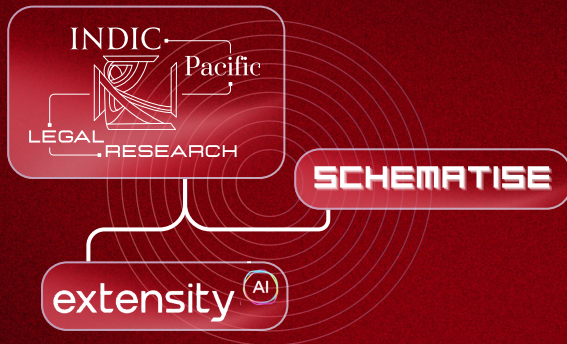


Joint Infographic Report

Artificial Intelligence, Market Power and India in a Multipolar World



IPLR-SLDA-EXTAI-IG-001

SANKALP SRIVASTAVA, ABHIVARDHAN & MARIUS-CONSTANTIN DINU

“Mind is destiny. Knowledge is destiny.”

Our Infographic Reports at Indic Pacific Legal Research aim to educate audiences across technical and layman backgrounds to understand legal and policy problems in the simplest way possible, howsoever complicated they really are.

Artificial Intelligence, Market Power and India in a Multipolar World, First Edition, 2025

Author(s): Sankalp Srivastava, Abhivardhan and Marius-Constantin Dinu.

Published by: Indic Pacific Legal Research LLP,
8/12, Loyal Road,
Mayo Hall, Allahabad, Uttar Pradesh, India - 211001

Printed and distributed online by Indic Pacific Legal Research LLP in the Republic of India.

ISBN: 978-81-990807-1-3
Date of Publication: August 15, 2025
Price: 400 INR.

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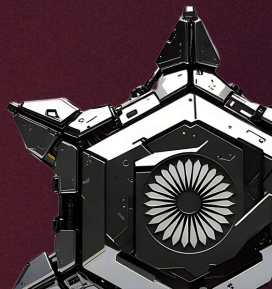
Cite the book as:

Sankalp Srivastava, Abhivardhan & Marius-Constantin Dinu, Artificial Intelligence, Market Power and India in a Multipolar World, (Indic Pacific Legal Research, August 15, 2025).

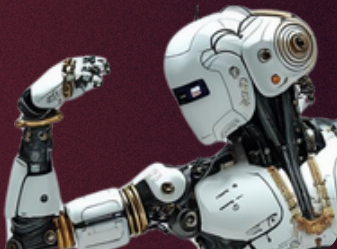
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About Us



We are a technology law consultancy, specializing in regulatory and customised legal advice on legal, policy, and ethical issues surrounding Web2 technologies, including Artificial Intelligence.

We offer solutions which are practical, helpful, and realistic. Regulatory uncertainty exists in the realm of digital technology, which is why we are glad to help.



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Schematise is a company led by Sankalp Srivastava that believes in the creation of domain-specific and meaningful Free and Open Source Software. Occasionally, Sankalp also ideates on issues that are auxilliary to the domain of knowledge representation in the domain of Open Source AI, Legal Tech, and more.



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About the Partners for this Report



ExtensityAI

At ExtensityAI, our team brings together academic rigor and proven industry prowess. Our researchers and engineers combine expertise across critical domains including bioinformatics, robotics, generative AI, and neuro-symbolic systems, with multiple peer-reviewed publications at prestigious AI conferences.

Led by researchers trained under pioneers like Sepp Hochreiter and mentored by experts including Gary Marcus, our team specializes in developing multi-step reasoning systems and verifiable architectures.



1

**Power Concentration
in the Global AI
Ecosystem**

2

**Geopolitical and
Socio-Economic
Consequences for India**

3

**Governance,
Enforcement, and
Equity: Addressing the
Regulatory Vacuum**

4

Conclusion

Table of Contents



1 Power Concentration in the Global AI Ecosystem

- Power Concentration in AI Infrastructure and Value Chains: An Introduction
- From Tangible Assets to Intangible Factors and the Flow of Capital
- Chokepoints and Technological Dependencies
- The AI Value Chain: Contractual Adaptations and Conflicts of Terms

Power Concentration in the Global AI Ecosystem

This section establishes the report's core thesis: that the AI ecosystem is designed to concentrate power. It details the mechanisms used by dominant players to build and protect their market position.

Power Concentration in AI Infrastructure and Value Chains: An Introduction

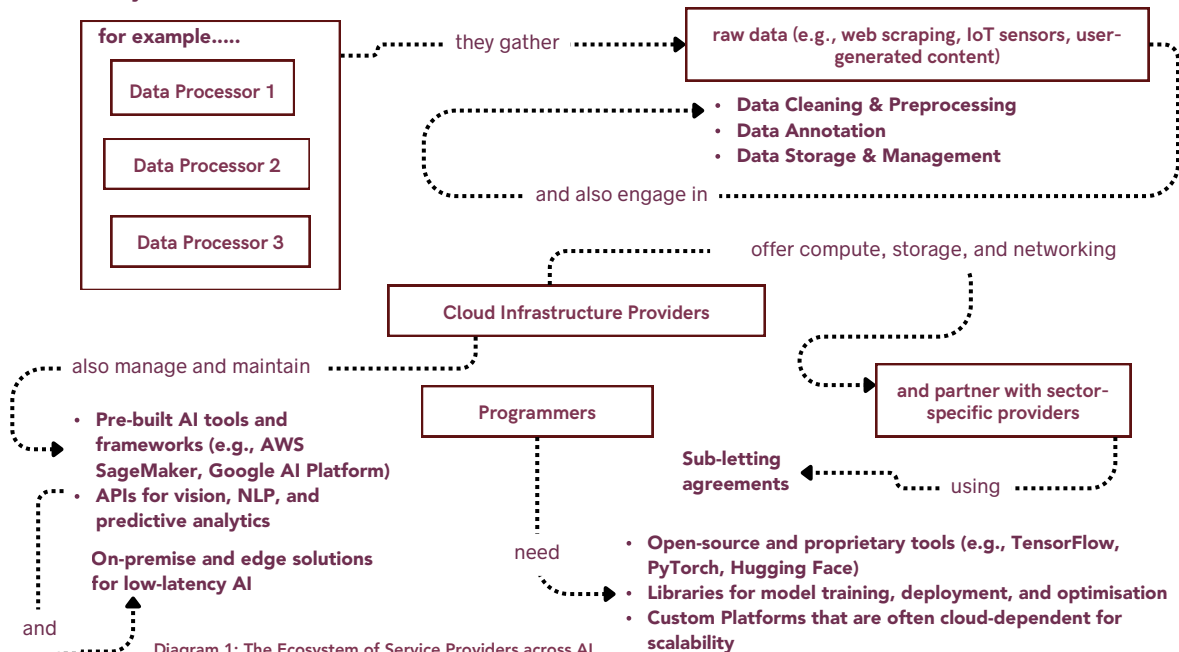
The ecosystem of service providers across the host of AI services is vast and multitudinal –

- there are various data processors,
- cloud infrastructure providers have sub-letting agreements with sector-specific providers, and
- programmers often venture into building tools and platforms that depend on the cloud providers, forming unique data curation opportunities.

Similarly, AI/ML (machine learning) service providers offer access to their services on a shared infrastructure in many cases – they may build using cloud infrastructure and diffuse or converge around the need for common development tools in this regard.

Power Concentration in the Global AI Ecosystem

Ecosystem of Data Processors



Power Concentration in the Global AI Ecosystem

Power Concentration in AI Infrastructure and Value Chains: An Introduction

It is this infrastructural backbone in global AI ecosystems that deserves careful and magnified analysis. Now, the cloud infrastructure market, which forms the foundation of the modern AI industry, is dominated by a handful of providers: Microsoft Azure, Amazon Web Services, Alibaba Cloud, and Google Cloud, for instance.

This market concentration directly translates into dominance in the development of large-scale, deep learning and Generative AI models (including large language models and their workflows), as the same entities leverage their vast computational resources to lead the field.

This consolidation of infrastructural and developmental power in a few corporations creates a significant imbalance, with potentially disastrous consequences for the bargaining power of smaller players in contracts—a dynamic that is explored throughout this report.

Power Concentration in the Global AI Ecosystem

From Tangible Assets to Intangible Factors and the Flow of Capital

The geoeconomic landscape of Artificial Intelligence is marked by a decisive shift from a reliance on tangible assets to a valuation of intangible factors such as data, intellectual property, and digital governance frameworks. If one were to look at the flow of commodities that AI enables and the values AI-augmented services add to existing solutions lead to two questions that deserve asking:

- what are the challenges that AI-enabled services pose to the prevailing regulatory institutions?
- how well can AI-enabled services operate within an unregulated market?

With AI/ML being adopted increasingly, there is a flow of commodities and capital from industries that previously depended entirely on human intelligence. For better or for worse, the commodification of creative content, for instance, has been attempted to be severed from the human who performs that task / job themselves. It means that a lot of creative content has been commodified as of mid-2025, with increased attempts to severe human performance and contributions per se. Some initial attempts have been illustrative, but while tall justifications have been made, it has not worked effectively yet. Diagram 2 featuring a figure by Alix Partners gives an interesting outlook of the possible commercial adoption of LLM-based creative content.

Power Concentration in the Global AI Ecosystem

From Tangible Assets to Intangible Factors and the Flow of Capital

FIGURE 1: AI USE CASES SPAN THE ENTIRE VALUE CHAIN

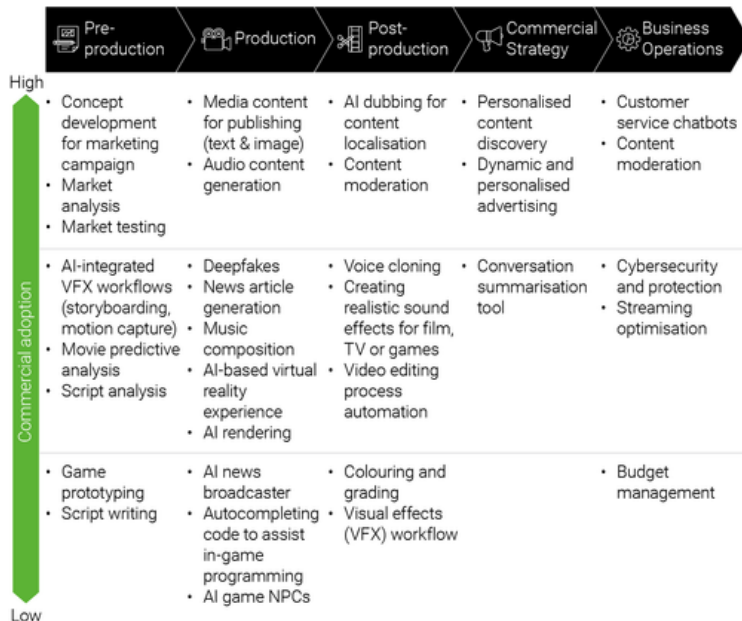


Diagram 2: AI Use Cases in Creativity tabulated
(Source: [Alix Partners](#))

Power Concentration in the Global AI Ecosystem

From Tangible Assets to Intangible Factors and the Flow of Capital

Nevertheless, there is a layer of abstraction provided by AI/ML which makes the flow of commodities subject to the norms of content creation decided by autonomous systems, which are used in various ways to change how national income contributions are received. Thus, for example, there can be a large component of content creation that will be outsourced to the AI industry. Similarly, where AI is used as a tool alongside data analysis, it will lead to decisions involving big data even by smaller organisations.

The effects of this flow of commodities and capital (see **Diagram 3 in the next page**) that may appear to the authors are depicted as follows:

- Generative AI (in particular, LLMs) and Retrieval-Augmented Generation (RAG) mechanisms have caused disruptions in how organisational data is stored on the cloud, and the extent of its expression will change to support external user access as well.
- Users may implement AI/ML systems in tandem with other systems of significant harm, such as those involving individual profiling and cybersecurity measures, with “AI” as a keyword to mask the actual labour performed in developing those systems.
- Further, organisational partnerships between powerful sector players result in the creation of challenges for ascertaining data ownership, especially amongst indigenous platform participants.

Power Concentration in the Global AI Ecosystem

From Tangible Assets to Intangible Factors and the Flow of Capital

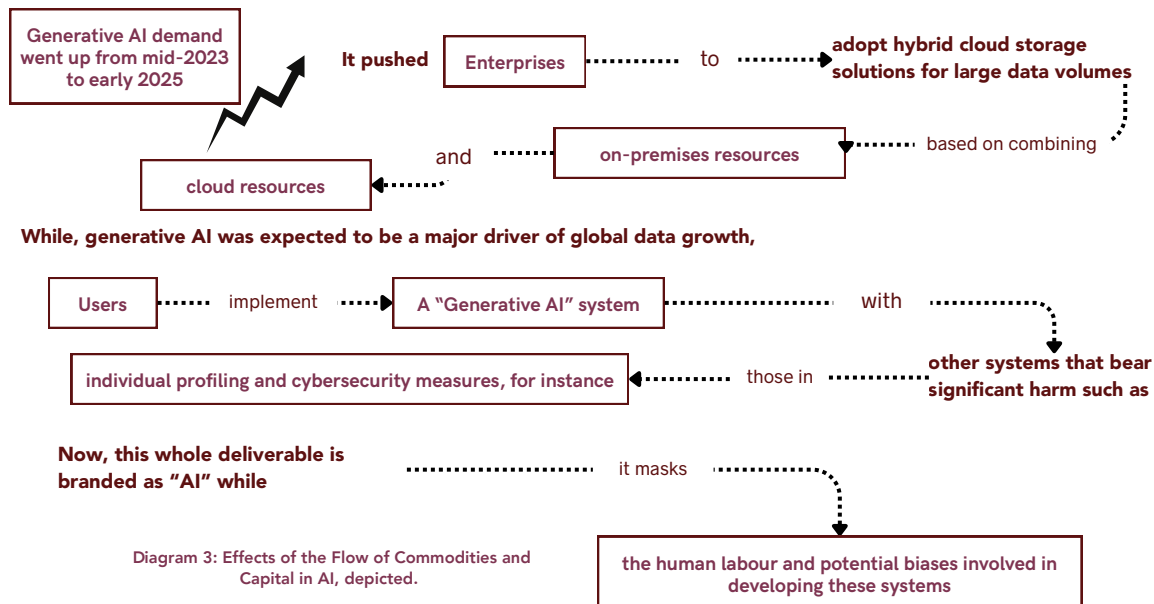


Diagram 3: Effects of the Flow of Commodities and Capital in AI, depicted.

Power Concentration in the Global AI Ecosystem

Chokepoints and Technological Dependencies

A critical vector of geoeconomic vulnerability lies in hardware chokepoints and supply chain dependencies. India's reliance on imports for over 50% of its electronic components creates a significant structural weakness. This is exacerbated by acute dependencies in the semiconductor value chain, from critical minerals to advanced fabrication.

The global supply of essential minerals like gallium and germanium, and gases like high-purity neon, is concentrated in a few nations. China, for instance, produces over half of the world's annual output of germanium, a mineral for which India is completely reliant on imports.

This concentration leaves AI hardware production susceptible to export controls and geopolitical shocks, as evidenced by China placing germanium under export licensing and India actively engaging with the Chinese government to navigate these restrictions.

These chokepoints are sometimes used as direct leverage; for instance, reports have emerged of Chinese authorities preventing personnel and machinery from moving from China to India for Apple's contract manufacturer, Foxconn.

Power Concentration in the Global AI Ecosystem

Chokepoints and Technological Dependencies

To counter this, India has launched the National Critical Mineral Mission with an allocation of ₹16,300 crores (around 194 million USD) for developing capabilities from exploration to recycling.

Furthermore, four new semiconductor projects, including ventures by Tata and an HCL-Foxconn joint venture, aim to localise packaging (OSAT) capabilities by 2027, though they will not address the absence of advanced logic node fabrication.

Policy complements are crucial, such as using diplomatic channels like the Indo-Pacific Quad (India, Japan, Australia and the US) to negotiate joint stockpiles of critical materials and linking PLI (production-linked incentive) scheme disbursements to end-of-life take-back quotas to create a circular economy for hardware components.

On the infrastructure front, edge data centers in Tier-2 and Tier-3 cities face significant grid losses (21%) and poor power stability, creating another chokepoint for decentralised AI deployment.

Power Concentration in the Global AI Ecosystem

The AI Value Chain: Contractual Adaptations and Conflicts of Terms

While regulatory challenges occur in an omnipresent manner, the development of AI as a mechanism for directing the development of analytical legal study is a key aspect. Due to the novelty of AI even in cyberspace jurisprudence, the jurisprudence needs to be adapted to account for the use of AI amongst different service providers in the data lifecycle. This occurs within the framework of the flow of commodities and capital from human-centred decision-making processes to those perceived as “automated”.

A central conflict of terms has emerged amongst different service providers. Contractual data is not available on an entirely transparent platform concerning the governance practices of data mining, and the web scraping industry has been largely unregulated. Except for cases wherein the effect of the data scraped was republication in a copyright-infringing manner, there has been a **discernible lack of authority** preceding the Generative AI adoption where data collected non-consensually from websites for training a model is permitted. Hence, the Generative AI industry operates within the gray areas of law by allowing its participants to engage in deriving works from the industry participants. Illustratively, one must consider some examples as described in the next page.

Power Concentration in the Global AI Ecosystem

The AI Value Chain: Contractual Adaptations and Conflicts of Terms

- The AI industry invests heavily in cloud infrastructure with a majority of its costs globally coming from these contracts. This signifies an emphasis on working well into the future, regardless of whether regulations are able to keep up. This kind of obligation can drive further automation and push those dependent on cloud infrastructure to co-establish their AI workflows.
- Cloud contracts prohibit users from adopting the data outputted by the model owned by a particular enterprise for use in training models by another enterprise. This kind of vendor-lock-in, if it begins to be enforced, can have a cascading effect on user freedom and would require a legal response that can adequately govern the training and outputs of models. As institutions the world over grapple with cyber law and privacy regimes, this is a particularly impactful contractual limitation that deserves more attention.
- In terms of anti-trust regulation, these kinds of practices would most likely not prove to be combinations which are illegal. That companies avoid publicity when these arrangements are made is a lesser-known but contrastingly widely accepted norm. For example, an individual seeking to use the competitive hallmark of low-cost large language model inferencing – DeepSeek – has to nevertheless gather compute resources that are more or less scarce in order to gain access to the model's inference process and capabilities.

Power Concentration in the Global AI Ecosystem

The AI Value Chain: Contractual Adaptations and Conflicts of Terms

Hence, there is presumably a three-way conflict here – between producers of training data, the AI development framework which capitalises on the availability of this data, and the end-users who demand protection from the liabilities arising under the legal framework.

The producers of training data and end-users have in common their ambiguity to regulation, their lack of bargaining power and organisation, and their position with respect to the large capital which develops AI as an augmentation to the current capabilities of automated decision makers.

Power Concentration in the Global AI Ecosystem

Intellectual Property and the Appropriation of the Digital Commons

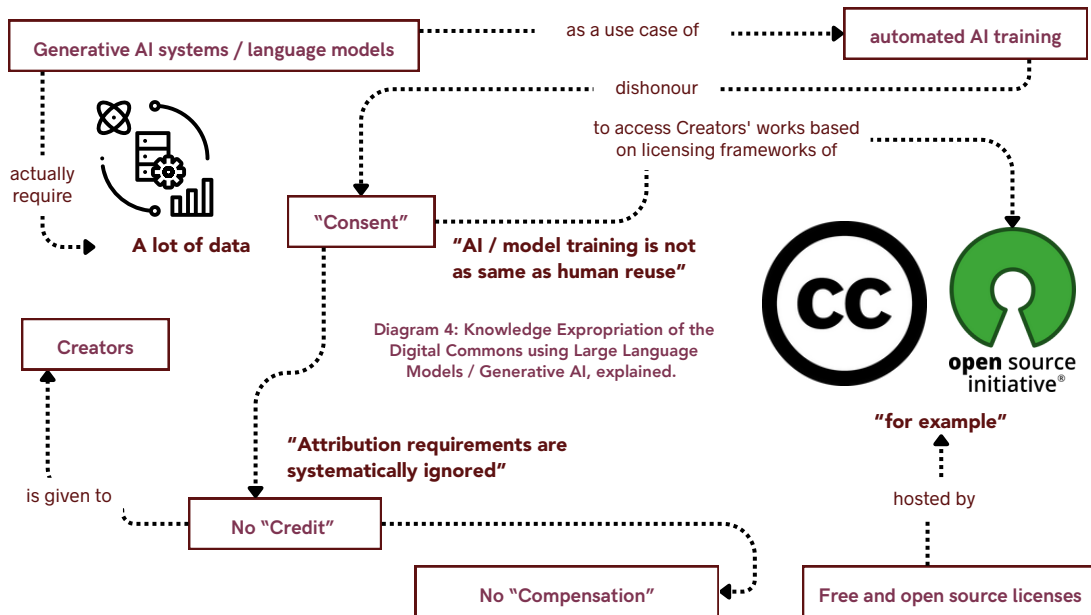
One of the key threats of AI being used for economic gain arises from the fact that the current regulatory system does not adequately take into account the **expropriation of knowledge** (*Diagram 4 in the next page*).

This can have antithetical effects on the subject matter of much of the norms arising out of copyright and other forms of intellectual property protection for traditional knowledge. This dynamic is central to the AI value chain, where the collection of training data often involves an appropriation of the digital commons.

This process repurposes what free and open-source software licenses, including those regulated by organisations such as Creative Commons and the Open Source Initiative, have made available under a “social contract” with those who adapt these licenses as software developers. There is consequently a large amount of discontent about publishing code or other forms of content under these licenses. This conflict is often articulated through the principles of Consent, Credit, and Compensation, where creators argue their work is used without their consent, their contribution is not credited, and they are not compensated for the **value generated**. Naturally, the role to protect copyright claims in various jurisdictions can evolve independently, but it must be borne in mind that the organisations who administer such contracts – namely Creative Commons International and Microsoft, who owns GitHub – can easily or indirectly bear a conflict of interest with their profit-maximising goals.

Power Concentration in the Global AI Ecosystem

Intellectual Property and the Appropriation of the Digital Commons



"i.e., no financial benefit is provided to creators while massive value extraction happens"

2

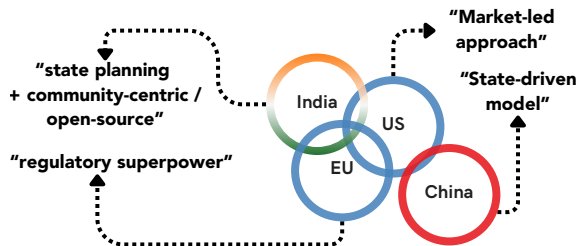
Geopolitical and Socio-Economic Consequences for India

- Indian Market Power and Geopolitical Position
- Divergence in Domestic Policy Preferences
- Issues Arising from Disenfranchisement of Labour
- Emerging Micro-attribution and Compensation Mechanisms

Geopolitical and Socio-Economic Consequences for India

This section uses India as a detailed case study to explore the dual-edged nature of AI. It will analyse how AI acts as both a tool for national advancement and a source of significant internal disruption.

The Geopolitics of Multipolarity



Multipolarity x Market Power Intersection

- Trade bargaining power through AI leadership
- Specialised production division benefiting diplomatic stance
- Financial centre positioning affecting regulatory credibility or causing regulatory arbitrage
- "AI washing" practices (Builder.ai case)
- Human resource protection as diplomatic strategy

Market Power Dynamics

involves

Data-driven economy development

- Automation-focused long-term vision
- Native capacity building
- Economic modernisation through data specialisation

Global Supply Chain Integration

involves

- Current Capabilities Enhancement
- Import/Export Networks

such as

The influence of trade routes on AI participation

Financial centres (Singapore, London) as AI hubs

Supply chain positioning

Diagram 5: Geopolitics, Labour, and Market Power in India's AI Economy, decoded.

Geopolitical and Socio-Economic Consequences for India

This section uses India as a detailed case study to explore the dual-edged nature of AI. It will analyse how AI acts as both a tool for national advancement and a source of significant internal disruption.

Indian Market Power and Geopolitical Position

Market power has a unique role to play in the multipolar world that Artificial Intelligence exists in. The existence of market power in a particular country can positively affect its prospects in the AI industry, predominantly because of the following reasons (**check Diagram 5 as well in the previous page**):

- **Allowing development of a data-driven economy:** AI/ML is an industry which has been driven by the long-term vision of automation, and developing native capacities in this regard can lead to further specialisation in the economy. Hence, AI/ML provides an impetus to the modernisation of the economy by developing sectors which put data at the forefront, facilitating empirical analysis on the developmental and public policy front.
- **Increase in bargaining power on the diplomatic front:** AI plays an essential role in international trade – since governments seek to place themselves as leaders in the market for the components and services developed by them (for example, for digital public goods). Internationally, the division of labour operates to the benefit of specialised means of production of AI-enabled services. This is demonstrated through specific strategic actions, such as India leveraging its G20 and GPAI chairmanships to project soft power and shape global AI norms with an industrial development perspective.

Geopolitical and Socio-Economic Consequences for India

Indian Market Power and Geopolitical Position

- **Current abilities of the systems in a region or country:** AI proves to be mostly an addition of production capabilities for the already present economic capabilities of a country. For example, Indian firms are actively engaging in AI as a way to power up their back-office and BPO operations. This is a clear demonstration of the multiplicative effect of AI whereby it is a tool for building upon an already assigned role in the global trade network.
- **Market Demands:** When AI or model development demands that certain labelling functions be performed, the role played by Kenyan companies in the data labelling process was magnified. However, the problems of inequality in this process continue to plague the system as, despite their vital role, Kenyan companies occupy a position at the bottom of the AI supply chain.
- **Import and Export Networks:** Supply chains are built internationally to facilitate trade in goods and services, and the existence of trade routes such as through financial centres in Singapore and London have determined, to a key extent, the nature of their participation in the AI supply chain. These financial centres are increasingly being employed to develop financial services powered by AI through which a reasonable portion of AI regulation is also conducted. Hence, the place occupied in the global supply chain can demonstrate the strength of the regulations put in place by that sovereign unit.

Geopolitical and Socio-Economic Consequences for India

Divergence in Domestic Policy Preferences

Policy preferences in the global AI ecosystem are diverging significantly. The United States champions a market-led approach, China promotes a state-driven model, and the European Union acts as a regulatory superpower. India is navigating these poles by forging its own path, which combines elements of state-led strategic planning with a community-centric, open-source ethos. This is visible in the fragmentation between central and state-level AI governance. While the central government proposes national frameworks like the Principles for Responsible AI via the NITI Aayog, these often remain non-binding. In parallel, states such as Maharashtra, Telangana, and Tamil Nadu are implementing their own flagship AI use cases. This sub-national dynamism, however, leads to a lack of uniform ethical processes and procurement standards, creating an inconsistent governance landscape across the country and hindering India's ability to project a coherent stance on the global stage on multiple fronts, including the credibility of their AI research, policy, procurement, and dissemination initiatives.

Geopolitical and Socio-Economic Consequences for India

Issues Arising from Disenfranchisement of Labour

The Indian economy is typically dependent on labour-intensive production processes, and much of its market power and diplomatic stances arise from the protection of its human resource. As new iterations of models developed by the industry attempt to perform reasoning tasks, this has consequences for the industries in which it is deployed. The challenge arises from the assignment of tasks to AI which are conceived as requiring human agency in their respective domains. This challenge is posed not only to the workforce involved in the industry but spreads to end-users, beneficiaries, and sponsors.

The following are some of the observable effects of the replacement of labour:

- As wage labour suffers a loss of income due to automation, it is pushed into more precarious positions of employment, and therefore, the equalising effect of authorities is expected to provide refrain. However, organisations lay their trust on an AI system for applying norms for equality of opportunity, safe workplaces for women, and diversity in the workplaces through written output or workflow-driven decisions. This can lead to an accelerated effect of disenfranchisement through the outsourcing of core functions, as workers do not have access to the AI mechanism involved in this process in the same way that they have to humans.

Geopolitical and Socio-Economic Consequences for India

Issues Arising from Disenfranchisement of Labour

- As a consequence of the processes involving human agency being performed by non-human or hybrid systems, the outcomes of these processes get homogenised by the inclusion of AI in decision-making. For instance, the use of Application Tracking Systems (ATS) in the hiring process can lead to the perpetuation of biases. Furthermore, workplaces may no longer have a human agent to direct concerns to in the organisational set-ups in which they may operate.
- The presence of AI tools in service industries can become concerning when the decisions on crucial aspects for which a person was put in the chain are effectively outsourced to AI. The usage of AI for the creation of Legal-Tech products, for instance, remains a risk because the information provided to the legal professional to take a decision is effectively being sourced from a tool that is prone to hallucinations – potentially leading to incorrect or unfair decisions and diluting trust & credibility associated with that legal professional in any plausible human sense. The lack of human-like capabilities in this field is already well documented – lack of episodic memory, contextual understanding, and cognitive capacities are all limited for the language models (or GenAI workflows) placed in the human's position.

Geopolitical and Socio-Economic Consequences for India

Issues Arising from Disenfranchisement of Labour

- One of the key threats of AI being used for economic gain arises from the fact that the current regulatory system does not adequately take into account the expropriation of knowledge. This can have antithetical effects on the subject matter of much of the norms arising out of copyright and other forms of intellectual property protection for traditional knowledge. This dynamic is central to the AI value chain, where the collection of training data often involves an appropriation of the digital commons, repurposing what free and open-source software licenses have made available under a “social contract” with developers. That being stated, while compulsory licensing is extremely hard to achieve, as for instance, also admitted by the USCO in their [May 2025 report](#), the appropriation of digital commons attributable to forms of knowledge expropriation can affect various legal and economic norms of engagement.

Geopolitical and Socio-Economic Consequences for India

Issues Arising from Disenfranchisement of Labour

- At the same time, a case of consent manufacturing is also possible, wherein while the technical design of web scraping techniques do not constitute a direct copyright infringement (for instance, model weights don't cause copyright infringements by design), the "social contract", i.e., a human-conscious sense of licensing and exercising civil and economic rights is distorted. Even if there is an economic impact and laying blame on web scraping techniques as a class of technology is legally unproductive, the economic basis is crucial, and cannot be discarded. For instance, a Beijing IP Court ruled that models of both parties were highly identical in certain aspects including architecture, convolutional layer data and others. In this case, since one entity had invested in the R&D of their AI infrastructure, their competitive interest is required to be protected. Hence, unless the larger algorithmic infrastructure fails to remain distinctive, the application of copyright law becomes difficult, and maybe impossible.

Geopolitical and Socio-Economic Consequences for India

Emerging Micro-attribution and Compensation Mechanisms

The disenfranchisement of labour in the AI value chain has spurred the exploration of emerging micro-attribution and compensation mechanisms. The current model often sees workers in the Global South facing precarious conditions with low wages and suffering from mental health harms, which starkly contrasts with the immense value generated for AI models.

For instance, to make its ChatGPT model less toxic, OpenAI outsourced the critical task of data labeling to workers in Kenya. These labourers, employed through the San Francisco-based outsourcing firm Sama, were paid a take-home wage of between \$1.32 and \$2 per hour to review and label tens of thousands of text snippets, many of which contained graphic descriptions of sexual abuse, violence, and hate speech.

This work was essential for building the AI's safety filters, yet the problems of inequality in this process continue to plague the system.

Geopolitical and Socio-Economic Consequences for India

Emerging Micro-attribution and Compensation Mechanisms

In another instance, a company called Builder.ai, a London-based AI startup once valued at \$1.5 billion, collapsed in 2025 after revelations that its “AI-powered” no-code platform, marketed through an AI assistant named “Natasha,” relied heavily on approximately 700 Indian engineers manually coding apps, rather than advanced AI.

Reports indicate the company misrepresented the engineers’ work as AI-generated, a practice dubbed “AI washing”. A 2019 investigation first exposed this, noting the platform (then Engineer.ai) depended on human contractors, with former employees stating it was “all engineer, no AI” source.

Legal filings from a 2019 lawsuit by ex-employee **Robert Holdheim** further alleged the company misled investors by claiming apps were “**80% built by AI**” when the technology was rudimentary source. While one analysis counters that Builder.ai used a code generator built on large language models like Claude, it acknowledges overstated AI capabilities source.

The engineers, often hired through third-party vendors, faced low wages and stringent non-disclosure agreements, obscuring their contributions and suggesting exploitation. The company’s financial misconduct, including inflating 2024 revenue projections by 300% and “round-tripping” with Indian firm VerSe Innovation, led to a federal investigation and bankruptcy, resulting in ~1,000 job losses, including many Indian engineers.

Geopolitical and Socio-Economic Consequences for India

Emerging Micro-attribution and Compensation Mechanisms

In that regard, it is important to explore what kind of micro-attribution and compensation mechanisms should be developed, as a non-negotiable.

First, it is more appropriate to define in a tautological way what could be the level & scale of attribution and compensation may be possible.

- **Level:** The target or scope of the action—is it focused on the whole system, the company, the entire economy, or the individual worker?
- **Scale/Type:** The nature of the mechanism's outcome—is it about providing recognition (Attribution), direct payment (Monetary), or improving conditions and power dynamics (Non-Monetary)?

To that end, attribution may be considered in the following ways, separate from the element of compensation:

- **System-Level Attribution:** This is the broadest, most high-level form of recognition. It treats the AI model as a single product and discloses its 'main ingredients'.
- **Individual-Level Attribution:** This is the most granular and detailed form of recognition. It aims to connect a specific contribution directly to the person who made it.

Geopolitical and Socio-Economic Consequences for India

Emerging Micro-attribution and Compensation Mechanisms

Now, compensation can be considered monetary as well as non-monetary, since there are certain elements of compensation which might not be possible to be mapped as monetary by design:

- **Compensatory Levels (Monetary)**

- **Macro-Level Monetary:** This refers to a large-scale financial mechanism that operates across an entire industry or digital ecosystem based on impact assessments. It is not a direct payment from one company to one worker. However, it addresses a system-wide problem with a system-wide financial solution for broad public benefit.
- **Micro-Level Monetary:** This refers to small, direct, and often continuous financial transactions from the use of an asset back to its creator or contributor. It's a direct, per-use payment linked to a specific contribution.

- **Compensatory Levels (Non-Monetary)**

- **Organisational-Level Non-Monetary:** This mechanism applies to an entire company or organisation. Its value comes from reputation, market access, and meeting ethical standards. This improves conditions for workers without being a direct wage increase.
- **Worker-Level Non-Monetary:** This mechanism is focused on empowering workers as a collective group, shifting the power dynamic between labour and the company. The value is in their collective agency. The power comes from the workers themselves.

Geopolitical and Socio-Economic Consequences for India

Emerging Micro-attribution and Compensation Mechanisms

Now, based on this analogical breakdown, one may find enabling attribution and compensation mechanisms around generative AI, a bit easier or more flexible. However, the disambiguation may be benefited by promoting inclusive and workable solutions which are promoting ethical business practices among startups and MSMEs and also keep a set of bigger companies in check.

3 Governance, Enforcement, and Equity: Addressing the Regulatory Vacuum

- The AI Knowledge Chain: Standardisation and Repurposing
- The AI Supply Chain: Enforcement Challenges in India
- Limitations of Enforcement and the Protection of Indigenous Systems

Governance, Enforcement, and Equity: Addressing the Regulatory Vacuum

*This final chapter analyses why current governance models are failing. It focuses on the institutional, technical, and epistemological challenges of regulating AI effectively and equitably. **Check Diagram 6 in the next page for a larger reference.***

Governance, Enforcement, and Equity: Addressing the Regulatory Vacuum

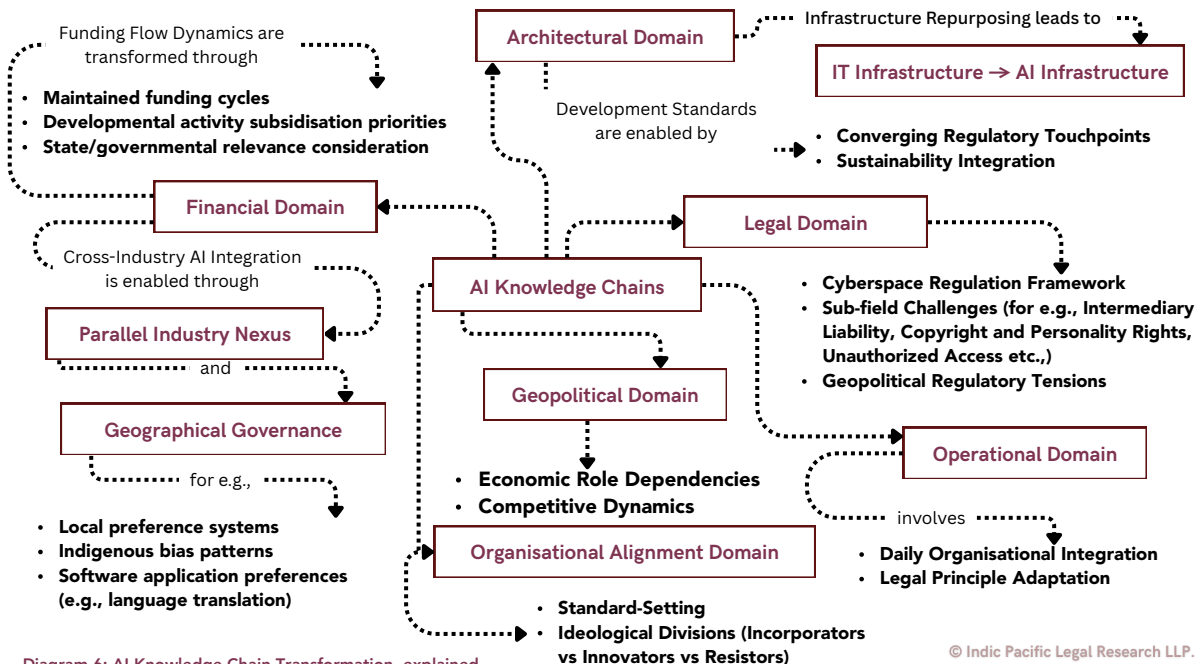


Diagram 6: AI Knowledge Chain Transformation, explained.

Governance, Enforcement, and Equity: Addressing the Regulatory Vacuum

The AI Knowledge Chain: Standardisation and Repurposing

Looking retrospectively at the past of AI model development, the white papers and research output that accompanies the release of most models, architectures, and fine-tuned models come accompanied with scarce information on the data used to train the model. In making these standards, AI/ML relies on the past standards and infrastructure that laid the basis for the Information Technology enabled services – the same developer communities and infrastructure is now repurposed. This occurs across a set of domains in which the transfer of effects radically changes how these domains interact with the law (see **Diagram 6**):

- **Architectural (see Diagram 6)** – We find the need to utilise cloud infrastructure in much the same ways – such as by utilising platforms that were reliant for hosting and managing cloud applications. While developers may create alternative spaces for hosting and deploying AI/Models for inferencing, issues relating to the standards for widely used development libraries and packages such as PyTorch, TensorFlow, Scikit-learn and many more can create popular converging points for AI/ML systems to be regulated from. This domain is also being repurposed for sustainability, with a push for “Green AI” through liquid cooling and other efficiency measures in data centres.

Governance, Enforcement, and Equity: Addressing the Regulatory Vacuum

The AI Knowledge Chain: Standardisation and Repurposing

- **Financial (see Diagram 6)** – Funding cycles maintained by philanthropic organisations, priorities for subsidising developmental activity are pushed towards certain sectors which a state and its organs may consider more relevant. This eventually includes the nexus of AI with a diverse set of parallel industries – such as cybersecurity, arts, agriculture, life sciences to name a few. Since funding flows follow a particular system of governance preferences in each geographical area or unit, these indigenous and highly local preferences are not dissimilar to biases towards a particular kind of software application – such as those already prevalent for language translation. This field derives from the already prevalent advances for AI in the previous periods of its developmental history.
- **Operational (see Diagram 6)** – The daily life of an organisational unit involves interacting with AI in many different ways – content generation, data processing, software programming, customer support, business intelligence, and many more. Each of these sectors now need a way to come to terms with the usage of the same legal principles.

Governance, Enforcement, and Equity: Addressing the Regulatory Vacuum

The AI Knowledge Chain: Standardisation and Repurposing

- **Legal and Regulatory (see Diagram 6)** – While organisations may be expected to include AI as a branding decision within the ethical boundaries determined by service providers, they are guided by the same regime of cyberspace regulations which govern aspects such as safe harbour, cybersecurity, smart contracts, data privacy, intellectual property and each of their sub fields such as intermediary liability, unauthorised access, cryptocurrency regulation, digital identity, sensitive personal data norms, copyright and personality rights. It would not be remiss to argue that each of these norms will face sufficient challenging in the forms of cyberspace regulation that each geopolitical bloc engages in. Hence, typically, regulation from the field of safe harbour regulation may face challenges in terms of how data privacy is regulated in geopolitical contexts.

Governance, Enforcement, and Equity: Addressing the Regulatory Vacuum

The AI Knowledge Chain: Standardisation and Repurposing

- **Geopolitical (see Diagram 6)** – Geopolitical associations amongst countries is dictated to a large extent by their role in the world economy. Hence Chinese companies seek to minimise costs for reasoning models such as DeepSeek due to the development of AI occurring in a highly disruptive format and the incumbent power of the United States as a governor of the largest multinational technology corporations. The eventual byproduct of these relations as they occur with respect to Artificial Intelligence and regulations is tied inevitably to the economic policy of these nations. While it would not be within the scope of this report to analyse each nation's economic policies, AI regulations are affected by these policy measures and in equal parts by the contractual relations formed between entities incorporated in those jurisdictions. These relations exist alongside the state's governance mechanisms and can be in response to these.

Governance, Enforcement, and Equity: Addressing the Regulatory Vacuum

The AI Knowledge Chain: Standardisation and Repurposing

- **Organisational Alignments** (see **Diagram 6**) – Setting standards includes, in major part, the organisations that we have discussed earlier, such as Free Software Foundation and its member organisations, WikiMedia Foundation and its various forms, associations of cybersecurity and informational security practitioners, developer communities, et al. In these formations, there is already a significant tussle between members of different ideologies which may not always be publicised but have an effect on AI governance. Hence, they can be categorised as – those who incorporate AI standards developed by geopolitical alliances, those who form their own standards as a way of organisational best practice or otherwise, and those who resist AI organisations.

Governance, Enforcement, and Equity: Addressing the Regulatory Vacuum

The AI Supply Chain: Enforcement Challenges in India

If one analyses how the technological sphere has been regulated in India, there is a massive reliance on institutions which are often understaffed or undertrained. In cyberspace, courts and regulatory institutions are expected to operationalise a goal which transcends national and jurisdictional boundaries. Their capacities in this regard must take into account the systems of Information Technology which interact with regulations in a systematic manner.

The spheres within which these regulations interact can be based on the history of the industry, the geographical proximity to other industries, the availability of labour, financial resources, and increasingly with the sphere of digital literacy.

Due to the industry being considered “disruptive,” there is relative fluidity in functioning, adoption of new technology, and innovations that get adopted as a new standard of functioning, making consistent enforcement difficult.

Governance, Enforcement, and Equity: Addressing the Regulatory Vacuum

Limitations of Enforcement and the Protection of Indigenous Systems

The challenge of enforcing justice in AI systems is compounded when interacting with indigenous knowledge systems. Alternative epistemologies, oral histories, and knowledge systems embedded in traditional ecosystems are less capable of being captured as these are not available in any known archived form, far less than the “digitised” content that most AI/ML systems rely on.

Owing to the reputation that AI/ML systems have recently attained for being less ethical, organisations looking to work in these archival spaces now may have to deal with hesitancy of indigenous communities or those with an alternative epistemology to interact with the digital domain at all. Moreover, in the field of international relations, the issue of knowledge being categorised by a typical Eurocentricity is one that is bound to arise, given that most linguistic norms are developed within this paradigm for AI/ML systems.

When studying Indian data sources, there is a growing movement to develop multilingual models – this is in itself a venture that may lead eventually to the crystallising of multilinguality in the more “AI/ML native” lexicon. This lexicon arises out of the practice of representing knowledge in typically digital standards, ontologies, and even through what is known as “developer best practices.”

Governance, Enforcement, and Equity: Addressing the Regulatory Vacuum

Limitations of Enforcement and the Protection of Indigenous Systems

Enforcing standards with components of justice in the digital sphere, thus, must direct their efforts towards a multipolar world – one where communities are given their due weightage in the development of enforcement mechanisms.

Where traditional mechanisms had faltered due to the tacit denial of cyberspace activity, AI/ML systems now have to contend with claims to justice from epistemically diverse communities, for example, in news media and academic institutions seeking to enforce copyright law, in online developer communities challenging coding via generative AI, amongst the people who annotate data for AI's enforcement mechanisms, and the omnipresent demand from communities with an alternative epistemic life (Dalits, Bahujans, and Adivasis, for instance).

The collection of data is a time-consuming process and it challenges one to think of the limitations as being built in to the AI/ML system itself. To move beyond a purely formal democracy in data collection, India is exploring concrete governance mechanisms, including frameworks like the CARE Principles for Indigenous Data Governance. The CARE principles—an acronym for Collective Benefit, Authority to Control, Responsibility, and Ethics—are people and purpose-oriented, designed to assert Indigenous Peoples' rights and interests in data sovereignty.

Governance, Enforcement, and Equity: Addressing the Regulatory Vacuum

Limitations of Enforcement and the Protection of Indigenous Systems

They act as a necessary complement to more data-centric standards like FAIR data (Findable, Accessible, Interoperable, and Reusable) by emphasising the central role of data in advancing Indigenous innovation and self-determination. A further policy complement is the establishment of Community Data Trustees, granting indigenous communities veto power over the use of their knowledge in foundation model training.

Furthermore, to ensure epistemic diversity in national datasets, grants from the Bhashini mission are being allocated to include oral-history transcripts, processed using privacy-preserving Automatic Speech Recognition (ASR), thereby integrating alternative knowledge systems directly into the AI pipeline while respecting their sovereignty.

Leadership of communities will play an important role in determining whether the process is only formally democratic or involves deeper consultation and public feedback through various stages of iteration.

4 Conclusion

- Further Readings

Conclusion

This report has argued that the development of Artificial Intelligence (particularly Large Language Models) is consolidating market and geopolitical power within a small group of dominant technology corporations. We have detailed the mechanisms through which this power is constructed and maintained, from the control of essential cloud and hardware infrastructure and the enforcement of restrictive contractual terms, to the widespread appropriation of the digital commons for training data.

Using India as a case study, we have demonstrated the profound and often contradictory consequences of this dynamic. While AI offers India a powerful tool for economic modernisation and enhanced geopolitical standing, it simultaneously poses significant threats of labour disenfranchisement, perpetuates systemic inequalities, and risks marginalising invaluable indigenous knowledge systems that do not conform to digital standards.

The existing legal, regulatory, and enforcement frameworks, both in India and globally, are ill-equipped to address the speed and scale of these challenges. To ensure a more equitable future, a new approach to governance is imperative—one that moves beyond formal democracy to empower communities through mechanisms like Community Data Trustees, enforces fair compensation for data labour, and holds dominant actors accountable for their impact on the global digital ecosystem with a better economic law basis. Without such interventions, the promise of LLMs risks being overshadowed by the peril of unchecked power concentration.

Conclusion

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Conclusion

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“The State’s role is not just to create knowledge through national labs and universities, but also to mobilize resources that allow knowledge and innovations to diffuse broadly across sectors of the economy.”

MARIANA MAZZUCATO

Author

**The Entrepreneurial State: Debunking
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