

# Business Standard

## Unlocking India's economic potential: Key tech policy priorities for 2025

*This year should be a watershed year, transforming India into a "Product Nation," with Rs 1 trillion allocated for Research & Development to the private sector*

Ajay Kumar - | **Mumbai**



Representational Image

In 2025, India will reach two key milestones — becoming a \$4 trillion economy and surpassing Japan to become the fourth-largest globally. Its future progress towards becoming the third-largest economy will depend on effectively harnessing emerging technologies, with McKinsey's 2024 report identifying 18 tech-areas that could add \$29 trillion to \$48 trillion globally by 2040.

The economic potential of new technologies can be maximised in two key areas: Production and usage. Producing technologies fosters innovation, creates jobs, and reduces dependency on imports. In a connected world, where network effects are significant, innovation leads to global dominance and huge economic gains, as exemplified by the dominance of a few players in sectors like semiconductors and e-commerce.

This year should be a watershed year, transforming India into a "Product Nation," with Rs 1 trillion allocated for Research & Development to the private sector.

Finalising its governance and implementation modalities would be of foremost importance. Other policy reforms include: Opening up of R&D across all sectors, including defence, atomic energy, and deep-water technologies while removing hurdles from legacy institutions; government procurement policy to foster innovations; greater priority to creating bigger skilled workforce in emerging technologies viz., quantum, cyber-security and space; global branding and export of indigenous industry products through bilateral and multilateral initiatives; reforming standard-making so that it is industry-led and supported by a legislative framework.

The use of new technologies enhances efficiency, boosts productivity, and stimulates innovation, generating multiplier effects throughout the economy. Government actions — creating infrastructure, providing financial support, reducing adoption costs, and enhancing skills — are critical for promoting technology adoption. The success of Aadhaar and UPI showcases the power of government policies in driving widespread tech adoption. A road map for 2025 for a few key technologies is outlined below:

**Artificial intelligence:** AI, including generative AI, is vital for India to leapfrog development in healthcare, education, and agriculture. The ongoing empanelment of vendors for 10,000 graphics processing units should be expedited. AI infrastructure must be prioritised for defence and security, with a focus on promoting startups and developing foundational models in agriculture, healthcare, education, and sanitation at subsidised rates. API-based access to India's diverse data assets will enable startups to build localised AI models.

**Cybersecurity and forensics:** India's swift digital adoption has outpaced its cybersecurity preparations, increasing risks. Threats from AI misuse, quantum technologies, and emerging tools like cryptocurrency, satellites, and drones only intensify these challenges. Stringent cybersecurity regulations, with penal provisions, must be enacted across critical sectors such as power, transportation, aviation, oil and gas, and health care. The Digital Personal Data Protection Act (DPDP), 2023, should be implemented early in 2025. Expanding the use of digital forensics in businesses by notifying private labs as examiners of electronic evidence, along with supporting the development of indigenous tools, is crucial.

**Quantum technologies:** A nodal ministry should be notified to roll out quantum technologies in key sectors like defence, healthcare, telecommunication, space, and finance. A time-bound action plan for adopting quantum key distribution and

post-quantum cryptography solutions, leveraging existing indigenous capabilities, should be implemented. Also, quantum-safe satellite communication capabilities must be developed.

**Exploiting data wealth:** Tech giants like Google, Facebook, Microsoft, and Amazon have become trillion-dollar enterprises leveraging data. India, as a top data producer, can harness the account aggregator (AA) model to monetise data. In 2025, the focus should be on expanding and universalising the AA model in finance, while adapting and rolling it out in education and healthcare.

India faces a shortage of high-quality geospatial data. Policies like Svamitva, the 2021 map policy, and the drone policy provide a foundation. Nationwide geospatial data compilation should be completed. PM Gati Shakti, a Geographic Information System-based master plan, should be universalised across projects. Work should also begin on PM Underwater Gati Shakti to harness the blue economy's potential by creating smart maritime zones, enabling sustainable marine resource use. In the \$600 billion global cloud compute market, India holds 1.6 per cent of the share, despite producing 20 per cent of global data. The Clean Network initiative, the DPDP Act, and rising AI cloud demand present a significant opportunity for India to expand its data centre capacity. The government should implement an aggressive policy aimed at capturing 5 per cent of global cloud infrastructure by 2030, potentially creating a \$100 billion industry.

**Digital competition:** To deal with digital monopolies, 2025 should see the formulation of a legislative framework to balance innovation and consumer welfare and do away with restrictive bureaucratic controls.

**Air mobility:** India has emerged as a global contender in the drone industry, with startups advancing indigenous drone-taxi designs. While rules for vertiports and standards for air-taxis have been notified, an important missing link is an automated unmanned traffic management, This should be notified in 2025.

**Semiconductors:** With several fab projects announced in different states of India, 2025 should focus on implementing these projects, operationalising backend fabs, and incentivising the ecosystem supplying chemicals, gases, substrates, and consumables to improve economic viability.

**Space:** Key steps in 2025 should include finalising satellite spectrum allocation to offer satellite-based communication services; disbursing the Rs 1,000 crore venture fund; and transferring ISRO's small scale launch vehicle technology to

private industry. The government should also engineer schemes to drive satellite usage.

In conclusion, 2025 will be pivotal for advancing new technologies through the right policy steps.

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*The author is former defence secretary and distinguished visiting professor, IIT Kanpur*

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