CHAPTER 6

Integrating New Technologies in International Arbitration: Thoughts on the Future of Our Profession

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§6.01 INTRODUCTION

Since the launch of OpenAI's ChatGPT in November 2022, conversations about artificial intelligence (AI) have been everywhere. In just a matter of months, ChatGPT became the fastest-growing consumer app in history,[1] and less than a year from its release, OpenAI CEO Sam Altman announced at the company's first-ever developer conference that the service had garnered approximately 100 million weekly users.[2] Around the same time in November 2023, 'AI' was selected by the Collins dictionary as its word of the year,[3] defined as an 'abbreviation for artificial intelligence: the modelling of human mental functions by computer programs'.[4]

It seems safe to say that the rise of ChatGPT has captured the public imagination and fuelled a surge of interest in the promise and potential of new technologies to transform our lives. The implications are as wide-ranging as the expert predictions for an AI revolution, oscillating from the wildly optimistic to the depressingly dystopian.

1. Krystal Hu, *ChatGPT sets record for fastest-growing user base – analyst note*, Reuters (2 Feb. 2023), https://www.reuters.com/technology/chatgpt-sets-record-fastest-growing-user-base-analyst-note-2023-02-01/.
2. Jon Porter, *ChatGPT continues to be one of the fastest-growing services ever*, The Verge (6 Nov. 2023), https://www.theverge.com/2023/11/6/23948386/chatgpt-active-user-count-openai-developer-conference.
3. *'AI' named most notable word of 2023 by Collins dictionary*, The Guardian (1 Nov. 2023), https://www.theguardian.com/technology/2023/nov/01/ai-named-most-notable-word-of-2023-by-collins-dictionary.
4. Esther Addley, *Definition of 'AI'*, Collins, https://www.collinsdictionary.com/dictionary/english/ai.

When it comes to AI and the future of work, the conversation tends to centre on the threat of automation. To what extent will AI displace workers by replicating tasks previously performed by humans? And how will AI impact highly skilled professions such as the practice of law?

The 2023 edition of the OECD's Employment Outlook report,[5] published in July 2023, provided a bleak outlook for the legal profession. The report observed that 'AI's improving ability to complete […] non-routine tasks raises new worries of job displacement for occupations previously thought impervious to automation'[6] and proceeded to speculate that '[o]ccupations in finance, medicine and legal activities', could be amongst those which 'may suddenly find themselves at risk of automation from AI'.[7] It is perhaps not so strange, then, that the legal profession remains reluctant to fully embrace the use of AI tools in day-to-day practice.

In November 2023, a survey on the use of AI in international arbitration published by law firm Bryan Cave Leighton Paisner[8] (BCLP) reflected widespread scepticism towards AI within the international arbitration community. The survey was based on a total of 221 respondents (including lawyers in private practice, arbitrators, experts, in-house counsel, academics, staff at arbitral institutions, legal tech providers, and litigation funders)[9] and applied a broad definition of AI which included 'systems using technologies such as text mining, computer vision, speech recognition, natural language generation, machine learning and deep learning to gather and/or use data to predict, recommend or decide, with varying levels of autonomy, the best action to achieve specific goals'.[10]

Overall, the survey found that whilst most members of the international arbitration community acknowledge that AI is useful for performing tasks like document review, translation, and text formatting and editing,[11] the majority are opposed to the use of AI tools to 'formulate or draft adjudicatory elements of an award'[12] or in legal submissions. 86%-88% of the survey respondents expressed concerns about cybersecurity risks, AI hallucinations,[13] the potential for breaches of confidentiality, improper delegation, and the danger of AI tools being misused to falsify or tamper with evidence ('deepfakes').[14] But despite these concerns, 73% of the survey respondents expressed no objection to using AI tools for the generation of factual summaries, whilst 65% indicated that they would deploy AI for document analysis, defined in the survey as 'extracting and organising data from documents'.[15] 62%, however, would '*draw the*

5. OECD (2023), *OECD Employment Outlook 2023: Artificial Intelligence and the Labour Market*, OECD Publishing, Paris, https://doi.org/10.1787/08785bba-en.
6. *Ibid*., section 3.
7. *Ibid*.
8. BCLP, *Annual Arbitration Survey 2023* (2023), https://www.bclplaw.com/a/web/tUW2SW6fjHrpXVrA7AfWkS/102932-arbitration-survey-2023-report_v10.pdf.
9. *Ibid*., at p. 7.
10. *Ibid*., at p. 6.
11. *Ibid*., at p. 13.
12. *Ibid*., at p. 23.
13. Defined in the survey as 'risk of the technology conjuring up fictitious information.'
14. BCLP, *supra* n. 8, at p. 15.
15. *Ibid*., at p. 13.

line' at using AI tools to generate texts for use in arbitral awards, whereas 58% expressed reservations in relation to text for use in expert reports.[16] Survey respondents' confidence in arbitrators' technical capability 'to give directions concerning the use of AI tools in arbitration' was similarly low, with 79% rating it at 5 or below on a scale of 1-10.[17]

It would seem, then, that whilst the COVID-19 pandemic pushed the legal profession to embrace technology for remote work and virtual meetings, many arbitration lawyers remain wary of the integration of AI into their practice. However, whether we like it or not, there is little doubt that technological innovations will radically change how lawyers work in the coming years and that AI will accelerate existing trends in digitalisation and virtual work environments. On that basis, this chapter will seek to offer a perspective on the future of international arbitration and, in doing so, will endeavour to move beyond the dichotomy between 'human intelligence' and 'artificial intelligence' ('AI will/will not replace lawyers') to explore the potential of AI and other innovative technologies to improve international arbitration as a practice and a profession. After all, the most exciting possibilities lie not in replacing lawyers with machines but in deploying new technologies to improve client results and lawyer well-being for a better profession overall.

Considering this, *Part I* of this chapter will address the short-term impact of AI on the practice of international arbitration, including the immediate opportunities and challenges likely to arise. *Part II* will then consider the long-term potential of new technologies to improve the profession of international arbitration.

For the purposes of this chapter, 'AI' is defined as 'an umbrella term for a range of algorithm-based technologies that solve complex tasks by carrying out functions that previously required human thinking'[18] and is generally used without distinction between the different types of AI classification.[19]

§6.02 PART I SHORT-TERM IMPACT: IMMEDIATE OPPORTUNITIES AND CHALLENGES

The existing use cases for AI in arbitration (and in the legal profession at large) already cover a variety of tasks, including document review and e-disclosure, legal research, data analysis, and citations,[20] most of which are performed using machine learning

16. *Ibid*.
17. BCLP, *supra* n. 8, at p. 23.
18. A definition first offered by the UK Information Commissioner's Office in its 2020 publication '*Explaining decisions made with AI*,' co-authored with The Alan Turing Institute, https://ico.org.uk/media/for-organisations/uk-gdpr-guidance-and-resources/artificial-intelligence/explaining-decisions-made-with-artificial-intelligence-1-0.pdf.
19. *See*, *e.g.*, Naveen Joshi, *7 Types of Artificial Intelligence*, Forbes (19 Jun. 2019), https://www.forbes.com/sites/cognitiveworld/2019/06/19/7-types-of-artificial-intelligence/, for a classification of the types of AI.
20. *See*, *e.g.*, Nigel Blackaby KC, Constantine Partasides & Alan Redfern, Redfern and Hunter on International Arbitration 6.110 (2022).

algorithms.[21] With the rise of generative AI (genAI), future applications now seem virtually limitless, with many promising tools in the works.

Unlike machine learning algorithms that process and analyse data to make predictions, genAI is a type of AI that can create new and original content by learning patterns from training data.[22] Large language models (LLMs) such as ChatGPT, Falcon, and Google's Gemini rely on this technology to produce original text content that mimics the human voice to such a degree it is sometimes difficult to tell the difference. Meanwhile, image synthesis services like Midjourney, OpenAI's DALL•E 3, and Adobe Firefly are generating artwork and design so impressive that it looks set to change the creative industries, along with video generation technologies able to create deepfakes that blur the line between what is artificial and what is real. These innovations bring with them a host of new opportunities and risks set to challenge the current arbitral framework, a number of which will be considered below.

Section §6.02[A] focuses on the procedural issues likely to arise from the increased use of AI tools by parties and their counsel. *Section* §6.02[B] addresses the use of AI by arbitrators. Finally, *section* §6.02[C] considers the regulatory landscape with regard to the use of AI tools in international arbitration.

[A] AI Use by Parties and Related Procedural Issues

As of September 2024, no major institutional arbitration rules[23] contain any mention of 'artificial intelligence'. This means that it is mostly left to the discretion of the tribunal to tailor an appropriate set of rules or guidelines regarding the use of AI if and when the need arises. However, as the use of AI tools becomes increasingly common, universal procedural issues are likely to emerge that may require broader consideration.

The following pages will consider two key issues of particular relevance to international arbitration: disclosure obligations (section §6.02[A][1]) and concerns regarding data privacy and confidentiality (section §6.02[A][2]).

[1] Disclosure Obligations

The growing use of AI tools amongst parties, counsel, and arbitrators raises the question of whether mandatory disclosure obligations are needed to protect the integrity of arbitration proceedings in the future.

21. Defined by IBM as '*a set of rules or processes used by an AI system to conduct tasks – most often to discover new data insights and patterns, or to predict output values from a given set of input variables,' What is a machine learning algorithm?*, IBM, https://www.ibm.com/topics/machine-learning-algorithms#:~:text=A%20machine%20learning%20algorithm%20is,learning%20(ML)%20to%20learn.
22. Margaret Rouse, *Generative AI*, Techopedia (15 Jan. 2024), https://www.techopedia.com/definition/34633/generative-ai.
23. Namely the ICDR Rules 2021, JAMS International Arbitration Rules 2021, LCIA Rules 2020, ICC Rules 2021, SCC Rules 2023, HKIAC Rules 2018, SIAC Rules 2016 (and the Draft 7th Edition of the SIAC Rules shared by the SIAC on 22 Aug. 2023), JCAA Rules 2021, DIAC Rules 2022, and UNCITRAL Rules 2021.

There is certainly no shortage of cautionary tales about the issues that can arise when AI use by non-tech-savvy lawyers goes undisclosed. In May 2023, for example, the legal profession enjoyed a collective chuckle when news emerged of a personal injury lawyer in New York who had relied a little too much on ChatGPT in preparing a brief for submission to Manhattan's federal court.[24] With the aid of the AI chatbot, the lawyer had produced a motion replete with '*bogus*' cases, decisions, and quotes, which was promptly filed to the court upon assurance from ChatGPT that the 'cases I provided are real and can be found in reputable legal databases'.[25] Stories such as this are likely why the November 2023 BCLP survey found widespread concern regarding the potential misuse of AI, with 88% of the respondents expressing worry over AI hallucination and 86% concerned about 'deepfakes'.[26] But just how valid are these fears?

With regard to the risk of hallucination (as in the case of the unfortunate New York lawyer), it is clear that technological advances are no substitute for lawyers' existing obligations to verify the accuracy of their court filings.[27] This is not a new problem, however, and is unlikely to be resolved with AI-specific regulation. Lawyers have been delegating work for as long as the profession has existed, and some have always sought to cut corners wherever possible. Just as they have in the past, law firms should continue to address this issue through internal policies to ensure that work produced by non-lawyers (whether by interns, support staff, or AI assistants) is competently done and subject to review and quality control by a lawyer qualified in the relevant jurisdiction.

The risk of deepfakes may be trickier to tackle.[28] Whilst the prevalence of AI tools has made it easier than ever to fabricate or falsify evidence (as well as to obscure any signs of tampering), it is also easier than ever for parties to level unsubstantiated allegations of forgery against the other side. As with many other issues, this ultimately comes down to trust, but in cases where the trust between the parties has deteriorated to the point that it cannot be restored, a set of robust guidelines for the disclosure of AI use may significantly aid the continued progress of the proceedings.

Mandatory disclosure rules would ensure that parties are given the opportunity to familiarise themselves with the tools used by the other side. Depending on the extent of disclosure required, it may also enable parties to assess the underlying algorithms of such tools and to consider and address the ways in which they may affect the scope and

24. Benjamin Weiser, *Here's What Happens When Your Lawyer Uses ChatGPT*, The New York Times (27 May 2023), https://www.nytimes.com/2023/05/27/nyregion/avianca-airline-lawsuit-chatgpt.html.
25. *Ibid*.
26. BCLP, *supra* n. 8, at p. 15.
27. *See*, *e.g.*, Art. 48 of the Code of Conduct for the Danish Bar and Law Society (2022), Rule 5.4 of the Code of Professional Conduct for Members of the Swedish Bar Association (2023), Rule 1.4 of the England and Wales Solicitors Regulation Authority's Code of Conduct (2023), and Rules 3.3 and 4.1 of the New York Rules of Professional Conduct (2022).
28. *See* Marie-Helen Maras & Alex Alexandrou, *Determining authenticity of video evidence in the age of artificial intelligence and in the wake of Deepfake videos*, International Journal of Evidence & Proof, 23(3), 255-262 (2019) https://doi.org/10.1177/1365712718807226, on the capabilities of deepfake technology and its impact on the process for authentication of video evidence.

nature of evidence and/or legal submissions in the proceedings. It seems reasonable, however, that proactive disclosure should only be required when mandated by the chosen rules (whether ad hoc or institutional).[29] If the tribunal requires further information (or if no specific rules have been agreed), it should be able to obtain this by requesting the parties to disclose further details.[30]

As AI is adopted more widely in the international arbitration community, arbitral institutions may wish to ease the procedural burden by developing registries of pre-approved AI tools that parties are permitted to use without disclosure (i.e., tools that have been vetted and approved with regard to data privacy and other security and regulatory concerns), as well as written policies for how such tools may be used, including any specific restrictions. In the meantime, the following pages will offer some reflections on the scope of any potential disclosure obligations.

Scope of Disclosure Obligations

The first step in any disclosure framework is to determine the extent of disclosure required and make sure that the scope of any mandatory obligations is clear and workable. In relation to the use of AI and other new technologies, this means disclosure rules should acknowledge that machine learning technology is already embedded into most legal practices through such commonplace tools as grammar and spell checkers, tools that check or generate citations, predictive typing software, translation software, and legal research tools. All these tools tend to incorporate at least some AI features and have been available for years, yet only the most cautious rule-sticklers would have thought before 2023 that the use of such programs would require disclosure.

The need for a pragmatic approach is also reflected in the results of BCLP's November 2023 survey, which found that views on the need for disclosure of AI use depended on the nature of the task. Accordingly, 72% of the survey respondents believed that AI use should be disclosed when applied in the drafting of expert reports, whilst 65% believed that disclosure was necessary for tools that provide assistance with document review and production.[31] Meanwhile, 62% believed that disclosure was needed when AI tools were used to translate documents submitted into the arbitration record, whereas only 40% believed that parties should be required to disclose the use of AI tools for legal research.[32] Despite general calls for transparency,[33]

29. This aligns with Guideline 3 of the Silicon Valley Arbitration & Mediation Center's (SVAMC) *SVAMC Guidelines on the Use of Artificial Intelligence in Arbitration* (2024), according to which '[d]isclosure that AI tools were used in connection with an arbitration is not necessary as a general matter,' whereas proactive disclosure applies under the Dubai International Financial Centre (DIFC) Courts' *Practical Guidance Note Number 2 of 2023 Guidelines on the use of large language models and generative AI in proceedings before the DIFC Courts*, which recommends that parties 'declare at the earliest possible opportunity if they have used or intend to use AI-generated content during any part of proceedings.'
30. This aligns broadly with the general approach to document disclosure in international arbitration where the power to request parties to give disclosure of relevant documents will typically fall within the tribunal's general case management powers (*see, e.g.*, Art. 3(10) of the International Bar Association's (IBA) Rules on the Taking of Evidence in International Arbitration (2020)).
31. BCLP, *supra* n. 8, at p. 19.
32. *Ibid*.

however, only half of the respondents believed that the use of AI tools in arbitration should be openly disclosed to 'all those involved in an arbitration', including the survey respondents' own clients, (other) parties to the arbitration, the tribunal, the administering institution, and potential third-party funders/insurers.[34] These findings suggest that it would be difficult to establish a common ground for the extent of disclosure needed,[35] and compromises will have to be made.

Some courts and judges have already responded to the rise of genAI with rigorous disclosure measures. In June 2023, for example, Judge Michael M. Baylson of the U.S. District Court for the Eastern District of Pennsylvania issued a standing order stating that lawyers 'MUST, in a clear and plain factual statement, disclose that AI has been used in any way in the preparation of' 'any complaint, answer, motion, brief, or other paper, filed with the Court'.[36] From a practical perspective, however, it hardly seems sensible to require mandatory disclosure of AI use that does not alter the substance of the final work product and is indeed so commonplace that it is likely to go unnoticed by most users. At the same time, it is key to ensure that guidelines are as clear and unambiguous as possible to minimise room for creative interpretation by overzealous counsel. A reasonable compromise may be an approach based on the type of AI tool and the intended purpose and nature of its use,[37] with mandatory disclosure required for the use of AI tools relying on generative capabilities or otherwise able to create original content, whereas machine learning tools (e.g., tools capable of making decisions, identifying trends, and other forms of predictive analysis by learning from data, but which do not produce original content) may be used freely. This approach would allow parties to make use of programs that do not influence the legal work product in a substantive way, whereas all AI programs designed to generate original text and image-based content would require disclosure, regardless of whether the AI-generated content is altered or amended before being used in submissions.

For analytics tools capable of generating input or whole documents for submission to the arbitration record, the extent of disclosure required may instead depend on the specific intended use. This category of AI systems includes tools for data summarisation used to generate overviews of factual and/or legal subjects, tools that prepare visual aids for complex advice or video reproductions and the like, as well as accounting and finance tools used for, e.g., loss calculations, valuations, and counterfactual simulation. A party may, for example, deploy AI to identify potentially relevant documents in a data room that it might wish to rely on in the arbitration without

33. The survey found that 60% of respondents agreed or strongly agreed that there is a need for greater transparency over the use of AI tools by parties in arbitration (*see* BCLP, *supra* n. 8, at p. 19).
34. BCLP, *supra* n. 8, at p. 20.
35. *See* the SVAMC's Commentary to Guideline 3, SVAMC Guidelines on the Use of Artificial Intelligence in Arbitration (2024), which states that 'defining a set of generally applicable criteria for disclosure of AI does not seem feasible and could create more controversy than it resolves.'
36. Judge Michael M. Baylson in the United States District Court for the Eastern District of Pennsylvania, Standing Order Re: Artificial Intelligence ('AI') in Cases Assigned to Judge Baylson, 6 Jun. 2023.
37. This aligns with the general approach taken in Guideline 3 of the SVAMC Guidelines on the Use of Artificial Intelligence in Arbitration (2024).

disclosing such use to the other side. If, on the other hand, that party were instead to use the same tool in the context of complying with a document request or an order issued by the arbitral tribunal, disclosure may be required. This ties back to the issue of trust, and parties may well wish to err on the side of caution by agreeing to disclose such tools regardless of actual use.

Overall, a disclosure framework based on these general categories should be fairly easy to manage, in addition to being flexible enough to accommodate new innovations and technological developments. It would also allow parties and their counsel a reasonable degree of freedom with regard to commonly used tools whilst making sure that any AI programs capable of generating new input or output for inclusion in material documents are disclosed and subject to scrutiny by the parties and the tribunal. However, to ensure that the parties can fully assess the potential impact of AI use on the proceedings, disclosure may also be required regarding the extent and nature of specific usage in relation to tools within the general scope. In addition, the parties should be required to disclose in each instance how a specific submission has been altered or otherwise influenced by such tools.

One potential solution is a two-pronged approach requiring:

(1) a general disclosure statement at the beginning of the arbitration, followed by
(2) specific disclosure statements prior to parties' submission of any document intended to be materially relied upon in the proceedings (including pleadings, evidence, and expert reports and submissions) that have been produced with the aid of AI tools.

The initial disclosure should cover (at a minimum):

- the type and nature of the AI tool used and its specific intended use (e.g., document analysis or text generation);[38]
- the identity of the supplier(s) of the AI tool, and
- specific information about the data set on which the tool was trained (e.g., size/volume, sources, and/or selection criteria).

Parties (or arbitrators) may also require disclosure of the prompts provided to the AI system,[39] as well as other technical parameters (e.g., neural network architectures or scripts for training and output generation) to be able to fully assess the workings of the underlying algorithms and evaluate how they might affect the integrity of AI-generated output submitted in the arbitration. This would provide parties with the strongest basis for considering (and substantiating) any objections to the use of specific tools, though it would also require significant resources and technical capabilities.

If the parties are not able to agree on a joint list of approved AI tools after the initial disclosure, the party wishing to use a disputed tool should be able to seek

38. *See* Guideline 3 of the SVAMC Guidelines on the Use of Artificial Intelligence in Arbitration (2024).
39. *Ibid*.

permission from the arbitral tribunal for its intended use.[40] Initial disclosures should therefore be followed by a short deadline for parties to object to the use of any disclosed tools, after which disputes should be settled by the arbitral tribunal.

Subsequent disclosures[41] made during the proceedings should be enclosed with each party submission and should at least contain a general outline of:

- specific use in the relevant submission (e.g., by listing the pages and/or sections of a document that include AI-generated output or by integration of a watermark for AI-generated content),[42] and
- the extent and nature of use (e.g., whether the AI-generated output was altered or otherwise amended before being included in the submission).

For the sake of uniformity, disclosures should be made on forms provided by either the arbitral institution (if any), the tribunal, or – if possible – jointly by the parties. Arbitrators may also require that disclosure statements must be signed by both a party representative and their legal counsel to assuage any lingering concerns of dishonesty.

Of course, this leads to the question of how breaches should be enforced and what sanctions should apply (if any), including whether parties should be liable for breaches by, e.g., experts or even fact witnesses. One possible (and fairly straightforward) approach would be to take inspiration from the existing remedies addressing counsel misconduct in international arbitration,[43] including the ability to draw inferences in assessing the evidence relied upon, or the legal arguments advanced by, the party representative,[44] impact on cost allocation,[45] and even potential liability for damages.

[2] Data Privacy and Confidentiality

It is a common characteristic of AI tools that they require large amounts of data to function (or at least to function well). Indeed, many of the long-term future use cases considered in this chapter require the parties to upload data onto AI-powered

40. Such disagreements should be addressed using the existing mechanisms for resolving disputes under the procedural rules applicable to the arbitration.
41. Given that AI tools covered by subsequent disclosures would already have been approved for use at the initial disclosure stage, there would not seem to be any need for the tribunal to consider objections at this stage except in very special circumstances.
42. This approach is consistent with preamble number 134 of the EU AI Act (*see* section §6.02[C] below), which states that '[f]urther to the technical solutions employed by the providers of the AI system, deployers who use an AI system to generate or manipulate image, audio or video content that appreciably resembles existing persons, objects, places, entities or events and would falsely appear to a person to be authentic or truthful (deep fakes), should also clearly and distinguishably disclose that the content has been artificially created or manipulated by labelling the AI output accordingly and disclosing its artificial origin.'
43. *See*, *e.g.*, Art. 9(8) of the IBA Rules on Taking of Evidence in International Arbitration (2020) and Guideline 26 of the IBA Guidelines on Party Representation in International Arbitration (2013).
44. Guideline 26, IBA Guidelines on Party Representation in International Arbitration (2013).
45. Article 9(8), IBA Rules on Taking of Evidence in International Arbitration (2020), and Guideline 26, IBA Guidelines on Party Representation in International Arbitration (2013).

arbitration platforms.[46] For many clients and lawyers alike, this will understandably raise alarm bells with regard to data privacy and confidentiality.

Common causes for concern include the lack of transparency about where data will end up, as well as reservations about inputting any kind of proprietary or otherwise sensitive information into AI programs, even if the information is not regulated.[47] As with the whirlwind efforts that followed the introduction of the EU's landmark General Data Protection Regulation (GDPR),[48] attention to confidentiality risks is also likely to be heightened in the coming years as the legal community (and the general public) grows to embrace AI. Overall, however, it seems that confidentiality concerns arising from AI integration will not differ too much in nature from those already raised by parties' reliance on other software programs and tech tools provided by third-party suppliers, including email, data rooms, and document management software. As with any other third-party tech tool – and as already established by the GDPR in relation to personal data[49] – it is key for AI users to assess the nature of the information that will be input into the AI model and closely examine their contracts for how that data will (or can) be used by the supplier, including whether information submitted by users may be reproduced in future responses.[50]

In arbitrations involving EU parties and/or EU individuals or governed by EU institutions, there will be a significant overlap between AI use and the GDPR. Unlike the EU's recently adopted Artificial Intelligence Act,[51] which at its heart is a product safety regulation and does not create any direct enforcement rights for individuals,[52] the GDPR is a rights-based regulation that equips individuals with a wide range of rights with respect to their personal data. However, given that the definition of 'processing' under the GDPR is technology-neutral and includes 'any operation or set of operations which is performed on personal data or on sets of personal data, whether or not by automated means',[53] the GDPR will intersect with the AI Act to 'fill the gap' in regard to individuals' rights whenever AI systems make use of personal data (which, given the broad definition of personal data under the GDPR,[54] will almost invariably be the case). This will address some – if not all – of the immediate data privacy concerns arising from AI integration, and the relationship between AI and the GDPR will likely

46. *See*, *e.g.*, section §6.03[B] below.
47. Similar considerations are reflected in the SVAMC's Commentary to Guideline 2, SVAMC Guidelines on the Use of Artificial Intelligence in Arbitration (2024).
48. Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 Apr. 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC (General Data Protection Regulation).
49. *See*, *e.g.*, the ICCA/IBA Joint Task Force's Roadmap on Data Protection in International Arbitration.
50. This is consistent with the recommendation given in the SVAMC's Commentary to Guideline 2, SVAMC Guidelines on the Use of Artificial Intelligence in Arbitration (2024).
51. The latest version of which is the European Parliament's Corrigendum to the EU AI Act of 19 Apr. 2024 passed by the European Parliament on 23 Apr. 2024, which corrected errors in the language and numbering present in previous drafts.
52. *See* section §6.02[C] below.
53. *See* Art. 4(2) GDPR.
54. *See* Art. 4(1) GDPR.

continue to grow and mature as more AI- and data-specific regulations are adopted in Europe and globally.

In addition to potential contractual confidentiality provisions and AI-specific regulations, lawyers who make use of AI tools are also likely to be bound by ethical rules and guidelines, which means they will be required to ensure and certify that the technology maintains the confidentiality of client data. Given that genAI is widely viewed as 'black box' technology due to the lack of transparency over its inputs and operations,[55] law firms may need to recruit and/or train technical coordinators or specialist AI lawyers to ensure a full understanding of the technical specifications, and to be able to advise clients on what actually happens with information put into AI programs deployed by the firm.

[B] AI and Arbitrators: Friends or Foes?

With the rise of generative AI, some countries have already begun to integrate AI-driven technologies into their judiciaries and adjudication processes. Estonia, a global digital leader and a frontrunner in public digital infrastructure, was rumoured in as early as 2019 to be piloting an AI judge for adjudication of small-claims disputes worth less than EUR 7,000, though this has since been debunked by the Estonian Ministry of Justice.[56] In the same year, it was widely reported that China had introduced so-called smart courts employing AI to assist judges with routine tasks such as recording testimony, analysing case materials, and verifying information from databases in real-time.[57] The initiative was so successful that four years later, in 2023, those AI assistants had reportedly been promoted to judges and were settling disputes via digital court hearings without human intervention.[58] Finally, just last year, The Guardian reported that a judge in Colombia had caused a stir when he revealed that he had consulted with ChatGPT in deciding an insurance dispute regarding the costs of medical treatment for an autistic child, in addition to relying on precedent in support of his conclusion.[59]

So far, there do not seem to have been any reports of arbitrations presided over by non-human AI tribunals or of parties selecting AI arbitration in their arbitration clauses, but despite the apparent lack of real-world application, much can be said (and indeed has been already) about the prospect of 'robot arbitrators' – good and bad. For many disputants, the appeal of arbitration comes in part from the ability of parties to appoint their own arbitrators (or, at the very least, influence the appointment process), unlike in civil litigation, where cases are typically assigned to judges at random. It is not

55. *See, e.g.*, the SVAMC's Commentary to Guideline 1, SVAMC Guidelines on the Use of Artificial Intelligence in Arbitration (2024).
56. Maria-Elisa Tuulik, *Estonia does not develop AI Judge*, Estonian Ministry of Justice (16 Feb. 2022), https://www.just.ee/en/news/estonia-does-not-develop-ai-judge.
57. *See, e.g.*, Alena Zhabina, *How China's AI is automating the legal system*, Deutsche Welle (20 Jan. 2023), https://www.dw.com/en/how-chinas-ai-is-automating-the-legal-system/a-64465988.
58. *Ibid*.
59. Luke Taylor, *Colombian judge says he used ChatGPT in ruling*, The Guardian (3 Feb. 2023), https://www.theguardian.com/technology/2023/feb/03/colombia-judge-chatgpt-ruling.

unthinkable, however, that the benefits of party appointment could be transferred to AI judges. It may even be possible in the not-so-distant future for parties to be able to 'design' their own arbitrators by mixing and matching elements from a register of (pre-approved) qualities, competencies, and areas of expertise administered by arbitral institutions or an international organ created on the basis of a multilateral treaty. This would fully resolve the potential problem of partisan arbitrators – and could even result in parties being presented with better-qualified and more ideally suited candidates than would be possible with human arbitrators.

Even if the future of (human) arbitrators is not quite so bleak, there can be no doubt that arbitrators have much to gain from integrating AI into their work. An obvious obstacle, however, is the risk of improper delegation of power, which 81% of respondents in BCLP's November 2023 survey reported being at least somewhat concerned about.[60] Unlike civil judges, arbitrators derive their powers from the parties' agreement to arbitrate rather than by virtue of state powers, and they are appointed by name and chosen because of their unique qualities, experience, and personal characteristics to resolve a dispute on the parties' behalf. An arbitrator's mandate is, therefore, an inherently personal mandate that must be fulfilled by the appointed individual, and delegation of the arbitrator's tasks (whether in full or in part) must be disclosed to the parties. The nature of an arbitrator's mandate also suggests that parties may not be too happy with arbitrators being aided in their decision-making by AI tools like ChatGPT.[61] There is no good reason, however, why parties should object to arbitrators seeking assistance from AI, just as they do not typically object to arbitrators relying on assistance or, indeed, advice from tribunal secretaries and expert witnesses, amongst others.

In the very near future, arbitrators will also likely be able to acquire personal AI secretaries who are fully tailored and trained in accordance with their individual preferences. In the autumn of 2023, for example, Microsoft announced its 'Copilot' for Microsoft 365 (branded 'your everyday AI companion'),[62] which promises to integrate GPT-4-based AI across the full suite of Microsoft 365 products, including Windows, Outlook, Teams, Word, Excel, PowerPoint and more, 'to unleash creativity, unlock

60. BCLP, *supra* n. 8, at p. 15.
61. In addition to the general reflections outlined in section §6.02[A][1] above, arbitrators' use of AI tools will also raise particular issues regarding the need for – and potential extent of – disclosure obligations, which are not further addressed in this chapter. Suffice it to say that whilst a flexible disclosure framework may be warranted for the parties, the nature of an arbitrator's mandate could well merit a stricter approach for arbitrators' use of AI. Parties may find it acceptable for an arbitrator to rely on genAI software in drafting the procedural history of an award but refuse to give consent for use of the same tool to articulate the reasoning behind the arbitrator's decision on the merits of the dispute. Rules regarding arbitrators' duties to disclose the use of AI tools may be best dealt with in institutional rules or by agreement between the parties, with due notice given to the arbitrator at the time of his or her appointment.
62. Yusuf Mehdi, *Announcing Microsoft Copilot, your everyday AI companion*, Microsoft (21 Sep. 2023), https://blogs.microsoft.com/blog/2023/09/21/announcing-microsoft-copilot-your-everyday-ai-companion/.

productivity and uplevel skills'.[63] According to Microsoft, Copilot in Word will 'jump-start the creative process so you never start with a blank slate again', providing 'a first draft to edit and iterate on – saving hours in writing, sourcing, and editing time'. Meanwhile, Copilot in Outlook promises to 'clear your inbox in minutes, not hours' by 'summarizing long email threads' and 'quickly drafting suggested replies'.[64] Many lawyers will recognise these tasks as typical junior-level work: drafting documents or email replies and preparing summaries for seniors to review. And in many cases, this is not too different from the tasks typically performed by tribunal secretaries in international arbitration proceedings. With proper oversight and supervision, there is no reason why an AI secretary should not eventually perform these tasks as well as – if not better than – a human one.[65]

AI assistants will not always be right, of course, and not every draft they produce will be useful, but the same could likely be said of any trainee attorney, junior associate, or young arbitration practitioner, including those trying on the role of tribunal secretary for the very first time. With patience, feedback, and proper training, they are all likely to improve and develop over time into skilful team members. The greatest challenge lies not in the quality of output produced by AI assistants but in making sure that arbitrators develop the technical capabilities and understanding needed to unlock AI's potential and functionality. Indeed, the output produced by AI models is only as accurate and as helpful as the questions asked by their users. Arbitrators – like any other professionals hoping to benefit from AI – will therefore need to learn how to ask the right questions (so-called prompt engineering) to achieve the desired results.

For arbitrators able to master AI, the benefit will be substantial. In addition to considerable time and cost savings,[66] integration of AI into arbitrators' decision-making is also likely to promote consistency and predictability in awards. AI-powered analytics can identify patterns and trends in past orders and awards, helping arbitrators make informed decisions based on the cumulative learnings of every precedent available to the public. In a sense, arbitrators aided by good AI tools will be able to benefit from a form of hybrid intelligence: the arbitrator's personal judgment, skillset, and unique (human) perspective combined with the ability and capacity of AI to consider every source available and find the one 'needle in the haystack' that may be of relevance to the arbitrator's decision. In addition, AI analytics is likely to be helpful

63. Jared Spataro, *Introducing Microsoft 365 Copilot – your copilot for work*, Microsoft (16 Mar. 2023), https://blogs.microsoft.com/blog/2023/03/16/introducing-microsoft-365-copilot-your-copilot-for-work/.
64. *Ibid*.
65. There is still some way to go, though, before AI assistants such as Microsoft's Copilot will be fully and safely integrable into legal practice, particularly when it comes to cybersecurity and data privacy risks. Indeed, the US House of Representatives was reported in March 2024 to have implemented a strict ban on the use of the Microsoft Copilot by congressional staffers over potential security risks identified by the Office of Cybersecurity: Andrew Solender & Ina Fried, *Scoop*: *Congress Bans Staff Use of Microsoft's AI Copilot*, Axios (29 Mar. 2024), https://www.axios.com/2024/03/29/congress-house-strict-ban-microsoft-copilot-staffers.
66. *See* section §6.03[B] below.

in preventing bias (whether good or bad) and mistakes of fact and/or law that may otherwise be caused by human error.

AI can also assist arbitrators in reviewing party submissions – a very promising use case that is only likely to increase in value as disputes continue to grow in both volume and complexity with legal submissions, exhibits, factual witness statements, and expert reports totalling tens if not hundreds of thousands of pages in many cases. AI models have already demonstrated promising capabilities in summarising content and could potentially assist arbitrators by:

- analysing parties' submissions and providing summaries of key points for each, as well as of each party's overall position and legal arguments;
- assisting arbitrators in researching case histories and identifying relevant evidence for arbitrators to review, and
- accelerating the legal research process by listing out cases and legal authorities cited by the parties (as well as surfacing relevant cases and authorities that the parties may have missed) and analysing trends or tendencies in relevant case law to identify key issues and applicable legal tests.

Of course, any arbitrator worth their salt would ultimately need to review the documents for themselves and conduct their own research, just as they would (or at least should) had they been assisted by a tribunal secretary.[67] But even so, a preliminary AI-generated review and analysis would no doubt be helpful – not only in speeding up the arbitrator's understanding but also by potentially identifying evidence or case law that the arbitrator might otherwise have missed. AI may even be able to add new perspectives to the parties' positions that even their counsel had not thought of.

Sceptics, of course, will claim that AI integration will cause lazy arbitrators to skip any independent review of the record and rely solely on the summaries generated by their AI assistants. As a result, arbitrators would acquire only a superficial understanding of the case rather than the deeper knowledge achievable only by reviewing everything for themselves. Indeed, it goes without saying that arbitrators should retain intellectual ownership of the award and that this requires them not only to review the parties' submissions but also to review, re-review, and re-work any draft awards produced by AI.[68] Just as arbitrators should not confine themselves to considering only what is put forth by counsel in the parties' submissions, they also should not limit themselves to viewing only what was selected by AI for summary. Overall, arbitrators will need to strike a balance between the potential efficiency gains from AI integration and the unique 'human touch' that led them to be appointed in the

67. This is consistent with section 6 of the England and Wales Courts and Tribunals Judiciary's Artificial Intelligence (AI) Guidance for Judicial Office Holders (2023), which states that '[j]udicial office holders are personally responsible for material which is produced in their name' and goes on to note that 'judges are not generally obliged to describe the research or preparatory work which may have been done in order to produce a judgment. Provided these guidelines are appropriately followed, there is no reason why generative AI could not be a potentially useful secondary tool.'
68. *See* section 6 of the England and Wales Courts and Tribunals Judiciary's Artificial Intelligence (AI) Guidance for Judicial Office Holders (2023).

first place. Clear rules and guidelines will also be needed and can likely be modelled on the rules already in place regarding arbitrators' reliance on tribunal secretaries.[69]

If used correctly, AI has the potential to free arbitrators of the busywork currently consuming much of their time and allow them to focus fully on the work that really matters. If anything, that should improve arbitrators' ability to reflect deeply on the legal issues and lead to higher quality awards overall – particularly in complex disputes. And should it so happen that some arbitrators are tempted into overreliance on AI tools, word will no doubt spread quickly throughout the international arbitration community, putting any future appointments in jeopardy.

[C] The Regulatory Landscape

Where technology advances, regulation is sure to follow, and on 13 July 2023, the Cyberspace Administration of China (CAC), along with six other Chinese government agencies, took a swift lead in issuing its Interim Administrative Measures for Generative Artificial Intelligence Services (生成式人工智能服务管理暂行办法).[70] This was followed on 13 March 2024 by the European Parliament's formal adoption of the much-anticipated EU Artificial Intelligence Act.[71] Just two months later, on 17 May 2024, Colorado Governor Jared Polis signed into law Senate Bill 24-205 concerning consumer protections in interactions with AI systems, making Colorado the first U.S. state[72] to adopt broad AI legislation. In addition, legislators in many other jurisdictions are working on similar AI-specific regulations, some of which may altogether prohibit the use of AI in the context of the administration of justice.

The EU AI Act, a landmark piece of legislation for the EU, is the world's first comprehensive regulatory framework on AI and aims to constrain the risks to security and fundamental rights raised by the use of AI systems.[73] In drafting the act, the European Parliament has sought to ensure that all AI systems developed, distributed,

69. In addition to taking inspiration from the England and Wales Courts and Tribunals Judiciary's Artificial Intelligence (AI) Guidance for Judicial Office Holders (2023).
70. 生成式人工智能服务管理暂行办法 (in English: *Interim Administrative Measures for Generative Artificial Intelligence Services*), Cyberspace Administration of China (13 Jul. 2023), https://www.cac.gov.cn/2023-07/13/c_1690898327029107.htm. The Interim Administrative Measures for Generative Artificial Intelligence Services took effect on 15 Aug. 2023.
71. The Act entered into force on 1 Aug. 2024 with a staggered timeline for implementation of its rules and requirements over the course of the next three years.
72. Utah had previously enacted Senate Bill 149 for the Artificial Intelligence Policy Act, which took effect 1 May 2024 and amended the Utah consumer protection and privacy laws to require disclosure of certain uses of AI to consumers, but the Colorado AI Act is the first piece of U.S. legislation to establish broad requirements for developers and deployers of certain AI systems in addition to disclosure requirements for AI systems intended to interact with consumers.
73. Defined in Art. 3(1) of the AI Act as 'a machine-based system that is designed to operate with varying levels of autonomy and that may exhibit adaptiveness after deployment, and that, for explicit or implicit objectives, infers, from the input it receives, how to generate outputs such as predictions, content, recommendations, or decisions that can influence physical or virtual environments.'

and used in the EU are 'safe, transparent, traceable, non-discriminatory, and environmentally friendly'.[74] To this end, the AI Act applies a risk-based approach and defines four levels of risks[75] in AI, which form the basis of its material scope: unacceptable risk,[76] high risk,[77] limited risk,[78] and minimal or no risk.[79]

Territorially, the AI Act applies to providers of AI service systems to EU member states, whether or not the providers are themselves established or located within the EU, as well as to deployers of AI systems established or otherwise located within the EU, importers, distributors, and authorised representatives.[80] In addition, the scope of the Act covers providers and deployers in third countries where the output produced by the AI system is used in the EU.[81]

Of particular interest to the legal profession is the Act's classification of certain AI systems intended to be used in the context of the administration of justice as 'high-risk',[82] which means that providers and deployers of such systems must ensure high levels of transparency and robust governance measures. Though the Act makes no direct mention of arbitration, it does refer to AI systems 'intended to be used by a judicial authority or on its behalf to assist judicial authorities in researching and interpreting facts and the law and in applying the law to a concrete set of facts',[83] further clarifying that 'AI systems intended to be used by alternative dispute resolution bodies for those purposes should also be considered to be high-risk when the outcomes of the alternative dispute resolution proceedings produce legal effects for the parties.'[84] AI tools intended to be used by arbitrators and/or arbitral institutions will almost certainly be captured in this definition of 'high-risk' AI systems and thus be subject to stringent technical and compliance standards such as requirements for detailed record-keeping, 'human oversight', and specific performance metrics.

The requirement for human oversight is particularly onerous and demands that '[h]igh-risk AI systems shall be designed and developed in such a way […] that they can be effectively overseen by natural persons'[85] whilst in use, with oversight measures 'commensurate with the risks, level of autonomy and context of use of the high-risk AI system'[86] either built into the system or 'appropriate to be implemented by

74. *EU AI Act: first regulation on artificial intelligence*, European Parliament (last updated 19 Dec. 2023), https://www.europarl.europa.eu/topics/en/article/20230601STO93804/eu-ai-act-first-regulation-on-artificial-intelligence.
75. Defined in Art. 3(2) of the AI Act as 'the combination of the probability of an occurrence of harm and the severity of that harm.'
76. *See* Art. 5 of the AI Act.
77. *See* Art. 6 of the AI Act.
78. The AI Act offers no clear definition of what constitutes 'limited risk.' However, *see* preamble number 132 and Art. 50 of the AI Act.
79. The AI Act offers no clear definition of what constitutes 'minimal risk' or 'no risk.' However, *see* Art. 2(1) of the AI Act, which excludes 'purely personal non-professional activity' from the material scope of the AI Act.
80. *See* Art. 2 of the AI Act.
81. *Ibid*.
82. *See* preamble number 61 and Annex III, number 8, of the AI Act.
83. *See* preamble number 61.
84. *Ibid*.
85. *See* Art. 14(1) of the AI Act.
86. *See* Art. 14(3) of the AI Act.

the deployer'[87] Amongst other things, such measures must ensure that 'no action or decision is taken by the deployer on the basis of the identification resulting from the system unless that identification has been separately verified and confirmed by at least two natural persons with the necessary competence, training and authority'.[88,89]

Arbitrators and arbitral institutions wishing to make use of AI systems in proceedings within the scope of the AI Act should expect that they will need to observe these requirements. Given the nature of the expert mandate, it seems rather likely that experts appointed to advise the tribunal on matters beyond its expertise will also be captured as deployers in the 'high-risk' classification – particularly where such experts are appointed by the tribunal itself. However, the AI Act provides no guidance as to whether lawyers and law firms acting for clients in arbitration proceedings will be seen to be acting 'on behalf' of tribunals to 'assist' them 'in researching and interpreting facts and the law and in applying the law to a concrete set of facts' when producing legal submissions and/or fact exhibits for submission into the arbitral record. It is not yet known how regulators will approach this issue, but it is worth noting that a broad interpretation may be at risk of clashing with professional regulations and ethical rules, which almost invariably state that lawyers must act 'on behalf of' or as 'representatives of' their clients.[90]

For those covered by the Act's 'high-risk' classification, a potentially helpful mechanism is found in Article 6(3), which sets out exceptions (or 'filters') for AI systems intended to 'perform a narrow procedural task', 'improve the result of a previously completed human activity', 'detect decision-making patterns or deviations from prior decision-making patterns [and] not meant to replace or influence the previously completed human assessment, without proper human review', or 'perform a preparatory task to an assessment relevant for the purposes' of a high-risk activity listed in Annex III of the Act. Whilst the scope of these 'filters' is not yet clear,[91] it is likely that they will include AI models used to structure data, classify documents, review or improve the output of human activity (e.g., by providing stylistic suggestions to a document drafted by a human and/or improving the quality of writing), and review and analyse human decision-making patterns to flag up potential inconsistencies or anomalies (e.g., by identifying logical gaps in an award), as well as tools performing preparatory tasks such as file-handling. This means that the exceptions will likely cover a majority of the use cases considered in this chapter.

87. *Ibid*.
88. *See* Art. 14(5) of the AI Act.
89. Unless 'Union or national law considers the application of this requirement to be disproportionate,' as set out in Art. 14(5) of the AI Act.
90. *See*, *e.g.*, Art. 3 of the Code of Conduct for the Danish Bar and Law Society (2022), Rule 1 of the Code of Professional Conduct for Members of the Swedish Bar Association (2023), and preamble number 1 of the New York Rules of Professional Conduct (2022), the latter of which suggests in preamble number 3 that 'conflicts […] among the lawyer's responsibilities to clients [and] to the legal system' must be exercised 'through the exercise of sensitive professional and moral judgment, guided by the basic principles underlying the Rules.'
91. Regulatory guidance will be provided by the European Commission to assist in interpreting the scope of these 'filters.'

It remains to be seen how the EU AI Act will eventually be implemented by the individual Member States and what this will mean in the context of international arbitration. However, as the Act focuses on ensuring the safe technical development and use of AI systems, it will not provide guidance on the specifics around AI use and integration in international arbitration, which is still very much a grey area.

Before the emergence of ChatGPT, the popular opinion in the international arbitration community seems to have been that there was no need for specific regulation on the use of AI. The many new uses now made possible by ChatGPT and other genAI tools have since driven calls for guidelines to address and regulate the use of AI, and this is likely to develop rather rapidly over the coming years. In April 2024, following a lengthy public consultation from August 2023 to February 2024, the Silicon Valley Arbitration & Mediation Center published its SVAMC Guidelines on the Use of Artificial Intelligence in Arbitration,[92] which focuses on: (1) promoting understanding of the uses, limitations, and risks of AI applications; (2) safeguarding confidentiality; (3) disclosure and protection of records; (4) duty of competence or diligence in the use of AI; (5) respect for the integrity of the proceedings and evidence; (6) non-delegation of decision-making responsibilities; and (7) respect for due process. The guidelines offer broad guidance intended to assist participants in arbitrations in navigating the potential risks and uses of AI, though they do not set out detailed standards or requirements for AI applications.

Beyond the SVAMC, there is currently little guidance to be found within the major institutional arbitration rules,[93] none of which address the use of AI or the challenges and procedural issues likely to arise as lawyers begin to incorporate AI tools within their workflows – and it appears that many would prefer to keep it that way. Indeed, BCLP's November 2023 survey found that, whilst 63% of the respondents were generally in favour of regulatory measures on the use of AI in international arbitration, only 26% believed that such regulation should be embedded within institutional arbitration rules.[94] The suggestion seems to be that institutions are not generally viewed as the best choice for dealing with the challenge of regulating AI. But even so, it would likely be useful for future amendments to the major institutional arbitration rules to include at least some general guidelines regarding the use of AI, particularly on issues like data protection, cybersecurity, and ethical concerns, which would benefit from a systemic solution. Other (more specific) AI risks may instead need to be dealt with on an ad hoc basis and are perhaps best left for arbitrators to address through procedural orders.

Overall, it seems likely that regulation of the use of AI in international arbitration will come from many different sources, including national legislation, institutional rules, and tribunal orders, all of which will come together to form a patchwork of rules

92. The guidelines are referenced throughout this chapter, as applicable.
93. That is, the ICDR Rules 2021, JAMS International Arbitration Rules 2021, LCIA Rules 2020, ICC Rules 2021, SCC Rules 2023, HKIAC Rules 2018, SIAC Rules 2016 (and the Draft 7th Edition of the SIAC Rules shared by the SIAC on 22 Aug. 2023), JCAA Rules 2021, DIAC Rules 2022, and UNCITRAL Rules 2021.
94. BCLP, *supra* n. 8, p. 27.

that parties and arbitrators will need to consider to ensure that proceedings are conducted in accordance with the laws of the seat and the place of enforcement and that any final awards are enforceable. Similarly, arbitration practitioners will need to ensure that any use of AI complies with applicable regulations, not only in their home jurisdiction but potentially also at the seat and place of enforcement. As the regulatory landscape evolves, it is also worth noting that differences in regulations across jurisdictions may be grounds for parties to resist enforcement of an award on the grounds of equal treatment and/or equality of arms if AI regulations in their respective home jurisdictions mean that one party had access to AI tools whilst the other did not. Whether or not this is likely to happen (and whether or not such challenges would stand any chance of success) will depend on the legal and regulatory developments in the coming years.

AI use is also likely to give rise to ethical considerations for counsel with regard to their duties towards their clients and the tribunal. Regulators such as bar associations and law societies around the world are already considering the need for specific guidance on AI use. In March 2022, the Council of Bars and Law Societies of Europe issued guidance on the use of AI-based tools by law firms and lawyers in the EU,[95] and in August 2023, the American Bar Association announced the creation of a task force to examine the impact of AI on law practice and the ethical implications for lawyers.[96] As counsel in international arbitration proceedings are typically bound by the ethical rules applicable in their home jurisdictions regardless of the seat of the arbitration or the substantive law of the dispute, they will be required to observe any AI-specific guidance or rules issued by their regulation authority, even if the same rules do not apply to opposing counsel. Such rules may require lawyers to disclose the use of AI to their clients and will almost certainly require them to verify any output produced by AI tools to ensure accountability and compliance with their ethical duties. In some circumstances, the use of AI to perform legal research or answer factual enquiries may not be in line with other duties lawyers have towards their clients, including the duty of confidentiality.

§6.03 PART II LONG-TERM PROSPECTS: THE FUTURE OF ARBITRATION

Once the international arbitration community (and the broader legal profession) begins to truly embrace AI and integrate it into day-to-day practice, the potential impact and possibilities are virtually endless and extremely exciting, to say the least – particularly with the dawn of quantum computing on the horizon, which will significantly reduce the training time required for the development of new AI and thus further accelerate

95. *See* the Council of Bars and Law Societies of Europe and the European Lawyers Foundation's 'Guide on the use of Artificial Intelligence-based tools by lawyers and law firms in the EU' (2022).

96. *ABA forms task force to study impact of artificial intelligence on the legal profession*, American Bar Association (28 Aug. 2023), https://www.americanbar.org/news/abanews/aba-news-archives/2023/08/aba-task-force-impact-of-ai/.

the developments within AI and other new technologies. The following pages will consider three particularly exciting prospects.

Section §6.03[A] addresses the time and cost savings likely to be achieved through AI integration. *Section* §6.03[B] deals with the prospect of so-called blockchain arbitration. Finally, *section* §6.03[C] reflects on the potential for AI to promote the creation of a truly global profession.

[A] Time and Cost Savings: Faster, Better, and Cheaper Arbitration?

Though lauded for its efficiency compared to the traditional litigation system, arbitration is still often a lengthy and expensive process, with parties spending months, if not years, resolving their disputes. However, with AI-driven legal tech tools poised to take over much of the time-consuming work of document review, data analysis, and legal research currently done by (junior) lawyers, it seems clear that AI and other new technologies will soon bring considerable time and cost savings as hours of manpower are replaced by mere minutes or seconds of processing time. The following pages will take a look at some of the greatest prospects for long-term efficiency gains.

Enabling Increased Complexity Without Increasing Costs

GenAI's ability to rapidly analyse and interpret vast volumes of data has the potential to accelerate the expedition of routine tasks at a rate that cannot be achieved by human effort. In particular, automation of tasks like document review and legal research will allow both counsel and arbitrators to take on larger and more complex cases by freeing up human resources for those aspects of the arbitration process that cannot (yet) be undertaken by AI systems, including effective preparation of evidence, advocacy and arbitrators' decision-making. The availability of AI tools may also encourage arbitrators to take on cases requiring greater technical or industry expertise. In particular, AI has the potential to assist arbitrators with objective analysis and assessment of expert reports, which would be particularly helpful in 'battle of the experts' scenarios. Finally, AI is likely to enable an increased level of sophistication and accuracy in complex delay and quantum analyses, including scenarios requiring, e.g., counterfactual simulation or regression analysis.

Facilitating Settlement Negotiations Through Outcome Prediction

Another promising application for genAI's capacity for data analysis is the potential for AI to predict the likely outcome of a current case by analysing historical data – including an estimate of the potential costs. With recent advances in machine learning algorithms and predictive analytics, this is likely to be possible in the very near future. As early as 2016, researchers had developed an AI model capable of predicting the outcome of cases before the European Court of Human Rights with 79% accuracy.[97] And the following year, in 2017, another research team announced that it had

97. *AI predicts outcomes of human rights trials*, University College London (24 Oct. 2016), https://www.ucl.ac.uk/news/2016/oct/ai-predicts-outcomes-human-rights-trials.

developed a program which could predict with 70.2% accuracy whether the US Supreme Court would follow or reverse a judgment.[98] In straightforward commercial disputes, where similar circumstances have been subject to consideration in previous cases, outcome prediction software will likely be helpful in providing parties with an incentive to settle matters at an early stage of the proceedings.

Possible Use During (Physical) Hearings

The potential use cases for AI during hearings are equally intriguing and could significantly reduce the administrative burden for tribunals and institutions. It seems a matter of time before AI-driven transcription systems become universal, leveraging speech recognition algorithms to capture and transcribe hearings in real-time, thereby improving the accuracy and completeness of the record and potentially eliminating (or at least considerably reducing) the need for manual notetaking. For counsel, another interesting prospect is the possibility of deploying AI to review transcripts in real-time and search for legal authorities, arguments, or evidence (whether on the record or in the public domain) to support or challenge statements made by opposing counsel, witnesses, or experts. Of course, lawyers would need to be mindful of any risk of hallucinations so that they do not inadvertently pass on inaccurate AI responses in the heat of the battle – and arbitrators must equally be careful not to miss any potential inaccuracies in AI-generated transcripts, such that witnesses are not mistakenly cited as having answered 'yes' where they, in fact, said 'no'. However, since such errors are also occasionally made by humans, it is very likely that AI court reporters will soon be just as reliable as their human counterparts, if not more.

Virtual Hearings

Much has been written already about the possibility of virtual hearings replacing traditional oral hearings,[99] but so far, this prospect does not (yet) seem to have gained widespread acceptance within the international arbitration community. One significant challenge is the lack of the required technical framework conditions. Whilst law firms and most offices (whether corporate or at home) are likely to be equipped with the hardware needed for virtual hearings, considerable data protection and cybersecurity concerns remain.[100] But even so, there is good reason to view the digitalisation of arbitration proceedings as an opportunity rather than a threat. First, virtual hearings allow for greater flexibility by eliminating the need for travel and are therefore likely to be a very effective tool in preventing lengthy postponement and scheduling processes, especially in urgent proceedings. In addition, the possibility of digital participation would save substantial resources for individuals who only attend the proceedings for a short time, such as witnesses and experts. This aligns well with the general principle

98. Daniel Martin Katz, Michael J. Bommarito & Josh Blackman, *A general approach for predicting the behavior of the Supreme Court of the United States*, PLoS ONE 12(4): e0174698 (2017) https://doi.org/10.1371/journal.pone.0174698.
99. *See, e.g.*, Mo Egan & Hong-Lin Yu, *Intersecting and dissecting confidentiality and data protection in online arbitration*, Journal of Business 2022, 2, 135-163, for a look at the data privacy and cybersecurity issues raised by 'the digitalisation of international arbitration.'
100. *Ibid*.

of speedy justice which is a cornerstone of the arbitral system. In addition, virtual hearings can promote inclusivity and increase access to justice by making it easier for individuals with limited mobility, or who are otherwise unable to travel, to take part in hearings. A clear negative effect, however, is the risk that the oral hearing, which is viewed by many as the centrepiece of any legal action, may be stripped of some of its authority if taking place via video conferencing.

Many lawyers will also argue that body language, such as facial expressions and gestures, is of great importance for their oral advocacy. Similarly, virtual hearings would make it more difficult for both counsel and arbitrators to rely on physical factors in assessing the credibility of a party or witness.[101] This may not be a bad thing, however, and could even increase objectivity in arbitrators' decision-making processes by eliminating physical factors likely to give rise to bias or other preconceived notions. If virtual hearings are ever embraced by the arbitration community, one could imagine that it might even become standard for parties and witnesses to use 'avatars' that obscure their gender and physical appearance to promote objectivity in the proceedings. Whilst this is unlikely to be a viable option for counsel, arbitrators, and experts, who tend to meet occasionally in the wider legal community and may have long-term working relationships, there seems to be no reason why individuals who appear at hearings as party representatives or witnesses should not be able to assume an avatar to protect themselves from bias.

[B] Blockchain Arbitration

In addition to the many potential uses of AI considered above, another breakthrough that promises to revolutionise the practice of international arbitration is blockchain technology. Blockchain technology emerged in 2009 as the public ledger for transactions made with Bitcoin,[102] the world's first cryptocurrency. In 2014, Canadian programmer Vitalik Buterin pioneered the next great innovation in blockchain when he founded Ethereum, now the second-most valuable cryptocurrency by market capitalisation, and introduced the so-called smart contracts.[103]

In short (and very simplified),[104] the blockchain system can be described as a cryptographically secured chain of information (essentially a digital database of sorts) that works by adding 'blocks' of data to the digital ledger in chronological order. Unlike a traditional database, which usually structures data into tables, a blockchain collects

101. Though AI-powered gesture recognition tools may be able to advise counsel and arbitrators to potential false testimony.
102. Bitcoin was invented in 2008 by one or more anonymous coders known by the pseudonym 'Satoshi Nakamoto'.
103. Vitalik Buterin, *Ethereum: A Next Generation Smart Contract & Decentralized Application Platform* (December 2014), https://ethereum.org/content/whitepaper/whitepaper-pdf/Ethereum_Whitepaper_-_Buterin_2014.pdf.
104. *See, e.g.*, Michael Crosby, Nachiappan, Pradhan Pattanayak, Sanjeev Verma & Vignesh Kalyanaraman, *Blockchain Technology: Beyond Bitcoin*, UC Berkeley Sutardja Center for Entrepreneurship & Technology (16 Oct. 2015), for a comprehensive description of blockchain technology.

information into groups (the eponymous blocks), each of which holds a set of information. Once a block is filled to its storage capacity, it is closed and provided with an exact timestamp, after which it is linked to the previous block. Thus, the blocks come together to form a chain, with each block containing the data of the previous block in its hash. The hash algorithm protects the data inside each block from being replicated. This makes the blocks impenetrable such that once added to the chain, they can no longer be altered or deleted unless all users agree to the change. If a change is agreed, this is reflected by the addition of a new block. The original block, however, remains unaltered and so creates a non-corruptible audit trail that protects against tampering. Blockchain therefore comes with built-in data security that eliminates human error – and because blockchain is built on a distributed model, there is no central point of failure, which makes it highly reliable.

In the context of international arbitration, blockchain technology has sparked discussions of 'blockchain arbitration',[105] a futuristic concept that promises a paradigm shift in dispute resolution. Since blockchain technology makes it possible to process transactions quickly and at low cost, blockchain-based platforms could allow parties and arbitrators to collect, store, and process large amounts of data in a more effective and secure manner than is possible today. The parties would be able to submit all notices, legal submissions, and evidence on the platform, providing them and the tribunal with a complete digital record that is easily searchable and fully verified. As users can control who is able to access the blockchain, such platforms would ensure much greater privacy than exchanging documents via email as is common today – though data privacy is, of course, unlikely to ever be fully guaranteed so long as third-party suppliers are involved.

Another key advantage of blockchain technology is the potential for smart contracts to facilitate the enforcement of arbitral awards by automatically executing awards once the proceedings are complete. Smart contracts are, in essence, electronic transaction protocols programmed to self-execute with the fulfilment of certain predetermined conditions. Simply put, this means that smart contracts offer a form of mathematically secured escrow arrangement. Since enforcement is not facilitated by arbitral institutions in traditional arbitration proceedings and can be a very lengthy and expensive process, automatic enforcement is likely to be highly valued by disputants. This would also reduce or even eliminate the need for securities such as bank guarantees and performance bonds, which would lead to a significant reduction in costs for parties and ease the potential financial strain of arbitration. And because neither party can tamper with the data in the blockchain, there is (at least in theory) limited risk of the award being set aside for fraud, material mistakes, or imperfect form.

In fairly straightforward commercial disputes involving one-off transactions, a smart contract is able to cover the entire spectrum of outcome scenarios between no payment on the one end and the release of full payment on the other. A significant challenge, however, is that smart contracts may not adapt easily to more complex,

105. *See, e.g.*, Dirk Wiegandt, *Blockchain and Smart Contracts and the Role of Arbitration*, Journal of International Arbitration, 39(5), 671-690 (2022) https://doi.org/10.54648/joia2022029.

higher-value disputes within, e.g., the construction and energy sectors, which often involve several contracts, parties, claims and counterclaims. Such transactions may not translate well into simple computer languages – at least until quantum computing becomes widely available. Another challenge is that all stakeholders may not be familiar – or indeed comfortable – with using blockchain and smart contracts and so may not be willing to rely on the technology. As blockchain would eliminate the need for oversight at key stages of the administration of the proceedings, the traditional role of arbitration institutions is also likely to be reduced, which may lead to further credibility concerns. In addition, self-executing smart contracts raise the risk of a potential loss of party autonomy as once entered, they do not give parties the freedom to explore other possibilities, including a potential settlement. Parties may also lose the ability to ask courts to refuse enforcement of awards despite having reasonable grounds, e.g., because of due process violations. It will remain to be seen how such issues will be resolved as the potential of blockchain technology continues to unfold in the coming years.

[C] AI as the Driver of a Truly Global Profession

Because AI systems are created and programmed by humans, who are naturally prone to bias, there is a significant risk that AI algorithms may also be inadvertently designed to replicate conscious and unconscious human biases. Indeed, biases and stereotypes are deeply ingrained in the fabric of our societies and in our ways of thinking, affecting how we perceive and interact with the world around us. They are so subtle that they are sometimes hard to detect, and it often takes considerable time and effort to build awareness of one's own biases. But what if human bias is proactively and consciously acknowledged, addressed, and challenged in the development of new AI? Could AI then have the potential to eliminate bias altogether? This is no doubt one of the most exciting prospects of the 'AI revolution', and therefore the final question considered in this chapter.

The first step (and a substantial hurdle) is to make sure that the data used to train the AI algorithm is itself free of bias – or, rather, that the algorithm is programmed to recognise bias in that training data and filter it out of its decision-making process. With the AI models currently available, this de-biasing process would likely require humans to first identify and categorise potentially biased language and then teach the algorithm to flag words, phrases, and expressions that imply bias. As this would require substantial human intervention it is unlikely to scale easily at present, but as more de-biased training data becomes available, that should considerably accelerate the development of bias-free AI.

In the context of international arbitration, which brings together people of many different nationalities, cultures, personal values and beliefs, the impact is likely to be enormous. Indeed, AI could open the door to a truly global, transnational framework for dispute resolution. There is even the possibility that AI could drive the development of a transnational public policy, which would enable the international arbitration community to assist in defining and protecting fundamental public interests and values

viewed as essential in a globalised economy, regardless of differences in national laws and regulations. This would allow arbitrators to develop public policy safeguards based on the broad (albeit not entirely unanimous) consensus amongst states to condemn certain practices, at least within international economic transactions and related regulations (including competition laws, securities regulations, and embargos), where the binding power of the arbitral system is already accepted by courts in many jurisdictions.

In addition, AI could be a driver in developing a truly diverse, inclusive, and equitable profession by eliminating bias in the appointment of arbitrators and increasing access to the profession. The process of selecting an arbitrator is currently based on subjective (and thus inherently biased) methods such as reputation, word of mouth, and simple Google or LinkedIn searches. In the not-so-distant future, however, AI-driven platforms will likely enable parties to quickly and efficiently gather information and feedback about arbitrators worldwide. Based on that data, AI tools can then provide recommendations for qualified candidates whilst promoting objectivity and diversity by filtering out irrelevant factors such as gender, ethnicity, personal background, social identity, socio-economic circumstances, and perhaps even nationality. Unlike human lawyers, whose choices are likely to be influenced by (conscious and unconscious) biases, AI tools can guide parties to the choices deemed to be objectively best suited, regardless of what has usually been done in the past.

AI integration is also likely to be key in eliminating existing language and cultural barriers. Like the fictional 'Babel fish' used by intergalactic travellers in Douglas Adams's science fiction classic 'The Hitchhiker's Guide to the Galaxy', AI-powered live translation tools may soon allow parties, counsel, and arbitrators to communicate with ease despite each speaking in a different language. Such tools may even be trained to recognise and accurately translate the intended meaning of any statements made, taking into consideration cultural differences and customs. This would remove barriers to effective communication and understanding, democratising advocacy for counsel of all nationalities and aiding arbitrators' understanding of the facts by allowing parties and witnesses to give testimony in their native languages (and free from the subjectivity of a human interpreter). In time, such tools could be drivers in creating a genuinely international community where arbitration can truly take place anywhere in the world and involve individuals of any and all backgrounds.