What Would a People-centred AI Policy for India Look Like?

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Digital sovereignty should not be measured by the government's autonomy to impose its wishes on its own people, and technological leadership should not be measured by the number of start-ups, funds raised, or people unilaterally subjected to faulty artificial intelligence. Sovereignty and leadership in technology should mean developing appropriate solutions for real problems. This goal requires the government to prioritise public welfare and development over the short-term desires of large domestic capital and its own ideological moorings in neo-liberalism and surveillance.

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The term "generative artificial intelligence (AI)" is disputed for its merit in describing large models that use huge data sets to output language, image, video, and/or audio. Throughout this article, I will still use the term generative AI to describe these models because I am interested in the category of generative AI that has been denoted by the market. Prominent examples of generative AI models and products include ChatGPT, Stable Diffusion, and Gemini. Since generative AI seems to significantly drive market movements and policy worldwide, an analysis of India's options and tendencies in generative AI policy is germane.

Situating Generative AI in the History of Big Tech

It is useful to trace the series of technological and market developments that led to the explosion of generative AI in 2022–23. In the last few decades, the development of digital technology has been defined by Silicon Valley. The cornerstone of this development has been the "platform" form, which can be described in various ways. The definition of a platform depends on which characteristics we want to emphasise, so for our purposes, a platform is an entity that connects multiple actors, for instance, various sides of a marketplace (Sanchez-Cartas and Leon 2021). A digital platform uses data generated by interactions among these actors to improve its services and target products and services to customers. For instance, Facebook is a platform that connects people to other people, and advertisers to these people. It uses data generated by people to target advertisements to them. Amazon is a platform that connects buyers to sellers, and targets sellers' products to buyers. Google's Play Store connects app developers to app users.

The digital platform is arguably Silicon Valley's most impactful innovation. The economic impact of platforms is often profound and destructive. Platforms can deploy speculative capital (like venture capital) to sell their services below cost for long enough to drive competitors out of the market, and then drive prices back up once the market has been captured. Deep discounting of this nature has been the preferred strategy of ride-hailing platforms like Uber (Gulati and Puri 2021). Platforms also use their data and network effects (the advantage of a captive audience, and useful information about them, in simpler terms) to expand into other markets. They also displace the very sellers they connect with buyers: for instance, Amazon and Flipkart sell their own products on their own platforms, use the data generated by third-party sellers to supply their own products, and use algorithms to direct customers towards their own products over those of third-party sellers. This practice is called self-preferencing (Khan 2017; Long and Amaldoss 2024).

Platforms have transformed various industries, including unlikely ones like news. News media today primarily reaches its audience through social media, and most advertising revenues accrue to social media (Tracy 2019; Myllylahti 2018). The loss of advertisers has meant that news media is no longer sustainable as a business in many markets, and the repeated layoffs in news all over the world are testament to this fact. Some governments, including those of Australia and Canada, have tried to force platforms to share revenue with news organisations due to this skew. Needless to say, the near disappearance of a vibrant press has had implications on the political, social and economic conditions of people everywhere. Platforms have also transformed the world of work. Casualisation of labour, already rising, was legitimised by gig platforms. The "gig-ification" of work is now spreading outside platforms, as more traditional employers use granular monitoring and pay by task rather than per month or even by the hour.

In short, platforms have had an outsized impact on much of the economy.

But in the last few years, in addition to platforms, the tech industry—also called big tech—has been moving through hype cycle after hype cycle, with questionable technological foundations. The promotion of crypto "assets" is an example of such a cycle: a product with no real use was inflated in value by speculators in the technology industry and legitimised by large financial institutions. Crypto asset hype was led from the front by big tech, with Facebook and others promoting their own private cryptocurrency called Libra in 2019 before it was shut down by regulators globally. The apotheosis of this bizarre phenomenon was reached with the promotion of non-fungible tokens (NFTs), a technology meant to track the ownership of digital files, which collapsed as quickly as it rose (Hawkins 2023). Another example is the metaverse project, which was at best premature and at worst irresponsibly and wildly speculative. Big tech is evidently running out of ideas. To make matters worse, one pillar holding up digital platforms, that of targeted advertising, might itself not be very effective. Research and reporting indicate that it is not at all clear that targeted advertising functions better than traditional broad advertising—and if so, all of big tech is built atop a bubble that is very costly to burst (Hwang 2020; Moore 2021).

It is against this backdrop that the advances in generative AI emerged. Generative AI is not fraudulent in the way that many of the previously described products are. The newest chatbots are able to generate very convincing content, as evidenced by their impact on the proliferation of disinformation and misinformation. The scientific advances made in large language models in the last few years are significant and interesting. However, the economic usefulness of these models is still up for debate given the unreliability of the content they generate. There is no general way to know which information generated by an AI model is correct and which is not, and such untrustworthiness makes the product not very useful for many industries.

This does not mean that generative AI is not deployed—often, it is deployed anyway and degrades the original service being provided. For instance, a lawsuit in the United States (US) alleges that United Health, a healthcare group, illegally denied older patients healthcare by bypassing doctors and deploying an AI model to determine healthcare allocation, while knowing that this model had a 90% error rate (Napolitano 2023). Such hasty deployment and consequent harm have been a feature of machine learning models since before the rapid rise of generative AI chatbots from 2022 (Heaven 2021).

It is no surprise that big tech is latching on to generative AI as the next big thing regardless of its shortcomings. AI has been good for market capitalisation and provides succour for an industry struggling to tell convincing stories. To the extent that generative AI is useful in limited contexts, it accrues value to big tech due to two reasons: one, that generative AI is created by companies (usually big tech) that own or are able to acquire the requisite computational resources and data to train these models. Two, that generative AI is deployed primarily on platforms owned by big tech (Kak et al 2023).

The history of the products preceding generative AI shows us that even products with limited or no utility can be promoted for years and can generate unprecedented profits for big tech in the short term.

Different AI Strategies Proposed for India

This short and simplified history can help us contextualise the different strategies towards AI proposed by different actors today. The first one, proposed by big tech, is a vision of generative AI as a general-purpose technology poised to transform the world. In this telling, generative AI can and should be used in every sector, and the best society can do is compensate for the loss through a universal basic income. It is worth noting that this narrative has changed over time: in 2021, OpenAI's chief executive officer (CEO) Sam Altman (2021) said about AI,

> The world will change so rapidly and drastically that an equally drastic change in policy will be needed to distribute this wealth and enable more people to pursue the life they want.

By January 2024, he was saying that AI will "change the world much less than we all think and it will change jobs much less than we all think" (Whiting 2024). Research seems to prefer the latter opinion—a May 2024 survey spanning Argentina, Denmark, France, Japan, the United Kingdom (UK), and the US showed that generative AI products are regularly used by only a very small minority of online respondents (Fletcher and Kleis Nielsen 2024).

The US government has a view that is functionally aligned to the big tech view: generative AI as an economically and strategically useful technology, one that must be naturally entwined with national security. For instance, Joe Biden's October 2023 Executive Order is preoccupied with national security even in the context of global concerns like biological risks from pathogens (The White House 2023a). The US AI businesses and government agencies work practically in tandem: in June 2024, OpenAI hired Paul Nakasone, former director of the US National Security Agency, to its board. Even before the recent surge of generative AI, the National Security Commission on Artificial Intelligence brought together intelligence and national security officials with big tech representatives to promote a view about the inevitability and efficiency of AI in warfare (Suchman 2021). The US policy actions and recommendations conflate AI risks with US national security risks, with the underlying assumption that the US national security concerns are synonymous with the concerns of humanity (Vipra 2024).

The Indian government's approach is less concerned with national security, and more with ensuring that India benefits from the growing demand for computational resources, as well as with digital sovereignty (Joshi 2024). Computational resources include semiconductors and the data centres that bring them together into clusters so that large AI models can be trained and run. India's Semiconductor Mission and IndiaAI Mission (with outlays of ₹76,000 crore and ₹10,000 crore, respectively, although it is unclear if there is an overlap in these outlays) seek to position India at a meaningful place in the global semiconductor manufacturing, assembly and testing supply chain.

Much like its positions on the World Trade Organization (WTO) on economic

sovereignty, the Indian government favours digital sovereignty in the sense of independent decision-making not constrained by foreign platforms. However, it has also chosen to collaborate with the US national security apparatus in relation to AI. On the sidelines of the Quad summit in 2022, US President Biden and Indian Prime Minister Narendra Modi launched the India–US Initiative on Critical and Emerging Technologies (iCET), which includes plans for cooperation on AI among other technologies. The India–US joint statement employs the American language of "resilient technology value chains and linking defence industrial ecosystems" (The White House 2023b).

The Indian government and state governments are also keen on the use of AI in different sectors, especially in agriculture. The union government aims to reproduce the qualified success of India Stack, a collection of quasi-public digital technologies, including digital identity (Aadhaar) and unified payments interface (UPI) through Agri Stack. Agri Stack is envisioned as a collection of databases and platforms to "bring various stakeholders together to improve agriculture in India" (Ministry of Agriculture and Farmers' Welfare nd). The World Economic Forum (nd) seeks to further this goal as well, through a programme called Artificial Intelligence for Agriculture Innovation.

Another impetus around AI comes from various technologists, business leaders and policy professionals, whom I shall collectively refer to as the "third way" group here. This group has largely been closely involved with the creation of India Stack, promotes digital public infrastructure, and seeks to carve a third way between what they describe as the US unregulated free market model and the Chinese state-led model of digitalisation (Matthan 2023). It will be a digression here to examine whether this characterisation of the US and Chinese approaches to digitalisation is correct. What is important is that parts of this group have a different perspective on the AI strategy that India should develop. Nandan Nilekani, for instance, would like India to focus on smaller AI models and frugal innovation, starting from examining use cases to design AI for, rather than the other way round (ETtech 2024).

The last significant approach on the table is one of democratising AI. Proponents of this approach believe that AI technology ought to be developed as well as deployed through democratic and participatory means, such that the needs of affected people and the expertise of workers on the ground are taken into account (Jauhar et al 2024; Banerjee et al 2024; Seger et al 2023; Sambasivan 2021).

Are Indian Socio-economic Problems Mere Use Cases for AI?

Despite their merits, all these approaches are driven by existing technology rather than by existing problems. It is clear that the big tech approach is led by technology, not least because it has become increasingly difficult to justify the cost of development of generative AI in relation to its impact on productivity and profit. The Indian government is right to care about digital sovereignty and India's place in the AI value chain, but it does not go any further than this. It is not much of an achievement to secure an important place for India in the supply chain for a technology that might itself be unimportant. It is better for India to first develop a clearer idea of where generative AI might add real value to the lives of a large number of people. The government's drive to deploy AI in sensitive sectors like agriculture demonstrates a proclivity for trends over impact. Other scholars, notably Joshi (2024), have explained how AI policy discourse in India also serves to privatise the state's administrative and governance functions.

To an extent, even the "use-case led" approach of the third way group is inadequate. Agriculture, education and healthcare are sectors with severe and entrenched political economy problems. Any policy thinking involving these sectors must begin with a comprehensive reckoning of their contradictions and political configurations, and not with technology (Kak 2024). For instance, agrarian distress in India is not attributable to a lack of platformisation or even technology; technological solutions can be a backdoor to impose politically contested ideas on the sector. It is no wonder that Indian farmers' groups have opposed Agri Stack as it is a technology stack based on flawed land records, steamrolling over concerns about socially segmented landownership. This system of landownership is upheld through violent means and is co-constituted with caste. This particular attempt to centralise agricultural data through digitalisation, under current conditions, can hardly be seen as anything except a method of opening up agriculture for large capital in India, a goal for which the legislative route was defeated by protracted farmers' protests.

India's experience with educational technology also shows that entrenched political economy issues cannot be solved with the quick fix of technology, much less with unreliable technology like generative AI. Much-vaunted edtech start-ups like Byju's have been shown to exploit the anxieties of students and their parents in an atmosphere where the union government refuses to invest seriously in public education, and where unemployment is rife. These predictable problems were ignored by the government, which launched a public–private partnership with edtech businesses in 2020 (All India Council for Technical Education nd; Parasa 2022). Even as of 2022, the government promoted digitalisation as the solution for India's education and unemployment problems (Suvarna and Patwardhan 2022).

It is clear that sectors of India's economy are not inherently use cases, they do not always require big-data-led digital solutions (not all technology is digital, and not all data is big), and their political contestations must not be muted through AI. These sectors are tied to production, productivity, and welfare, and are not grounds for experimentation with speculative technology. Even relatively, radical approaches like the democratisation of AI take AI as a given technology that must find use cases. It is possible that generative AI as it exists today only has a handful of appropriate use cases. We can only discover an honest answer to the question of usefulness if we begin from the problems rather than from the specific iteration of digital technology.

Even encouraging pilot studies on the use of AI must be viewed with healthy

scepticism: if the last few decades of fashionable policies like microfinance have shown us anything, it is that micro-economic effects do not always translate to the same benefits when implemented at scale. At scale, global political economic phenomena assert themselves. One cow lent to a beneficiary may increase his earnings, but when everyone in the district receives a cow, these comparative benefits tend to decline; and to implement a programme at large scales, large capital with all its proclivities, including predation, must be employed (Finch and Kocieniewski 2022; Greeley 2006). Similarly, yield improvements in chillies in a few villages through the use of AI do not promise yield and price increases when the programme is scaled up; additionally, they do not at all account for, and even serve to obscure, the international consolidation of input markets in agriculture and the unequal WTO policies that Indian farmers have to contend with. It is possible that "AI" is able to tackle some of the smaller problems plaguing Indian agriculture; but it is unclear whether AI is the most efficient way of solving these problems, and if the costs and risks of using AI are worth it in an already embattled, crisis-ridden sector. Similar concerns about commercial interests driving AI policy exist in healthcare (WHO 2021).

Characteristics of a Good AI Policy for India

In times of such uncertainty about the utility of generative AI, what kind of AI policy can India shape for itself? I argue that the following four elements are essential for a people-centred AI policy for India.

Evidence-based investment: There is merit in waiting for strong evidence of the capabilities and potential use of generative AI to emerge before committing public funds and capacity to its development, and before tying national sovereignty to AI sovereignty. This does not mean doing nothing—it means that investments ought to be targeted to those aspects of generative AI that are likely to ensure returns in the long term. Often, investing in computational power is considered equivalent to investing in picks

and shovels during a gold rush. But developing computational power capacity in a country takes years, even decades, and also requires enormous upfront investments. If generative AI in its current compute-intensive form is shown to be not that useful in a few years, such investments will not create the returns hoped for. There are other reasons to invest in computational power—semiconductors are used in all aspects of modern life—but generative AI ought not to be the driving force of such investments at this point.

Even the provision of resources like land and electricity for data centres should be made in consideration of the potentially fleeting nature of generative AI's impact. Data centres use a lot of water and electricity, the wastage in speculative endeavours which India cannot afford. The intense resource use of data centres has also led to unrest in the neighbourhoods where they are located (Rone 2023; Valdivia 2022). Other countries have previously restricted the use of technology like cryptocurrency mining due to excessive energy use. In keeping with its climate pledges, India should make careful choices in the allotment of scarce ecological resources for digital projects. This is the context in which we must view the plans of Microsoft, Amazon and others to invest in constructing resource-hungry data centres in India (Parkin and Hodgson 2024).

Reducing deployment harm: While generative AI may not be poised to upend the world, it can create benefits and cause harm while it is deployed. The government can protect the economy and people's rights by ensuring that legal systems are equipped for the real-world use of generative AI. One example is through ironing out liability issues in AI deployment. Laws should clarify where liability falls when different kinds of AI deployment harm an individual or a group. They must ensure both that the use of AI does not mean that no one is held accountable for harm, and also that the faults of AI are not used to scapegoat people who are not responsible for developing or deploying it. Clear rules on liability can bring to light and

internalise the true costs of generative AI among those who deploy the technology. For instance, Air Canada withdrew its customer support chatbot based on generative AI after the chatbot invented a refund policy prompting a customer to book a flight. Air Canada argued that the customer ought to have checked the website for the refund policy, but was forced by a tribunal to honour the refund policy invented by the chatbot (Belanger 2024). The withdrawal of the chatbot by Air Canada indicates that Air Canada had belatedly internalised the costs of a faulty AI chatbot that could disseminate misinformation.

In the healthcare sector, where generative AI seems to be quite useful for diagnostics and drug discovery, clarity on legal liability is especially important (Mello and Guha 2024). AI-induced medical devices are already recognised under the Medical Devices Rules, 2017, which impose licensing and grievance redressal requirements. However, specific liability issues related to AI malfunctioning in healthcare settings still need to be addressed (Lenin 2024). The WHO (2021), for example, has suggested that hospitals could be held liable for not exercising due care in selecting and maintaining AI.

Another way of reducing deployment harm is through paying special attention to cybersecurity. Generative AI is shown to create new cybersecurity risks. AI makes it easier to generate mass cybersecurity threats and AI systems themselves are vulnerable to attack in specific ways (Renaud et al 2023). India's draft National Cybersecurity Policy, which was prepared in 2021 and reformulated in 2023, has not been adopted yet (ETTelecom 2023). India regularly ranks very high among the countries that face the most number of cyberattacks in a year (Pillai Rajagopalan 2023). The IndiaAI Mission does not have a specific focus on cybersecurity. In particular, a focus on cybersecurity in the educational aspects of the IndiaAI Mission would be useful because India faces a shortage of at least three million cybersecurity personnel as of now (Sharma 2024).

There are two other issues related to the deployment of generative AI. One is that of data protection, dealt with in

detail by Fui-Hoon Nah et al (2023), Chen and Esmaeilzadeh (2024), and Hacker et al (2023). The other is that of competition concerns in various industries with the introduction of generative AI, and in the production of generative AI. The latter is explored in detail by Vipra and Korinek (2023) and Vipra and Myers West (2023).

Reclaiming digital public infrastructure as a market-correcting measure: As was made clear at the Group of Twenty (G20) meeting hosted by India in 2023, digital public infrastructure (DPI) has shaped up to be a significant export of digital governance from India. DPI can be used to define various digital services, but in this article, I am not referring to all e-governance services or all digital infrastructure that are promoted by the government. Taking from the G20 2023 definition, DPI refers to shared, interoperable digital systems that "can be built on open standards and specifications to deliver and provide equitable access to public and/or private services at societal scale" (Chaudhuri 2023). DPI has emerged as a response to the big tech platform business model: while platforms privatise marketplaces and cannibalise market participants' roles, DPI seeks to reacquire for the public the function of connecting different parts of a marketplace. In other words, DPI in this sense refers to public infrastructure on top of which private and public players can build and offer their own services. Here I do not include endeavours like DigiYatra, which seek to surveil airports using facial recognition technology, and which deviate significantly from the anti-monopoly thrust of DPI but are still promoted as DPI.

Of course, many of India's DPI experiments are at best quasi-public: UPI is controlled by the National Payments Corporation of India, which is owned by a consortium of major banks but is governed by the Reserve Bank of India. Even a flawed UPI represents DPI because it prevents the monopolisation of the payments protocol in India; the Open Network for Digital Commerce similarly seeks to promote a non-monopolistic alternative to e-commerce platforms. This pro-competition potential of DPI should be the aspect that is encouraged and developed further, while simultaneously increasing public control over DPI.

The Indian government should take the anti-monopoly potential of DPI seriously and continue to evolve appropriate business models for appropriate markets to prevent the private takeover of entire markets as they digitalise. The role of domestic capital has undoubtedly been important in funding DPI experiments. However, for DPI to be more public in its orientation, the government must also independently frame policy such that all domestic businesses are provided a level playing field to challenge big tech.

The concept of DPI has provided a truly unique opening to experiment with digital business models that do not rely on monopolisation as the only generator of revenue. When designed well, DPI can shape the global digital market rather than merely respond to it. Independent and public-oriented policy is important so that India does not miss out on this opening.

Broadening AI policy: The quest for developing artificial "intelligence" is not new. Large language models and deep learning are one of many pathways towards developing AI. Much of the global workforce in advanced AI development is Indian and is trained in Indian universities. As a large country with a wide technical talent base, India can do better than broadly follow AI approaches that are currently supported by US technology billionaires. Deep learning is expensive and relies on large data sets and extensive energy. India can afford to invest in more research on AI approaches that are not deep learning, or in the development of new hardware that does not merely build on current AI chips. There is likely not only one way to create useful AI, and investment in risky science can pay rich dividends in the long term.

Today, India's AI policy is choosing to follow not only deep learning as a technique and large language models as an iteration of that technique, but also the interface of chatbots using this technique. There is little appetite for innovation at any of these layers; it is as if all India can do is apply chatbots, even if based on smaller models, to Indian problems using Indian languages. India's educational strategy in AI too falls short here. The IndiaAI Mission is limited to actions like including AI in education, "upskilling" the non-IT workforce, promoting industry-academia collaboration, and bringing AI courses to small towns. These actions are not meritless, but they do not indicate an ambitious vision of India playing a leading role in the advancement of AI. India is still envisioned as being a follower of approaches that US industry develops. While the conversion of technology into public utilities or mass market products is important, science and engineering students in India must be rewarded for skills other than pitching yet another platform to venture capitalists.

In Conclusion

It is not wrong to aim for digital sovereignty or Indian technological leadership. However, sovereignty should not be measured by the government's autonomy to impose its wishes on its own people, and technological leadership should not be measured by the number of startups, funds raised, or people unilaterally subjected to faulty AI. It should also not just be measured by the ability of people to "democratically" choose between a small set of given methods of using existing technology, especially when the utility of that technology is doubtful. Sovereignty and leadership in technology should mean developing appropriate solutions for real problems. This goal requires the government to prioritise public welfare and development over the short-term desires of large domestic capital and its own ideological moorings in neo-liberalism and surveillance.

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