INTERNATIONAL JOURNAL OF HUMAN RIGHTS LAW REVIEW

Volume 3 | Issue 2 Art. 2

2024

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Recommended Citation
Ishaan Deepak Joshi, 'Ethics in Blockchain Arbitration: Implications for ADR in India's Digital Age' (2024) 3 IJHRLR 16-32.
Available at www.humanrightlawreview.in/archives/.

ETHICS IN BLOCKCHAIN ARBITRATION: IMPLICATIONS FOR ADR IN INDIA'S DIGITAL AGE

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ABSTRACT

The Indian Arbitration Act of 2021 and the Information Technology Act of 2000 are having a profound impact on Indian dispute resolution, particularly in the realm of arbitration. The Indian Arbitration Act of 2021 provides a comprehensive framework for arbitration procedures and the enforcement of awards, while the Information Technology Act of 2000 governs electronic transactions and grants legal validity to electronic documents. Presenting a thorough framework with the Digital Data Protection Act of 2023 to protect personal data requires a careful examination of its effects on arbitration. When discussing ethical issues in Indian arbitration, it's crucial to strike a balance between transparency and confidentiality standards, particularly given the decentralised nature of blockchain technology and the potential vulnerabilities in smart contracts. Highlighting legislative reforms, ethical best practices, and compliance with cyber laws, particularly the Digital Data Protection Act, is crucial for upholding ethical arbitration in the digital age. Studying global legal frameworks offers valuable insights into effective strategies, potential challenges, and innovative solutions implemented in various jurisdictions. Integrating blockchain technology and smart contracts into Indian arbitration signifies a major change, requiring a delicate balance between innovation and ethical considerations. This article highlights the importance of legislative adaptations and ethical frameworks to ensure the ethical progress of arbitration in the changing digital environment.

KEYWORDS

Blockchain Arbitration, Ethical Considerations, Data Protection, Legal Frameworks, Dispute Resolution Innovation

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I. INTRODUCTION

Blockchain technology and smart contracts are revolutionizing the field of dispute resolution, especially in the realm of Indian arbitration. With the surge in global trade and economic activities in India, the adoption of decentralised systems brings about various opportunities and challenges. This introduction sets the stage for the research by emphasising the increasing importance of blockchain and smart contracts in Indian arbitration and the need to examine their ethical implications. Blockchain is a cutting-edge, decentralised ledger system that is resistant to tampering. Operating on a network of nodes guarantees transparency and immutability in recording transactions. Smart contracts, integrated into the blockchain, are self-executing agreements with predefined rules.[2] They streamline the enforcement of contractual terms, decreasing the need for middlemen and enhancing efficiency in the arbitration process. India is becoming a focal point for international trade, with a growing trend towards utilising blockchain and smart contracts for resolving disputes.

Delving into the Arbitration and Conciliation Act, 2021, a pivotal piece of arbitration legislation in India, stakeholders are currently examining creative alternatives to improve processes and boost effectiveness. This study aims to explore the ethical aspects of incorporating blockchain and smart contracts into the current legal system. With the rapid evolution of technology, ethical considerations require a thorough examination. With blockchain and smart contracts reshaping the conventional aspects of arbitration, concerns emerge about transparency, security, and the risk of bias.[3] With the Digital Data Protection Act of 2023 in place, it is essential to conduct a thorough examination of the ethical considerations and legal consequences related to these advancements. Approaching this research

[2] Ortolani, P. (2016). Self-Enforcing Online Dispute Resolution: Lessons from Bitcoin. *Oxford Journal of Legal Studies*, *36*(3), 595–629. http://www.jstor.org/stable/26363509
[3] Werbach, K. (2018). Trust, but Verify: Why the Blockchain Needs the Law. *Berkeley Technology Law Journal*, *33*(2), 487–550. https://www.jstor.org/stable/26533144

requires a meticulous examination of existing laws, regulations, and case precedents. Exploring the Indian Arbitration Act, cyber laws, and the Digital Data Protection Act, this paper aims to offer a detailed insight into the legal framework.[4] By incorporating doctrinal perspectives, a solid basis is established for analysing the ethical considerations of blockchain and smart contracts in Indian arbitration.

II. LEGAL FRAMEWORKS

The Arbitration and Conciliation Act, 2021, is fundamental to arbitration law in India. This text provides a detailed overview of the procedural framework for arbitration proceedings, as well as the recognition and enforcement of arbitral awards. Recognising the autonomy of parties within this framework, the Act allows for a flexible and party-centric approach to determining the procedure for arbitration. The Act recognises the legitimacy of arbitration agreements, whether written or communicated electronically, in line with the changing technological environment.

Ensuring the enforceability of arbitral awards, whether domestic or international, is crucial, and the Act offers procedures for their acknowledgment and implementation within the Indian legal framework. Integrating smart contracts into arbitration processes brings about a significant change in how contractual obligations are understood and carried out.[5] The Arbitration and Conciliation Act is well-equipped to address the challenges and opportunities arising from smart contracts, as it remains technology-neutral. How well the Act can adjust to these technological advancements will impact its ability to handle disputes stemming from blockchain-based agreements.

[4] Burman, A. (2020). The Growth of Privacy Regulation and the Bill. In *Will India's Proposed Data Protection Law Protect Privacy and Promote Growth?* (pp. 3–8). Carnegie Endowment for International Peace. http://www.jstor.org/stable/resrep24293.4
[5] Ganguli, A. K. (2018). NEW TREND IN THE LAW OF ARBITRATION IN INDIA. *Journal of the Indian Law Institute*, *60*(3), 249–281. https://www.jstor.org/stable/26826641

The Information Technology Act of 2000 is crucial for overseeing electronic transactions and granting legal status to electronic documents. It provides a legal framework for electronic contracts that is in line with the principles of blockchain and smart contracts. The provisions in the Act concerning digital signatures and authentication mechanisms establish the groundwork for incorporating technology into dispute resolution. Discussing cyber laws in India, the Information Technology Act acknowledges the validity of electronic records and signatures, which allows for the recognition of digitally signed arbitration agreements and awards. The provisions in the Act concerning the admissibility of electronic evidence continue to enhance the digitalization of arbitration proceedings.

The Digital Data Protection Act sets up a comprehensive framework for protecting personal data. Understanding the impact on arbitration proceedings, particularly those involving blockchain and smart contracts, is essential. Regulations in the Act regarding data privacy, security, and cross-border data transfers have a substantial influence on the ethical considerations surrounding blockchain technology in arbitration. Given the emergence of blockchain and smart contracts, the Act's provisions become even more significant. Section 10A of the Act explicitly acknowledges the validity of contracts formed through electronic means.[6] Analysing the incorporation of blockchain and smart contracts into the arbitration process requires a detailed examination of how these provisions correspond with new technologies. Understanding the importance of digital signatures in ensuring the validity of electronic contracts and arbitral awards as outlined in Sections 3 and 4 of the Information Technology Act is essential.

These provisions play a crucial role in establishing the authenticity and

[6] Suominen, K., Chatzky, A., Reinsch, W., & Robison, J. (2018). 10 Big Questions (and Myths) Surrounding Blockchain. In *Harnessing Blockchain for American Business and Prosperity: 10 Use Cases, 10 Big Questions, 5 Solutions* (pp. 15–22). Center for Strategic and International Studies (CSIS). http://www.jstor.org/stable/resrep22491.6

integrity of electronic records. When dealing with blockchain and smart contracts, the trustworthiness and protection of digital signatures are crucial factors in upholding the integrity of arbitration processes. The Information Technology Act acknowledges the admissibility of electronic evidence in legal proceedings under Section 65B. In arbitration, it is crucial to uphold the integrity of digital records. Given the immutability and transparency of blockchain technology, it is crucial to grasp how electronic evidence from blockchain platforms is handled under the Information Technology Act to uphold ethical arbitration practices.[7]

The Digital Data Protection Act, 2023 aims to establish a comprehensive framework for safeguarding personal data. Addressing principles of data privacy, security, and user rights, the DDPA tackles the increasing concerns related to safeguarding sensitive information in the digital age. To comprehend the influence of the DDPA on arbitration, a thorough analysis of its data protection principles is essential. Given the nature of blockchain, it is crucial to adhere to the DDPA for data storage and transfer.[8]

The Act's focus on securing explicit consent, minimising data, and the right to be forgotten brings up ethical concerns about the utilisation of personal data in blockchain-based arbitration. The DDPA introduces strict measures regarding cross-border data transfers, requiring a thorough analysis of how these provisions interact with the global nature of arbitration. Operating across borders, blockchain presents challenges in complying with the DDPA's requirements. Dealing with jurisdictional challenges is crucial for upholding ethical standards in handling and

[7] Piasecki, S. J. (1995). Legal Admissibility of Electronic Records as Evidence and Implications for Records Management. *The American Archivist*, *58*(1), 54–64. http://www.jstor.org/stable/40293888

[8] Teperdjian, R. (2020). THE PUZZLE OF SQUARING BLOCKCHAIN WITH THE GENERAL DATA PROTECTION REGULATION. *Jurimetrics*, *60*(3), 253–314. https://www.jstor.org/stable/27010025

transferring personal data in arbitration.[9]

III. ETHICAL CONSIDERATIONS IN INDIAN ARBITRATION

Emphasising transparency is fundamental to ethical arbitration practices. With its decentralised and transparent nature, blockchain has the potential to improve the visibility of arbitration proceedings. Ensuring an unchangeable record creates a permanent history of actions, promoting responsibility. It can be difficult to strike a balance between openness and the confidential nature of some arbitration cases as set forth in the Arbitration and Conciliation Act of 2021. Blockchain technology provides transparency, but it may conflict with the confidentiality standards outlined in arbitration laws. The Arbitration and Conciliation Act highlights the importance of maintaining the confidentiality of arbitration proceedings, especially when dealing with sensitive commercial information. This situation presents a complex ethical challenge, requiring a thorough analysis of how blockchain's transparency interacts with, or may conflict with, the confidentiality requirements established by Indian arbitration laws.[10]

Blockchain technology and security have both advantages and disadvantages. Decentralised and cryptographic features improve security, but vulnerabilities in smart contracts or network attacks can be risky. Weighing the benefits of a tamper-proof system against possible risks to the integrity and confidentiality of arbitration proceedings is crucial in an ethical assessment. Smart contracts, integrated into blockchain technology, frequently require handling and storing personal information. The Digital Data Protection Act enforces strict data protection principles. Examining the relationship between smart contracts, which

[9] Cong, L. W., & He, Z. (2019). Blockchain Disruption and Smart Contracts. *The Review of Financial Studies*, *32*(5), 1754–1797. https://www.jstor.org/stable/48568940
[10] Holtzmann, H. M. (1977). The First Code of Ethics For Arbitrators in Commercial Disputes. *The Business Lawyer*, *33*(1), 309–320. http://www.jstor.org/stable/40685796

automate contractual obligations, and data protection principles is crucial for maintaining ethical compliance. The emphasis of the DDPA on explicit consent and purpose limitation requires a reassessment of how personal data is used in smart contracts.[11]

There are concerns about potential bias arising from the deployment of algorithms within smart contracts. Emphasising fairness and impartiality in dispute resolution is a key aspect of the Arbitration and Conciliation Act. It is crucial to assess the algorithms' impartiality within smart contracts and their commitment to fairness principles, especially when dealing with a variety of parties or delicate topics. When it comes to blockchain technology, the automated execution of smart contracts must adhere to ethical standards. When evaluating the technology, it is crucial to ensure fairness in dispute resolution by considering diverse party interests and upholding due process.[12] Highlighting the significance of examining the procedural aspects impacted by blockchain technology, the Act emphasises fair and just proceedings.

IV. LEGAL RECOGNITION OF SMART CONTRACTS

Smart contracts, being programmable and self-executing agreements, have gained increasing recognition within legal frameworks globally. Recognising the importance of smart contracts in the legal discourse is essential for their successful integration into arbitration practices in India. It is crucial to thoroughly analyse the changing legal environment to grasp the current situation, obstacles, and possible improvements related to smart contract recognition. The Arbitration and Conciliation Act, 2021, does not specifically address smart contracts.[13]

[11] Cool, A. (2019). Impossible, unknowable, accountable: Dramas and dilemmas of data law. *Social Studies of Science*, *49*(4), 503–530. https://www.jstor.org/stable/48569102
[12] Sondhi, A. (2007). Arbitration in India — Some Myths Dispelled. *Student Bar Review*, *19*(2), 48–54. http://www.jstor.org/stable/44306675
[13] Goldstein, I., Jiang, W., & Karolyi, G. A. (2019). To FinTech and Beyond. *The Review of Financial Studies*, *32*(5), 1647–1661. https://www.jstor.org/stable/48568937

Examining how the Act can be applied to new technologies due to the lack of a clear regulatory framework. Examining pertinent case law and legal commentaries is crucial to understanding how Indian courts interpret and acknowledge smart contracts in arbitration agreements. By comparing international legal frameworks, we can gain valuable insights into how other jurisdictions handle the legal recognition of smart contracts. Examining different approaches will reveal effective strategies, possible obstacles, and creative responses implemented worldwide.[14] Utilising a comparative lens is crucial for formulating recommendations for legal reforms in the Indian context.

V. CYBER LAW AND DATA PROTECTION ACT RAMIFICATIONS

The Digital Data Protection Act (DDPA) introduces a framework for safeguarding personal data, significantly impacting arbitration practices. Examining the Act's data protection principles within the realm of arbitration proceedings, especially those related to blockchain and smart contracts, is crucial. It is crucial to understand how the Act aligns with or necessitates amendments to existing arbitration laws for ethical compliance. Balancing robust data protection measures with the preservation of the autonomy of arbitral proceedings is a crucial ethical consideration. In light of the procedural flexibility that arbitration typically offers, we must carefully consider the Act's emphasis on data minimization and purpose limitation. Ensuring this delicate balance guarantees ethical practices while maximising the advantages of blockchain and smart contracts.

Given the global reach of blockchain technology, it frequently results in situations requiring cross-border arbitration. Dealing with the DDPA's strict regulations on cross-border data transfers can be quite challenging

[14] Sklaroff, J. M. (2017). SMART CONTRACTS AND THE COST OF INFLEXIBILITY. *University of Pennsylvania Law Review*, *166*(1), 263–303. http://www.jstor.org/stable/45154933

for ensuring compliance.[15] Examining jurisdictional challenges and suggesting methods to comply with the Act's requirements is crucial for maintaining the ethical and legal integrity of cross-border arbitration involving blockchain and smart contracts. Having a deep understanding of how the DDPA affects the enforcement of arbitral awards, particularly those related to blockchain-based evidence or smart contract execution, is crucial. Aligning the Act's provisions on enforcement with the arbitration process is crucial for promoting ethical conduct in arbitration in the digital era.[16]

VI. RECOMMENDATIONS

Considering the significant influence of smart contracts, it is crucial for legislative amendments to clearly define their position within the Arbitration and Conciliation Act, 2021. Having a deep understanding of the legal recognition and enforcement of smart contracts in arbitration agreements is crucial to instilling trust in emerging technologies while upholding ethical standards. It is crucial to establish specific guidelines within the arbitration laws for cases related to blockchain technology. These guidelines should cover procedural aspects, evidence submission, and the recognition of blockchain-based records. This integration ensures that the advantages of blockchain, such as transparency and immutability, are in line with established ethical standards in arbitration.

Crafting a sophisticated framework that balances the transparency benefits of blockchain with the confidentiality needs of arbitration is essential. Adhering to ethical guidelines is crucial when utilising blockchain technology to safeguard sensitive data, specifically in relation to disclosure and confidentiality in accordance with the Arbitration and

[15] Tran, R. L. (2018). PORTABLE RECIPROCITY: A WAY TOWARDS A BLOCKCHAIN AGNOSTIC WORLD TO FACILITATE CROSS-BORDER REAL ESTATE TRANSACTIONS. *Real Property, Trust and Estate Law Journal*, *53*(2), 447–480. https://www.jstor.org/stable/27008633

[16] Singh, A. (2017). DATA PROTECTION: INDIA IN THE INFORMATION AGE. *Journal of the Indian Law Institute*, *59*(1), 78–101. https://www.jstor.org/stable/26826591

Conciliation Act.[17] It is crucial to include mechanisms for ethical oversight in blockchain arbitration. Impartial bodies or arbitrators with specialised knowledge in technology and ethics can offer supervision to guarantee equitable and righteous proceedings. Engaging in the continuous monitoring of algorithms, dispute resolution processes, and strict adherence to established ethical standards is crucial.

It is crucial to ensure that the Arbitration and Conciliation Act is in harmony with the Digital Data Protection Act (DDPA) to safeguard data protection and privacy in arbitration cases. Modifications need to be implemented to cover data minimization, purpose limitation, and user rights in accordance with the DDPA to ensure a balanced relationship between arbitration practices and data protection principles.[18] Formulate recommendations for handling cross-border arbitration involving blockchain and smart contracts. Creating mechanisms to navigate the jurisdictional challenges posed by the DDPA is essential. Working with international partners can help establish consistent practices to maintain the integrity and legality of cross-border arbitration.

Integrating blockchain and smart contracts into Indian arbitration requires a careful balance between innovation and ethical considerations, signalling a significant change. Emphasising legislative reforms, ethical best practices, and compliance with cyber laws, especially the DDPA, are crucial for the ethical advancement of arbitration in the digital age.[19] By maintaining this equilibrium, we can leverage the advantages of blockchain and smart contracts while preserving the ethical principles of arbitration, which in turn builds confidence and dependability in the

[17] Townsend, J. M. (2004). Clash and Convergence on Ethical Issues in International Arbitration. *The University of Miami Inter-American Law Review*, *36*(1), 1–21. http://www.jstor.org/stable/40176584

[18] TARAFDER, A., & BASU, A. (2017). Taking a Fresh Guard: Rethinking Data in Light of the Privacy Judgment. *Economic and Political Weekly*, *52*(40), 18–23. http://www.jstor.org/stable/26697695

[19] Sindhu, J. (2016). PUBLIC POLICY AND INDIAN ARBITRATION: CAN THE JUDICIARY AND THE LEGISLATURE REIN IN THE "UNRULY HORSE"? *Journal of the Indian Law Institute*, *58*(4), 421–446. http://www.jstor.org/stable/45163080

process of resolving disputes.

VII. FUTURE PROSPECTS AND CHALLENGES

One can observe the ever-evolving nature of blockchain and smart contracts, characterised by ongoing technological progress. Remaining informed about these changes and their impacts on arbitration is essential. It is important to regularly update and amend legislation to keep Indian arbitration laws current and adaptable to new technologies. One can expect ethical considerations regarding blockchain and smart contracts in arbitration to develop over time. Creating a structure for continuous ethical assessment and adjustment is crucial.[20]

Collaborative efforts are required from legal experts, technologists, and ethicists to tackle emerging challenges and maintain ethical standards in arbitration practices. Given the advancements in blockchain and smart contracts, it is crucial to prioritise international cooperation for cross-border transactions. Establishing worldwide guidelines for the ethical application of blockchain in arbitration can enhance uniformity and confidence. By collaborating with international institutions and jurisdictions, a shared ethical framework can be developed.

Navigating the regulatory landscape could be challenging as technology continues to advance. Identifying and addressing regulatory gaps is crucial to guaranteeing legal certainty and ethical conduct. Regular reviews and consultations between legal and technological professionals can help pinpoint areas that need regulatory attention. It is essential to implement educational programmes to improve ethical practices. Training programmes for arbitrators, legal professionals, and technologists can help bridge the knowledge gap, fostering a comprehensive understanding of the ethical implications of blockchain and smart contracts. This proactive

[20] Mittal, N. (2018). BUSINESS COURTS AND PRIVATE TRIBUNALS: IS INDIA READY FOR GLOBAL COMMERCE? *Journal of the Indian Law Institute*, *60*(1), 79–96. https://www.jstor.org/stable/26826626

approach enhances decision-making in arbitration proceedings.[21]

When considering future prospects and challenges, it is crucial to adjust the ethical framework to align with technological changes. By adopting a proactive and adaptive approach, arbitration practices can evolve continuously while keeping ethical considerations a top priority. For long-term success in arbitration during the digital age, it is crucial to adopt a collaborative, well-informed, and ethical approach to navigate the opportunities and challenges ahead.

VIII. DIGITAL DATA PROTECTION ACT, 2023 AND ARBITRATION

The Digital Data Protection Act (DDPA) establishes a structure for safeguarding personal data in India. Its regulations cover the handling, retention, and sharing of personal data, with the goal of protecting individuals' privacy online. To comprehend the impact of the DDPA on arbitration, one must delve into its fundamental principles and how they relate to arbitration procedures. The DDPA highlights essential principles that govern the processing of personal data, such as data minimization, purpose limitation, and storage limitation.[22] Evaluating how these principles correspond with the collection and use of data in arbitration proceedings, particularly those involving blockchain and smart contracts, is essential for ethical and legal compliance.

Obtaining explicit consent for data processing within smart contracts is a crucial ethical consideration. Smart contracts frequently entail the automated execution of predetermined conditions, which may include handling personal data.[23] Examining how the principles of explicit consent

[21] VELASCO, P. R. (2017). COMPUTING LEDGERS AND THE POLITICAL ONTOLOGY OF THE BLOCKCHAIN. *Metaphilosophy*, *48*(5), 712–726. https://www.jstor.org/stable/26602100

[22] HAMILTON, K. J., & SCHNEIDER, H. H. (2016). Confidential Arbitration Agreements for High-Profile Clients and Senior Executives. *Litigation*, *43*(1), 39–42. https://www.jstor.org/stable/26402016

[23] Sánchez, S. N. (2019). The Implementation of Decentralised Ledger Technologies for Public Procurement: Blockchain-based Smart Public Contracts. *European Procurement*

and purpose limitation under the DDPA relate to smart contracts is crucial for maintaining ethical data protection practices. Considering the DDPA, individuals have the right to ask for the removal of their personal data, known as the "right to be forgotten." It is important to analyse how this right relates to arbitration records kept on blockchain platforms. Considering ethics requires a delicate balance between privacy rights and the importance of preserving accurate arbitration records.

Considering the DDPA's limitations on personal data transfer outside of India, a thorough analysis is required to understand its effects on cross-border arbitration cases. It is crucial to grasp how these limitations correspond with the worldwide scope of arbitration, particularly when incorporating blockchain technology, to ensure ethical and legal adherence. Emphasising data protection is crucial while maintaining the security and confidentiality of arbitration proceedings. It is crucial to assess how the Act's data protection rules align with the requirements for secure and confidential arbitration processes, especially when utilising blockchain technology, to uphold ethical standards.

Stakeholders in arbitration should incorporate DDPA guidelines into their practices proactively. Incorporating data protection impact assessments, implementing explicit consent mechanisms, and establishing protocols for handling personal data in arbitration proceedings are essential steps to take. When legal and technological professionals work together, they can create guidelines that address the specific challenges presented by blockchain and smart contracts. It is important to provide ongoing education and training programmes to ensure that arbitrators, legal professionals, and technologists are well-versed in the complexities of the DDPA.[24] Emphasising the significance of aligning arbitration processes

& Public Private Partnership Law Review, *14*(3), 180–196. https://www.jstor.org/stable/26895828

[24] Kahn, R. A. (2018). Why Blockchain Is More Important to Lawyers Than They Probably Understand. *Business Law Today*. https://www.jstor.org/stable/27180134

with the principles outlined in the Act can reinforce ethical data protection practices through informed decision-making.

Understanding the ethical dimensions involved is crucial when considering the intersection of the Digital Data Protection Act with arbitration, especially in the context of blockchain and smart contracts. It is crucial to balance data protection principles with the specific features of arbitration to ensure that the DDPA improves privacy while maintaining the integrity and efficiency of arbitration processes.[25] Collaborative efforts, education, and proactive compliance initiatives are crucial for ensuring the smooth coexistence of data protection principles and ethical arbitration practices.

IX. CONCLUDING REMARKS

Integrating blockchain and smart contracts into the Indian arbitration system has the potential to greatly enhance efficiency, transparency, and accessibility. These technologies have a decentralised and automated nature and can bring transformative elements to reshape traditional dispute resolution mechanisms. The ethical considerations related to the utilisation of blockchain and smart contracts in Indian arbitration are complex. To tackle issues regarding transparency, security, privacy, and fairness, it is crucial to find a careful equilibrium between utilising technological progress and maintaining ethical principles.

It is crucial to update the legislative framework to include provisions for smart contracts within the Arbitration and Conciliation Act, 2021. It is crucial to make thorough amendments to ensure legal recognition, enforceability, and ethical guidance for incorporating smart contracts into arbitration agreements. Those involved in arbitration, such as arbitrators, legal professionals, and technologists, should follow ethical best practices.

[25] Smith, C., Coward, C., Hess, M. R., Hofman, D. L., Kim, B., & Norman, A. (2019). BLOCK-CHAIN REACTION. *American Libraries*, *50*(3/4), 26–33. https://www.jstor.org/stable/26612552

Setting clear standards for transparency, data protection, and procedural fairness is crucial to ensuring that blockchain and smart contracts uphold ethical norms, ultimately building confidence in the arbitration process. The upcoming Digital Data Protection Act will establish a thorough framework for data protection, which will have a significant impact on arbitration practices. It is essential to align arbitration processes with the principles of the DDPA to uphold ethical data protection standards and maximise the advantages of blockchain and smart contracts. Given the international nature of arbitration, it is crucial to tackle the issues arising from the DDPA's limitations on data transfers. When legal professionals work together with international partners, they can establish consistent practices to uphold the ethical and legal integrity of cross-border arbitration.

Adapting to technological advancements and evolving ethical considerations is crucial for the future of arbitration in India. Engaging with legislative reforms, ethical best practices, and complying with data protection laws is essential to maintaining arbitration as a dependable and ethical dispute resolution method. International cooperation and the development of worldwide guidelines for ethical blockchain integration in arbitration help maintain consistency and trust.[26] When experts from different areas work together, they can create a universal ethical framework that goes beyond borders.

One cannot deny the significant impact of blockchain and smart contracts in Indian arbitration. Realising this potential ethically necessitates a nuanced approach that integrates legislative reforms, ethical best practices, and compliance with data protection laws. Embracing technological innovation while upholding the core principles of transparency, fairness, and privacy is crucial for a balanced and ethical

[26] Smith, C., Coward, C., Hess, M. R., Hofman, D. L., Kim, B., & Norman, A. (2019). BLOCK-CHAIN REACTION. *American Libraries*, *50*(3/4), 26–33. https://www.jstor.org/stable/26612552

future for arbitration in India.[27] Engaging in ongoing discussions, staying informed, and being flexible are key elements that will uphold the ethical progress of arbitration in the digital era.

[27] Passador, M. L. (2017). CHALLENGING ARBITRATION: HOW CAN ITS HISTORY INFORM ITS CURRENT (E-)PRACTICE? *Willamette Journal of International Law and Dispute Resolution*, *24*(2), 233–255. https://www.jstor.org/stable/26210451