

“Regulating Digital Economy in the era of Artificial Intelligence: A Critical Analysis”

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Introduction

The rapid development and widespread adoption of artificial intelligence (AI) mark a significant milestone in technological evolution, potentially heralding the fourth industrial revolution. This transformative technology is reshaping diverse sectors by automating complex tasks, enhancing decision-making processes and driving innovation. However, alongside these benefits AI also introduces profound challenges, particularly within socio-economic frameworks such as the legal domain. The legal sector must grapple with the implications of AI on regulatory compliance, liability and ethical standards, necessitating adaptive frameworks that can effectively address these emerging complexities. In the realm of competition law AI's dual role as both a disruptor and enabler presents unique theoretical and practical considerations. On one hand AI can facilitate more efficient market operations by optimizing pricing, improving consumer choices and fostering innovation. On the other hand, it raises concerns about potential anti-competitive behaviors, such as algorithmic collusion, market dominance through data control and reduced market transparency. These dynamics compel regulators and legal practitioners to revisit existing competition policies and enforcement mechanisms to ensure they remain robust and relevant in an AI-driven marketplace, balancing innovation incentives with the protection of fair competition.

Anticompetitive Effects of Implementing Artificial Intelligence: -

In the realm of unilateral anticompetitive conduct AI technologies, particularly smart algorithms, have become powerful tools that can facilitate both exploitative and exclusionary practices by dominant firms. Exploitative practices involve leveraging AI to impose unfair conditions on consumers or trading partners, such as discriminatory pricing or differential access to services, which can harm market fairness and consumer welfare. On the other hand, exclusive practices may include using AI-driven strategies to foreclose competitors from the market, for example, by manipulating product visibility or dynamically adjusting offers to disadvantage rivals. These dual capabilities of AI pose complex challenges for competition law enforcement, as the algorithms' adaptability and opacity can obscure anticompetitive intent and effects. Moreover, smart algorithms enable firms to implement highly sophisticated discriminatory practices that go beyond traditional forms of discrimination. By analyzing vast amounts of data in real-time, these algorithms can segment markets finely and tailor prices or terms to individual consumers or groups, potentially leading to price discrimination that exploits consumer heterogeneity. Such practices can reinforce market power by extracting greater consumer surplus and reducing competitive pressure. The dynamic and self-learning nature of AI further complicates regulatory oversight, necessitating advanced tools and frameworks to detect and address these evolving anticompetitive behaviors effectively.

Challenges for Competition Law in the Face of Artificial Intelligence: -

The rapid advancement and widespread adoption of AI technologies are fundamentally transforming market dynamics, introducing complexities that challenge the existing competition law framework. These changes stem from AI's ability to influence market behavior in unprecedented ways, such as enabling new forms of coordination, data-driven dominance and algorithmic pricing strategies that may not have been anticipated by traditional antitrust rules. As a result, regulators face the difficult task of determining whether current legal provisions sufficiently address these AI-driven conduct patterns or if there is a need to develop new legal interpretations and tools to effectively manage emerging risks. Moreover, the challenges for competition law vary depending on the nature of AI's impact. In some cases, AI

may simply amplify behaviors already regulated under existing laws, such as collusion or abuse of dominance, but with greater speed and scale. In others AI may give rise to novel risks and market distortions that fall outside the scope of current antitrust provisions, such as the exploitation of vast datasets to entrench market power or the creation of barriers through self-learning algorithms. This duality necessitates a nuanced approach, balancing the reinforcement of established legal principles with the exploration of innovative regulatory responses tailored to the unique characteristics of AI-driven markets.

AI's expanding capabilities, particularly through self-learning algorithms, blur the distinction between unlawful explicit collusion and tacit collusion. While explicit collusion involves direct agreements between competitors and is clearly prohibited under competition law, tacit collusion occurs without overt communication and is harder to regulate despite producing similarly harmful anticompetitive effects, such as elevated prices and reduced market competition. AI systems can facilitate tacit collusion by enabling firms to monitor competitors' behaviors and adjust their strategies dynamically, effectively coordinating market actions without explicit agreements. This technological advancement increases the complexity of detecting and addressing anticompetitive conduct in markets. Moreover AI's influence extends the oligopoly problem beyond traditional oligopolistic markets, which are typically more prone to tacit collusion due to their limited number of players. By enhancing firms' ability to analyze and respond to competitors' moves in real time AI can foster tacit coordination even in markets that have previously been resistant to such behavior, including those with more numerous competitors. This expansion raises significant challenges for competition authorities, as existing legal frameworks may not adequately capture or deter AI-enabled tacit collusion, potentially leading to broader anticompetitive effects across diverse market structures. Consequently, regulators must consider new approaches to address the evolving landscape shaped by AI technologies.

Agreements: -

Restrictive agreements can be categorized based on the relationship between the parties involved. Horizontal restrictive agreements occur between competitors operating at the same level of the market, often referred to as collusion. These agreements may involve practices such as price-fixing, market sharing, or limiting production, all aimed at reducing competition and controlling market conditions to the benefit of the parties involved. Vertical restrictive agreements, on the other hand, take place between firms at different stages of the supply chain, such as between a supplier and a distributor. These agreements often regulate the terms of distribution, pricing, or territorial exclusivity, which can affect competition by controlling how products are marketed and sold downstream. It is important to note that restrictive agreements do not necessarily require formal contracts to be binding or enforceable. Informal arrangements or understandings, often termed "concerted practices," can also constitute restrictive agreements if they lead to coordinated behavior that restricts competition. Such concerted practices may be less explicit than formal contracts but can have similar anti-competitive effects by facilitating cooperation between parties that would otherwise compete independently. This broader definition ensures that regulatory frameworks can address a wide range of anti-competitive behaviors beyond just written agreements.

Benefits: -

Procompetitive benefits generated by AI on the demand side significantly enhance consumer decision-making by improving access to commercial information in ways that are easier, quicker, cheaper and more comprehensive. AI-driven tools enable consumers to efficiently gather, analyze and compare a broader range of offers across markets, thereby increasing transparency and empowering more informed choices. This expanded access helps reduce search costs and information asymmetries, allowing consumers to identify the best products or services that meet their preferences and budget constraints more effectively.

Moreover, AI contributes to protecting consumers from manipulative marketing practices and unfair price discrimination by detecting and mitigating biased or deceptive tactics. Through advanced data analysis and pattern recognition AI algorithms can flag suspicious pricing strategies or targeted marketing that may exploit consumer vulnerabilities. This protective function not only fosters fairer market conditions but also builds consumer trust, which is crucial for healthy competition and market efficiency. Together, these demand-side effects of AI promote a more competitive environment that benefits both consumers and businesses by encouraging innovation and better service offerings.

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Autonomous operations driven by next-generation algorithms have the potential to democratize access to online shopping by simplifying the user experience. For consumers who may lack the skills or time to navigate complex digital marketplaces, these advanced algorithms can act as intelligent intermediaries. Digital personal assistants, or digital butlers, can autonomously assess individual purchase needs by analyzing user preferences, behaviors and contextual data. They then identify the most suitable product options, compare offers across multiple platforms and execute transactions on behalf of the user, effectively reducing barriers to digital commerce. This shift not only enhances convenience but also levels the playing field by enabling a broader range of consumers to benefit from the efficiencies and choices available in online markets. By automating decision-making and transactional processes, these digital assistants can help users avoid information overload and optimize their purchasing outcomes. Moreover, such autonomous tools may continuously learn and adapt to changing user requirements and market conditions, further personalizing the shopping experience and ensuring that consumers receive timely, relevant and cost-effective solutions without direct intervention.

Competitive Advantages for AI Adopters and Disadvantages for Ai Non-Adopters

Advantages: -

AI-driven improvements in operational efficiency extend beyond simple automation of routine tasks. By integrating intelligent systems, firms can optimize complex workflows, enhance decision-making processes through real-time data analysis and improve resource allocation. This holistic enhancement not only accelerates production cycles but also minimizes errors and downtime, resulting in higher overall productivity. Consequently, organizations can respond more swiftly to market demands and customer needs, reinforcing their agility and resilience in competitive environments. Moreover, the cost reductions achieved through AI adoption are multifaceted. Automated processes reduce reliance on manual labor, decreasing labor costs and the risk of human error, while predictive maintenance and optimized supply chain management lower operational expenses further. These savings enable firms to reinvest

in innovation, quality improvements, or competitive pricing strategies. The scalability afforded by AI also allows businesses to expand operations efficiently without proportional increases in overhead, thereby strengthening their market position and long-term sustainability.

Businesses that integrate AI comprehensively across their entire workflow—rather than limiting its use to isolated tasks—can unlock significant efficiency improvements by streamlining operations, automating routine processes and enhancing decision-making capabilities. This holistic adoption enables organizations to reimagine and optimize end-to-end processes, resulting in faster turnaround times, reduced operational costs and improved agility in responding to market changes. Moreover, forming strategic partnerships with technology firms accelerates innovation cycles by combining expertise, sharing resources and scaling AI solutions more rapidly, which is crucial for staying competitive in a fast-evolving technological landscape. In addition to operational benefits, prioritizing responsible AI practices is essential for maintaining stakeholder trust and ensuring regulatory compliance. Addressing ethical concerns such as data privacy, security and algorithmic bias fosters transparency and accountability, which are increasingly demanded by customers and regulators alike. This ethical commitment not only mitigates risks but also differentiates businesses in a market where trust is a key competitive advantage. By leveraging AI to analyze vast amounts of data in real time, businesses can convert raw information into actionable insights, enabling more informed strategic decisions and personalized customer experiences that drive growth and innovation.

Utilizing AI-driven analytics enables companies to not only respond more effectively to current market conditions but also to anticipate future trends and customer behaviors. By leveraging vast amounts of data through sophisticated algorithms, businesses can uncover hidden patterns and insights that inform strategic planning and operational adjustments. This proactive approach helps organizations stay competitive by aligning their offerings with evolving customer needs and optimizing resource allocation to maximize returns. Furthermore AI-powered decision-making reduces human bias and error, fostering a data-centric culture that supports continuous improvement and innovation. Beyond decision-making AI adoption transforms business processes through automation of repetitive and time-consuming tasks. This shift frees employees from routine duties such as data entry, inventory tracking and customer inquiries, allowing them to focus on higher-value activities like product development, market expansion and personalized customer engagement. Additionally AI's predictive analytics enhance supply chain management, risk assessment and demand forecasting, leading to more agile and resilient operations. Companies that integrate AI effectively gain a strategic edge by improving efficiency, reducing costs and accelerating innovation cycles, whereas those without such capabilities risk falling behind due to slower response times and fragmented data systems.

Disadvantages: -

Businesses that do not adopt AI technologies face significant barriers in maintaining competitiveness as the global market increasingly relies on data-driven innovation. Their dependence on generic, publicly available data limits their ability to develop tailored AI applications that address specific industry challenges or customer needs. This data gap restricts opportunities for differentiation and innovation, which are critical for sustaining growth and market relevance. Furthermore, the absence of a robust digital infrastructure—such as cloud computing capabilities and centralized data management—hampers their capacity to efficiently process, analyze and act on large volumes of data, putting them at a disadvantage compared to AI-enabled competitors who can rapidly iterate and optimize their operations. In addition, businesses without AI integration struggle to meet evolving customer expectations for personalized experiences and real-time responsiveness. AI-driven companies leverage advanced analytics and machine learning to deliver customized products, services and communications, fostering stronger customer engagement and loyalty. Without these capabilities, non-adopting businesses risk diminished customer satisfaction, reduced retention

rates and ultimately, a shrinking market share. The cumulative effect of these challenges not only impacts operational efficiency and innovation but also threatens long-term viability in an economy where AI is becoming a fundamental driver of competitive advantage.

Non-adopting businesses face significant strategic disadvantages as they miss critical opportunities to upskill their workforce, which is essential for transitioning employees into higher-value roles that complement automation and AI technologies. This skills gap not only hampers their immediate operational efficiency but also undermines their long-term adaptability to the rapidly evolving technological landscape. Without integrating AI comprehensively into their workflows, these firms risk stagnation, as they are unable to leverage the full potential of AI-driven process improvements, innovation and cost reduction. Consequently, their growth prospects diminish and they become increasingly vulnerable to disruption by competitors who embrace these technologies. Beyond individual firms, widespread non-adoption of AI can have broader market implications, including reduced overall competitiveness and innovation within industries. Firms that fail to incorporate AI may struggle to keep pace with evolving customer demands and regulatory expectations, potentially triggering increased regulatory scrutiny to address market imbalances. AI's capacity to automate routine tasks, lower operational costs and enable the creation of novel products and services is a critical driver of economic dynamism; firms that do not harness these advantages may find themselves marginalized. This dynamic not only affects firm-level performance but can also influence market structures, competitive dynamics and the regulatory environment, emphasizing the systemic importance of AI integration.

Development of Artificial Intelligence ecosystem: -

The AI ecosystem constitutes a multifaceted and dynamic network that integrates diverse components, stakeholders and regulatory frameworks to guide the lifecycle of artificial intelligence. Central to this ecosystem are algorithms, which serve as the foundational instructions enabling machines to process data and learn patterns. These algorithms depend heavily on vast and varied datasets, which fuel the training and refinement of AI models, ensuring their accuracy and effectiveness. Complementing these elements is the substantial computational power required to perform complex calculations and support real-time processing, which is facilitated by advanced hardware, optimized software and scalable cloud infrastructure. Beyond the technical infrastructure, the AI ecosystem thrives on the expertise and innovation of skilled talent, including researchers, developers and domain specialists who drive AI advancement and practical application. Regulatory bodies and governance frameworks play a crucial role in shaping this ecosystem by establishing standards and ethical guidelines that ensure responsible AI deployment and mitigate potential risks. Together, these interconnected elements create a robust environment that supports the continuous evolution, deployment and oversight of AI technologies across various sectors.

Data collected from diverse sources often requires systematic segregation, classification and processing to extract meaningful insights. This processing depends heavily on computational resources, which are delivered through a combination of software algorithms and hardware capabilities. Advances in hardware, particularly the development of powerful Graphics Processing Units (GPUs), have revolutionized the field of artificial intelligence by enabling rapid execution of complex computations. GPUs excel at parallel processing, making them ideal for handling the large-scale matrix operations involved in AI tasks, thereby significantly reducing training and inference times for machine learning models. On the software side, data processing algorithms can range from classical statistical machine learning methods to sophisticated neural network-based approaches. These algorithms employ various learning mechanisms to enable models to perform tasks autonomously. Unsupervised learning allows models to identify patterns without labeled data, while supervised learning relies on labeled datasets to guide the training process. Semi-supervised learning combines elements of

both, leveraging small amounts of labeled data alongside larger unlabeled datasets. Reinforcement learning, distinct from the others, is driven by an objective function where models learn optimal actions through rewards and penalties, iteratively improving performance in dynamic environments. Together, these hardware and software components form the backbone of modern AI systems, enabling efficient data-driven decision-making and automation.

Big technology companies and hyperscalers such as Google, Microsoft, AWS and Meta have emerged as leaders in democratizing access to advanced neural networks by providing robust platforms and tools tailored for developers and end users. Google's TensorFlow and Meta's PyTorch stand out as the most widely adopted frameworks, offering comprehensive libraries and interfaces that simplify the implementation and experimentation with various neural network architectures. These frameworks have become foundational in the AI development ecosystem due to their flexibility, scalability and strong community support, enabling rapid innovation across industries. To enhance computational efficiency and accelerate the training and inference of neural networks, hardware manufacturers like Nvidia have introduced technologies such as CUDA, which optimize the interaction between GPUs and AI frameworks like TensorFlow. This synergy between software and hardware has significantly reduced processing times, making large-scale AI applications more feasible. Additionally, Chinese companies like SenseTime have developed proprietary interfaces, such as SenseCode, designed to operate alongside TensorFlow and PyTorch. These efforts aim to reduce reliance on Western-developed frameworks and foster an independent AI technology stack, reflecting broader strategic priorities in the global AI landscape.

Large corporations spearhead advancements through substantial R&D investments, while startups introduce niche innovations. Academia contributes by fostering research and developing talent, while governments establish regulations to address AI ethics, privacy and security. Regulatory bodies shape AI governance, through policies ensuring ethical, responsible and competition compliant AI development and deployment. Data providers supply high-quality datasets essential for training AI models, while venture capitalists fund AI startups. Finally, alliances and partnerships between firms, researchers and policymakers enhance AI development, with governments playing a crucial role in fostering global AI collaborations.

Competition amendment act 2023: -

Mergers and acquisitions (M&A) transactions with a value exceeding ₹2,000 crore require prior approval from the Competition Commission of India (CCI) if the target company maintains substantial business operations within India. This regulatory threshold is designed to ensure that large technology firms cannot acquire emerging startups prematurely, thereby preventing anti-competitive practices that could stifle innovation and reduce market competition. By enforcing this requirement, the CCI aims to safeguard the digital ecosystem from monopolistic consolidation before startups reach significant asset or turnover benchmarks that traditionally trigger regulatory scrutiny. This framework addresses the evolving nature of digital markets, where nascent companies often possess valuable intellectual property or user bases that, if absorbed unchecked by dominant players, could lead to the elimination of future competitors. The preemptive approval mechanism serves as a critical checkpoint to evaluate the potential impact of such acquisitions on market dynamics, consumer choice and innovation. Consequently, it balances the need for business growth and investment with the imperative to maintain a competitive and fair marketplace in India's rapidly expanding digital economy.

Digital platforms that knowingly facilitate anti-competitive information sharing or collusion between competing enterprises are now legally recognized as part of a cartel. This means that these platforms can be held accountable under cartel laws, which traditionally targeted direct agreements among competitors to fix prices, limit production, or divide markets.

By enabling or orchestrating the exchange of sensitive commercial information, such as pricing strategies or market intentions, these digital intermediaries effectively contribute to anti-competitive behavior, undermining fair competition and harming consumers. The recognition of digital platforms as cartel participants reflects a broader legal adaptation to the evolving market dynamics where technology intermediates business interactions. Regulators acknowledge that the role of these platforms is not merely passive; rather, they can actively facilitate or encourage collusion by providing the means or environment for competitors to coordinate their actions. This legal stance aims to close gaps in enforcement, ensuring that anti-competitive practices mediated through digital channels do not escape scrutiny and that competition policy remains effective in the digital economy.

The revision in the basis for calculating penalties marks a significant shift in regulatory enforcement, particularly affecting digital platforms operating across multiple jurisdictions. By expanding the calculation base from relevant domestic revenue to an entity's total global turnover, authorities can impose substantially higher fines. This change reflects an effort to enhance the deterrent effect of penalties, ensuring that multinational digital companies are held accountable for their global operations rather than just their activities within a single country. Consequently, this approach increases the financial risks for such platforms, potentially influencing their compliance strategies and operational decisions worldwide. Moreover, this adjustment aligns with broader regulatory trends aimed at addressing the challenges posed by the globalized nature of digital markets. Since digital platforms often generate substantial revenue from multiple countries, limiting penalties to domestic revenue could underestimate the scale and impact of non-compliance. Calculating fines based on global turnover ensures a more proportionate and impactful sanction, encouraging these entities to prioritize adherence to regulatory requirements across all markets. This evolution in penalty frameworks underscores the growing emphasis on comprehensive oversight and the need for digital platforms to maintain robust compliance mechanisms on a global scale.

Settlement and Commitments:

To address the challenges posed by prolonged litigation in rapidly evolving digital markets, the Act establishes streamlined frameworks that empower enterprises to negotiate and agree upon remedies collaboratively. This approach aims to expedite the resolution of anti-competitive investigations by facilitating mutually acceptable settlements, thereby reducing the time and resources typically consumed by lengthy legal processes. By promoting negotiated outcomes, the Act enhances regulatory efficiency and provides greater predictability for businesses operating in dynamic market environments. These frameworks encourage proactive engagement between regulators and enterprises, allowing for tailored solutions that address specific competition concerns without resorting to protracted court battles. The emphasis on negotiated remedies helps maintain market stability and supports innovation by minimizing uncertainty and disruption. Overall, this mechanism fosters a more balanced enforcement landscape where swift, consensual resolution of competition issues can coexist with robust oversight.

Digital Competition Bill: -

The draft released by the Ministry of Corporate Affairs in March 2024 marks a pivotal moment in India's regulatory landscape, aiming to address the growing influence and market dominance of Big Tech companies. This legislation seeks to establish clear thresholds and definitions that will govern the operations of these technology giants within the country, ensuring that their business practices promote fairness, transparency and competition. As the bill moves through public consultation, it is poised to create a framework that balances innovation with the need to protect consumer interests and maintain a level playing field for domestic startups. Amid ongoing debates from both multinational tech corporations and local startup ecosystems, the bill represents India's most comprehensive effort to regulate digital

markets to date. It underscores the government's commitment to fostering a digital economy that is equitable and competitive, preventing monopolistic behaviors that could stifle growth or innovation. By setting these regulatory standards, India aims to not only safeguard its digital infrastructure but also to empower smaller players, encouraging a more diverse and resilient technology sector. This initiative reflects broader global trends where governments are increasingly scrutinizing Big Tech to ensure responsible corporate conduct and fair market dynamics.

The bill aims to designate certain dominant technology platforms as Significant Socially Dominant Entities (SSDEs) by applying a combination of quantitative and qualitative criteria. These parameters include measurable factors such as the size of the user base and revenue figures, which provide a clear indication of the platform's market influence and economic power. By assessing these metrics, regulators can objectively identify platforms that hold substantial sway over digital markets and user interactions. In addition to these quantitative measures, the bill incorporates qualitative factors to capture the broader impact of these platforms on society, competition and information flow. This dual approach ensures that the designation of SSDEs reflects not only economic dominance but also the platforms' role in shaping public discourse, data control and potential risks related to market fairness and consumer protection. Together, these criteria form a comprehensive framework to regulate and oversee the activities of the most influential technology entities.

Rather than waiting to address abuses after they occur, the bill proactively establishes a clear set of predefined rules that Social Service Delivery Entities (SSDEs) must adhere to. This forward-looking approach aims to create a transparent and regulated environment that minimizes the potential for unfair practices. By setting these standards in advance, the legislation seeks to prevent discriminatory behaviors and misuse of power, thereby promoting fairness and accountability within the sector. This regulatory framework is particularly beneficial for smaller competitors who often face challenges in competing against larger, more established entities. Ensuring that SSDEs operate under uniform guidelines levels the playing field, fostering healthy competition and encouraging innovation. Ultimately, the bill's emphasis on preventative measures supports a more equitable and efficient social service delivery landscape, where all participants have a fair opportunity to contribute and thrive.

Regulations extend beyond just the primary entity of a corporate conglomerate to include its subsidiaries and related service providers that utilize data collected through the parent company's central digital platform. This comprehensive regulatory scope ensures that all branches benefiting from the core digital service's data are held to consistent standards, thereby preventing regulatory gaps that could arise if only the parent company were subject to oversight. By encompassing subsidiaries and affiliated services, regulators can better safeguard data privacy, security and compliance across the entire corporate structure. Furthermore, this approach acknowledges the interconnected nature of modern digital ecosystems within large corporations, where data sharing and integration among various units are common. It compels all entities within the conglomerate to adhere to uniform policies and practices regarding data use, minimizing risks associated with unauthorized data exploitation or inconsistent compliance measures. Ultimately, such regulatory frameworks promote accountability and transparency throughout the conglomerate, reinforcing trust among users and stakeholders who interact with any part of the corporate digital network.

Conclusion: -

Competition law in the digital economy is evolving to address the unique challenges posed by technology-driven markets, where traditional antitrust approaches often fall short. The shift from ex-post enforcement—which reacts after anti-competitive behavior has occurred—to ex-ante regulation aims to prevent market distortions before they arise. This proactive stance is critical in digital markets characterized by rapid innovation cycles,

significant data accumulation and powerful network effects that can entrench dominant players. Regulators are increasingly focusing on mechanisms such as data access, interoperability requirements and constraints on self-preferencing practices to ensure that competition remains vibrant and consumers benefit from choice and innovation. Moreover, this regulatory transformation reflects a broader recognition that digital monopolies are sustained not only by market share but also by control over vast data ecosystems and platform architectures. By modernizing antitrust frameworks, authorities seek to balance fostering innovation with preventing abuse of market power that can stifle competitors and harm consumer welfare. This involves integrating multidisciplinary insights from economics, technology and law to develop tailored rules that can adapt to the dynamic nature of digital markets. The ultimate goal is to create a fair competitive environment that supports new entrants and incentivizes ongoing technological progress while safeguarding consumer interests in an increasingly digitalized economy.

References

1. "Intellectual Property Rights in the Era of Artificial Intelligence", G Usha Kiranmai, international Journal of Pharmacy and Pharmaceutical science, 2025, ISSN NO. 2664-7222.
2. "Indian Perspective of Intellectual Property For AI-Created Works", Bagath Manish, Trends in Intellectual Property Research, <https://doi.org/10.69971/tipr.3.2.2025.50>
3. "Artificial Intelligence a Modern Approach", Stuart J. Russell, Peter Norvig, Third Edition, ISBN-13: 978-0-13-604259-4.
4. "Preserving The Rule of Law in the Era of Artificial Intelligence", Stanley Greenstein, Artificial Intelligence and Law (2022) 30:291–323, <https://doi.org/10.1007/s10506-021-09294-4>,
5. "Law and the Political Economy of AI Production", Petros Terzis, International Journal of Law and Information Technology, 2024, XX, Oxford University Press, 1–29, <https://doi.org/10.1093/ijlit/eaee001>
6. "Preserving Consumer Autonomy Through European Union Regulation of Artificial Intelligence: A Long- Term Approach", Sebastien Fassiaux, European Journal of Risk Regulation (2023), 14, 710–730,
7. "Multidisciplinary Perspectives on Artificial Intelligence and the Law", Henrique Sousa Antunes, Pedro Miguel Freitas, Law, Governance and Technology Series, Volume 58, Springer ISSN NO. 2352-1902,
8. "Artificial Intelligence and Competition Policy", Andrei Hagiu, Julian Wright, International Journal of Industrial Organization.
9. "Artificial Intelligence as a Challenge for Law and Regulation", Wolfgang Hoffmann-Riem, 2022, <https://www.researchgate.net/publication/337653460> ,
10. "Liability Regimes in the Age of AI: a Use-Case Driven Analysis of the Burden of Proof", David FernandezLlorca, Vicky Charisi, Journal of Artificial Intelligence Research Vol 76 (2023) 613-644,
11. "Position: Technical Research and Talent is Needed for Effective AI Governance", AnkaReuel, Lisa Soder, Proceedings of the 41 stInternational Conference on Machine Learning, Vienna, Austria. PMLR 235, 2024,
12. "Responsibility Gap(s) Due to the Introduction of Artificial Intelligence in Healthcare: An Ubuntu-Inspired Approach", Brandon Ferlito1 · Seppe Segers1, Science and Engineering Ethics, 2024, <https://doi.org/10.1007/s11948-024-00501-4>
13. "Between Real World and Thought Experiment: Framing Moral Decision-Making in Self-Driving Car Dilemmas", Vanessa Schäffner, Humanistic Management Journal (2021), <https://doi.org/10.1007/s41463-020-00101-x>,

14. “Responsibility Gaps and Retributive Dispositions: Evidence from the US, Japan and Germany”, Markus Kneer, Markus Christen, *Science and Engineering Ethics* (2024), Volume 30, <https://doi.org/10.1007/s11948-024-00509-w>
15. “Leveraging AI to Mitigate Money Laundering Risks in the Banking System”, Doron Goldbarsht, Cambridge University Press, 16 November 2023, <https://doi.org/10.1017/9781009334297.006>,
16. “AI: Artificial Intelligence or Accidentally Intrusive”, Nivedita Gajjar, Ravi Thakur, *GLS Law Journals*, Vol. 01, Issue 01; Jan 2019,
17. “Artificial Intelligence and Global Trade Governance: A Pluralist Agenda”, Han-Wei Liu, Ching-Fu Lin, *Harvard International Law Journal / Vol. 61*, Volume 61, Number 2, Summer 2020.

