Made in India AI, for India and the world

- ***Amitabh Kant****

No other technology in recent times has taken the world by storm as much as artificial intelligence (AI). The significance of AI lies in its ability to enhance efficiency and productivity, provide personalized experiences and drive innovation across industries. Its impact will only continue to grow as the technology evolves. As AI continues to transform and revolutionize the way we live and work, it's essential to recognize its vast potential and harness its power to drive positive and constructive change at every echelon of society.

The impact of AI on education, access to curated knowledge, and economic productivity – one example being via automation of various programming tasks - cannot be overstated. Today, according to Satya Nadella, 30 percent of code in Microsoft is written by AI. For a technology as important as this, it is imperative for our country—now world's fourth largest economy—to develop sovereign capabilities in this field. This is important for three primary reasons:

Firstly, *Aatmanirbharta* (self-reliance) in this technology will spur our domestic startup ecosystem and attract private sector investment. Other leading countries in AI are already seeing the benefits of this independence: For example, China recently banned Nvidia chips to boost sovereign chip making capacity.

Secondly, building AI that is attuned to the nuances, culture, history, and languages of India will make AI accessible and applicable to every Indian.

Thirdly, responsible sovereign capability in this field will become increasingly important for national security. For this, you need advanced models that keep clear records of where their data comes from (data-lineages) to prevent hidden malicious behaviors that could emerge at critical moments. Several countries are already spending billions of dollars in this domain. The essential ingredients for building this capability are threefold: data, computing power, and skilled talent, which operate in a virtuous cycle.

Today, OpenAI's ChatGPT in India reportedly has more monthly active users than in any other country, about 33% higher than in the U.S. Companies like OpenAI, which have raised around $40 billion in total funding, are burning $1-2 billion each month to attract users by giving their services at 'zero' cost. This predatory pricing is encouraged by U.S. policies which seek to import data and actively 'export' AI.

Apart from user-acquisition, companies are using our data to train even superior closed-source AI models. If India doesn't develop *Atmanirbharta* in AI, our future may involve having AI services powered by our own data, but owned by others, and then sold back to us. Instead, we should adopt the best features of global models, let them work within India, but set rules that encourage Indian and foreign investment. This will help create a positive cycle of more data, better compute resources, and more talent, boosting our overall AI development.

The government of India, through initiatives like the India AI Mission, has taken bold steps to support Indian startups such as Sarvam AI, SoketAI, Gnani.ai and Gan AI to build sovereign models from scratch. However, unless these models are used on Indian data in the service of every Indian, their true potential will never be realized. India should augment the potential of its

huge demographic dividend by ensuring that sovereign AI reaches the last mile and provides a bulwark against AI use leading to wealth centralisation.

and history shows that in tech, sometimes those who come second can actually build faster, learn smarter, and skip the pitfalls. Clive Osborne made the first laptop computer and went bust. Apple is the beneficiary. Alta Vista developed the first search engine and is now defunct. Google utilised the opportunity. A massive opportunity exists for India to leapfrog in AI. However, to do this effectively, we need to address the following issues:

Firstly, the government should only deploy sovereign or open-source models that are securely run on sovereign infrastructure for its internal operations. Using closed-source models with non-auditable behavior poses serious security risks and the potential for policy leaks. Additionally, partnerships like the recent AICTE initiative offering free licenses to foreign model providers for students and teachers should be disallowed. Such arrangements result in valuable data leaving India, which can be used to profile Indian citizens and improve foreign models. They also undermine fair competition through predatory pricing. Unlike earlier technologies like internet search, where data was a secondary revenue source, in AI, data is a fundamental, integral input that directly influences the quality and capabilities of the core product.

Secondly, the government should require that all AI models and APIs serving users in India operate on infrastructure hosted entirely within Indian borders. No user data should flow outside India for applications involving large language models (LLMs). This approach will attract significant private investment in compute infrastructure, such as GPUs and other accelerated hardware, and improve privacy protections for Indian citizens by preventing data from leaving the country and benefiting foreign AI capabilities at India's expense.

While India has made progress through public funding and initiatives like the open GPU marketplace, our compute capacity remains vastly behind global leaders. For example, OpenAI and Nvidia recently announced a partnership to scale to 10 gigawatts of GPU capacity—equivalent to roughly 5 million of the latest high-performance GPUs like Nvidia's Blackwell series—whereas India's current capacity is around 30,000 GPUs. Bridging this gap requires massive private sector investment and foreign direct investment (FDI).

The government can play a vital role by creating demand by aggregating it and providing access to sovereign models as a public good. The same computing infrastructure used for inference can also be harnessed for training new models, creating a synergistic boost to India's AI capabilities. This concept aligns with Nvidia CEO Jensen Huang's idea of 'intelligence factories'—centers dedicated to AI "manufacturing." Like the "Make in India" initiative for hardware, we should promote the 'manufacturing' of AI and intelligence solutions within India, with 100% local value addition, while welcoming global capital and intellectual property.

Thirdly, the government should work on creating a new type of Digital Public Infrastructure (DPI) that integrates all government services, tourism data, NCERT educational content, emergency services, schemes, railway bookings, the Swayam platform, and similar systems. The government should then encourage developers of sovereign models and applications to create platforms that comply with this infrastructure. These platforms would give all Indian citizens easy access to sovereign AI models, government services, and knowledge bases like NCERT textbooks.

This approach would enable any citizen to access a wide range of services through a simple, intuitive platform where they can just ask for what they need. Imagine a farmer being able to call a number and ask about pest strategies, a carpenter asking about woodworking techniques in Tamil, a child asking complex physics conundrums to an AI tutor, or a Divyangjan asking about the schemes they are eligible for. To increase reach, multiple modalities such as voice, mobile apps, messaging platforms etc should be used.

Fourthly, by significantly increasing AI demand in a country of 1.4 billon, both through mandating inference within the country and providing AI services to Indian citizens, India can attract substantial private sector investment in computing infrastructure. This will also encourage Foreign Direct Investment (FDI) and help bring back top global AI talent. Better access to computing resources will reassure talented researchers worldwide that India is a viable place to pursue advanced AI research.

To support this, India needs a dedicated national program focused on attracting and retaining top-tier AI experts. This will lead to better methods for curating data and sharing non-personally identifiable information as a public good, as platforms like AI Kosh under the India AI mission are already doing. Ultimately, this will create a virtuous cycle of data, computing power, and talent—driving India's AI capabilities forward and enabling us to leapfrog in the field.

By empowering citizens with AI and bringing in the Make in India philosophy, India can unlock significant and lasting growth while also ensuring social equity. India must take bold strides to build a thriving end-to-end AI ecosystem. The opportunity is immense and the potential for global impact is unparalleled. The AI race is very much wide open.

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