

No. / संख्या 12/19/2017/NPC-QCI
Government of India / भारत सरकार
Ministry of Commerce and Industries / वाणिज्य और उद्योग मंत्रालय
Department of Industrial Policy and Promotion / औद्योगिक नीति एवं संवर्धन विभाग
NPC-QCI Section / एनपीसी-क्यूसीआई अनुभाग

Udyog Bhawan, New Delhi
Dated the 25th January, 2018

OFFICE MEMORANDUM

Subject: Productivity Week Celebration from 12th to 18th February in National Productivity Council.

National Productivity Council (NPC) is an autonomous organization under Department of Industrial Policy and Promotion, Ministry of Commerce and Industry, Government of India, established on 12th Feb, 1958, with the mandate to increase productivity consciousness across all sectors of the economy.

2. Over its 59 years of existence, NPC has built extensive experience in problem solving right from the shop floor level to strategic and policy issues at the macro level. With nearly 140 full time consultants on its roll possessing a wide repertoire of skills/expertise and a network of 13 regional offices at all major State capitals/industrial centres, NPC has the requisite professional strengths as well as country wide presence. NPC's long service relationship includes well-known names in both public - Central/State Government departments/ PSUs and private sectors as well as with international organizations with whom it has developed synergistic partnerships. NPC has been designated as a Centre of Excellence on IT for Industry 4.0 (CoE: IT for I4.0) by Asian Productivity Organization (APO), Japan.

3. The National Productivity Council will be observing **National Productivity Week** from **12th to 18th February, 2018** and National Productivity Day on 12th February 2018. It will be its 60th Anniversary and will be celebrated as Diamond Jubilee Year.

4. Productivity can be enhanced by adopting modern methods, appropriate technologies, using more efficient manufacturing processes, better materials and the application of waste minimisation techniques, resulting in value creation and better quality of work. Keeping in view the importance of productivity for various sectors of economy, the theme "**Industry 4.0 Leapfrog Opportunity for India**" has been selected for the National Productivity Week-2018. The concept paper is enclosed.

5. It is requested that Ministries/Departments/PSUs/Industry Associations may consider organizing the following activities keeping the special theme of the year in view to spread the message of Productivity and formulate a Plan of Action for improving productivity within the Ministries/Departments/PSUs/Associations.

- i. Special talks on TV, Radio discussions, meetings, workshops/round tables focusing on problems being faced on the Productivity front by different industries.
- ii. Essay/Paintings/Slogan competitions relating to the theme.
- iii. A Productivity Improvement Committee may be set up to formulate a Plan of Action for the year – (2018-19) for enhancing productivity by adopting few Industry 4.0 technologies.
- iv. Productivity/Innovation awards may be instituted for individual/team efforts.
- v. Challenges/Competitions on application of various I 4.0 technologies in industry/services may be held.
- vi. Offices of the Ministries/Departments may be advised to participate in productivity promotion activities instituted by NPC.

6. Co-operation of all Ministries/Departments/PSUs/Industry Associations is solicited in celebrating the Productivity Day and Productivity Week, 2018 in a befitting manner, with a view to make Productivity a truly national movement. **Entrusting projects/assignments** to NPC on nomination basis may also be considered due to the reputation and competence of the organization. Further, NPC may be empanelled as a consultant and training partner.

7. A list of planned activities proposed by offices of NPC for Productivity Week Celebration 2018 is also enclosed. Interested organizations for participating in the events may contact Dr. Nitin Aggrawal, Group Head (HRM) & Dy. Director (PA) (Email: nitin.a@npcindia.gov.in, Tel: 011-24607336).

Encl: As Above


(Sourabh Bhattacharyya)

Under Secretary to the Govt. of India

To

All Ministries/PSU/Autonomous Bodies/Industry Association (as per attached list)

Theme paper
“Industry 4.0, Leapfrog Opportunity for India”
(For Productivity Week & Diamond Jubilee Year 2018)

Industry 4.0, to put it briefly, is a mélange of many futuristic and advanced concepts and technologies which have the potential of transforming the production scenario in the 21st century mainly comprising of a ‘connected shop floor’ where data is collected from various sensors and other input devices to be used for predictive maintenance, better control and long-term analysis.

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, additive manufacturing, sensor based technologies 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. This will result in the “Smart Factory”, which is characterized by versatility, resource efficiency, ergonomic design and direct integration with business partners.

Industry 4.0 is one of the major drivers of the Fourth Industrial Revolution. The first industrial revolution was triggered by water and steam power to move from human labor to mechanical manufacturing. The second industrial revolution built on electric power to create mass production. The third used electronics and information technology to automate manufacturing. The fourth is the current trend of automation and data exchange in manufacturing technologies.

Manufacturing today is cutting edge and requires a high level of skill. Today, the global manufacturing sector is undergoing a structural transformation. Though India banks heavily on its Service Sector for growth, the Manufacturing Sector needs to play a significant role in the Indian economy. Manufacturing now needs to fuel the high growth in India. Hon’ble Prime Minister of India, launched the ‘**Make in India**’ program to place India on the world map as a manufacturing hub. The Manufacturing Sector especially MSMEs play a pivotal role in the Indian economy and provide the largest share of employment after agriculture. In order to converge the aims of growth with employment it is important to increase the share of manufacturing in the country’s Gross Domestic Product from 16% to 25% by 2022 and to create 100 million additional jobs by 2022.

Digital connectivity forms the backbone for adoption of advanced technologies. With increasing penetration of the internet in India and emergence of e-Commerce, presence of enterprises on the internet has become inevitable. Ensuring comprehensive broadband connectivity in industrial clusters, Government of India has launched **Digital India Programme** with a vision to transform India into a digitally empowered society and knowledge economy.

Smart Factory may be characterised in terms of flexible systems and machines, distribution of functions throughout the network, communication/interaction among all participants across

hierarchy, self-optimization and autonomous decision-making. Digital technologies allow for new business models and value-producing opportunities, and are attainable for most developing countries.

Smart manufacturing brings in the following benefits:

- Lower Cost
- Additional Revenue
- Enabling Industrial Companies to optimize customer relationship.
- Transparency in the production process
- Clarity on the status of all aspects of production system in real time
- Industrial companies that successfully implement Industry 4.0 no longer need to choose between focusing on a better top or bottom line. They can improve both at the same time.
- Logistics processes becomes leaner
- Reduced inventories
- Maintenance processes standardization
- 100% traceability

India is uniquely advantaged in scalable digital technologies. In financial services, it is building a unique, first-of-its-kind digital stack (known as the “India Stack”) with Aadhaar, Jan Dhan accounts and various payment technologies such as UPI and the Aadhaar Payment Bridge System. This scalable platform offers an opportunity to develop innovative services not just for the Indian customer but can easily be modified to offer similar services to global customers. Developing and deploying these ‘technology stacks’ across well-penetrated service sectors like construction, under-penetrated sectors like health or nascent sectors like urban management services can deliver not just economic growth but millions of new jobs.

The organization need to upscale their competitiveness by selecting and adopting the technologies of I 4.0 from the following list based on the relevance, cost-effectiveness, and impact on productivity enhancement:

- Additive Manufacturing – 3D Printing
- Sensors
- Robots (auto + co-bots)
- Simulation
- Augmented reality
- Cloud Computing
- Big Data and Analytics
- Industrial Internet
- Cyber-security
- Horizontal and vertical integration

There are many challenges which have to be addressed in order to successful adoption of advanced technologies and realization of Industry 4.0 potential. Few key challenges are given below:

- Lack of a clear digital vision.

- A lack of data analytical capabilities.
- Fostering a strong digital culture.
- Level of digitization
- Data Security
- The major risk with recording, storage and analysis of large volumes of customer data is the inappropriate use of the said data
- Lack of standardization
- Though concepts like sharing of data and integration of technology are not new, however lack of standards or rather prevalence of proprietary standards is going to be a key roadblock

National Productivity Council, New Delhi has been designated by the Asian Productivity Organisation (APO) as a Centre of Excellence on IT for Industry 4.0 (CoE: IT for I4.0)". The scope of CoE is to function as a knowledge centre for the entrepreneurs, start-ups regarding concepts of information technology and its application in Industry, to disseminate this knowledge through workshops, lectures and training programmes, to facilitate display of latest technology / demonstration projects for helping the new start-ups, etc.

In this scenario, the Centre of Excellence (CoE) can be very effective in collection of information, development & dissemination of knowledge/information, facilitation in capacity building of industries in coordination 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.

India must proceed on a different development journey, which accounts for different global circumstances and leverages India's strengths. Our hypothesis is that digital technologies will power mass services just like industrial technologies powered mass manufacturing.

If India is to benefit from Industry 4.0 and win against global competition, it has necessarily to integrate the principles of Industry 4.0 with the 'Make in India' initiative. "**Make in India**" initiative is more broad-based idea to encourage multi-national, as well as national companies to manufacture their products in India. Government is focusing more on enabling policies and improving infrastructure for certain key Sectors.

There are two schools of thoughts on this revolution. First, the experts believe that by fourth industrial revolution, the manufacturing base will become modernized by 4.0 solutions, allowing capital to be used more gainfully. In making better use of its base, industry will draw less on capital employed. Profitability and Return on Capital Employed will rise and create new investment opportunities – a key aspect in the funding of new projects and in creating new jobs.

Second school of experts says that the use of industry 4.0 technologies will result in an increase in labor productivity and in the quality of the products manufactured. As a result, the demand for quality products manufactured will increase, rendering companies with no option but to increase capacity to meet the demand. There is no doubt that certain low-skilled jobs will be eliminated. However, it is expected that an increase in capacity will have a positive effect on the creation of jobs,

requiring higher levels of skills. Employees who were rendered jobless due to elimination of low-skilled jobs need to be re-skilled or up-skilled to make them ready for the new requirements. All in all, the creation of new high skilled jobs will compensate, to a large extent, for the elimination of low skilled jobs.

Various initiatives are being undertaken by Government of India and other stakeholders in order to realize successful adoption of smart manufacturing concept which will expedite the process of achieving goals of “Make in India”. There is no doubt Industry 4.0 is a leapfrog opportunity for India to become hopefully the first large economy in the digital 21st century.

It is essential to prepare the roadmap for adoption at various levels of technology appropriate for different scales of operations especially for MSMEs. It is proposed that the institute/organization may undertake the following activities during the Productivity Week Celebration and reap the benefit of Industry 4.0 advancements:

1. On Foundation day, you may invite a High Dignitaries to chair the panel sessions on how to adopt Industry 4.0 and the future ahead with reference to the selected theme in their respective units.
2. Conduct internal workshop on the selected theme to capture the various initiatives undertaken by the different levels of the organization.
3. Conduct Seminar/Conference on Industry 4.0 with the support of experts from Academia, MSME, Consultants as knowledge partners, etc.
4. Invite NPC to co-sponsor/co-chair events like “Youth Festivals”, Debates” or other competitions on the theme selected.
5. Invite NPC to co-chair *Productivity Improvement Committees* of the organization.
6. Conduct Talk Show on the achievements, way forward, outcomes of Industry 4.0 through Community Radio/local TV channels

The report of above shared activities will be uploaded on NPC website and its extract will be published in Productivity News magazine. The report should include the name of the activity conducted, key contributions, significant highlights, outcomes achieved, list of invitees, participants, etc. You may send the report to the following address:

Director General,
National Productivity Council,
5-6, Institutional Area, Lodhi Road,
New Delhi – 110003
Email: nitin.a@npcindia.gov.in

S. No.	Activity Owner	Activity Plan
1	Regional Directorate, Bhubneswar	1. Productivity Day main event along OSPC 2. Productivity Week events at various organisations (7-10 events)
2	Regional Directorate, Hyderabad	1. Panel Discussion on the Theme in AIR, Doordarshan and Private Television Channels in the states of Telangana, Andhra Pradesh and Chhattisgarh 2. One Day Workshops (3 Nos.) with support from MSME in the states of Telangana, Andhra Pradesh and Chhattisgarh 3. Productivity Talks for ½ Day in PSUs and other Government Institutions in the states of Telangana, Andhra Pradesh and Chhattisgarh 4. Prizes for Competitions for School Children, College Students and Industry Personal
3	Regional Directorate, Kolkata	1. One day Workshop on the Theme on 12.02.2018 2. Painting Competition on 16.02.2018 at Nehru Children's Museum, Kolkata
4	Regional Directorate, Patna	1. Observing Productivity Day Function " Awareness Prog. On Industry 4.0" at Bihar Electricitiy Board / PSUs/ Accademic Institution in association with Bihar State Productivity Council, Patna 2. Organising 4-5 one day / Half day talk in Public Sector Organisations and Accademic Institutions in association with BSPC Patna 3. Participating as Guest expert in productivity week programmes organised by PSUs like IOC, NTPC and Govt. Deperatments. 4. Seminar on " Industry 4.0- Leapfrog opportunities for India : Key Issues and Challenges" in Association with Dept. of Industry, Govt. of Bihar and Bihar Industry Association 5. Other Activities like talk show on Doordarshan and All India Radio, subjected to their confirmation
5	Regional Directorate, Chandigarh	Lecture in PSUs / Organisations (2 Nos) Lectures / Poster Making Competition / Slogan Competition in Engineering Institutions (3 Nos) Programme in association with Industrial associations (2 Nos) Programme in AIR / DD / Community Radio
6	Regional Directorate, Guwahati	1. One day workshop on the theme of productivity Week 2018 to be conducted by NPC 2. Two number of half day workshops in one of the central PSUs 3. Publication of message from CM / Governor on the ocassion of productivty week 2018 in leading local newspaper

S. No.	Activity Owner	Activity Plan
7	Regional Directorate, Gandhinagar	<ol style="list-style-type: none"> 1. Elocution competition at Pandit Deendayal Petroleum University on 2. Competitions at Schools/Colleges 3. Media propagation 4. Programs with LPCs, industry associations, etc. 5. Sensitizing local industries on concept of Industry 4.0 6. Theme talks at Government institutions such as MSME-DI, GEDA 7. Productivity literature distribution campaign
8	Regional Directorate, Chennai	<ol style="list-style-type: none"> 1. Essay Competition 2. Consolation Prize 3. Painting Competition 4. Lecture meeting
9	Regional Directorate, Jaipur	<ol style="list-style-type: none"> 1. Productivity Talk in association with Rajasthan State Productivity Council & Rajasthan Chamber of Commerce & Industries, Jaipur 2. Talk Show at Doordarshan and Aakashwani on 12th February 2018. 3. Productivity Talk for various MSME units in association with Industries Association at Jaipur, Jodhpur, Udaipur, Bikaner, Alwar, Kota etc. 4. Productivity Talk on various Central PSUs and State PSUs
10	Regional Directorate, Bengaluru	<ol style="list-style-type: none"> 1. Letters sent to the Central Public Sector Units and PSU's requesting them to organize activities and also to nominate participants for the Workshop on "Emerging Trends in Manufacturing Practices" 2. One Day Workshop on the theme "Emerging Trends in Manufacturing Practices", cover the Theme for this year's Productivity Week "Industry 4.0, Leapfrog Opportunity for India"
11	PA + IE Group	Penal Discussion on Foundation Day
12	Poona Divisional Productivity Council	9th Productivity Improvement Case Study Competition 2018 for Automobile, General Engineering and Service Sectors
13	Assam Productivity Council	Various activities for Work Persons & Trade Unions, Young Management students, young entrepreneurs, women program etc.
14	Kutch Saurashtra Productivity Council	<ol style="list-style-type: none"> 1. Productivity Day Inaugural Function, Printing of Different Poster with motivational quotes with theme of 2018 2. Industrial Visit 3. Programs for Students of various colleges 4. Programs at various chapters of KSPC 5. Programs for Workers 6. Valedictory Function of Productivity Week.

S. No.	Activity Owner	Activity Plan
15	Bombay Productivity Council	in-house programmes: 1. Industry 4.0, Leapfrog Opportunity for India 2. Productivity Programme in Marathi/Hindi 3. Effective Communication 4. Effective Performance in Office 5. Improving Managerial Effectiveness 6. Time Management 7. Team Building
16	Haryana State Productivity Council	1. Lecture by the eminent speakers on Productivity Theme 2. Productivity Slogan (Hindi-English) Competition for workers & Supervisors. 3. Training Programme on Productivity, Quality, Cost & Delivery in Hindi for workers & Supervisors 4. Seminar on Reduce, Re-cycle & Re use for middle Mgt. personnel 5. Special issue of Haryana Productivity News
17	Salem Productivity Council	1. Drawing competition for the School students on the theme "Industry 4.0, Leapfrog Opportunities for India" 2. Workshop on GST EWAY BILL by Officials from Central Board of Exise and Customs Department Salem. 3. Opportunity for MSME in the current scenario under GST regulations. 4. Awareness programme on Workman welfare schemes & Total Insurance . 5. A workshop organized on " Knowledge Management for Industry Productivity" by Dean of Vinayaka Mission University, Salem
18	Kerala State Productivity Council	1. Industry 4.0, Leapfrog Opportunities for India 2. Digital and Internet Marketing. 3. Productivity Work Culture & Safety 4. Team Work, Interpersonal Relations and Productivity 5. State Level Competition on the Productivity month theme "Industry 4.0, Leapfrog Opportunities for India " for the prize winner of member organizations in Elocution (English and Malyalam)
19	Baroda Productivity Council	1. Open Vadodara Drawing & Collage Making Competition 2. Free Career Counselling for needy students 3. Elocution Competition 4. Slogan Making, Essay Writing, Photography Competition 5. Knowledge Sharing Session on the Productivity Theme
20	Rajasthan State Productivity Council	1. Panel Discussion 2. Lectures 3. Special Talks 4. Essay Competition 5. Open House discussion 6. Round Table Conference

S. No.	Activity Owner	Activity Plan
21	Madurai Productivity Council	<ol style="list-style-type: none"> 1. "Digital India" / Cyber Security 2. "Smart Factory" Competition for Middle level Executives 3. Industrial Visit for SPC Memembers 4. Project Competition for Engineering Students 5. Student Competition on Fourth Industrial Revolution
22	Coimbatore Productivity Council	<ol style="list-style-type: none"> 1. Oratorical Competition for Industrial Workers 2. One Day Free Training Programme for Employees 3. Oratorical Competition for School student 4. Quiz Competition for College Students 5. Oatorical Competition for College Students