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Algorithmic Arbitrators: Confronting the Legitimacy Crisis of Artificial Intelligence in International Commercial Arbitration

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ABSTRACT

The integration of artificial intelligence into international commercial arbitration presents one of the more consequential jurisprudential questions of the present century. While AI tools are already deployed in document review, predictive analytics, and procedural management, the prospect of autonomous algorithmic decision-making at the merits stage raises problems that existing arbitral frameworks are ill-equipped to answer. This article argues that the deployment of AI as a decision-maker in international commercial arbitration generates a structural legitimacy crisis along three intersecting axes: the doctrinal requirements of independence and impartiality, the procedural guarantees of due process and the right to a reasoned award, and the systemic risk of algorithmic bias embedding itself within transnational commercial justice. Drawing on the UNCITRAL Model Law, the ICC Rules, arbitral jurisprudence, and comparative regulatory frameworks including the General Data Protection Regulation and the European Parliament's resolutions on algorithmic accountability, the article evaluates whether AI can satisfy the legal standards that underpin the enforceability of arbitral awards under the 1958 New York Convention. It concludes that, while AI may legitimately serve arbitration as an auxiliary tool, its elevation to primary decision-maker is, under the current doctrinal and conventional framework, deeply problematic and likely incompatible with the foundational requirements of arbitral legitimacy absent a transformative re-architecture of that framework.

Keywords: *Artificial intelligence, international commercial arbitration, algorithmic bias, due process, New York Convention, impartiality, legitimacy.*

I. INTRODUCTION

International commercial arbitration has long been celebrated as the pre-eminent mechanism for the resolution of cross-border commercial disputes, valued for its flexibility, neutrality, finality, and near-universal enforceability under the Convention on the Recognition and

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Enforcement of Foreign Arbitral Awards of 1958.¹ At its foundation lies a fundamentally humanist premise: that parties who have consented to arbitrate entrust their dispute to the informed and impartial judgment of one or more natural persons whose deliberative reasoning can be explained, challenged, and held to account.² That foundational premise is now under unprecedented pressure from the rapid and largely unregulated incursion of artificial intelligence into the dispute resolution ecosystem.

AI is no longer a speculative presence in international arbitration. Predictive analytics platforms are used to assess the probable outcome of claims and defences. Natural language processing tools assist in the review of millions of documents during disclosure exercises. Machine learning algorithms generate draft procedural orders and suggest timelines. Leading arbitral institutions, including the ICC, SIAC, and HKIAC, have acknowledged the use of AI tools in arbitral proceedings and have begun issuing guidance on their appropriate deployment.³ Yet these developments, significant as they are, remain at the periphery. The question this article addresses is of a different and more fundamental order: what happens when AI moves from assisting the arbitrator to replacing the arbitrator?

The proposition that an algorithm could render a final and binding arbitral award, enforceable in over one hundred and seventy jurisdictions under the New York Convention, is not merely a thought experiment. Start-up ventures in legal technology have already developed prototype AI arbitration platforms for low-value commercial disputes. Academic literature is beginning to engage seriously with the question.⁴ Regulatory bodies are grappling with the implications of automated decision-making in high-stakes legal contexts.⁵ The time has therefore come for the international arbitration community to confront, with doctrinal rigour and normative candour, the question of whether an AI system can ever be a legitimate arbitrator under the current framework of international commercial arbitration law, and, if not, what reforms would be necessary to make it so.

¹ Marike Paulsson, *THE 1958 NEW YORK CONVENTION IN ACTION* 3 (2016).

² GARY B. BORN, *INTERNATIONAL COMMERCIAL ARBITRATION* 147 (3d ed. 2021).

³ INTERNATIONAL CHAMBER OF COMMERCE, ICC COMMISSION REPORT: LEVERAGING TECHNOLOGY FOR EFFICIENT DISPUTE RESOLUTION 17 (2023).

⁴ Manu Subramanian, *Artificial Intelligence and the Future of International Arbitration*, 38 *ARB. INT'L* 189, 191 (2022).

⁵ European Parliament, *Resolution on Artificial Intelligence in a Digital Age*, ¶ 9, 2020/2266(INI) (May 3, 2022).

II. ARTIFICIAL INTELLIGENCE AND ARBITRAL DECISION-MAKING: A CONCEPTUAL MAP

Before engaging in doctrinal analysis, it is necessary to establish what is meant by artificial intelligence in the context of arbitral decision-making, since the term encompasses a spectrum of technical configurations whose legal implications differ substantially.⁶ At one end of the spectrum are rule-based systems, sometimes called expert systems, which apply a predetermined logical framework to factual inputs and produce outputs that are entirely predictable from the rules themselves. At the other end are large language models and deep learning systems trained on vast datasets, whose decision-making processes are opaque even to their designers: the so-called 'black box' problem.

For the purposes of this article, three deployments of AI in arbitration are distinguished. The first is AI as an auxiliary tool, where the technology assists the human arbitrator in document analysis, legal research, translation, or scheduling without making any substantive decision. The second is AI as a decision-support system, where the algorithm generates recommendations, risk scores, or outcome predictions that the human arbitrator considers but is not bound by.⁷ The third, and most legally consequential, is AI as an autonomous decision-maker, where the algorithm itself renders the award without human deliberation over the merits.

The first category raises questions primarily of procedural disclosure and equal treatment: must parties be told that AI-assisted document review was used? Does the use of a predictive analytics platform by one party's legal team create an inequality of arms? These are important questions, but they are largely tractable within the existing procedural framework.⁸ The second category raises more acute concerns about the integrity of the deliberative process: if an arbitrator is substantially guided by an AI recommendation that neither party can inspect or challenge, is the award the product of genuine human reasoning?

The third category, autonomous AI decision-making, is the focus of this article because it exposes the deepest potential incompatibilities between the nature of algorithmic systems and the normative structure of international commercial arbitration. As the following sections argue, an autonomous AI decision-maker faces serious, and arguably insuperable, difficulties in

⁶ Josef Drexl et al., *Technical Aspects of Artificial Intelligence: An Understanding from an Intellectual Property Law Perspective* 4 (Max Planck Inst. for Innovation & Competition, Research Paper No. 19-13, 2019).

⁷ Noah Waisberg & Josef Cerroni, *AI in Arbitration: Understanding AI Arbitration Assistants*, 37 ARB. INT'L 115, 119 (2021).

⁸ Stephan Wilske, *Arbitration 4.0: How Artificial Intelligence Will Change Dispute Resolution*, 36 J. INT'L ARB. 507, 510 (2019).

satisfying the requirements of independence, impartiality, due process, and reasoned award that are the minimum conditions for a valid and enforceable arbitral award.⁹

III. INDEPENDENCE AND IMPARTIALITY AND THE PROBLEM OF ALGORITHMIC NEUTRALITY

The requirements of independence and impartiality are the cornerstone of arbitral legitimacy. Under the UNCITRAL Model Law, any circumstances giving rise to justifiable doubts as to an arbitrator's impartiality or independence constitute grounds for challenge and potentially for setting aside the award.¹⁰ The IBA Guidelines on Conflicts of Interest in International Arbitration articulate an objective standard: whether a fair-minded, informed third party would have justifiable doubts.¹¹ These requirements exist because arbitration derives its authority from the parties' consent and from the international community's confidence that disputes will be resolved by neutral decision-makers.¹²

The application of these requirements to an AI system immediately discloses a fundamental problem. Independence, understood as the absence of relationships between the decision-maker and the parties that could influence the outcome, is structurally inapplicable to an AI system in the traditional sense. An AI system has no financial interests, no prior professional relationships, and no social connections that could generate the conflicts of interest that the IBA Guidelines seek to address.¹³ In this narrow sense, AI might appear to be more independent than a human arbitrator.

This apparent advantage, however, dissolves upon closer examination. An AI decision-making system is not a neutral tabula rasa; it is a product of its training data, its architecture, and the choices made by its designers. If the training data over-represents outcomes from disputes involving parties of particular nationalities, industries, or legal traditions, the system will systematically favour outcomes consistent with those patterns.¹⁴ The bias is not the result of conscious partiality, for the algorithm has no intentions, but its effect on the parties is

⁹ Kun Fan, *The Emergence of AI-Assisted Arbitration and the Challenge to Traditional Arbitral Principles*, 40 J. INT'L ARB. 45, 52 (2023).

¹⁰ UNCITRAL Model Law on International Commercial Arbitration art. 12(2) (1985, as amended 2006); ICC Rules of Arbitration art. 11(1) (2021).

¹¹ INTERNATIONAL BAR ASSOCIATION, IBA GUIDELINES ON CONFLICTS OF INTEREST IN INTERNATIONAL ARBITRATION, General Standard 1 (2014).

¹² Frank Emmert, *The Independence and Impartiality of Arbitrators in International Commercial Arbitration*, 7 SETON HALL CIR. REV. 1, 18 (2010).

¹³ Elena Solovyeva, *Algorithmic Bias in Legal Decision-Making: Implications for Arbitration*, 15 CONTEMP. ASIA ARB. J. 71, 83 (2022).

¹⁴ Hannah Sassaman & Meredith Whittaker, CIVIL RIGHTS, BIG DATA, AND OUR ALGORITHMIC FUTURE 5 (MediaJustice, 2014).

indistinguishable from structural prejudice. O'Neil has documented extensively how algorithmic systems replicate and amplify the inequalities embedded in their training data, producing outcomes that are simultaneously technically neutral and substantively discriminatory.¹⁵

More fundamentally, the designers and operators of an AI arbitration system have interests, commercial, reputational, and ideological, that could shape the system's outputs without the knowledge of the parties. An AI system developed by a technology company headquartered in a particular legal tradition, trained primarily on awards rendered in a particular arbitral seat, and optimised for settlement efficiency rather than legal accuracy embeds those values into every decision it renders.¹⁶ The parties cannot interrogate the system's reasoning in any meaningful sense, cannot challenge the selection or weighting of training data, and cannot invoke the equivalent of a conflict-of-interest challenge against an algorithm.

The impartiality requirement poses an equally acute difficulty. Impartiality in international arbitration is not merely the absence of bias in the subjective sense; it includes the appearance of impartiality to a reasonable observer.¹⁷ The European Parliament's resolution on artificial intelligence in a digital age identifies the opacity of algorithmic decision-making as difficult to reconcile with the transparency requirements of fundamental rights adjudication.¹⁸ An AI system whose decision-making logic is inaccessible to the parties cannot satisfy the appearance-of-impartiality requirement, because there is no way for a reasonable observer to assess whether the system is biased. The requirement of apparent impartiality is not a formalism; it is the mechanism by which the international arbitration community maintains public confidence in the system.¹⁹

IV. DUE PROCESS, THE REASONED AWARD, AND THE RIGHT TO EQUAL TREATMENT

The due process requirements applicable to international commercial arbitration derive from multiple overlapping sources: the national law of the arbitral seat, the applicable institutional rules, and the overarching requirements of international human rights law and public policy.²⁰

¹⁵ CATHY O'NEIL, *WEAPONS OF MATH DESTRUCTION: HOW BIG DATA INCREASES INEQUALITY AND THREATENS DEMOCRACY* 31 (2016).

¹⁶ Subramanian, *supra* note 4, at 195.

¹⁷ Christoph Liebscher, *THE HEALTHY AWARD: CHALLENGE IN INTERNATIONAL COMMERCIAL ARBITRATION* 112 (2003).

¹⁸ European Parliament, *Resolution on Artificial Intelligence in a Digital Age*, ¶ 9, 2020/2266(INI) (May 3, 2022).

¹⁹ Thomas Schultz, *Human Rights: A Speed Bump for Arbitral Procedures? An Introduction to the Debate*, 9 INT'L ARB. L. REV. 8, 9 (2006).

²⁰ Universal Declaration of Human Rights art. 10, G.A. Res. 217 (III) A (Dec. 10, 1948); International Covenant on Civil and Political Rights art. 14, Dec. 16, 1966, 999 U.N.T.S. 171.

Under Article 18 of the UNCITRAL Model Law, each party must be given a full opportunity to present its case.²¹ The New York Convention permits refusal of enforcement where the arbitral procedure was not in accordance with the agreement of the parties or, failing such agreement, with the law of the country where the arbitration took place, or where recognition or enforcement would be contrary to the public policy of the enforcing country.²²

The requirement that an arbitral tribunal issue a reasoned award is one of the most important procedural safeguards in international commercial arbitration. Most leading institutional rules require reasons as a default, and many national courts treat the absence of reasons as a ground for setting aside or refusing enforcement.²³ The reason for this requirement is not bureaucratic formalism; it is that reasons enable the parties to understand why they won or lost, to identify errors of law or fact that may justify challenge, and to hold the decision-maker accountable to the legal and factual matrix of the dispute.

An AI system can produce text that has the formal appearance of reasons. Large language models are capable of generating sophisticated legal prose that cites authorities, applies principles, and reaches conclusions in a manner that superficially resembles the reasoning process of a human arbitrator.²⁴ But the generation of plausible-sounding reasons is not the same as the provision of genuine reasoning. What matters legally is not whether an AI system has subjective understanding, but whether the reasoning process is transparent and verifiable. An AI system identifies statistical patterns in its training data and generates outputs that correspond to those patterns. The reasons it produces may not reflect the actual computational process that produced the outcome, because that process, involving billions of weighted parameters, cannot be reduced to a verifiable narrative explanation.²⁵

This gap between generated text and genuine reasoning has direct legal consequences. If an AI award is challenged, the court tasked with supervisory jurisdiction cannot review the actual process by which the award was reached, because that process is either opaque by design or inaccessible in practice. The award cannot be meaningfully scrutinised for errors of law, procedural irregularities, or excess of jurisdiction if the reasoning process is a post-hoc linguistic reconstruction rather than the genuine basis of the decision.²⁶ This raises a serious

²¹ UNCITRAL Model Law on International Commercial Arbitration art. 18 (1985, as amended 2006).

²² Convention on the Recognition and Enforcement of Foreign Arbitral Awards art. V(2)(b), June 10, 1958, 330 U.N.T.S. 3.

²³ Liebscher, *supra* note 17, at 118.

²⁴ Maximin de Fontmichel, *Le tribunal arbitral face à l'intelligence artificielle [The Arbitral Tribunal and Artificial Intelligence]*, 2020 REV. ARB. 689, 705.

²⁵ Darius Chan & Amos Tan, *When Machines Decide: Liability for Erroneous AI Arbitral Awards*, 34 SING. ACAD. L.J. 601, 617 (2022).

²⁶ RICHARD SUSSKIND, *ONLINE COURTS AND THE FUTURE OF JUSTICE* 201 (2019).

systemic due process concern, not because the outcome is necessarily wrong, but because the mechanism of accountability has been severed.

The right to equal treatment raises further difficulties. Article 18 of the UNCITRAL Model Law requires that parties be treated with equality.²⁷ The concept of equality of arms, drawn from human rights jurisprudence, requires that no party be placed at a substantial disadvantage relative to its opponent in presenting its case.²⁸ In the AI arbitration context, inequality of arms may arise from the differential capacity of parties to interact with, interrogate, or audit the algorithmic system. A sophisticated multinational corporation with access to AI legal tools, data scientists, and computational resources may be far better positioned to identify and exploit patterns in an AI arbitration system's decision-making than a smaller party from a developing economy.

The GDPR may further complicate the due process analysis in cases where the AI system processes personal data in making its decision. Article 22(1) of the GDPR confers on data subjects the right not to be subject to a decision based solely on automated processing that produces legal effects concerning them or similarly significantly affects them.²⁹ While the precise scope of Article 22 in the arbitral context remains contested, not least because most commercial arbitration parties are corporations rather than natural persons, the underlying normative principle that consequential legal decisions ought to involve meaningful human review aligns with the due process concerns developed in this part and points toward reform even where the Regulation does not directly apply.

V. ALGORITHMIC BIAS AND THE SYSTEMIC THREAT TO ARBITRAL JUSTICE

The problem of algorithmic bias in legal decision-making has attracted increasing attention in the academic literature and in regulatory practice, but its specific implications for international commercial arbitration have not been adequately theorised.³⁰ This part argues that algorithmic bias in AI arbitration systems poses a systemic risk that is qualitatively different from, and more dangerous than, the individual bias of a human arbitrator, because it is invisible, self-reinforcing, and capable of infecting an unlimited number of awards simultaneously.

²⁷ UNCITRAL Model Law on International Commercial Arbitration art. 18 (1985, as amended 2006).

²⁸ Alexis Mourre & Alexandre Vagenheim, *Some Comments on Procedural Equality in International Arbitration*, 33 J. INT'L ARB. 329, 334 (2016).

²⁹ Regulation 2016/679, of the European Parliament and of the Council of 27 April 2016 on the Protection of Natural Persons with Regard to the Processing of Personal Data (General Data Protection Regulation), art. 22(1), 2016 O.J. (L 119) 1.

³⁰ O'Neil, *supra* note 15, at 25.

Algorithmic bias arises when the outputs of a machine learning system reflect, reproduce, or amplify patterns of discrimination or inequality present in the training data or embedded in the system's design.³¹ In the context of international commercial arbitration, the training data for an AI decision-making system would necessarily include historical arbitral awards. The corpus of published arbitral awards is, however, far from a neutral representation of commercial justice. Awards from developed-country seats are over-represented; awards involving developing-country parties as respondents may reflect structural asymmetries in access to legal representation and resources; and awards in certain sectors may encode industry practices that are themselves the product of power imbalances.³²

An AI system trained on this corpus will reproduce these patterns as default outcomes. Critically, because the system's outputs may themselves be incorporated into future training datasets, a feedback loop that progressively reinforces existing patterns rather than correcting them, algorithmic bias may entrench over time. Solovyeva has suggested, in the specific context of investment arbitration, that the use of predictive analytics trained on historical awards generates outcome predictions that may systematically disadvantage state respondents from the Global South.³³ If those predictions are used to shape settlement negotiations, the bias operates even before a formal award is rendered.

The systemic dimension of algorithmic bias in arbitration is particularly alarming. A biased human arbitrator affects one case at a time and is subject to challenge, removal, and reputational sanction. A biased AI system deployed across an institutional platform affects every case processed by that platform simultaneously, with no mechanism for individual challenge, no reputational accountability, and no corrective feedback loop accessible to the affected parties.³⁴ The scale of the potential injustice is therefore categorically different.

The systemic risk is further compounded by the competitive dynamics of the international arbitration market. Arbitral institutions compete for cases; technology providers compete for institutional contracts. This creates structural incentives to prioritise efficiency, settlement rates, and technological sophistication over the more demanding and expensive project of designing genuinely unbiased AI decision-making systems.³⁵ Absent mandatory regulatory intervention,

³¹ Sassaman & Whittaker, *supra* note 14, at 7.

³² Solovyeva, *supra* note 13, at 85.

³³ Solovyeva, *supra* note 13, at 88.

³⁴ European Parliament, *Resolution on Artificial Intelligence in Criminal Law and Its Use by the Police and Judicial Authorities in Criminal Matters*, ¶ 6, 2020/2016(INI) (Oct. 6, 2021).

³⁵ Sundaresh Menon, *Regulating International Arbitration*, 31 ARB. INT'L 173, 186 (2015).

market forces alone may be insufficient to produce AI arbitration systems that are adequately and independently audited for bias.

The existing framework for setting aside and refusing enforcement of awards provides inadequate protection against algorithmic bias. The public policy exception in Article V(2)(b) of the New York Convention has been interpreted narrowly by most national courts, and demonstrating that an AI award was the product of algorithmic bias would require access to the system's architecture, training data, and decision logs, information that is unlikely to be voluntarily disclosed by a technology company and may be protected as a trade secret.³⁶ The enforcement framework, designed for awards rendered by human arbitrators whose reasoning can be examined, is thus structurally ill-adapted to the governance of algorithmic decision-making.

VI. TOWARD A REGULATORY FRAMEWORK FOR AI IN INTERNATIONAL COMMERCIAL ARBITRATION

The analysis in the preceding parts demonstrates that autonomous AI arbitration raises serious and, under the current framework of international commercial arbitration law, likely unsatisfiable doctrinal objections. It cannot readily satisfy the requirements of independence and impartiality, it cannot reliably provide a verifiable reasoned award, it structurally undermines due process and equal treatment, and it poses a significant risk of systemic algorithmic bias. The question that remains is what a responsible and appropriately bounded relationship between AI and international arbitration would look like, and what institutional architecture would be necessary to realise it.

The first and most important regulatory principle is the human deliberative floor: no final award in an international commercial arbitration should be rendered without genuine human deliberation on the merits by a qualified arbitrator or panel. This principle does not prohibit the use of AI tools in arbitral proceedings; it requires that the human arbitrator exercise real and accountable judgment, informed but not replaced by AI analysis.³⁷ This principle is already implicit in most leading institutional rules, but it needs to be made explicit and enforceable as a condition of award validity.³⁸

³⁶ Convention on the Recognition and Enforcement of Foreign Arbitral Awards art. V(2)(b), June 10, 1958, 330 U.N.T.S. 3.

³⁷ Maura Ganz, *Toward an International Framework for the Regulation of AI in Arbitration*, 41 J. INT'L ARB. 1, 22 (2024).

³⁸ Arbitration Institute of the Stockholm Chamber of Commerce, SCC Arbitration Rules art. 1 (2023).

The second principle is algorithmic transparency. Where AI tools are used in the arbitral process, whether for document review, predictive analytics, or procedural management, the parties should be informed of their use, their technical nature, and the identity of their provider.³⁹ Crucially, parties must be given an opportunity to raise objections based on bias, conflict of interest, or data protection concerns before the award is rendered. The Silicon Valley Arbitration and Mediation Center's 2024 Guidelines on the Use of Artificial Intelligence in Arbitration represent a step in this direction, but they do not go far enough in requiring proactive disclosure.⁴⁰

The third principle is mandatory bias auditing. Any AI system used in a decision-support capacity in international commercial arbitration should be subject to independent algorithmic audit conducted by a body with no commercial relationship with the technology provider or the arbitral institution. The audit should examine the training data for representational biases, the system's outputs for patterns of differential treatment, and the system's compliance with applicable data protection law.⁴¹ Audit results should be made available to arbitral institutions, national supervisory courts, and, in redacted form, to parties upon request.

The fourth principle is international institutional coordination. The legitimacy of international commercial arbitration rests on a shared framework of procedural standards maintained by leading institutions, national courts, and international bodies including UNCITRAL. The governance of AI in arbitration cannot be left to individual institutions acting in competitive isolation; it requires a coordinated regulatory response at the international level.⁴² UNCITRAL is the natural forum for this coordination; its track record in developing the Model Law, the Transparency Rules, and the ISDS reform process demonstrates its capacity to generate authoritative soft law in the field of international arbitration.⁴³

The fifth principle is the protection of access to justice. The efficiency gains promised by AI-assisted arbitration are real and should not be dismissed, particularly for parties with limited resources who currently face prohibitive costs in international commercial arbitration.⁴⁴ Efficiency, however, cannot be purchased at the cost of legitimacy. Any framework for AI in

³⁹ Winnie Ma, *Data Privacy and Confidentiality in AI-Driven Arbitration*, 51 COMPUT. L. & SEC. REV. 105702 (2023).

⁴⁰ Silicon Valley Arbitration & Mediation Center, *Guidelines on the Use of Artificial Intelligence in Arbitration* (1st ed. 2024).

⁴¹ Ganz, *supra* note 37, at 24.

⁴² Albert Jan van den Berg, *Hypothetical Draft Convention on the International Enforcement of Arbitration Agreements and Awards*, 14 ICCA CONGRESS SERIES 649, 672 (2008).

⁴³ United Nations Commission on International Trade Law, UNCITRAL Model Law on International Commercial Arbitration art. 28 (1985, as amended 2006).

⁴⁴ Susskind, *supra* note 26, at 205.

arbitration must include safeguards against the deployment of AI tools that systematically advantage well-resourced parties, and must ensure that the promise of cheaper and faster dispute resolution does not become a mechanism for delivering algorithmic injustice at scale.⁴⁵

VII. CONCLUSION

The intersection of artificial intelligence and international commercial arbitration presents the international legal community with a challenge of unusual complexity and urgency. The analysis in this article has argued that autonomous AI arbitration is, under the framework as it currently exists, difficult to reconcile with the foundational requirements of international commercial arbitration: it struggles to satisfy independence and impartiality standards, cannot reliably produce verifiable reasoned awards, risks undermining due process and equal treatment, and generates significant systemic risks of algorithmic bias.

These conclusions do not counsel technological pessimism. Artificial intelligence, deployed as an auxiliary and transparent tool under the supervision of qualified human arbitrators and within a robust regulatory framework, has the potential to make international commercial arbitration more accessible, more efficient, and more consistent. The efficiency gains are too significant, and the access-to-justice implications too important, to be sacrificed to an uncritical defence of the status quo.⁴⁶

What is required is a fundamental reconfiguration of the governance architecture of international commercial arbitration to accommodate the realities of the algorithmic age. This requires, at minimum, the articulation of a human deliberative floor as a condition of award validity, the mandatory disclosure and transparency of AI tools used in arbitral proceedings, independent algorithmic auditing of decision-support systems, and internationally coordinated regulatory standards developed under the auspices of UNCITRAL.⁴⁷

The legitimacy of international commercial arbitration has been built, over more than a century, on the confidence of parties, institutions, and national courts that disputes are resolved by principled human judgment, subject to defined procedural safeguards and enforceable through a universal convention framework. That legitimacy is not an obstacle to progress; it is a constitutional inheritance that must be preserved, adapted, and, where necessary, re-founded to

⁴⁵ Chan & Tan, *supra* note 25, at 620.

⁴⁶ Sundaresh Menon, *International Arbitration: The Coming of a New Age for Asia (and Elsewhere)*, 22 ICCA CONGRESS SERIES 1, 26 (2012).

⁴⁷ Menon, *supra* note 35, at 190.

meet the challenges of a world in which the boundary between human and algorithmic decision-making is increasingly difficult to locate.⁴⁸

⁴⁸ Born, *supra* note 2, at 149.