

Center of Excellence (CoE) on IT for Industry 4.0

NPC is the apex national level organization to promote productivity culture in India. Established under the Department of Industrial Policy and Promotion of the Ministry of Commerce and Industry, Government of India in 1958, it is an autonomous, multipartite, non-profit organization with equal representation from employers' & workers' organizations and Government, apart from technical & professional institutions and other interests. NPC is a constituent of the Tokyo-based Asian Productivity Organisation (APO), an Inter Governmental Body, of which the Government of India is a founder member.

Industry 4.0 or the fourth industrial revolution as it is called, is emerging globally as a powerful force and is being touted as the next industrial revolution. It is characterized by the increasing digitization and interconnection of products, value chains and business models. Industry 4.0 is driven by an amalgamation of emerging technologies like data volumes, computational power, Internet of Things (IoT), business analytics, augmented reality, artificial intelligence, elemental design, simulation, advanced robotics and cyber-physical systems. Industry 4.0 would mean the convergence of real and virtual worlds - the next phase in bringing together conventional and modern technologies in manufacturing.

Today, the global manufacturing sector is undergoing a structural transformation. A new paradigm that is in tune with the digital 21st century is fast emerging which is driven by Industry 4.0 (I 4.0). In this scenario, the Center of Excellence (CoE) can be very effective in collection of information, development and dissemination of knowledge/information, facilitation in capacity building of industries in co-ordination with various stakeholders. This will result in the "Smart Factory", which is characterized by versatility, resource efficiency, ergonomic design and direct integration with business partners.

In this scenario, NPC has established a "**Centre of Excellence on IT for Industry 4.0(CoE: IT for I4.0)**" in collaboration with Asian Productivity Organization (APO).

Scope of CoE

- CoE will function as a knowledge center for the entrepreneurs, start-ups regarding concepts of information technology and its application in Industry 4.0
- CoE will also disseminate this knowledge through workshops, lectures and training programmes
- CoE will also coordinate with APO for guest faculty to disseminate knowledge regarding practical applicability of industry 4.0 in other countries
- CoE will also facilitate display of latest technology / demonstration projects for helping the new start-ups.
- CoE will also facilitate establishment of CoEs in other non- APO countries especially in Africa

NPC has signed a Memorandum of Understanding (MoU) with National Small Industries Corporation Ltd. (NSIC) to have a demonstration facility at NSIC along with other areas of collaboration. As per the activities given in the proposal, NPC had organized a Workshop on Industry 4.0 and Development of Roadmap for CoE: IT for Industry 4.0.

Workshop on Industry 4.0 and Development of Roadmap for CoE: IT for Industry 4.0

National Productivity Council organized a three days National Workshop on “Industry 4.0 and Development of Roadmap for CoE: IT for I4.0” during 6th-8th June, 2017 in NPC premises. The CoE: IT for I4.0 was formally inaugurated Mr S. N. Tripathi, Additional Secretary & DC-MSME, Ministry of MSME in the presence of other dignitaries as given below:

Sr. No.	Name	Designation	Organization
1	Mr. Ravindra Nath	CMD	National Small Scale Industries Corporation
2	Mr. Sanjeev Gupta	Additional Secretary	Department of Industry Policy & Promotion, Min. of Commerce & Industry, GoI
3	Ms. Kalpana Awasthi	Director General	NPC
4	Mr. Joselito Bernardo	Director	APO

Photographs of the inauguration event to launch CoE:IT for I4.0 :



a) Launch of CoE IT for I4.0 by Chief Guest & other Dignitaries



b) Welcome speech by Mr. S N Tripathi, IAS, Additional Secretary & DC, Mo MSME c) Welcome speech by DG, NPC



d) Welcome speech by Mr. Joselito C. Bernardo, Director, APO Secretariat

All above dignitaries stressed the importance of I 4.0 and expect it to scale up manufacturing industry in India and contribute to Indian economy.

The speakers invited for giving deliverables in the workshop are from diverse industries like Bosch Automotive Electronics (AE), RBEI, WIPRO, IMProve Academy, Fraunhofer, IT experts from National Informatics Centre, Sector Skill Council etc. The participants from various organizations including IT sectors, Government organizations etc., actively participated in the workshop and gave their views on how I4.0 concepts can be effectively implemented across the organizations in India.

Photographs of the speakers during the workshop on CoE: IT for I4.0:



e) Mr. Susok Volker, Lead Data Analyst, Bosch addressing session f) Huang Thu Ngo, APO Program Officer



g) Ms. Seema Gaur, Economic Advisor, DIPP addressing session

Subsequent to successful completion of the workshop, a Roadmap for Center of Excellence (CoE) on IT for Industry 4.0 has been prepared and the same is being finalized in consultation with APO. Some of the major activities which may be taken up in coming years for Center of Excellence (CoE): IT for I4.0 are given below:-

Major Activities for CoE: IT for Industry 4.0:

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1	Prepare Directory of national and international experts and institutions.
2	Develop website and portal for COE IT for I4.0 including Mobile apps.
3	Develop promotional materials on Industry 4.0 including few case studies, Preparation of Industry 4.0 training and dissemination Kit.
4	Study on review of existing approaches and carry out survey work to assess digitization status, Study on requirements for standardization of technology, Security of IT systems, technology requirement & indigenization for successful adoption of I4.0.
5	Conference on ICT Innovation for Promoting Productivity Growth in the SME Sector, Global conference on best practices in Industry 4.0 and role of stakeholders etc.
6	Facilitate to start-ups / upcoming to demonstrate project and exposure to experts & Know –how, Development of experience Zone about Industry 4.0 concept and applications etc. and Development of Organization/ Company for a demonstration.
7	Workshop/seminar in Automobile Sector/ Electronics & Computer Hardware component Sector/ Food Processing sector/ Textile and Garments sector/Pharmaceutical sector to hold stakeholder meeting with respect to Industry 4.0.
8	Development of a Smart Manufacturing Index (SMI) & development of toolkit on IT for Industry 4.0 for SMEs.
9	Customization of framework on Industry 4.0 including implementation approach, methodologies etc as per Indian Industry and Member Countries and Survey to measure Smart Manufacturing Ranking using earlier developed SMI including selected APO Member Countries(MCs), Survey to assess skills requirement for implementation of I4.0 and role of various stakeholders including APO Member Countries (MCs).
10	Multi-Country observational study; Visit of APO Member Countries' (MCs) organizations to Indian organizations.