NEXT IAS

Daily Editorial Analysis

NUCLEAR WEAPONS AND ARTIFICIAL INTELLIGENCE

Syllabus: GS2/ Government Policies & Interventions, GS3/ Nuclear Technology

In Context: All current discussions on the **geopolitics of Artificial Intelligence** inevitably recall the **nuclear experience.**

> **Artificial intelligence**
> - It is the science and engineering of making intelligent machines, especially intelligent computer programs.
> - It is related to the similar task of using computers to understand human intelligence, but AI does not have to confine itself to biologically observable methods.
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> **Significance**
> - AI would not replace people but create new opportunities in various fields.
> - It works on data, and if we could train our machines, it could do wonders for us in milliseconds by automating processes.
> - AI is creating new opportunities which could not be achieved by traditional technology.

RELATABILITY OF AI DEVELOPMENT WITH NUCLEAR POWER

- Although nuclear and AI are very different, there are similarities too.
- **Role of Consequences:**
  - The nuclear revolution was revealed to the world by the **use of atomic bombs** against Hiroshima and Nagasaki in August 1945.
    - The **enormous destructive power** and its **horrendous consequences** compelled statesmen and scientists to consider ways to limit the threats to the survival of humanity in the nuclear age.
  - The AI revolution threatens an even bigger catastrophe — **machines taking over from humanity** and enslaving them.
    - The broader impact of the AI revolution is likely to be far more sweeping.
- **Promise to transform:**
  - While nuclear technology never lived up to its economic promise of "delivering electricity too cheap to meter", AI promises to transform the economy, society and polity in fundamental ways.
- **Challenge of governance:**
  - Many of the issues that animate AI governance today are similar to those the world faced at the dawn of the nuclear age.
  - These challenges include:
    - Managing the impact of this new technology on geopolitical rivalry among the great powers,
    - Erecting a firewall between the use and abuse of these technologies and
    - Creating international norms and institutions to govern its use.
- **Call for a 'control':**
  - As in the nuclear age, many today **demand a ban on military uses of AI** or at least **a "freeze" on research and development** until there is a better assessment of the technology at hand.
  - Like in the nuclear era, there is growing interest in **promoting "arms control" agreements** between the great powers.

- **Creation of a bipolar world:**
  - If the US and the Soviet Union — the superpowers of the post-War world — dominated the discourse on nuclear weapons, Washington and Beijing do the same in the AI arena today.
  - It is no surprise that US-China agreements on AI are viewed as **critical for the management of the new technological revolution**.
- **Regulation of AI:**
  - There is talk of **international norms** to manage the potential negative consequences of the AI revolution.
    - One such initiative is the GPAI or the Global Partnership for Artificial Intelligence which has 28 members.
    - India is hosting the Global Partnership for Artificial Intelligence (GPAI) summit in **Delhi**.
  - Some have proposed the setting up of an "International Agency for Artificial Intelligence" (IAAI), much like the **International Atomic Energy Agency (IAEA)** that was set up in 1957 to regulate the uses of nuclear energy.

OTHER CHALLENGES OF AI

- **The challenge & fears of unknown:**
  - The biggest challenge in achieving this balance is that no one knows for certain what's going to happen next with AI.
  - There are widespread fears. These **range from apocalyptic scenarios** such as AI posing an existential threat to humans, to **more immediate fears**, which include **developing deepfakes** that can be used to spread misinformation, create identity theft tools, more effective cyberattacks and automate tasks that are currently done by humans.
- **Difficulty to control:**
  - This technology is evolving so fast that stakeholders are falling behind miserably when it comes to putting safeguards.
  - There have been calls to pause AI development to give time for governments and industry players to come up with guardrails.
  - But the horse has already bolted, and at a good speed. There is competition between governments, universities and companies, all seeking to advance the technology, so it will be impossible to impose a worldwide moratorium.
- **Lack of regulations:**
  - It is clear that there is a **global race for AI dominance**. Nations across the world are investing heavily in AI research, development, and deployment.
  - While healthy competition can drive innovation, an unregulated race can lead to a **fragmented landscape** where standards, ethics, and accountability fall by the wayside.
  - Unregulated AI **can also deepen social inequalities i**n addition to posing **threats to privacy and civil liberties**.

SUGGESTIONS FOR INDIA & WAY AHEAD

- The agenda of reforming India's technology sector is at once **large and urgent**.
  - Unlike in the nuclear domain, India does not have the luxury of taking things easy until it's too late in the AI domain.

- It is important for India to **build on the current momentum** in the partnership with the **US** on AI and other critical and emerging technologies.

- India needs to **move on multiple policy fronts** quickly to raise its position in the global AI hierarchy.

- **Building strong domestic capabilities in AI** is critical to making the best out of international cooperation. That, in turn, calls for a **larger role for the private sector.**

    - If technological progress in the second half of the 20th century — especially in nuclear and space — were **led by governments**, it is the private sector that is leading **AI research, development and innovation** in the West.

Daily Mains Question
[Q] Analyze the similarities between the geopolitics of Artificial Intelligence and nuclear Power. Why is it important for India to 'not' repeat its nuclear weapons mistakes with AI?

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