Samarth Udyog Bharat 4.0 Platform

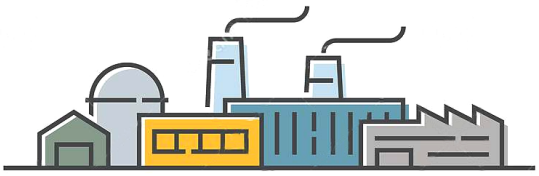
Why in News

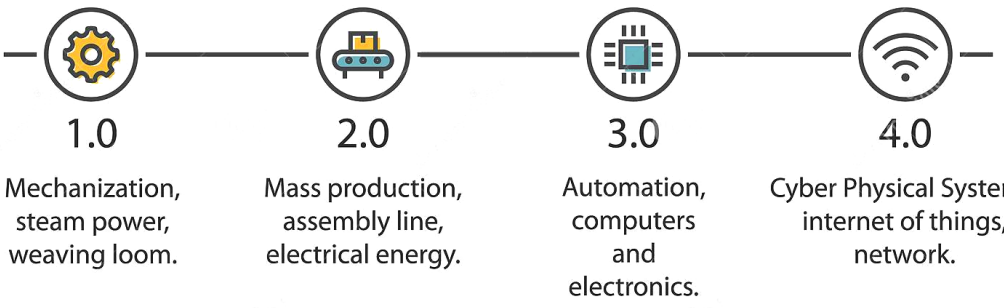
Recently, **Central Manufacturing Technology Institute (CMTI) Bangalore, under the SAMARTH Udyog Bharat 4.0 Platform organized a webinar** on “Expert Talks from Samarth Udyog Centres” to celebrate the Azadi ka Amrit Mahotsav.

- The **objective** was to listen to the experts of the Samarth Udyog Centres on the indigenous technology developments & the **ways for collaborations in the domain of Smart Manufacturing & Industry 4.0.**
- **CMTI** is a **Research & Development organisation** under the aegis of the **Ministry of Heavy Industries,** focusing on providing ‘Technology Solutions’ to the manufacturing sector and assisting technological growth in the country.

Key Points

- **About:**
    - **Smart Advanced Manufacturing and Rapid Transformation Hub (SAMARTH) -Udyog Bharat 4.0** is an **Industry 4.0 initiative of the Department of Heavy Industry,** under its scheme on **Enhancement of Competitiveness in Indian Capital Goods Sector.**
        - The scheme on ‘Enhancement of competitiveness in the Indian Capital Goods Sector’ was notified in 2014 to encourage technology development and infrastructure creation.
    - **CMTI** has established **Smart Manufacturing Demo & Development Cell (SMDDC)** as a **Common Engineering Facility Centre (CEFC)** to propagate and support the process of adoption of Industry 4.0 and smart manufacturing practices by the rapidly growing Indian manufacturing industry.
- **Industry 4.0:**
    - It refers to the **fourth industrial revolution,** which is the **cyber-physical transformation of manufacturing.**
    - It has been defined as **“a name for the current trend of automation and data exchange in manufacturing technologies,** including **cyber-physical systems, the** Internet of things**,** cloud computing **and cognitive computing and creating the smart factory.**





- **Benefits of Industrial Revolution 4.0:**
    - It will increase productivity, efficiency and quality in processes, greater safety for workers by reducing jobs in dangerous environments, enhance decision making with data-based tools, and improve competitiveness by developing customised products.
- **Challenges:**
    - **A Gap in Technical Skills:**
        - Since, the **needs required of the workforce are all evolving** so, only with the right workforce will business models be able to successfully implement new technology and maintain operations.
    - **Data Sensitivity:**
        - The rise in technology has also led to **increasing concerns over data and IP privacy, ownership, and management.**
    - **Innovation:**
        - The **lack of separation between protocols, components, products, and systems** is also a challenge as interoperability impedes companies' ability to innovate.
    - **Security:**
        - Threats in terms of **current and emerging vulnerabilities in the factory** are another significant concern.
        - The physical and digital systems that make up smart factories make real-time interoperability possible—however, it comes with the risk of an expanded attack surface.
    - **Handling Data Growth:**
        - As more companies become dependent on **AI usage, companies will be faced with more data** that is being generated at a faster pace and presented in multiple formats. To wade through these vast amounts of data, **AI algorithms need to be easier to comprehend.**

India's Scenario

- **Overview of India's Current Potential:**

- India has the **third largest startup ecosystem in the world.**
- It is the **largest exporter of generic pharmaceuticals.**
- When it comes to **exports of cars,** it does not even rank in the top 15.
- Overall, **India's manufacturing sector makes up around 17% of the GDP.**
    - The **services sector makes up over 65%.**

- **Related Initiatives:**
    - In 2018, the **World Economic Forum (WEF)** set up its **Centre for the Fourth Industrial Revolution in India** to work in collaboration with the GoI.
    - The **National Institute for Transforming India (NITI) Aayog** is the designated **nodal agency to interact with the WEF** for elaborating the new policy frameworks for emerging technologies.
    - The **GoI has already made the enabling policy framework** and set up incentives for infrastructure development on a PPP (Public Private Partnership) model.
    - **Samarth Udyog Bharat 4.0** is India's initiative to push for Industry 4.0 implementation with an aim to propagate technological solutions to Indian manufacturing units by 2025 through steps like awareness programme, training, demo centers etc.
    - **India's National Manufacturing Policy (NMP)** has been promulgated which aims at enhancing the share of manufacturing in GDP to 25% and Industry 4.0 is the only way ahead to achieve this task.
    - **Others:**
        - **Make in India**, Setting up of **manufacturing clusters**, improving **ease of doing business**, announcement of **Production-linked Incentive (PLI) schemes**, financial sector reforms, **tax reforms**, incentivizing R&D, large infrastructure development projects, **power sector reforms**, and strengthening the **environmental, social, and corporate governance (ESG)** in country.
        - Initiatives such as **5G Trials** and **Digital India**.

Way Forward

- In terms of Industrial Revolution 4.0, **adopting Smart manufacturing, analytics and IoT** will give a new lease of life to industrialisation in India.
- Apart from policy implementation hurdles, one major bottleneck is **lack of skilled labour or fear of job losses** owing to Robotics & Automation. A **smart strategy** to counter this is to upskill workers and millennials in these fields and create more jobs.

Source: PIB