6. AI Infrastructure Skills- Science & Technology

Expanding Access to AI Resources, Skills, and Technology Nationwide

The government is treating AI as a "Digital Public Infrastructure" (DPI) to democratize access to compute power (GPUs) and datasets for startups and common citizens. Initiatives like the *IndiaAI Mission* and Bhashini aim to bridge the language and hardware divide to support the vision of Viksit Bharat @2047.

The Union Government is promoting inclusive access to AI infrastructure, skills, and technology as a core development pillar. This initiative aims to support the vision of Viksit Bharat @2047, ensuring that the benefits of Artificial Intelligence reach every stratum of society.

Understanding AI Democratisation

Meaning- AI democratisation refers to the equitable spread of AI capabilities, tools, and benefits across society, ensuring they are not monopolized by big tech firms or select experts.

Objective- To make AI accessible, affordable, and usable for individuals, businesses, governments, and communities, enabling a wider population to build and influence AI systems.

Core Pillars- Researchers identify three structural pillars-

1. Democratizing AI Use (Accessibility).
2. Democratizing AI Development (Creation).
3. Democratizing AI Governance (Regulation).

India's Approach

AI as Digital Public Infrastructure (DPI)- India treats AI as DPI to ensure that a rural startup has the same technological foundation as a global giant.

Access to Resources- It moves beyond just "apps" to providing core building blocks like high-end computing power, vast datasets, and model ecosystems.

Comprehensive Pillars of AI Democratization

The Data Pillar (Accessibility & Quality)

Breaking Silos- True democratisation requires ensuring "Big Tech" doesn't hold a monopoly on data, the "fuel" of AI.

Open Resources- Initiatives like AIKosh host over 7,500 datasets across 20 sectors, helping startups/non-profits build models without high collection costs.

Synthetic & Representative Data- Utilizing synthetic data and Open-Source Datasets allows developers to bypass privacy hurdles and data scarcity.

Data Literacy- Fostering a "Citizen Data Scientist" movement ensures data is accurately labeled and representative of diverse populations.

The Compute Pillar (Infrastructure & Affordability)

Bridging the Hardware Gap- High-end processing power must be a utility, not a luxury.

Subsidized Power- Deployment of 38,000+ GPUs and 1,050+ TPUs. Available at rates as low as ₹65 ($0.78) per hour (nearly one-third of the global average).

Cloud & Edge AI

1. Cloud Democratization- Allows students to "rent" GPU credits cheaply.
2. Edge AI- Enables powerful models to run locally on affordable smartphones.

Connectivity- Reaching 99.9% district coverage with 5G ensures compute access even in remote areas.

The Tools Pillar (Usability & Open Source)

Removing the Coding Barrier- shifting focus from complex coding to intuitive design.

No-Code/Low-Code- Tools like AutoML allow small business owners to create forecasts via drag-and-drop interfaces.

Foundation Models- Users can fine-tune Pre-trained "Base" Models (e.g., Llama, Mistral, or India's indigenous BharatGen) for specific regional languages/niches.

Open Ecosystems- Frameworks like PyTorch and TensorFlow keep breakthroughs in the public domain.

The Knowledge Pillar (Literacy & Education)

Workforce Readiness- Tools are only effective if the workforce is skilled.
Reskilling- AI education is integrated into government programs for factory workers, medical staff, and educators.
Democratizing Logic- Teaching the underlying logic of AI helps the population understand its limitations and risks.

The Governance Pillar (Ethics & Safety)

Oversight- Prevents "shadow IT" and algorithmic bias.
Bias Detection- Using Responsible AI toolkits to audit algorithms for discrimination based on race, gender, or location.
Regulatory Clarity- Frameworks like the EU AI Act or 2025 India AI Guidelines provide roadmaps for safe innovation.
Public Trust- Ensuring transparency and accountability in AI development.

About Artificial Intelligence (AI)- Concepts & Market

Definition- A branch of Computer Science creating systems capable of Reasoning, Learning, and Self-Correction.
Strategic Goal- To drive economic growth and national security; AI leadership is seen as a key determinant of geopolitical power.

Key Technologies

Machine Learning (ML)- Learning from data without explicit programming.
Natural Language Processing (NLP)- Understanding human language.
Computer Vision- Interpreting visual inputs.
Robotics- Interacting with the physical world.
Deep Learning- Neural networks for complex processing (speech/image recognition).

Market Dimension

Global AI Market- Estimated at ~$400–450 billion (2026); projected to cross $2–2.5 trillion by early 2030s (CAGR ~26–30%).
Indian AI Market- Projected to reach ~$15–20 billion by 2027 (CAGR 25–35%).
Talent- India has ~16% of the global AI talent pool (2nd worldwide); workforce demand approaching 1 million by end-2026.

Sectoral Applications- AI for Social Good (2026)

Agriculture (Precision & Resilience)- Shifts from input-based to information-based decision-making.
Kisan e-Mitra- Voice-based AI chatbot in 11+ regional languages.
National Pest Surveillance System- Identifies 400+ pest species for real-time risk warnings.
Healthcare (Bridging the Last Mile)- Compensates for doctor shortages in rural areas.
Early Detection- Automated analysis of X-rays/CT scans for TB/Cancer.
Telemedicine- AI-driven triage prioritizes critical cases.
Language & Inclusion (Removing "Language Tax")- Bhashini Platform- 1.2 million downloads; real-time translation in 36+ Indian languages.
Disaster Preparedness- MausamGPT- Provides real-time, conversational safety advisories at the Panchayat level.

Why India Needs to Democratise AI?

Breaking the "Language Wall"- 90% of Indians don't use English. Tools like Bhashini allow vernacular access to digital services.
Empowering the "Invisible" Workforce- 490 million informal workers lack business tools. Digital ShramSetu- Uses AI to build micro-credentials for credit access.
Securing "Digital Sovereignty"- Avoiding status as a "data colony."
IndiaAI Mission- Network of 38,000+ GPUs rented at ₹65/hour.

BharatGen- First foundational model built on Indian data.

Reskilling (Skills-First Economy)

SOAR Program- AI ethics/ML basics for students from Class 6.

Regional Hubs- 31+ Data and AI Labs in Tier-2/3 towns.

Initiatives Taken to Democratise AI

High-Performance Compute

1. Sovereign Infrastructure- 38,000+ GPUs & 1,050 TPUs operationalized.
2. India Semiconductor Mission (ISM) 2.0- ₹1,000 crore allocation for chip design.

Digital Public Goods (AI Kosh)- Repository of 7,500+ datasets and 273 pre-trained models.

Sustainable Power ("Green AI")

1. SHANTI Act 2025- Targets 100 GW nuclear capacity by 2047.
2. Leveraging 50% non-fossil fuel capacity for Green Data Centres.

Human Capital

1. YUVAi- AI literacy for youth (13–21 years).
2. Curriculum- AI basics mandated in schools nationwide.

India's Integrated AI Strategic Stack (2024–2026)

Category	Initiative	Primary Objective	Strategic Impact (as of Feb 2026)
Compute & Hardware	India AI Mission & ISM 2.0	Building sovereign processing power and local chip manufacturing.	• 38,000+ GPUs deployed. • ₹76,000 Cr+ allocated for domestic semiconductor fabs.
Data & Models	AI Kosh & Bhashini	Providing high-quality datasets and indigenous language models.	• 7,541 datasets available. • AI services active in 36+ local languages for rural access.
Infrastructure	MeghRaj (GI Cloud) & 5G	Secure government hosting and high-speed connectivity.	• 2,170+ ministries onboarded. • 99.9% district coverage for 5G processing.
Global Leadership	India-AI Impact Summit 2026	Setting the agenda for the Global South.	• Shifted the global narrative from "Safety Only" to "AI for Inclusive Growth."
Diplomacy	DPI & Compute Equity WG	Exporting "India Stack" and sharing GPU resources.	• MoUs with 23 countries. • Championing GPUs as a Global Public Good.
Sustainability	SHANTI Act 2025	Ensuring clean energy for massive AI data centres.	• Nuclear power target of 22.38 GW to sustainably fuel the AI revolution.

Challenges & Concerns

Cybersecurity ("Agentic" Shift)- Autonomous AI agents can exploit 90% of vulnerabilities in <90 minutes. Need for AI-driven Zero-Trust Architectures.

Algorithmic Bias- Models trained on urban/Western data can exclude marginalized groups (e.g., pension rejection due to dialect).

"Black Box" Problem- Lack of Explainable AI (XAI) makes appeals difficult.

Data Privacy vs. Open Innovation

1. Shadow AI- Unauthorized use of AI causing data leaks.
2. Consent Fatigue- Need for Privacy-by-Design (Federated Learning).

Sovereign Compute Bottleneck- Demand from 2 lakh+ startups outstrips supply of GPUs. "Compute Divide" favours well-funded players.

Environmental Cost- Energy-intensive training clashes with Net Zero goals.

The Seven AI Chakras (2026 Focus Areas)

1. Human Capital- Employability surged to 56%.
2. Inclusion- Voice-AI used by 38 million farmers.
3. Safe AI- India AI Safety Institute monitor's bias.
4. Science- India is the 6th largest patent filer in AI.
5. Resources- AI Kosh offers free datasets.
6. Resilience- AI-optimized grids save 15% energy.
7. Social Good- Telemedicine closing rural gaps.

Way Forward

Infrastructure Chakra

1. Ensure compute is a Digital Public Good.
2. Semiconductor Mission 2.0- Focus on domestic chip fabrication.

Innovation Chakra

1. Bharat Gen- Rollout of sovereign models supporting 15 languages (aiming for 22).
2. Domain-Specific AI- Models like Agri Param and Ayur Param.

Governance Chakra

1. India AI Safety Institute (AISI)- Mandatory safety testing and bias audits.
2. Policy-as-Code- Automating compliance with DPDP Act 2023.

Global Chakra

1. Leading the Global South via the "Democratizing AI Resources" Working Group.
2. Three Sutras- People, Planet, Progress.

Conclusion

India's strategy ensures AI is a public good, not a luxury. By combining affordable compute, inclusive skilling, and indigenous innovation, India is building a scalable ecosystem to serve as a global model for inclusive development by 2047.

Source- https-//www.pib.gov.in/PressReleasePage.aspx?PRID=2225781&reg=3&lang=1