

AI Race: What India should Do?

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Just a fortnight back, the United States committed billions to semiconductor investments with Stargate Initiative, laying the groundwork for their technological future. The aim was to create 100,000 jobs and secure pole position for US in AI.

In another part of the world, an open-source AI model emerged in Deep Seek, shaking the foundations of proprietary systems with its unmatched cost-efficiency and performance. Deep Seek developed an open-source product in less than two years with 200 employees and less than \$10 million in capital. In comparison, Open AI boasted 4,500 employees and had \$6.6 billion in funding.

Sam Altman, CEO of open AI founder previously calling India's efforts to develop its own AI models as "totally hopeless" made a complete about turn and said that India should take a leadership role in AI space.

The global AI race has begun. Each week, the world bears witness to groundbreaking innovations that push the boundaries of what we once thought possible. With its young demographic and a well-established Digital Public Infrastructure, India needs to rapidly develop capabilities to lead the next phase of the AI revolution.

India's Momentum:

Our numbers tell a story of immense momentum:

India has 420,000 AI professionals – a force larger than many nations' entire tech sectors. A 92% AI adoption rate amongst enterprises– the highest in the world. And a \$17 billion market potential. These are the building blocks of a new technological superpower. The Government's commitment is unequivocal. It has launched an India AI Mission is a clear declaration of intent.

Our developer community is the second largest in the world, behind only the U.S. India has 240+ Gen AI startups, of which 70% offer Vertical-Specific Solutions. The Indian Generative AI startup ecosystem is evolving rapidly, with 70% catering to industry-specific challenges in sectors such as healthcare, education, BFSI, and agriculture. For instance, Sarvam AI is working on building a foundational models with Indic languages. Niramai is a health-tech startup using AI to detect early signs of breast cancer in women. BHASHINI is breaking language barriers with built-in support for 22+ languages to make communication more inclusive. It has already powered over 100 million inferences, proving its widespread use and reliability.

With such a vibrant ecosystem of innovation, we have the necessary foundation to catalyse both the pace and scale of a new wave of digital transformation. India's story is one of a billion people+

fundamentally reimagining its digital architecture in less than a decade. *First*, look at what we achieved in financial inclusion –we took bank-account penetration from 30% to over 80% in just 7 years. The World Bank and IMF said this should take 47. By rethinking DPI, we cut the cost of opening a bank account from \$23 to just 15 cents. This is a complete paradigm shift.

Second, examine the scale of digital payments - \$568 billion in monthly UPI transactions, with India handling 49% of global real-time payments. More than just the digitisation of existing payment flows, India has created entirely new economic behaviours and possibilities at a scale never seen before. This infrastructure has created a completely new generation of technology companies. We built close to 108 unicorns in this period, powered by DPI. From payments, we moved to healthcare startups using the health stack, lending platforms leveraging the account aggregator framework, and commerce companies building on top of open networks.

Third, look at how DPI proved transformative during crisis. During the pandemic, we could instantly transfer \$4.5 billion to 160 million people. No paperwork. No delays. Just direct digital transfers to every eligible citizen. From construction workers to farmers, from women to rural workers – India facilitated direct, instant, and leakage-free transfers when they needed it most.

On this open-source, interoperable infrastructure, we created an ecosystem that allows both public and private innovation to flourish. The results speak for themselves: 14 million businesses registered on GST, 863 million internet users, and an expected 13.42% digital economy growth rate. With a globally recognized talent pool, relatively low electricity costs, abundant land, a vast reservoir of data, and strong government support for an aspirational entrepreneurial vision, we should lead this race.

The Challenge:

A foundational pillar of the AI ecosystem that demands urgent attention is AI hardware. GPU's are the brain of AI and the key pillar on which machine intelligence is built. The Biden Administration, amongst its last order, issued the AI diffusion rule, thereby putting severe controls and restrictions on import and export of GPU computing facility.

Despite India being a Quad partner, the US put India under the Tier II category – restricting import of advanced GPUs as well as large scale training of frontier AI models.

This places severe handicap on India's ability to develop and grow as an AI power.

The Hardware Imperative:

India must take decisive steps to build and fortify the hardware backbone powering AI systems, ensuring they deliver unmatched efficiency, reliability, and scalability. Owning our AI hardware capabilities is a necessity for securing independence in an increasingly tech-driven world. Investments in AI hardware will create jobs and attract significant capital, while also

sparkling a ripple effect of innovation across industries. By developing robust hardware ecosystems, India can position itself as an indispensable partner in global supply chains, amplifying its influence on the international stage. Nurturing cutting-edge research and cultivating homegrown expertise will unlock breakthroughs that solidify India's leadership in AI hardware innovation.

Finally, championing open-hardware ecosystems will foster collaboration and inclusivity, ensuring accessibility for innovators and developers around the world. To lead the AI revolution, we must understand this truth: hardware is more than an accessory—it is the engine driving it all.

What Must India Do?

To maintain our sovereignty in technological advancement, and lead from the front, we must not allow ourselves to become a technological colony of the USA and China. This requires us to do the following:

- i. India must innovate in a nimble, less energy consuming, cost-effective manner. We must do more for less like ISRO.
- ii. Open Source is the way forward, but we must create an environment that encourages brilliant and clever engineering. We must converge software with computing power to achieve solutions for pressing challenges like improving learning and health outcomes at the lowest cost.
- iii. We must build sovereign frontier models which are based on our data sets and do not have any inherent biases. It should be an end-to-end AI ecosystem and not just the application layer.
- iv. Since India has 22 recognized official languages and a vast number of local dialects, we must build multilingual and multimodal foundational models.
- v. As a Quad partner, India should secure its position among Tier-I countries in the realm of AI diffusion, and not be subjected to any restrictions or controls.
- vi. There must be a sense of great urgency and a mission-driven approach.

When future generations write the history of AI, they must mark this decade as the moment when India transformed from a service provider to a global innovator.

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