicting, evaluating and mitigating the biophysical, social, and other relevant effects of development proposals prior to major decisions being taken and commitments made".

Environmental and Social Impact Study is a structured and multi-tier process which follows the principles of participative, open and transparent governance (as seen in Figure 1). It provides a decision aid during policy making, programme planning and project execution (PPP) activities. When performed in the policy making settings, it helps develop effective standards for environmental protection. When applied to programme planning, it helps assess collective impact of urban development activities on the environment and society. When used across the development project lifecycle, it helps implement policy complied, locally acceptable and environmentally positive change.

Effective ESIS takes a cross-sectoral approach to assess the impact of urban development activities on physical, biological and social environment and formulate actionable risk

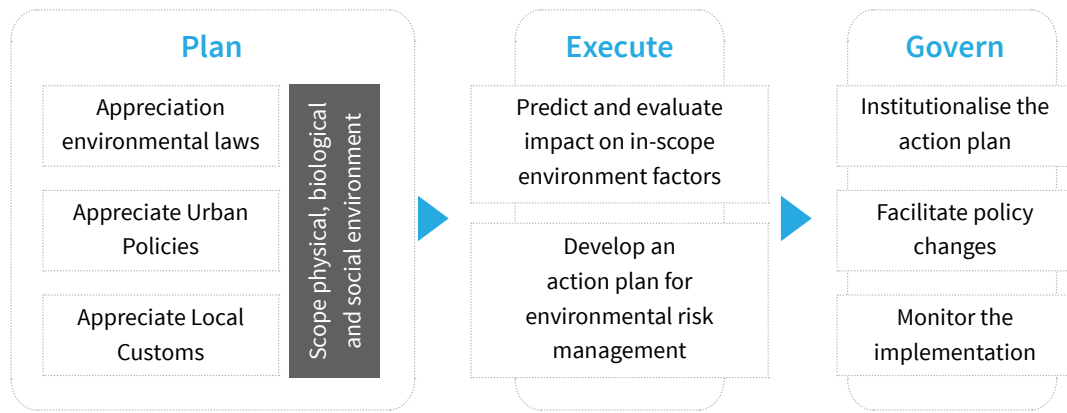


Figure 1: Environmental and Social Impact Study Methodology

mitigation strategies for environmentally sustainable economic development. Generally, it begins by appreciating the applicable policy environment. Policies and laws provide guiding principles for ESIS outcome. Along with the formal policy knowledge, it is also imperative to appreciate the customary environment in which the development project is carried out. Understanding of local customs helps in developing context aware solutions which are locally acceptable.

As a multi-dimensional analysis, ESIS should take into consideration multiple stakeholder views. Different stakeholders have different reservations, expectations and aspirations from the study. As such, it is necessary to perform a stakeholder analysis to balance the needs of different interest groups. Figure 2 describes a typical stakeholder management scenario for ESIS.

Problem prediction and mitigation forms the central part of this scientific enquiry. Both qualitative and quantitative techniques need to be adopted to paint the problem picture, devise measurable mitigation strategies and create an action plan for environmental protection and social alignment. The final stage in the ESIS is of institutionalization and monitoring of environmental protection plan to enhance positive effects of urban development project. Care must be taken to ensure that the implementation of environmental protection plan will not become a hurdle in the development process. An optimal trade-off between economic development and environmental protection is a key to sustainable development.

As objective impact assessment is imperative for impartial and informed decision making, specially trained professional consultants can play a crucial role in helping municipal authorities and urban development agencies incorporate environmental and social considerations into smart city development projects.

Such experts would possess multi-disciplinary knowledge in urban planning, environmental law, environmental engineering, social economics and data analytics, and would have acquainted themselves with local culture and customs.

The time has now come for us to think of the urban as ‘living places planned for sustainability, designed for environment and maintained for social progress.’ By ensuring long-term viability of urban infrastructure, ESIS promises to improve well-being in Indian cities cost-effectively. Rightly done, ESIS also opens the door for securing external financing for development projects as leading donors now favour long-term viability. The cost of not making ESIS an integral component of development planning is a lost opportunity for gifting us and generations to come a better future.



# Artificial Intelligence Vs Human Intelligence



**Mr. Gunjan Chowdhury**

Technical Advisor, Quality & Process,  
Toshiba India Pvt Ltd., Gurugram

*Artificial Intelligence (AI) can improve a company's operation and performance. Some intelligent people think that someday AI will supersede Human Intelligence who creates AI.*

Industries, which can afford to buy highly sophisticated computerized programmed machines in Manufacturing Lines for perfection, are very happy and satisfied by the improvement of Quality and rejection in ppm. We are still in learning and initial stage of this transformation but have already started observing that such machines are improving their performance and perfection in various manufacturing lines.

It is difficult to distinguish between cause and effect of AI. But AI is already empowering Engineers to deliver better and better every day and spend more time on Quality Testing before delivering the product to end-users as human intelligence is a must for final Quality check.

It may also be considered that companies that are making so many different types and models of automatic computerized machines in huge quantity, lose track of the performance of their machines with the end-users. Companies lose connectivity and communication with their customers about the present status of the machines or satisfaction level of the customers. Many companies in India have no tracking records after 5 years of their supply of such automatic computerize machines. We should be thoughtful and plan for problems ahead of time. This area has a huge scope to be explored in order to fill up the gaps.

The perfection of performance of such machines is necessary and a must because as an emerging India, which is the future of manufacturing hub of Japan-Europe-America -Korea, will ask

for quality to satisfy as pre-condition otherwise 'Make in India' dream will be short-lived.

We observed that in many top Indian managers the culture and mindset for providing proper training is missing when an experienced Engineer or Technician is employed. Ignoring or avoiding training before starting work with new machines, most of the time invites many unforeseen problems for company as a whole.

Now hundreds of Japanese companies have established their manufacturing facilities in India. For any new employee in those companies it is mandatory to go through extensive training until knowledge transfer is complete and employee passes the tests. This is Japanese Culture - mind set - system - rules of the company.

The training process might take some time like a month or so for a new employee to be fully trained. But it has been observed that the employee becomes fully productive from the day one and delivers results with "Zero Defect".

We can design a machine install perfect software program for its operation, but the question is : "Will this machine have any desire? any creativity? Will this machine always run unattended?"

Experiments suggest that there is a gap between the logic of the software installed in the machine and mindset, knowledge level, expertise of the operator of the machine. A number of times we found that initial programming has been lost due to lack of knowledge transfer and training of the users.

Quality is desire, Quality is demand, Quality is attitude wherein compromise has no place. To achieve quality for customer satisfaction and customer delight, every company has a big role to develop passion and commitment to systems for their





---

employees through various human resources activities and training to achieve India's dream of ***"Make in India -Zero Defect -Zero Reject."***

When the perfect quality is achieved as per customer's requirement, there will always be a balance between Artificial Intelligence and Human Intelligence.

---



Advertisement/  
Advertorial  
**Tariffs**

**QUALITY**  
A QCI PUBLICATION  
April - June 2018  
**INDIA**



Half Page

Full Page

Inside Cover

Back Inside

Back Cover

CASUAL (PRE-INSERTION COST)

Non-Members	₹ 18,000	₹ 30,000	₹ 80,000	₹ 90,000	₹ 1,00,000
Member (10% Discount)	₹ 16,200	₹ 27,000	₹ 72,000	₹ 81,000	₹ 90,000

ANNUAL CONTRACT (FOUR INSERTION COST)

Non-Members	₹ 70,000	₹ 90,000	₹ 2,20,000	₹ 2,00,000	₹ 2,50,000
Member (10% Discount)	₹ 63,000	₹ 81,000	₹ 1,98,000	₹ 1,80,000	₹ 2,25,000

**JACKET AD: ₹ 1,60,000**

\* Payment to be made by cheque/ DD drawn in favour of Quality Council of India

**Mechanical Data**

Bleed Size : 20.3 cms x 28 cms  
Non-Bleed Size : 1 cms x 22 cms

**Other Informations**

Language : English  
Frequency : Quarterly

For further details, please contact: **Ms. Anam Qureshi** - anam.qureshi@qcin.org | +91 9899514911  
**Mr. Sanjay Singh** - sanjay.nbqp@qcin.org | +91 9811058618

**Quality Council of India**

Institution of Engineers Building, 11<sup>th</sup> Floor, 2 - Bahadur Shah Zafar Marg, New Delhi - 110002, India.

**Tel:** +91-11- 2337 9321 | **Fax:** 91-11-2337 8678 | **Email:** info@qcin.org

## Professional Membership Scheme

Dear Quality Aspirants / Professionals,  
Warm greetings !

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.

This "scheme" is open for all as per their eligibility and it would give you an edge over the other Professionals/ Corporates as QCI has earned the reputation of being a very credible, successful and highly sought after accreditation/ registration institution. Besides getting the membership certificate, a copy of quarterly "Quality India" magazine and an opportunity for placing articles/ads in it, discounted registration for the Awareness/Training programs & events such as Conclaves, Seminars/Workshops, access to the upcoming Knowledge Repository etc. will be provided.

If you have the passion to become a part of this movement for quality promotion, stay abreast with the latest on the quality front, connect with other professionals, advance your knowledge and career, or grow your reputation as a thought leader, this membership would put you on the right track.

**Best Regards,**  
CEO-NBQP(QCI)

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

**Work: +91-11-23321274 / 23323415 | Ext: 307 / 302**  
**Mob.: 09654170686 / 09717062729**



# 8 GLOBAL BUSINESSES

## GLOBAL LEADER

TESTING, INSPECTION  
AND CERTIFICATION

**1,400**

OFFICES  
AND LABORATORIES  
IN 140 COUNTRIES

**69,000**

EMPLOYEES

**400,000**

CLIENTS

**€4.55**

BILLION IN REVENUE

**Bureau Veritas** is a world leader in Testing, Inspection and Certification, helping clients across all industries address challenges in quality, health & safety, environmental protection (QHSE) and social responsibility.

**BUREAU VERITAS, INDIA**  
Marwah Centre, 6th Floor, K. Marwah Marg  
Off Saki-Vihar Road, Andheri (E), Mumbai - 400 072  
Tel.: +91 22 6695 6300  
bvindia.corporate@in.bureauveritas.com  
www.bureauveritas.co.in



**Move Forward with Confidence**





**Services Offered**

**CERTIFICATION:**

QMS, EMS, OHSAS, Automotive, Telecom, Railways, Social Audit, Food & Medical Devices

**TRAINING:**

Business Process Improvement, Management Systems, Behavioral & Safety Training.

**INDUSTRIAL SERVICES:**

Third party Inspection Services in Telecom, Automotive, Oil & Gas, Infrastructure, Machinery & Equipment, Coal etc.



- Q** Committed to process efficiency.
- Q** Ensuring People Safety
- Q** Social well being and Environmental care.
- Q** Certification can help you in achieving
  - global recognition
  - appreciation from your clients and stakeholders
  - a culture of continual improvement



- 1200+ Employees
- 600+ Field Engineers
- 35+ Structural Engineers
- 100+ Telecom Support Staff
- 50+ Managerial Staff
- 2 Design Centre in Delhi & Bangalore



**Quality Austria Central Asia Private Limited**