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Volume 22, Issue 1, September 2025

Corporate Boards: Human or Bot?

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DOI: 10.2966/scrip.220125.76

Abstract

With the dawn of artificial intelligence (AI), it is only a matter of time before it amplifies or even replaces human decision-making in corporate governance. This threatens to subvert the core concepts of a director as laid down in the Companies Act, 2013, like director duties, accountability, and the nature of corporate leadership. This article delves into the legal ramifications of integrating AI inside the corporate boardrooms, specifically from the statutory lens of Indian corporate laws. This paper focuses on Chapter XI, where it explores the applicability–or the lack thereof, of these provisions when AI systems are engaged in board decisions. The issues revolve around AI's decision making–the legal status and the allocation of liability for harmful decisions influenced by AI systems–in light of directors' fiduciary duties. Additionally, it examines the challenges of ensuring transparency, particularly in relation to algorithmic biases and the Black Box Phenomenon. This article concludes by proposing recommendations for a comprehensive regulatory framework governing the ethical use of AI in corporate boards, including, but not limited to–guidelines for algorithmic accountability, regular AI system audits, and enhanced disclosure requirements for companies employing AI in governance. Through this research, the author seeks to advance the emerging field of AI governance and provide insights for policymakers,

corporate directors, and AI developers working at the intersection of technology and corporate law.

Keywords

AI Director; Algorithmic Decision-Making; Artificial Intelligence; Chapter XI of the Companies Act 2013; Corporate Boards; Director Duties

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The surge of AI has now caught up with S&P 500 companies globally, becoming a hot topic for Boardroom discussions and hitting a record high in their earnings call.1 By 2025, forecasts say that the investment in AI will cross the $200 billion mark worldwide.[2] Research indicates that Generative AI is more a productivity booster than a technological revolution,[3] thereby potentially boosting the overall GDP by 7%.[4] All these numbers suggest that AI is here to stay, and that companies will soon start implementing AI in their corporate governance. This context is the launchpad of this research paper whereby the analysis will try to answer one broad yet seemingly simple question: Can AI replace human decision making in corporate Boardrooms?

The paper aims to answer and analyse these following questions: First, how the integration of AI into Boardrooms challenges the existing traditional corporate governance decision-making and subsequently, the directors' duties, accountability, and leadership under Chapter XI (Sections 149-172) of the Companies Act, 2013. Second, what regulatory changes are required within the Indian corporate governance structure to address the legal status of AI, its decisions, accountability and the liability in corporate governance.

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[1] Phil Rosen, 'S&P 500 companies are more obsessed than ever with AI' (*Markets Insider*, 15 February 2024) <https://markets.businessinsider.com/news/stocks/ai-stocks-sp500-4q-tech-earnings-artificial-intelligence-goldman-sachs-2024-2> accessed 8 September 2025.

[2] Goldman Sachs, 'AI investment forecast to approach $200 billion globally by 2025' (1 August 2023) <https://www.goldmansachs.com/insights/articles/ai-investment-forecast-to-approach-200-billion-globally-by-2025> accessed 8 September 2025.

[3] Goldman Sachs, 'Navigating the AI Era: how can companies unlock long-term strategic value?' (2023), <https://www.goldmansachs.com/what-we-do/investment-banking/insights/articles/navigating-the-ai-era/report.pdf> accessed 8 September 2025.

[4] Goldman Sachs, 'Generative AI Could Raise Global GDP by 7%', (5 April 2023) <https://www.goldmansachs.com/insights/articles/generative-ai-could-raise-global-gdp-by-7-percent>.

1 Historical background and Context

AI has been in existence for over 60 years and the recent rise in the computing power of 'Big Data' technologies have led to its rapid advancement.[5] Research has found a gap between the use of AI and corporate Board governance where 86% of businesses already utilise some form of AI without the Board being apprised of it.[6]

Globally, there seems to be a shift in the dynamics of how the world is accepting and integrating AI. A few years ago, in 2017, the European Union Parliament[7] has come to a resolution where we can consider creating a specific legal status of "electronic persons" for the most sophisticated autonomous robots, making them liable for damages they may cause by possibly applying 'electronic personality' to cases where robots make autonomous decisions or otherwise interact with third parties independently. Albeit this resolution was non-binding and later rejected in practice, the committee emphasized the importance of ensuring transparency, predictability, and traceability of AI.[8] With the help of Asimov's laws,[9] the Parliament favoured the regulation of AI as long as it is in compliance with: Firstly, a robot may not injure a human being or, through inaction, allow a human being to come to harm. Secondly, a robot must obey the orders given to it by human beings except where such orders would

[5] Yanqing Duan, John S. Edwards and Yogesh K Dwivedi, 'Artificial Intelligence for Decision Making in the Era of Big Data – evolution, challenges and research agenda' (2019) 48 International Journal of Information Management 63.

[6] Institute of Directors (Science, Innovation and Technology Expert Advisory Group), 'AI in the Boardroom: The Essential Questions for Your Next Board Meeting', (24 March 2023) <https://www.iod.com/resources/science-innovation-and-tech/ai-in-the-Boardroom-the-essential-questions-for-your-next-Board-meetin/>.

[7] European Parliament, 'Resolution of 16 February 2017 with Recommendations to the Commission on Civil Law Rules on Robotics (2015/2103(INL))' [2017] OJ C 252/239.

[8] Ibid.

[9] Isaac Asimov, 'Runaround' (1942) 29(1) Astounding Science Fiction 94.

conflict with the First Law. Thirdly, a robot must protect its own existence as long as such protection does not conflict with the First or Second Laws and finally, it also included a Zeroth law – a robot may not harm humanity, or, by inaction, allow humanity to come to harm.[10]

This resolution, however, was criticized by AI and Robotics Experts, industry leaders, law, medical and ethics experts[11] on the ground that a robot cannot hold the status of a person that is derived from the Natural Person model[12] and the Legal Entity Model[13].

1.1 Defining Artificial Intelligence

According to the EU AI Act[14], an AI system is defined as a machine-based software system capable of inferring outputs such as predictions, recommendations, or decisions through the development of models or algorithms from input data. This definition establishes a clear distinction between AI systems and traditional rule-based software and highlights several essential characteristics:

First, AI systems exhibit an inference capability that goes beyond simple data processing. They learn from data and generate outcomes that are not directly pre-programmed, allowing for dynamic responses to varying inputs.

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[10] Amy Tikkanen, 'Three Laws of Robotics, Concept by Asimov' (*Britannica*, 17 May 2022), <https://www.britannica.com/topic/Three-Laws-of-Robotics> accessed 8 September 2025.

[11] Robotics Openletter EU, 'Open Letter to the European Commission' <https://robotics-openletter.eu/> accessed 8 September 2025.

[12] Elvia Arcelia Quintana Adriano, 'The Natural Person, Legal Entity or Juridical Person and Juridical Personality' (2015) 4 Penn. St. J.L. & Int'l Aff. 363.

[13] Ibid.

[14] Regulation (EU) 2024/1689 of the European Parliament and of the Council of 13 June 2024 laying down harmonised rules on artificial intelligence and amending Regulations (EC) No 300/2008, (EU) No 167/2013, (EU) No 168/2013, (EU) 2018/858, (EU) 2018/1139 and (EU) 2019/2144 and Directives 2014/90/EU, (EU) 2016/797 and (EU) 2020/1828 (Artificial Intelligence Act), PE/24/2024/REV/1 [2024] OJ L 2024/1689.

Second, they incorporate mechanisms for learning and adaptation. Through approaches such as machine learning, AI systems continuously refine and improve their performance over time, making them more accurate and effective as they are exposed to new data. Third, these systems operate with varying degrees of autonomy. Depending on their design and application, they may perform tasks with minimal human intervention or require a certain level of human oversight, an aspect that is particularly relevant when considering their potential role in decision-making processes. Fourth, AI systems are purpose-driven; they are developed to pursue explicit objectives set by their designers, or they may develop implicit objectives based on the data they process.

Finally, AI systems may function as stand-alone entities or as integral components within larger products or services. Their integration can be either physical as an embedded feature, or functional as an independent module, thus enhancing their utility across a variety of applications.

1.2 Types of Artificial Intelligence

The EU AI Act[15] classifies AI systems based on the level of risk they pose to fundamental rights, safety, and public interest. The Act introduces a four-tiered risk-based framework which consists of, (i) 'unacceptable risk', referring to AI applications that are inherently harmful and thus prohibited, such as social scoring by governments and real-time biometric surveillance in public spaces; (ii) 'high-risk systems', which are permitted subject to strict regulatory obligations such as: conformity assessments, documentation protocols, and human oversight – like, AI used in employment, critical infrastructure, law enforcement, and education; (iii) 'limited-risk systems', which are subject to

[15] Ibid.

transparency requirements to ensure that users are adequately informed when interacting with AI; and (iv) 'minimal or no-risk systems', which are largely unregulated due to their negligible societal impact, such as AI-enabled spam filters or video game engines.

While the conceptual taxonomy of the EU AI Act classifies AI systems based on their level of risk to the society, the AI research community widely recognizes three broad categories of AI based on their progressive levels of functional capacity. They are namely, narrow AI, general AI, and super AI.

Narrow AI refers to systems designed to perform a specific task or set of tasks within a confined domain. These systems exhibit intelligence only within the scope for which they have been programmed, as exemplified by facial recognition, data analytics, and natural language processing applications currently deployed in corporate settings to enhance decision-making, support risk assessment, and streamline operational processes.[16]

In contrast, general AI, or Artificial General Intelligence (AGI), denotes machine intelligence that can perform any intellectual task at a level comparable to that of a human being, with the ability to transfer learning and expertise across various domains. Although AGI remains largely a theoretical construct and a subject of extensive academic debate, it represents a future scenario in which AI systems could potentially manage complex corporate governance issues with human-like reasoning.[17]

Super AI, or superintelligence, further extends this concept by hypothesizing a form of intelligence that would surpass human cognitive capabilities in every field, including creativity, decision-making, and emotional

[16] Stuart Russell and Peter Norvig, *Artificial Intelligence: A Modern Approach. Global Edition* (4th edn, Pearson 2016).
[17] Ben Goertzel and Cassio Pennachin (eds), 'Artificial General Intelligence' (Springer 2007).

intelligence; while super AI is currently confined to theoretical discussions, its potential emergence raises significant long-term policy and regulatory considerations, as it could radically transform corporate governance structures and the broader societal, ethical, and legal frameworks within which corporations operate.[18]

Given that current practical applications in corporate governance predominantly rely on narrow AI systems, with AGI and super AI remaining speculative, it is important for policymakers and corporate directors to recognize these distinctions to ensure compliance with evolving regulatory standards.

2 Legislative Provisions

This paper spans the ambit of Chapter XI of the Companies Act, 2013 – with a special focus on Section 166 which contains the duties of directors. Section 166 as a whole will be dissected and analysed comparatively to that of a human director versus an AI director. By doing so, the aim is to discover statutory gaps in the existing legislation and find potential recommendations to fix it.

An AI director, unlike its human counterpart, must rely on sophisticated natural language processing capabilities to interpret and adhere to the company's articles of association[19], ensuring compliance through continuous updates and conflict resolution mechanisms. While human directors act in "good faith"[20] based on ethical judgment and experience, AI directors require complex algorithms to simulate ethical considerations and balance stakeholder interests, including those of employees, shareholders, and the environment. Both are

[18] Nick Bostrom, 'Superintelligence: Paths, dangers, strategies' (OUP 2014).
[19] The Companies Act, 2013, § 166(1).
[20] The Companies Act, 2013, § 166(2).

required to exercise due care, skill, and independent judgment.[21] However, an AI director achieves this through advanced risk assessment, data analytics, and bias-mitigation safeguards, while human directors rely on skill, expertise, and discretion. The AI director's approach to avoiding conflicts of interest,[22] preventing undue gains,[23] and adhering to the prohibition against delegating duties[24] through programmed conflict detection, decision-logging, and automated recusal protocols, although such mechanisms require continual oversight to avoid unintended biases or failures. On the other hand, a human director navigates these obligations through personal integrity, judgment, and legal advice. And for addressing liability where punitive fines[25] are applicable to human directors[26], an AI director operates within a framework of compliance funds and self-auditing protocols, ensuring it adheres to legal and ethical standards in a structured, automated manner.

The integration of artificial intelligence into corporate decision-making is increasingly regulated by evolving frameworks such as the EU AI Act, which emphasizes transparency, accountability, and human oversight in automated systems. This regulatory framework requires AI systems to operate within clearly defined parameters to ensure that automated decisions do not undermine fundamental rights, a principle that is further reinforced by relevant case law from the Court of Justice of the European Union. For instance, in the *SCHUFA Holding and Others* case[27], the Court scrutinized the application of automated decision-making in credit scoring, emphasizing that data subjects must be

[21] The Companies Act, 2013, § 166(3).
[22] The Companies Act, 2013, § 166(4).
[23] The Companies Act, 2013, § 166(5).
[24] The Companies Act, 2013, § 166(6).
[25] The Companies Act, 2013, § 166(7).
[26] *Oriental Metal Processing (P) Ltd v Kashinath Thakur* (1961) AIR SC 573.
[27] C-634/21 *OQ v Land Hessen* [2023] ECLI:EU:C:2023:957.

provided with meaningful information about the logic underlying such decisions, even when such information is contested on grounds of trade secrets, to safeguard the right to transparency and effective judicial redress.

Similarly, in the case of *CK* v *Magistrat der Stadt Wien*[28], the Court addressed the requirement for controllers to furnish accessible and comprehensible explanations regarding automated profiling, thereby underscoring the necessity of human intervention in processes that significantly affect individuals.

Together, these legal developments illustrate that, within the current EU regulatory landscape, corporate governance practices must be designed to balance the operational benefits of AI with stringent safeguards that preserve individual rights and maintain accountability in decision-making processes.

3 Legal Analysis

For Shareholders, Stakeholders and Directors are the three main actors that have the steering wheel of the company's decision-making process. The role of shareholders and stakeholders, however, is relatively limited than the directors – where the former's prominence only comes in during important transactions, including but not limited to, voting on decisions that might alter the legal and official characteristics or structure or functioning of the company.[29] As the management is delegated by the shareholders to the directors, their role is more hands-on as they are responsible for the day-to-day functioning of the company.

The Indian corporate laws were amended in 2013 and one of the amendments was the codification of the appointment of Independent Directors

[28] Case C-203/22 *CK v Dun & Bradstreet Austria GmbH and Magistrat der Stadt Wien* [2025] ECLI:EU:C:2025:117.
[29] The Companies Act, 2013, § 179, read with § 180.

(IDs). This was mainly due to the Satyam scandal,[30] which could have been avoided, had there been a rational actor. Independent directors are considered monitors of the corporate landscape[31]. To further enhance the role of the independent directors – especially in context of reducing the agency costs due to the conflict between the management and the shareholders,[32] the Dr J. J. Irani Committee Report[33] had recommended the inclusion of the concepts of duty of care and diligence as a 'basic duty' of directors.[34]

However, the reality is far different. Concerns have been raised about the effectiveness and independence of appointed directors, despite regulatory requirements,[35] and agency costs can be mitigated through effective corporate governance, which is largely possible due to the presence of a rational voice amidst the many companies in India with concentrated shareholding patterns.[36]

3.1 AI Director: The Perfect Director?

To the rescue comes an AI director that may be free from bias or groupthink but still remains susceptible to algorithmic bias based on training data and design

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[30] Madan Lal Bhasin, 'Corporate Accounting Fraud: A Case Study of Satyam Computers Limited' (2013) 2 Open Journal of Accounting 26.

[31] Sakshat Bansal and Janhavi Rajkumar, 'The Trilemma of Indian Independent Directors: Concerns and Directions for Reform' (2024) 15(1) Indian Journal of Law and Justice 158.

[32] Adolf Berle and Gardiner C Means, *The Modern Corporation and Private Property* (Macmillan 1932), ix.

[33] Ministry of Company Affairs, 'Report of the Expert Committee on Company Law' (May 2005) https://ibbi.gov.in/uploads/resources/May%202005,%20J.%20J.%20Irani%20Report%20of%20the%20Expert%20Committee%20on%20Company%20Law.pdf> accessed 8 September 2025.

[34] Ibid 44.

[35] Kala Vijayraghavan, Maulik Vyas and Lijee Philip, Why are independent directors resigning in droves (*The Economic Times*, 7 September 2020), <https://economictimes.indiatimes.com/markets/stocks/news/exodus-of-ind-directors-gains-pace-on-reputational-and-legal-concerns/articleshow/77966601.cms?from=mdr>.

[36] Meenu Gupta, 'A Study on Independency of Independent Directors in Corporate Governance' (*Institute of Company Secretaries of India*) <https://www.icsi.edu/media/portals/86/Independent%20Directors.pdf> accessed 8 September 2025.

choices. An AI director can be truly independent in terms of their ability to make rational decisions, free from the influence of majority shareholders. While the Act mandates that directors be natural persons37, this requirement may no longer be appropriate in light of AI's growing capabilities in data processing, decision-making, and mitigating human inefficiencies such as groupthink and agency costs.[38].

It is a well-established problem that some Boards of directors are susceptible to homogenization of perspectives[39], meaning they often suffer from groupthink.[40] Notwithstanding ethical practices, human directors may occasionally encounter situations where personal interests could potentially conflict with their fiduciary duties. On an extension, due to human nature and the possibility of developing interpersonal relationships, a human director may compromise on rationality of the decision. However, an AI director can maintain rationality and transparency without being subject to human emotion[41]. By extending the same logic, one can say that an AI director won't be susceptible to human biases that unintentionally seep in to Board deliberations due to personal experiences and backgrounds of human directors, provided that the AI is free

[37] This (punitive) liability is only applicable to human directors especially because criminal liability can only be affixed to a natural person, therefore the mind of the company must reside with the directors. So, in this sense, it is said that a director of a company must be a natural person.
[38] Rudresh Mandal and Siddharth Sunil, 'The Road Not taken: Manoeuvring through the Indian Companies Act to Enable AI Directors' (2021) 21 Oxford University Commonwealth Law Journal 95.
[39] Christopher S. Tuggle, Karen Schnatterly and Richard A. Johnson, 'Attention Patterns in the Boardroom: How Board Composition and Processes Affect Discussion of Entrepreneurial Issues' (2010) 53 Academy of Management Journal 550.
[40] Rookmin Maharaj, 'Corporate governance, Groupthink and Bullies in the Boardroom' (2008) 5 International Journal of Disclosure and Governance 68.
[41] Goreti Marreiros, Carlos Ramos and José Neves, 'Dealing with Emotional Factors in Agent Based Ubiquitous Group Decision' in Tomoyo Enokido et al. (eds), *Embedded and Ubiquitous Computing - EUC 2005 Workshops* (Springer 2005).

from its own biases – also called 'Algorithmic Bias'.[42]

A human director may encounter difficulty in processing large volumes of data with a time constraint, which sometimes may result in oversight of critical information. However, an AI director can be programmed in a way that has extremely quick and efficient data processing systems – with specific expertise tailored to the company's needs. While not a direct replacement for human diversity, AI systems can bring a form of cognitive diversity to Board deliberations.[43]

Therefore, there are inherent limitations Board of Directors that comprise of only humans. But these limitations can be mitigated or addressed through the integration of AI as a director on the Board.

3.2 AI Director: A Corporate Governance Nightmare?

However, the other side of the coin is that AI in its current state is not well equipped to deal with complex business transactions at the level equivalent to that of a director. To this effect, there are multiple roadblocks for successful implementation of AI on the Board of Directors.

The legal aspects that merit consideration are assigning liability and accountability to the decisions taken by AI. Even if the Board of Directors were to automate the entire decision-making process using AI, the directors would still remain liable under the current statutory provisions[44]. The Board of Directors must make important decisions based on the best available information in good faith, and this decision must be recorded accordingly. Though the Indian

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[42] Stanford CRAFT, 'What is algorithmic bias?', (14 March 2024, last modified 20 November 2024) <https://craft.stanford.edu/resource/what-is-algorithmic-bias/> accessed 8 September 2025.

[43] Akshaya Kamalnath, 'The Perennial Quest for Board Independence - Artificial Intelligence to the Rescue?' (2019) 83 Albany Law Review 43.

[44] Michael Hilb, 'Toward artificial governance? The role of artificial intelligence in shaping the future of corporate governance' (2020) 24 Journal of Management and Governance 859.

Companies Act does not explicitly codify the business judgment rule[45], like U.S. law, Section 456[46] provides some protection for decisions made in good faith. If we apply this rule to the integrated AI, then either the company would have no other option but apply the outcome generated by AI, rather than relying on humans with somewhat limited rationality and bias; or in case of any legal dispute, the black box of this AI[47] has to be decrypted.[48] Professor Armour and Professor Eidenmüller discuss this at great length in their paper, titled 'Self-Driving Corporations?'.[49] When corporations are fully 'self-driving' and a decision taken by an AI results in an 'algorithmic failure' – which could either be a financial loss or an illegal action, what is the liability assigned to it?[50] Their findings seem to dissect this question and find a solution – which are two regulatory approaches: strict liability with mandatory insurance[51] or, unlimited pro rata shareholder liability.[52]

Applying this logic to the Indian company laws, the answer to the question: Who takes the blame for an action caused due to an AI's decision? The solution of assigning 'strict liability with mandatory insurance' can fit within sections including but not limited to Section 447[53] and Section 448[54] where, the

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[45] IndiaCorpLaw, 'Business Judgment Rule: The Indian Context' (7 February 2024) <https://indiacorplaw.in/2024/02/business-judgment-rule-the-indian-context.html> accessed 8 September 2024.

[46] The Companies Act, 2013, § 456.

[47] Cynthia Rudin and Joanna Radin, 'Why are we using black box models in AI when we don't need to? A lesson from an explainable AI competition' (2019) 1(2) Harvard Data Science Review <https://hdsr.mitpress.mit.edu/pub/f9kuryi8/release/8> accessed 8 September 2025.

[48] Hilb (n43) 859.

[49] John Armour and Horst G. M. Eidenmüeller, 'Self-Driving Corporations?' (2020) 10 Harvard Business Law Review 87.

[50] Ibid 92.

[51] Ibid 111.

[52] Ibid 113.

[53] The Companies Act, 2013, § 447.

[54] The Companies Act, 2013, § 448.

laws allow the imposition of penalties and liabilities on both companies and their officers for failing to maintain legal standards[55]. Similarly, the solution of 'unlimited pro rata shareholder liability' can align with section 339 (the 'veil piercing' section).[56] The concept of piercing of the corporate veil[57] is that, in cases of fraudulent or wrongful trading, for example, courts have the power to hold the directors, officers, or even shareholders personally liable for the debts of the company, which goes against one of the hallmark features of a corporation, i.e., limited liability. So, the application of 'unlimited pro rata shareholder liability' ensures that shareholders cannot hide behind the veil of limited liability in cases where algorithmic failures cause harm, especially when wrongful conduct can be proved.

The two aforementioned problems of algorithmic biases, and the Black Box nature of AI stand at the forefront and essentially place an embargo on the implementation of an AI director, amongst other ancillary problems like logistics and monetary burden. At the most basic level, the problem of algorithmic bias can be defined as, "When AI produces repeatable errors that create unfair outcomes, favoring some groups over others"[58]. When this problem arises in a boardroom, then the argument favoring AI's rationality is completely quashed. Similarly, the concept of a Black Box AI is when the internal workings of a decision taken by an AI are opaque. This turns against the argument that an AI director is capable of ensuring transparency and rationality of its decisions. Another con of implementing AI in a boardroom is that, although one of the reasons for implementing an AI director is to mitigate agency costs, but the fact

[55] This can be considered an exception to the rule that liability is only assigned to natural persons under the Companies Act, 2013.
[56] The Companies Act, 2013, § 339.
[57] *Salomon v Salomon* [1897] A.C. 22; *LIC v. Escorts Limited* [1986] 1 SCJ 38.
[58] Stanford CRAFT (n41).

is that AI is expensive.[59] While AI systems eliminate ongoing expenses such as salaries and reduce risks like fraud or human error thereby potentially lowering long-term agency costs. They also entail substantial upfront investments for development, as well as continuous costs for maintenance, customization, and updates, creating a trade-off between operational efficiency and financial outlay.

For an AI to be personalised according to the company's needs, it requires huge upfront capital for the development and additional periodic investments for regular updates and maintenance – therefore, potentially increasing costs for the company.[60] In terms of usage of resources, recent reports have shown that these Generative AI models consume a lot of water[61] – thereby, posing a risk of being unsustainable for the planet.

While the prospect of AI fully replacing human directors seems daunting in terms of its successful implementation and legal compliance, it is more prudent to consider AI as a complementary tool rather than a complete augmentation of a human director altogether. AI lacks the capacity to engage with the nuanced complexities of business decisions at the level required by directors, for example – under the business judgment rule, which requires directors to act in good faith, using their informed judgment. Even with AI's advanced data processing, issues like algorithmic biases and the 'Black Box' opacity of AI decision-making place an embargo on its implementation. It is also

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[59] Alison Powell, 'AI is Expensive', (*Media@LSE*, 5 June 2024), <https://blogs.lse.ac.uk/medialse/2024/06/05/ai-is-expensive/> accessed 8 September 2025.

[60] Rachel Gordon, 'Rethinking AI's impact: MIT CSAIL Study Reveals Economic Limits to Job Automation', (*MIT CSAIL*, 22 January 2024) <https://www.csail.mit.edu/news/rethinking-ais-impact-mit-csail-study-reveals-economic-limits-job-automation> accessed 8 September 2025.

[61] Pengfei Li et. al, 'Making AI Less "Thirsty": Uncovering and Addressing the Secret Water Footprint of AI Models' (2025) 68(7) Communications of the ACM 54;
Sam Meredith, 'A "thirsty" generative AI boom poses a growing problem for Big Tech', (*CNBC*, 6 December 2023) <https://www.cnbc.com/2023/12/06/water-why-a-thirsty-generative-ai-boom-poses-a-problem-for-big-tech.html> accessed 8 September 2025.

pertinent to note that even if the black box and bias issues were solved, AI could not be fully autonomous directors, without addressing deeper concerns of moral agency, legal judgment, and subjective interpretation of "good faith." Even explainable AI may still lack normative reasoning needed for directorial roles under fiduciary standards.

AI, while beneficial, cannot supplant the human judgment, that is the core of corporate governance. Therefore, AI should serve as a decision-enhancing tool for directors, providing data-driven insights while human directors retain ultimate responsibility and accountability for decisions made in the best interests of the company.

3.3 AI Director: Unbiased?

Algorithmic bias, when considered within the evolving framework of corporate governance and the potential integration of AI directors, reveals deep and multifaceted challenges that extend beyond mere computational errors. The concept of an AI director is often predicated on assumptions of efficiency, objectivity, and superior data processing; yet, critical analyses expose that such systems are susceptible to inherent biases that compromise these very ideals.[62] Empirical investigations have shown that skewed training data predominantly representing a narrow demographic, can yield disproportionate error rates for underrepresented groups, effectively embedding societal inequities into algorithmic outputs. This raises significant concerns about the reliability of automated decision-making in high-stakes environments such as the boardroom, where inaccuracies or oversights could materially impact corporate strategy and stakeholder interests.

[62] Joy Buolamwini and Timnit Gebru, 'Gender Shades: Intersectional Accuracy Disparities in Commercial Gender Classification' (2018) 81 Proceedings of Machine Learning Research 1.

Furthermore, judicial examinations of automated facial recognition systems reveal that the opacity and irreducible complexity of these technologies pose legal and ethical dilemmas that existing regulatory frameworks struggle to address.[63]

The notion of a "coded gaze" is potent critique which reveals that the design and implementation of such technologies are imbued with implicit norms and prejudices that favor dominant cultural narratives while misrepresenting or completely omitting diverse perspectives.[64]

The inability to fully trace and explain algorithmic decisions not only undermines accountability but also complicates the assignment of liability in cases of error or harm. Such judicial reflections underscore a broader issue: when the mechanics of algorithmic decision-making are inscrutable, the delegation of critical decisions to AI systems risks perpetuating, and even amplifying, the biases and systemic inequities already present in societal structures.

Integrating these critical insights into the discourse on AI in corporate governance highlights that the deployment of automated systems cannot be considered a neutral or unequivocally beneficial substitute for human judgment. Instead, it necessitates a robust, multidimensional approach to oversight—one that demands heightened transparency, diligent recalibration of input data, and an adherence to principles of fairness and accountability. This multifaceted regulatory framework would need to rectify inherent data imbalances and ensure that the use of AI in strategic decision-making is aligned with the broader imperatives of social justice and equitable practice.

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[63] *R (Edward Bridges)* v *Chief Constable of South Wales Police* [2020] EWCA Civ 1058.

[64] Joy Buolamwini, *Unmasking AI: My Mission to Protect What Is Human in a World of Machines* (Random House 2023).

3.4 AI Director: Legal Personhood?

Across jurisdictions, the legal treatment of artificial intelligence has reflected a growing awareness of AI's potential to act autonomously within human-centric legal frameworks, leading to intense debate about whether AI should be granted legal personhood. While the Indian Companies Act, 2013, restricts directorship to "natural persons," this formalist approach is being challenged globally, especially as AI systems increasingly perform decision-making functions akin to those of directors. For instance, the European Parliament's 2017 resolution proposed creating a specific legal status of "electronic persons" for the most sophisticated autonomous robots, enabling them to bear civil liability for harm caused by their actions and interact independently with third parties—a notion grounded in functional realism rather than anthropocentric bias.[65] However, this suggestion faced strong resistance from legal and ethics scholars, who argued that granting AI legal personhood conflates legal personality with moral agency, a category still fundamentally tethered to human consciousness and volition.[66] In the United States, courts have so far rejected expanding legal personhood to AI, as seen in Thaler v. Vidal (2022)[67], where the Federal Circuit denied patent inventorship to an AI, underscoring that current statutes presuppose the requirement of human creators. Nonetheless, the underlying judicial reasoning rested not on moral incapacity but on statutory interpretation, indicating that legislative evolution could alter the legal landscape. Contrastingly, some scholars advocate for a "bundle theory" approach, granting AI personhood piecemeal by ascribing specific capacities such as holding property or entering contracts,

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[65] Visa A.J. Kurki, *A Theory of Legal Personhood, Oxford Legal Philosophy* (OUP 2019), 175 et seq.

[66] Lawrence B. Solum, 'Legal Personhood for Artificial Intelligences' (1992) 70 North Carolina Law Review 1231; Katherine B. Forrest, 'The Ethics and Challenges of Legal Personhood for AI' (2024) 133 Yale law Journal Forum 1175 <https://www.yalelawjournal.org/forum/the-ethics-and-challenges-of-legal-personhood-for-ai> accessed 8 September 2025.

[67] *Thaler* v *Vidal*, 43 F.4th 1207, 1210 (Fed. Cir. 2022)

particularly within commercial contexts.[68] This nuanced framework parallels the legal treatment of corporations and offers a potential path for India to reconsider Section 149 of the Companies Act in terms of functional capacities rather than rigid definitions. By integrating international developments and scholarly perspectives, it becomes evident that the legal treatment of AI is jurisdictionally diverse, conceptually fluid, and deeply intertwined with broader questions of liability, autonomy, and regulatory pragmatism—all of which are critical to the central inquiry of whether AI can meaningfully replace human directors in corporate governance.

4 Current Trends

Although it comes with its own challenges, AI becoming a part of the decision-making process seems to be just the tip of the iceberg.

These One of the earliest appointments of AI to the Board of Directors happened in 2014, in a Hong Kong based Venture Capital fund[69]. This algorithm was granted equal voting powers as other executives. In fact, two of its investment decisions were also followed through – which goes to show that this company has a lot of faith and therefore, trusts AI as an independent decision maker.

Marc Benioff, the CEO of Salesforce has integrated an artificial intelligence system ("Einstein") in their weekly executive meetings.[70] Over the course of a

[68] Kurki (n65).

[69] Rob Wile, 'A Venture Capital Firm Just Named An Algorithm To Its Board Of Directors - Here's What It Actually Does' (*Business Insider*, 13 May 2014) <https://www.businessinsider.com/vital-named-to-board-2014-5> accessed 8 September 2025.

[70] David Reid, 'Marc Benioff brings an A.I. machine called Einstein to his weekly staff meeting' (*CNBC*, 25 January 2018) <https://www.cnbc.com/2018/01/25/davos-2018-ai-machine-called-einstein-attends-salesforce-meetings.html> accessed 8 September 2025.

year, Einstein had played a participative role in their executive meetings, and has even demonstrated great capability to challenge human judgement.[71]

Similarly, an Abu-Dhabi based firm – International Holding Company (IHC) – has introduced an AI observer ("Aiden") to its Board.[72] Aiden was created by G42, partnered with Microsoft's Azure OpenAI service, and is involved in wide-ranging tasks – from assisting in the company's decision-making process, providing advanced data analysis, risk evaluations, flagging any ethical concerns, etc. Aiden also sits in Board meetings and participates as an observer with non-voting rights.

In India, Cyril Amarchand Mangaldas–a tier 1 corporate law firm has implemented 'Legaltech & ALS (Legal Technology & Alternative Legal Services)'[73] to automate menial tasks like proofreading, editing, reviewing contracts, due diligence, legal research, etc. Although this doesn't qualify to be on the equivalent footing as a director, yet it shows that reputed law firms have also started trusting AI's abilities to aid and advice in everyday tasks.

5 Suggestions and Recommendations

The current laws under the Companies Act 2013 provide for some slack for the integration of AI in corporate governance, *albeit* indirectly. For example, provisions like – Sections 149[74], 166[75], and 179[76], underscore that AI cannot fully

[71] Salesforce, 'Einstein' <https://help.salesforce.com/s/products/einstein> accessed 8 September 2025.
[72] Ryan Heath, 'AI shakes up corporate Boards', (*Axios*, 23 April 2024) <https://www.axios.com/2024/04/23/ai-bots-corporate-Boards-directors> accessed 8 September 2025.
[73] Cyril Amarchand Mangaldas, 'Legaltech and ALS' <https://www.cyrilshroff.com/legaltech-als/> accessed 8 September 2025.
[74] The Companies Act, 2013, § 149.
[75] The Companies Act, 2013, § 166.
[76] The Companies Act, 2013, § 179.

replace human directors, as fiduciary duties, accountability, and ethical judgment remain as foundational aspects of a director's duties. Section 149 requires independent directors to ensure objectivity, which AI could support by offering unbiased insights and mitigating issues like groupthink, as Kamalnath suggests.[77]

However, as Armour and Eidenmüller note, AI lacks the human qualities necessary for ethical judgment and legal accountability.[78] Scholars like Mandal and Sunil propose that instead of a radical overhaul[79], the existing fiduciary duties imposed on directors, such as the duty of care under Section 166(3), could be adapted to accommodate AI. By introducing AI in a framework analogous to Board Service Providers (BSP)[80], AI could initially take an advisory role, allowing human directors to focus on judgment-intensive decisions while ensuring oversight. Similarly, under Section 166(2), while AI can provide data-driven insights[81] to help directors fulfill their duties, the responsibility for acting in good faith remains with the human directors, particularly in cases of algorithmic failure.[82] Section 179, concerning the powers of the board, shows how AI can assist in complex decision-making, yet it cannot autonomously exercise these powers without human oversight. Furthermore, the risks of AI, such as algorithmic biases and the opacity of the 'black box' system, particularly in critical areas like fraud prevention under Section 447[83], leave no choice but to incorporate human control, oversight, and accountability.

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[77] Kamalnath, (n42) 51.
[78] Armour and Eidenmüller (n48) 100, 110.
[79] Mandal and Sunil (n37) 38.
[80] Stephen M. Bainbridge and M. Todd Henderson, 'Boards-R-Us: Reconceptualizing Corporate Boards' (2014) 66 Stanford Law Review 1051.
[81] Carlos Fernández-Loría, Foster Provost and Xintian Han, 'Explaining Data-Driven Decisions Made by AI Systems: The Counterfactual Approach' (2022) 46(3) MIS Quarterly 1635.
[82] Armour and Eidenmüller (n48) 92.
[83] The Companies Act, 2013, § 447.

The promise of AI in corporate governance rests not only on its technical competence but on its ability to render decisions that are intelligible and accountable. This criteria currently undermined by the opacity of most high-performing systems. Explainable AI (XAI) has emerged as a response to this opacity, yet its effectiveness remains contested. While regulatory frameworks such as the GDPR have gestured toward a "right to explanation," what constitutes a legally or ethically adequate explanation remains unsettled.[84] Much of XAI research has focused on technical solutions such as LIME and SHAP (which are model-agnostic methods that generate simplified explanations of complex models, but may not reflect the model's true internal reasoning), that attempt to approximate decision logic retrospectively. However, as the EDPS report shows, these post hoc methods can obscure more than they reveal, offering surface-level interpretability that may mislead users into overestimating the coherence or fairness of underlying models.

Equally pertinent is the judicial demand for context-sensitive explanations, especially in domains like sentencing or administrative adjudication, where legitimacy is inseparable from justification.[85] In the corporate setting, this raises a structural concern – board decisions are not only outcomes but also processes of deliberation, subject to legal scrutiny and stakeholder expectation. If AI systems cannot make their reasoning accessible in ways that align with legal standards of transparency and reason-giving, their role in governance, however functionally efficient, risks being normatively hollow.

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[84] Massimo Attoresi et. al, 'TechDispatch #2/2023: Explainable Artificial Intelligence' (*European Data Protection Supervisor*, 14 November 2023) <https://op.europa.eu/en/publication-detail/-/publication/59e38fb7-8436-11ee-99ba-01aa75ed71a1/language-en> accessed 8 September 2025.

[85] Ashley Deeks, 'The Judicial Demand for Explainable Artificial Intelligence' (2019) 119(7) Columbia Law Review 1829.

Trust in AI cannot be engineered solely through performance metrics; it must be earned through epistemic accountability.[86] Until XAI can move beyond proxy explanations toward genuinely communicable reasoning, its role in high-stakes decision environments such as corporate boards will remain not only constrained but conceptually insufficient.

6 Conclusion

Therefore, the final finding of this paper is that—artificial intelligence could be integrated as a tool to enhance the decisions taken by the board of directors, albeit while ensuring that human directors retain ultimate responsibility for governance and legal compliance under the current laws of the Companies Act, 2013.

While AI systems offer unparalleled capabilities in data processing, predictive analytics, and pattern recognition, skills that can significantly improve decision-making within corporate boards, their integration must be approached with cautious optimism. AI's value lies not in its replacement of human judgment but in its augmentation. It can serve as a powerful co-pilot for directors, mitigating human inefficiencies such as groupthink, cognitive biases, and information overload, thereby enabling more informed and rational deliberation. However, the inherent limitations of AI particularly the challenges posed by algorithmic bias, lack of moral agency, explainability deficits, and the opacity of decision-making within 'black box' systems, underscore the necessity of human oversight, ethical reasoning, and legal accountability.

[86] Violet Turri, 'What Is Explainable AI?' (*SEI Blog*, 17 January 2022) <https://insights.sei.cmu.edu/blog/what-is-explainable-ai/> accessed 8 September 2025.

Under current Indian company law, particularly Chapter XI of the Companies Act, 2013, the role of directors is inextricably linked with notions of fiduciary responsibility, good faith, and legal liability – the attributes which AI, in its present form, cannot fulfil autonomously. The statutory requirement that directors be natural persons reinforces this human-centric model of governance, signalling a legal and philosophical boundary that AI cannot yet cross. Moreover, practical considerations such as cost, sustainability, and the sociotechnical implications of delegating high-stakes decisions to non-sentient entities raise further questions about AI's readiness to take on a directorial mantle.

Hence, this paper concludes that a hybrid governance model, where AI operates as an advisory or decision-support mechanism, possibly in a role akin to a Board Service Provider (BSP) may present the most pragmatic and legally viable path forward. Such a model allows companies to reap the efficiency and consistency of AI, while retaining the nuanced ethical judgment, accountability, and contextual understanding that only human directors can provide. To enable this integration, the Companies Act may require moderate amendments, not to redefine the concept of a director entirely, but to accommodate AI in a supplementary role that supports compliance, enhances oversight, and promotes better corporate outcomes.

Looking ahead, the development and mandatory implementation of explainable AI (XAI) protocols, regular algorithmic audits, and a framework for assigning liability, whether through insurance models or modified shareholder responsibility will be crucial. Ultimately, the ethical deployment of AI in corporate governance must align with the broader goals of transparency, fairness, and sustainability. The future of corporate boards is not about choosing between human or bot, but about leveraging the strengths of both, in a balanced and legally sound manner.