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**'AATMANIRBHARTA THROUGH
TECHNOLOGY SOVEREIGNTY'**

BY

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**ORGANIZED BY CENJOWS
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The New Tech World Order is governed by 4 Ds – Data, Digitization, Digitalization and Disruption; disruption being the gamechanger. The Digital Transformation disrupted the analog systems and in the foreseeable future, the quantum tech will disrupt digital tech. A resurgent India on the move has embarked on a multi-pronged National development strategy – Gati Shakti. There is the Make in India, as a precursor to Made in India, the Aatmanirbhar Bharat Program as a call for self-reliance, Skill India, Start Up India to champion the agile ignited young minds into entrepreneur ventures, Digital India and many more. All these coming up concurrently has created an enormous technology and innovation bandwidth, and an excitement in India which has tech reverberations world-wide.

The global ESG eco systems is driven by VUCA - Volatility, Uncertainty, Complexity and Ambiguity of the present and BANI, Brittleness, Anxiousness, Non-linearity and Incomprehensible contours as the emerging scenarios. That said, the moot questions are –We are ranked the 17th technological advanced Nation, largest importer of defence equipment, and third largest military expending Nations globally. How do we leverage our technological might to reverse the rankings, as a first step? As one of the “Emerging Global Power Centre of Technology” how does India attain Technology Sovereignty?

The best model to self-reliance is creation of our own unique model which gives homegrown indigenous solutions. This requires a transformative approach. There is a need to put in place five key pillars - One, Fostering Applied Research and Design for technology development at all levels of TRL; Two, Focused Skill Development for meeting the human resources needs of the technology development road map; Three, Progressive growth of the Startup Eco System with development agency, research potential and production agency for life cycle management of technology; Fourth, as is - to be analysis for identifying all gaps in technology development to charter a consortium approach and international collaboration.

That said, the *aatmanirbharta* through technology sovereignty from deliverables to deliveries is a marathon requiring a strategic structure and progressive enabling trajectory with the following imperatives for a National Technology Framework (NTF).

The first is to develop an NTF. A number of initiatives are already in place to include Technology Development Board, Technology Innovation Hubs, Atal Innovation Missions, Centres of Excellence (CoE) in identified technologies, Invest India, ICET and many more. The following actions would comprise the NTF:

- One, articulate a **NATIONAL TECHNOLOGY STRATEGY** with a clear technology forecast, technology development action plan organized as programs (akin to Integrated Guided Missiles Development Program IGMDP) with time bound deliverable milestones and end state of each technology vertical.
- Two, reconfigure DST into Ministry of Technology & Innovation (MTI). For management oversight and implementation of national technology strategy, program structure (like IGMDP) with project management focus with inter-ministerial synergy through a technology structure.
- Three, create a National Technology Act (NTA) for legislation and regulation of technology programs with the concept of One Technology One Program (OTOP) focus and management of Intellectual Property Rights (IPRs).
- Four, National Technology Day Broadcast on 11 May akin to National budget broadcast every year in February. This shall create a National fervour on Technology through a formal audit of past and future road map.
- Five, National R & D Organization, to create synergy between Govt, private and public R & D Eco System for exploiting the convergence in technologies today and in the future.

- Six, National Research Foundation Bill 2023 has been drawn and INR one lakh crore pledged. Given the astounding success of CSR Program based on Companies Act 2013, Corporate Professional Responsibility Fund at 2 % to be ploughed into R&D.
- Seven, Consolidation of Demographic Dividend. The industrial corridors pan India and the defence industrial corridors need to harness skill development and produce future certified job ready work force.
- Eight, India as a Womb to Tomb MRO Hub. With a huge fillip in the manufacturing sector, MRO and life cycle sustenance support of equipment is a huge opportunity to include technology upgrades and tech infusion in legacy equipment.

Vaccination Diplomacy through Vaccine Sovereignty is a great example of technology sovereignty demonstrated by India during the covid crisis. What if we took lead in low hanging tech fruits in drones which has a global market of over 50 Bn USD in the next five years, renewable energies, EV, ICT hardware, semiconductor and software, software defined networks and allied equipment, big data analytics and the emerging technology stack of AI, AR, VR, meta, IoT, blockchain and chip manufacturing to name a few mega trends. Given the strong National resolve, political will a strategic thought process with a progressive whole of Nation approach is the best way forward to build and sustain technology sovereignty.