

HARNESSING ARTIFICIAL INTELLIGENCE IN INTERNATIONAL ARBITRATION PRACTICE

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ABSTRACT

Since the beginning of 2023, generative artificial intelligence (hereinafter “Generative AI”) in the form of large language models (LLMs) like ChatGPT-4 has taken the world by storm. Legal practice is no exception. Among other stories, worldwide headlines have featured the fact that ChatGPT-4 is capable of passing the New York Bar Exam, that courts are adopting Generative AI in their decision-making, and that a New York lawyer has been sanctioned by a judge for relying upon non-existent case law precedent that he obtained from ChatGPT-4 and did not double-check.

Yet, putting aside these newsworthy developments, tools powered by other forms of artificial intelligence (hereinafter “AI”) have already been relied upon in legal practice for many years. This article introduces how AI supports successful international arbitration practice, including uses and methods that are already available and those that are anticipated to become helpful. This article also addresses the challenges and pitfalls that accompany these opportunities. Overall, this article concludes that the brave new world of AI in international arbitration is an exciting one that,

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through careful and thoughtful deployment of best practices, can add significant value to international arbitration teams in the decades to come.

KEYWORDS: *generative artificial intelligence in arbitration, artificially intelligent legal technology use cases in arbitration, artificial intelligence practical applications in arbitration, large language models' use in arbitration, artificial intelligence regulation in arbitration, future applications of artificial intelligence in arbitration practice*

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I. INTRODUCTION

Since the beginning of 2023, generative artificial intelligence (hereinafter “Generative AI”) in the form of large language models (hereinafter “LLMs”) like ChatGPT-4 has taken the world by storm. Legal practice is no exception. Worldwide headlines have featured ChatGPT-4 passing the New York Bar Exam;¹ courts adopting Generative AI in their decision-making;² and a New York lawyer being sanctioned by a judge for relying upon non-existent case law precedent that he obtained from ChatGPT-4 and did not double-check.³ Yet, putting aside these newsworthy developments, tools powered by other forms of artificial intelligence (hereinafter “AI”) have already been relied upon in legal practice for many years.

Through several parts, this article introduces how AI supports successful international arbitration practice, in particular, including uses and methods that are already available and those that are anticipated to become helpful.

Following this introduction, Part II explains that AI is not new to international arbitration practice. Indeed, various AI-powered tools and applications have already supported international arbitration practitioners with document management, document review, and arbitrator due diligence, among others, for many years. Part III delves into the world of Generative AI, including LLMs like ChatGPT-4, and explains how these tools differ from prior iterations of AI and how they may be revolutionary. Part IV then presents areas where there is an opportunity to employ Generative AI in international arbitration practice today, with a “top ten” list of use cases, complete with user prompts and some of the responses received, to help international arbitration teams supercharge their management practice and advocacy. Part V reviews limitations and challenges that may arise as Generative AI is deployed in international arbitration practice and offers best practice guidance to support practitioners as they balance the benefits and drawbacks of this emerging technology. Finally, Part VI looks to the future and examines developments in Generative AI that can potentially supercharge arbitration work further, for example, by permitting question-and-answer interaction with large document sets and automating document production.

With opportunities come challenges and pitfalls, but overall, this article concludes that the brave new world of AI in international arbitration is an

¹ Daniel Martin Katz et al., *GPT-4 Passes the Bar Exam*, SSRN (Mar. 15, 2023), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4389233.

² *AI and the Rule of Law: Capacity Building for Judicial Systems*, UNESCO, <https://www.unesco.org/en/artificial-intelligence/rule-law/mooc-judges> (last visited Nov. 9, 2023).

³ Kathryn Armstrong, *ChatGPT: US Lawyer Admits Using AI for Case Research*, BBC (May 27, 2023), <https://www.bbc.co.uk/news/world-us-canada-65735769>.

exciting one that, through careful and thoughtful deployment of best practices, can add significant value to international arbitration teams in the decades to come.

II. OVERVIEW OF AI APPLICATIONS ALREADY BEING USED IN INTERNATIONAL ARBITRATION PRACTICE

Even before the popularisation of Generative AI and LLMs through ChatGPT-4, tools powered by other forms of AI had supported international arbitration practice for many years. Such tools help streamline work processes, improve decision-making for case strategy, and save costs. The technology underlying these tools includes machine learning, natural language processing (hereinafter “NLP”), text-mining, predictive analytics, pattern recognition, speech recognition, and Optical Character Recognition (hereinafter “OCR”). Each is explained below.

Machine learning algorithms, including supervised, unsupervised, and reinforcement learning, are used to train models on historical legal data and can be used to perform tasks such as document classification, sentiment analysis, and predictive analytics.⁴ Supervised learning involves training a model with labelled data, such as categorising legal documents into different types (e.g., contracts, court opinions). Unsupervised learning explores patterns in unlabelled data: for instance, identifying common topics in a large set of legal documents. Reinforcement learning is about interaction and reward-based training, like a model learning the best legal arguments through trial and error in a simulated courtroom environment.

NLP is usually used to translate legal documents, summarise case law, and extract relevant information from legal texts.⁵ As international arbitration often involves parties from different countries and languages, AI-driven machine translation tools have become essential for bridging language barriers and facilitating communication and collaboration among parties, lawyers, and arbitrators.

Text mining involves analysing and extracting information from unstructured text data to identify key terms, entities (such as names of parties or arbitrators), and relevant facts from legal documents.⁶ The extracted

⁴ Mohamed Alloghani et al., *A Systematic Review on Supervised and Unsupervised Machine Learning Algorithms for Data Science*, in *SUPERVISED AND UNSUPERVISED LEARNING FOR DATA SCIENCE* 3, 4 (M. Emre Celebi et al. eds., 2019).

⁵ Shannon Flynn, *How Natural Language Processing (NLP) AI Is Used in Law*, L. TECH. TODAY, (June 9, 2021), <https://www.lawtechnologytoday.org/2021/06/how-natural-language-processing-nlp-ai-is-used-in-law/>; Aditya Singh Chauhan, *Future of AI in Arbitration: The Fine Line Between Fiction and Reality*, KLUWER ARB. BLOG (Sept. 26, 2020), <https://arbitrationblog.kluwerarbitration.com/2020/09/26/future-of-ai-in-arbitration-the-fine-line-between-fiction-and-reality/?output=pdf>.

⁶ Rupali Wagh, *Knowledge Discovery from Legal Documents Dataset Using Text Mining Techniques*, 66 INT’L J COMPUT. APPLICATIONS 32, 32 (2013), <https://research.ijcaonline.org/volume66/number23/pxc3886501.pdf>.

information can then be used to categorise and organise the legal data, making it easier to retrieve and analyse when needed. This process supports arbitration professionals in efficiently managing and navigating vast amounts of legal text, aiding in tasks like legal research, case preparation, and document management.

Predictive analytics use historical data to make predictions about future outcomes. In international arbitration, these algorithms analyse past case data and arbitrator decisions to provide insights into the likelihood of a case's success or suggest potential settlement terms.⁷

Pattern recognition algorithms analyse individual cases to detect similarities and differences in data patterns concerning court decisions and arbitral awards.⁸ This technique can help find relevant case law, detect conflicts of interest among arbitrators, or assess the consistency of awards and decisions.

Speech recognition can transcribe spoken words and discussions by parties, counsel, and witnesses into transcribed text, which can be analysed more easily. Transcribing and analysing spoken content through speech recognition can save time, ensure accuracy, and provide a searchable and manageable text format of the content.⁹ This can be particularly helpful for legal professionals and arbitrators who need to review and reference the discussions during arbitration proceedings.

OCR, based on machine learning and computer vision, is used to convert scanned documents and images into machine-readable text and facilitates digital data extraction.¹⁰ This is particularly valuable for digitising paper-based documents and making them accessible and searchable on online legal research databases.

As elaborated in the following subparts, these AI techniques provide the architecture behind several tools and platforms that are already frequently used to support key tasks in international arbitration practice.

A. AI-Powered Document Review and Production Tools

Document review and production are often necessary evils in international arbitration practice. These processes are perceived as time-

⁷ Aline Tanielian Fadel, *Predictive Analytics and Diversity in International Arbitration: Friends or Foes?*, AM. REV. INT'L ARB. (Oct. 8, 2021), <https://aria.law.columbia.edu/predictive-analytics-and-diversity-in-international-arbitration-friends-or-foes/?cn-reloaded=1>.

⁸ See GEORGIOS I. ZEKOS, ADVANCED ARTIFICIAL INTELLIGENCE AND ROBO-JUSTICE 321-45 (2022).

⁹ Daniel Faggella, *AI for Speech Recognition and Transcription in Law and Legal*, EMERJ, <https://emerj.com/ai-podcast-interviews/ai-for-speech-recognition-transcription-law-legal/> (last visited Nov. 9, 2023).

¹⁰ Prithiv S, *Legal OCR for Processing Legal Documents*, NANONETS (May 29, 2022), <https://nanonets.com/blog/legal-ocr/>.

intensive and low-value grunt work. Moreover, they are often a sore point in the outside counsel and client's relationship because the client may be unwilling to pay the usual rates for time spent on such work. This creates an opportunity to implement AI-driven document review tools to reduce the time and costs associated with labour-intensive document review and analysis tasks. E-discovery platforms such as Relativity,¹¹ Luminance,¹² EverLaw,¹³ and CS Disco¹⁴ employ machine learning algorithms to categorise, extract, and analyse information from vast amounts of legal documents.

Each platform has AI-driven functionalities that enable users to swiftly identify pertinent documents through conceptual search (in addition to keyword search), data visualisation, and document clustering, which expedites the overall document review process.

Conceptual search in the context of e-discovery is a powerful and innovative approach to information retrieval that goes beyond traditional keyword-based searches. Unlike keyword searches, which rely on exact word matches, conceptual search utilises AI and NLP to understand the underlying concepts and context within documents. Conceptual search is, therefore, useful in e-discovery as it enables legal professionals to uncover relevant documents even when specific keywords or phrases may not have been used, thus reducing the risk of missing critical information.

Data visualisation of related documents presents document relationships, patterns, and key information graphically and offers a visual narrative of the document corpus.¹⁵ This allows legal teams to quickly grasp the structure of the data, identify important trends, and pinpoint critical documents. Moreover, it aids in developing effective case strategies by revealing patterns and connections that may not be immediately apparent through traditional text-based analysis.

Further, these e-discovery platforms cluster related documents by content or themes, enabling the review of groups of documents that are relevant to a set of facts or issues in an arbitration proceeding. Clustering also helps reviewers identify patterns, trends, or commonalities within a document corpus, which can be crucial for building a coherent legal strategy or uncovering hidden insights. Another benefit of clustering is ensuring that strategic decisions are uniformly and consistently applied to the overall document set (e.g. decisions on the treatment of privileged or confidential information).

¹¹ RELATIVITY, <https://www.relativity.com/> (last visited Nov. 9, 2023).

¹² LUMINANCE, <https://www.luminance.com/> (last visited Nov. 9, 2023).

¹³ EVERLAW, <https://www.everlaw.com/> (last visited Nov. 9, 2023).

¹⁴ DISCO, <https://csdisco.com/> (last visited Nov. 9, 2023).

¹⁵ George Socha, *Data Visualization: What Is It? And Can You Trust It?*, 101(2) JUDICATURE 10, 10 (2017), https://judicature.duke.edu/wp-content/uploads/2020/10/may2017_socha.pdf.

These tools enhance the speed, accuracy, and comprehensiveness of document review for production and disclosure, making them efficient at managing large volumes of electronic data in complex international arbitrations.

B. End-to-End ODR Platforms

A key feature of end-to-end ODR platforms like New Era ADR¹⁶ is the ability to automate and streamline dispute resolution. AI algorithms facilitate the intake of cases, intelligently categorise them, and allocate resources efficiently. Parties can initiate arbitration proceedings seamlessly, guided by AI-driven prompts and tools, simplifying the complex legal processes associated with dispute resolution. This level of automation reduces administrative burdens and ensures that cases progress smoothly, saving both time and resources.

Parties can track the progress of their cases in real time, access relevant documents, and receive notifications through user-friendly interfaces. AI technologies underpin these features, ensuring that parties are well informed about the status of their arbitration proceedings. This transparency fosters trust and confidence in the process, ultimately contributing to more equitable and satisfactory outcomes.

C. AI-Powered Legal Research Platforms

AI-powered legal research platforms have become indispensable tools in international arbitration, providing arbitration lawyers with the technology to search for relevant precedents, jurisprudence, and legal sources across multiple jurisdictions.

Platforms like Kluwer Arbitration¹⁷ and Jus Mundi¹⁸ harness the power of machine learning to compile an extensive database of international arbitration cases, treaties, conventions, and related legal documents.

CaseText¹⁹ employs an AI-driven approach, leveraging NLP to extract valuable insights from legal texts. Its platform also offers the capability to analyse and summarise legal research results and draft legal memoranda.

LexisNexis²⁰ and Westlaw,²¹ established names in the legal research landscape, also integrate AI into their platforms to enhance research

¹⁶ NEW ERA ADR, <https://www.neweraadr.com/> (last visited Nov. 9, 2023).

¹⁷ *Kluwer Arbitration*, WOLTERS KLUWER, <https://www.wolterskluwer.com/en/solutions/kluwarbitration> (last visited Nov. 9, 2023).

¹⁸ JUS MUNDI, <https://jusmundi.com/en> (last visited Nov. 9, 2023).

¹⁹ CASETEXT, <https://casetext.com> (last visited Nov. 9, 2023).

²⁰ LEXISNEXIS, <https://www.lexisnexis.com/en-us/home.page> (last visited Nov. 9, 2023).

²¹ *Westlaw*, THOMSON REUTERS, <https://legal.thomsonreuters.com/en/westlaw> (last visited Nov. 9, 2023).

capabilities by providing predictive analytics to suggest relevant cases, statutes, and secondary sources based on user queries.

D. AI-Enabled Machine Translations

International arbitration is characterised by its inherently cross-border nature. Parties frequently come from different cultural and linguistic backgrounds, and evidence and testimony may be in multiple languages. Despite this added complexity, the usual goal of effective communication and understanding of legal content is paramount to achieving equitable dispute resolution. In this context, AI-powered machine translation has emerged as a game-changing technology, offering advanced linguistic capabilities that transcend traditional language barriers.

DeepL, renowned for its neural machine translation technology, and Google Translate, a widely accessible and versatile translation service, represent two exemplary platforms that leverage AI and deep learning techniques to deliver precise and context-aware translations of legal documents and communications translations.

In essence, DeepL,²² Google Translate, and similar AI-driven translation platforms are indispensable assets in international arbitration, ensuring that all participants can effectively engage in the process regardless of language differences, thereby promoting fairness and impartiality in dispute resolution.

E. Conflict Management and Arbitrator Due Diligence

International arbitration often involves complex disputes with multinational parties and necessitates a rigorous approach to arbitrator due diligence, selection, and conflict management. To address these needs, various services have emerged to offer arbitrator profile and conflict-checking tools, including, for example, Arbitrator Intelligence,²³ Kluwer Arbitration's Profile Navigator & Relationship Indicator,²⁴ and Global Arbitration Review's Arbitrator Research Tool (ART).²⁵

Each tool uses a combination of AI, data analytics, and self-reported information to provide comprehensive insights into arbitrators' performance and track record. Importantly, in some instances, the data collected may include candid feedback from counsel who have appeared before those

²² DEEPL, <https://www.deepl.com/en/translator> (last visited Nov. 9, 2023).

²³ ARB. INTEL., <https://arbitratorintelligence.vercel.app/> (last visited Nov. 9, 2023).

²⁴ *Practical Tools*, WOLTERS KLUWER, <https://www.wolterskluwer.com/en/solutions/kluwarbitration/practical-tools> (last visited Nov. 9, 2023).

²⁵ *Arbitrator Research Tool*, GLOB. ARB. REV., <https://globalarbitrationreview.com/tools/arbitrator-research-tool> (last visited Nov. 9, 2023).

arbitrators in particular cases. As such, this data helps arbitration practitioners identify suitable candidates for arbitrators based on empirical data rather than subjective assessments.

Further, this approach adds diversity to the prospective arbitrator pool by bringing additional candidates to the practitioner's attention who meet the objective data-based criteria but who may otherwise not be known by the selecting counsel. Overall, these tools provide data-driven inputs to the arbitrator selection process and promote transparency and objectivity in the arbitrator selection process.

Another example is Jus Connect,²⁶ which enhances the capabilities of AI-powered conflict management in international arbitration by fostering collaboration among legal professionals, offering a secure and confidential environment for sharing information, insights, and strategies related to arbitration cases. Legal practitioners can connect, communicate, and exchange knowledge while maintaining the privacy and confidentiality required in arbitration proceedings.

F. AI-Driven Data Analytics for Third-Party Disputes Funding

Predictive data analytics has emerged as a powerful tool in litigation finance and third-party funding, transforming how legal professionals make strategic decisions. Notable platforms in this space include Lex Machina²⁷ and Arbilex.²⁸

By aggregating all data from documents filed on court dockets and leveraging AI-driven insights along with human legal expert review to structure the data, Lex Machina provides insights on the quantum of damages, potential case resolutions, opposing counsel's litigation history, and the timing of the proceedings to enable predictions on various aspects of a case.

Similarly, Arbilex employs machine learning algorithms to analyse historical case data, legal precedents, and financial metrics. This enables third-party funders to assess the potential risks and rewards of funding a particular case.

These and similar solutions enhance decision-making within international arbitration, serving as a valuable resource for legal teams dealing with cross-border disputes.

These tools analyse historical case data to provide insights into settlement probabilities and potential third-party funding opportunities and enable arbitration practitioners to make informed decisions and negotiate settlements more effectively.

²⁶ JUS CONNECT, <https://jusconnect.com/en/directory/arbitrators/all> (last visited Nov. 9, 2023).

²⁷ LEX MACHINA, <https://lexmachina.com> (last visited Nov. 9, 2023).

²⁸ ARBILEX, <https://www.arbilex.co> (last visited Nov. 9, 2023).

III. Introducing Generative AI, LLMs, and Chatbots

Generative AI refers to LLMs and AI-powered chatbots. The most popular ones currently are likely ChatGPT-4, created by OpenAI, and Bard, created by Google. Other technology service providers are developing their own similar products.

ChatGPT-4 is a form of Generative AI built on top of OpenAI's GPT-3 (**Generative Pretrained Transformer 3**) LLM. It uses statistical modelling, which allows the user to present open-ended questions and obtain responses in a narrative format. In September 2023, OpenAI announced that ChatGPT-4 had gained access to the Internet to better power its access to information.²⁹ Google's Bard, on the other hand, has always had access to the Internet.³⁰ However, it is worth noting that even before ChatGPT-4 gained access to the Internet, user studies showed that ChatGPT-4 was comparatively more advanced.³¹

Each LLM-powered chatbot allows its users to regulate variability—the degree to which the chatbot generates the most or least likely next word in the sentence—by posing carefully crafted questions. This question-and-answer (**Q&A**) format makes ChatGPT-4 especially attractive to all levels of users because the process can feel interactive.

It also means that ChatGPT-4 can respond effectively to complex inquiries. The better the user is at crafting questions, the better ChatGPT-4 will be at providing the desired output from a stylistic perspective. Even more compelling, users can (and likely should) direct the length, tone, style, and “voice” of the answers they hope to receive—again, the better the input, the more useful the output (as discussed in Section IV below).³²

Not long after ChatGPT-4 took the world by storm, OpenAI launched Harvey, which uses ChatGPT-4 technology to build LLMs for law firms to use to support their legal work. By April 2023, Harvey had attracted several investors and a roster of global law firms as prospective clients.³³ CaseText also launched a similar LLM product that targets law firms around the same time.³⁴

²⁹ *ChatGPT Users Can Now Browse Internet, OpenAI Says*, REUTERS (Sept. 27, 2023), <https://www.reuters.com/technology/openai-says-chatgpt-can-now-browse-internet-2023-09-27/> (last visited Nov. 10, 2023).

³⁰ Sundar Pichai, *An Important Next Step on Our AI Journey*, GOOGLE BLOG (Feb. 6, 2023), <https://blog.google/technology/ai/bard-google-ai-search-updates/>.

³¹ Manuel Vonau, *ChatGPT vs. Google Bard: Which Gives the Better Answers?*, ANDROID POLICE (Nov. 4, 2023), <https://www.androidpolice.com/chatgpt-vs-google-bard-better-answers/>.

³² For a deep dive into what LLMs are and how to train them to support technologically-empowered legal practice, see Damien Charlotin, *Large Language Models and the Future of Law*, SSRN (Aug. 22, 2023), <https://ssrn.com/abstract=4548258>.

³³ Sara Merken, *Legal AI Race Draws More Investors as Law Firms Line Up*, REUTERS (Apr. 27, 2023), www.reuters.com/legal/legal-ai-race-draws-more-investors-law-firms-line-up-2023-04-26/.

³⁴ *Id.*

IV. PUTTING GENERATIVE AI-POWERED CHATBOTS INTO PRACTICE: TEN CONCRETE AND PRACTICAL APPLICATIONS IN INTERNATIONAL ARBITRATION

The integration of Generative AI-powered chatbots into legal practice, especially in international arbitration, has ushered in a new era of efficiency and innovation. These technologies are not just theoretical concepts but have practical applications that can significantly enhance lawyers' work. Of course, lawyers must assess how and to what degree Generative AI-powered chatbots should be integrated into their practice.

The following are ten concrete and practical applications for Generative AI-powered chatbots in international arbitration practice. The examples provided primarily draw upon ChatGPT-4 as it is presently the most widely available product and the one with which the authors are most familiar. These suggestions can also apply to other Generative AI-powered chatbots. Each tool will have its strengths and weaknesses when generating responses.

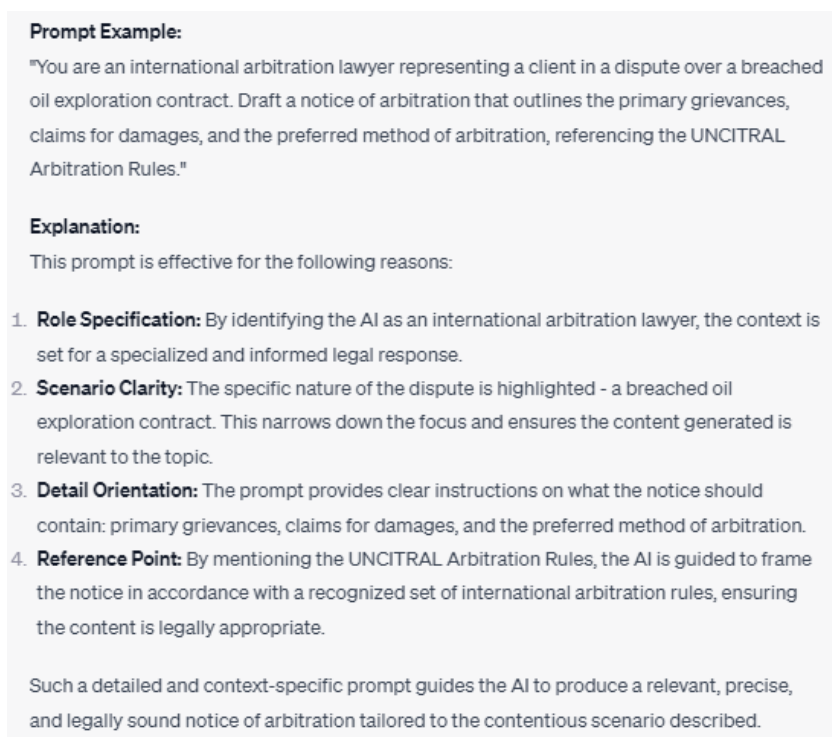
A. Effective Use of Prompts and Customisation

As discussed in Part III above, LLMs like ChatGPT-4 thrive on clear and specific instructions. The more granular the guidance, the more accurate and contextually relevant the output.

Specifying the role and purpose can drastically improve the LLMs' performance. For instance, guidance prompts such as "[y]ou are a lawyer drafting an arbitration agreement . . ." can lead to more precise content generation. Detailed instructions can also reduce the chances of the chatbot producing irrelevant or off-topic content.

For example, Elizabeth presented the below prompt to ChatGPT-4:

FIGURE 1



In practice, however, lawyers should not expect a chatbot to be able to draft an entire Notice of Arbitration without requiring further review! Setting aside confidentiality, data privacy, and privilege concerns, lawyers should manage their expectations of what chatbots can produce. For example, it may be helpful to use a chatbot to generate broad outlines and/or to support drafting of specific paragraphs or sections rather than expect it to draft an entire pleading from beginning to end.

It may also be more helpful to ask a chatbot to provide feedback on an existing draft rather than asking it to prepare a draft document based on limited instructions. Some chatbots limit the number of words that can be included in the instructions (e.g., 3,000 words), so providing an overly detailed set of instructions may not be possible.

B. Note-Taking and Transcription

AI-driven transcription services can transcribe hours of spoken content in minutes and provide summaries, saving valuable time. Examples include

Otter.ai and Fathom.³⁵ Such tools can be helpful during meetings, providing a reasonably reliable transcript for future reference. AI-powered summaries can replace the need to take detailed attendance notes.

C. Conducting Factual Research Efficiently

Occasionally, Generative AI-powered chatbots may help conduct factual research: for example, supporting a lawyer in understanding the historical context that applies to a dispute.

Lawyers should again take note, though, that some LLMs have knowledge that is limited in various ways, such as specific periods or information available from a particular set of sources. However, in some instances, plugins can help bridge the gap, allowing for up-to-date factual research.

D. Conducting Legal Research Efficiently

Generative AI-powered chatbots can assist with legal research, but only to a limited extent at present. LLMs—at least those in the public domain—will not generally have access to paywalled information.

Lawyers should, therefore, not expect chatbots to have access to the latest case information. Moreover, it is not even known whether the chatbots have accessed legal databases that are freely available. This may change if legal research platforms develop and launch their own chatbots to aid and enable research within their databases.

Lawyers should be cautious when relying on any legal research conducted by a chatbot. LLMs have been known to “hallucinate” and produce or reference non-existent legal precedents (and which lawyers have relied on at their peril).³⁶ The ethical and disciplinary issues around lawyers’ reliance on legal analysis undertaken by chatbots are discussed in Part V below.

In principle, legal professionals should cross-verify every piece of research from a chatbot to ensure veracity and authenticity.

E. Drafting Assistance

Generative AI-powered chatbots can help assist with parts of legal documents. It can suggest clauses tailored to specific cases or help draft bespoke contractual clauses when standard precedents are not applicable.

³⁵ OTTER.AI, <https://otter.ai> (last visited Nov. 10, 2023); FATHOM, <https://fathom.video/> (last visited Nov. 10, 2023).

³⁶ Armstrong, *supra* note 3.

For example, Elizabeth asked ChatGPT-4 to draft a contract clause, and it generated various suggestions:

FIGURE 2

Prompt:

"Draft a clause for a contract between Company A and Vendor B that ensures Vendor B will adhere to strict data protection standards, including GDPR compliance, when handling Company A's customer data."

Suggestions:

- 1. Data Protection and Compliance Clause:**
"Vendor B shall ensure that all customer data provided by Company A is stored, processed, and transmitted in strict compliance with the General Data Protection Regulation (GDPR) and other applicable data protection laws. Vendor B shall implement and maintain appropriate technical and organizational measures to safeguard such data against unauthorized access, disclosure, alteration, or destruction."
- 2. Notification of Breach Clause:**
"In the event of any breach or suspected breach of data security measures, Vendor B shall immediately notify Company A and shall cooperate fully with Company A to remedy the situation and mitigate any potential adverse effects."
- 3. Data Return and Destruction Clause:**
"Upon the termination of this contract or upon Company A's request, Vendor B shall promptly return all customer data to Company A and securely destroy any copies thereof, unless prohibited by law or any regulatory requirement."
- 4. Audit and Inspection Clause:**
"Vendor B shall permit Company A, upon reasonable notice, to inspect and audit Vendor B's data processing activities to ensure compliance with this clause and relevant data protection laws."

F. Generating Counter-Arguments

Generative AI-powered chatbots can analyse a given argument and generate potential counter-arguments. This function can be invaluable for legal professionals, allowing them to anticipate opposing viewpoints and prepare accordingly.

For example, Elizabeth presented ChatGPT-4 with a legal argument and asked it to generate counter-arguments:

FIGURE 3

Prompt:

"Argue that Party A's disclosure of confidential information to a third party constitutes a material breach of the non-disclosure agreement (NDA) they signed with Party B."

Argument:

"Party A and Party B entered into a non-disclosure agreement (NDA) to protect sensitive business information shared between them. Party B provided proprietary data to Party A under the assurance that this information would remain confidential. However, Party A disclosed this confidential information to a third party without Party B's consent, jeopardizing Party B's competitive advantage and trust. This unauthorized disclosure clearly violates the terms of the NDA and constitutes a material breach, warranting appropriate remedies and damages."

Potential Counter-Arguments:

- 1. Unintentional Disclosure:**
"The disclosure of the confidential information by Party A was unintentional and occurred due to an inadvertent error, without any malice or intent to harm Party B."
- 2. Ambiguous Terms in the NDA:**
"The NDA's terms regarding what constitutes 'confidential information' were ambiguous, making it unclear whether the disclosed information was indeed covered by the agreement."
- 3. Prior Public Knowledge:**
"The information disclosed by Party A was already publicly known or accessible, and therefore, its disclosure cannot be considered a breach of the NDA."
- 4. Lack of Damages:**
"Party B cannot demonstrate any tangible harm or damages resulting from the disclosure, making the breach, if any, immaterial."
- 5. Consent Given:**
"Party B had, in a prior instance or communication, given implied or explicit consent for Party A to share the information with specific third parties."

G. Assisting in Drafting and Refining Articles and Emails

Beyond legal documents, Generative AI-powered chatbots can assist lawyers with their thought leadership and profile-building projects, such as drafting and refining articles for legal journals, emails, invitations and marketing materials for legal industry events. One of the most helpful features of ChatGPT-4, for example, is the opportunity to ask it for suggestions on how to improve writing quality or ask it to explain why it has edited writing in a particular way.

For example, Elizabeth asked ChatGPT-4 to draft an invitation email to a potential speaker for a legal conference, and it provided a first draft:

FIGURE 4

Prompt:

Consider a scenario where an event organizer wants to draft an invitation email to a renowned legal expert to speak at an upcoming law conference. Can you draft the invitation?

Subject: Invitation to Deliver the Opening Address at 'Emerging Trends in International Law' Conference

Dear Dr. John Smith,

I trust this message finds you in good health and spirits. My name is [Your Name], and I am the principal organizer of the 'Emerging Trends in International Law' conference scheduled for next month [specific date, e.g., 15th] at [Venue Name, e.g., The Metropolitan Convention Center, London].

Your exemplary contributions and thought leadership in the field of international law have been a beacon for professionals and scholars worldwide. In light of your esteemed stature and profound expertise, it would be a privilege for us to have you as our chief guest and to grace our audience with the opening address.

Our conference seeks to bring together a diverse group of legal luminaries, scholars, and practitioners to discuss and dissect the evolving dynamics of international law. Your presence and insights would undoubtedly set the tone for a meaningful and enlightening discourse.

We are committed to ensuring your experience at the conference is seamless and rewarding. All logistical arrangements, including travel and accommodation, will be taken care of by our team.

Kindly let us know if this invitation aligns with your schedule and interests. Your affirmation would greatly elevate the significance of our event, and we are keenly hopeful for a positive response.

Warm regards,

[Your Name]

[Your Position, e.g., Event Organizer]

[Your Contact Information]

🔄 Regenerate

Generative AI-powered chatbots can also help produce content for business development purposes. For example, ChatGPT-4 may help draft an introduction to a lawyer for a LinkedIn profile or other purposes based upon a CV or may help draft social media posts based on provided content.

FIGURE 5

Explanation:

The invitation is suitable for several reasons:

1. **Clarity:** The subject line clearly states the purpose of the email, ensuring that the recipient immediately understands its significance.
2. **Personalization:** Addressing Dr. John Smith directly and acknowledging his expertise in the field of international law adds a personal touch, making the invitation more compelling.
3. **Details:** The email provides all the necessary details about the event, including the date, venue, and purpose of the conference.
4. **Value Proposition:** By highlighting the importance of Dr. Smith's presence and the value he would bring to the event, the invitation emphasizes the mutual benefits of his participation.
5. **Logistical Assurance:** Mentioning that all logistical arrangements will be handled by the organizing team removes potential barriers or concerns Dr. Smith might have about attending.
6. **Professional Tone:** The language and structure of the email maintain a formal and respectful tone, reflecting the importance of the occasion and the stature of the invitee.

By addressing all these elements, the invitation effectively communicates the significance of the event, the value of the invitee's participation, and the organizers' commitment to ensuring a smooth experience.

H. Drafting Pleadings, Awards, and Other Documents

Subject to confidentiality considerations, it may be helpful to use Generative AI-powered chatbots to assist with preparing an outline or first draft of pleadings, arbitral awards, or other documents. However, lawyers should be cautious and mindful of various ethical, disclosure, and other obligations and considerations. These issues are discussed further below in Part V.

I. Oral Advocacy

In a recent experiment coordinated by the Chartered Institute of Arbitrators (CIArb) Brazil Branch, ChatGPT-4 went up against student advocates in a mock hearing based on this past year's Willem C. Vis

International Arbitration Moot.³⁷ While the human team “won” (judged by human arbitrators), those observing considered ChatGPT-4’s performance commendable, showcasing its potential to support preparation of a structured oral argument.³⁸

However, the experiment reportedly also highlighted the chatbot’s limitations, such as “hallucinating” fabricated cases and lacking a personal commitment to the case. Despite its potential as a tool for lawyers, especially in legal research, the human touch, characterised by experience and emotional intelligence, remains irreplaceable in the legal profession.

J. Generating Visual Aids

A compelling visual aid can often be more persuasive than pages of written content. AI tools can generate visual aids tailored to specific arguments, ensuring they are informative and engaging. Part VI.C below discusses these developments further.

V. PITFALLS, OPPORTUNITIES, AND THE NEED FOR GUIDELINES FOR THE USE OF GENERATIVE AI IN INTERNATIONAL ARBITRATION PRACTICE

As the tools and uses described in the prior Parts demonstrate, AI generally, and Generative AI in particular, present a wide range of opportunities. However, along with these opportunities are also pitfalls and the need for guidelines to help shape the utilisation and implementation of AI in international arbitration practice.

A. Pitfalls and Opportunities

The rapid adoption of Generative AI in legal practice has already presented challenges, including instances of Generative AI misuse by lawyers, resulting in negative consequences.³⁹ For example, in a New York federal district court, a lawyer relied on ChatGPT-4 to generate references to judicial opinions and legal citations, which he cited without double-checking

³⁷ Fernanda Romero G. Pereira et al., *Human vs. Machine?*, CIARB NEWS (May 10, 2023), <https://www.ciarb.org/news/human-vs-machine/>; see also Arbitration Channel, *Human or Machine? 2023 Vis Moot Demonstration Round with ChatGPT*, YOUTUBE (Mar. 8, 2023), <https://www.youtube.com/watch?v=vnI4bHOkGFM>.

³⁸ Caroline Simson, *ChatGPT’s Potential Is ‘Astonishing,’ But Nothing to Fear*, LAW360 (Apr. 5, 2023, 8:48 PM), www.law360.com/articles/1593701/chatgpt-s-potential-is-astonishing-but-nothing-to-fear.

³⁹ Elizabeth Chan et al., *The Hong Kong Law Society Young Solicitors’ Group Think Tank Competition 2023: Regulating AI in the Legal Profession*, Submission for the Hong Kong Lawyer (pending publication).

or verifying their existence or veracity.⁴⁰ This is only one example, but it highlights the need for responsible and ethical Generative AI use. To address similar concerns and maintain the integrity of the legal system, a federal district court judge in Texas has (apparently in a first for U.S. federal courts) added a requirement for attorneys to certify that their filings, if drafted by Generative AI, were also verified for accuracy by a human and to take responsibility for their submissions.⁴¹

Meanwhile, other courts have embraced the possibilities that Generative AI presents. For example, Lord Justice Birss of the English Court of Appeal said that he found ChatGPT-4 “jolly useful” after he used it to write part of a ruling.⁴²

In China, the Guangzhou Arbitration Commission (hereinafter “Commission”) reported in September 2023 that it had used an AI arbitration assistant to resolve its first case involving a dispute between two domestic private companies. According to the Commission, the assistant can “improve the efficiency of resolving disputes by nearly four times” by undertaking procedural tasks including “intelligent acceptance of cases, multilingual real-time translation, blockchain recognition of evidence and inputting viewpoints and statements”.⁴³

B. The Need for Guidelines for the Use of Generative AI in International Arbitration and Emerging Best Practices

In these circumstances, the legal community has raised questions about whether lawyers’ use of Generative AI in their work should be regulated. Some courts, like the Texas judge mentioned above, are requiring lawyers to disclose their use of Generative AI tools. Others may hesitate to go so far.

But there appears to be an emerging consensus that some regulation is required to ensure the safe, ethical, and responsible use of Generative AI. For example, the Massachusetts Institute of Technology established a Task

⁴⁰ Benjamin Weiser & Nate Schweber, *The Chat GPT Lawyer Explains Himself*, N.Y. TIMES (June 8, 2023), <https://www.nytimes.com/2023/06/08/nyregion/lawyer-chatgpt-sanctions.html>.

⁴¹ Jacqueline Thomsen, *US Judge Orders Lawyers to Sign AI Pledge, Warning Chatbots ‘Make Stuff up’*, REUTERS (June 3, 2023, 1:17 AM), <https://www.reuters.com/legal/transactional/us-judge-orders-lawyers-sign-ai-pledge-warning-they-make-stuff-up-2023-05-31/>. See Judge Brantley Starr’s requirement in Hon. Brantley Starr, Mandatory Certification Regarding Generative Artificial Intelligence [Standing Order] (N.D. Tex.), <https://www.txnd.uscourts.gov/judge/judge-brantley-starr> (last visited Nov. 6, 2023) (Standard Forms tab). See further Judge Starr’s template to be used by attorneys when making such certification, U.S. Dist. Ct. N.D. Tex. Dall. Div., Template Certificate Regarding Judge-Specific Requirements [hereinafter Template Certificate Regarding Judge-Specific Requirements].

⁴² Gareth Corfield, *British Judge Uses ‘Jolly Useful’ ChatGPT to Write Ruling*, THE TELEGRAPH (Sept. 14, 2023, 10:14 PM), <https://www.telegraph.co.uk/business/2023/09/14/british-judge-uses-jolly-useful-chatgpt-to-write-ruling/>.

⁴³ *AI Arbitration Used for Dispute in Guangzhou*, CHINA DAILY (Sept. 1, 2023), www.china.org.cn/china/2023-09/01/content_110739087.htm.

Force on Responsible Use of Generative AI for Law in 2023. It released a set of draft guidelines to ensure “factual accuracy, accurate sources, valid legal reasoning, alignment with professional ethics, due diligence, and responsible use of Generative AI for law and legal processes”.⁴⁴

Certain features of international arbitration may make guidance on the use of AI even more pressing.⁴⁵ For example, the Silicon Valley Arbitration and Mediation Center’s (hereinafter “SVAMC”) Drafting Subcommittee on the Draft Guidelines for the Use of AI in International Arbitration (hereinafter “Subcommittee”) published a draft version of its guidelines for public consultation in August 2023 (hereinafter “Draft Guidelines”).⁴⁶ The Subcommittee explains that the multi-faceted and multi-jurisdictional nature of arbitration proceedings make it necessary to have a set of best practices or recommended international practice.⁴⁷ Given the potential for various national laws to apply, for instance, an arbitration seated in Paris, governed by Mexican law, with hearings in Hong Kong, it becomes necessary to harmonise the potentially disparate local and international standards relating to the use of Generative AI.

C. The SVAMC’s Draft Guidelines

The SVAMC’s Draft Guidelines provide a useful example for the potential regulation and management of AI use in international arbitration. The discussion below benefits from the authors’ experience in practice and Elizabeth’s role as a Member of the SVAMC’s Subcommittee.

In summary, the Draft Guidelines provide as follows:

⁴⁴ *Task Force on Responsible Use of Generative AI for Law*, MIT COMPUTATIONAL L. REP. (June 2, 2023), <https://law.mit.edu/ai>.

⁴⁵ See also *Artificial Intelligence—The Rise of Machine Learning*, BRYAN CAVE LEIGHTON PAISNER (July 24, 2023), <https://www.bclplaw.com/en-US/events-insights-news/ai-in-ia-the-rise-of-machine-learning.html>. The survey on “Artificial Intelligence—the Rise of Machine Learning” 2023 assesses the “extent to which AI is used in international arbitration, consider[s] the perceived risks and benefits that come with its use, and canvas[ses] views on the need for regulation of the use of AI in international arbitration.” The survey results were not available at the time of writing.

⁴⁶ Elizabeth Chan is a member of this Subcommittee.

⁴⁷ *Guidelines on the Use of Artificial Intelligence in Arbitration*, SILICON VALLEY ARB. & MEDIATION CTR. (Aug. 31, 2023), <https://thearbitration.org/wp-content/uploads/2023/08/SVAMC-AI-Guidelines-CONSULTATION-DRAFT-31-August-2023-1.pdf>. It is worth noting that, while the Guidelines refer generally to the use of “Artificial Intelligence” in international arbitration, they define this term with a focus on emerging Generative AI technologies like the LLMs, chatbots, and Q&A (the precise definition is provided in Part V.C below, as well as reasons for this choice of definition). On the other hand, the definition of “Artificial Intelligence” adopted in this paper is different because this paper serves a broader purpose (i.e. to demonstrate the historical evolution of AI technologies in support of legal practice where Generative AI is just one of the latest technologies that can support legal practice). When discussing the Guidelines below, for the sake of clarity, we defer to the definition of “Artificial Intelligence” as adopted in the Guidelines themselves.

1. Preliminary Provisions —

(a) *Application of the Guidelines* — These Guidelines shall apply when and to the extent that the parties have so agreed and/or following a decision by an arbitral tribunal or an arbitral institution to adopt these Guidelines.

(b) *Definition of AI* — As used in these Guidelines, the term “AI” refers to computer systems that perform tasks commonly associated with human cognition, such as understanding natural language, recognising complex semantic patterns, and generating human-like outputs.

(c) *Non-Derogation of Any Mandatory Rules* — These Guidelines shall not derogate from any legal obligations, ethical duties, or rules of professional conduct, or any other binding rules applicable to the arbitration proceedings or persons participating in them.

2. Guidelines for All Participants in International Arbitrations —

(a) *Guideline 1* — Understanding the uses, limitations, and risks of AI applications

(b) *Guideline 2* — Safeguarding confidentiality

(c) *Guideline 3* — Disclosure and protection of records

3. Guidelines for Parties and Party Representatives —

(a) *Guideline 4* — Duty of competence or diligence in the use of AI

(b) *Guideline 5* — Respect for the integrity of the proceedings and evidence

4. Guidelines for Arbitrators —

(a) *Non-Delegation of Decision-Making Responsibilities*

(b) *Respect for Due Process*

While an in-depth discussion of each of the Draft Guidelines is outside the scope of this paper, it is worth focusing on some of the thorniest issues that have arisen in the context of the public consultation to date.⁴⁸

First is the definition of AI. As quoted above, the Draft Guidelines define AI very broadly. Defining AI is inherently difficult since there are many use cases that may not yet be imaginable. The Subcommittee adopted a broad definition of AI to include both existing and future types of AI. At the same time, however, the Guidelines are intended to focus more on modern uses of AI and some of the recent concerns raised by Generative AI and LLMs. The intent of the Guidelines was not to focus on tools practitioners have used for a long time, such as OCR.

Second, the disclosure of the use of AI tools in arbitration and in what circumstances has emerged as a controversial issue, both during the drafting process and the public consultation.

⁴⁸ The content of this Part of the paper is taken in part from preparatory materials produced by the Subcommittee for its presentation. The authors thank Sofia Klot and Marta Garcia-Bel for their preparation of these materials. See also *The Tea on International Arbitration, Silicon Valley Weighs in on AI in International Arbitration*, SPOTIFY (Oct. 23, 2023), <https://open.spotify.com/episode/2Q6jaeNZ52p2MyYIIRuWg4>, a podcast where members of the Drafting Committee, Elizabeth Chan, Orlando Cabrera and Sofia Klot, discussed the Guidelines.

The members of the Subcommittee had different views on whether, when and to what extent someone should disclose the use of certain AI tools in an arbitration. They all agreed on the need to remain somewhat agnostic and not impose a general duty to disclose any and all uses of AI tools.

At the same time, however, the Draft Guidelines recognise that there may be certain circumstances where disclosing the use of AI tools may be warranted to preserve the integrity of the proceedings or the evidence. This includes, for example, when a party or an expert uses AI tools in the preparation of submissions, expert opinions, demonstratives or evidence, and using such AI-powered tools could have a material impact on the proceedings and/or their outcome.

For example, a quantum expert should disclose using an AI tool to prepare their base case for calculating damages. As for arbitrators, they would have to proactively disclose the use of AI tools in a way which could be perceived as delegating any part of their decision-making function.

The Subcommittee eventually provided two options and let the arbitration community vote on which one they prefer or suggest an entirely different approach. One option is more prescriptive than the other. The Subcommittee is gathering comments from the arbitral community to determine whether there should be more or less disclosure and in what circumstances. Such disclosure requirements are also at play in other settings where the concern may center on the integrity of the dispute resolution process itself and that of lawyers presenting information to the adjudicator. Indeed, as mentioned above in Part V. A, a Texas federal judge has added a judge-specific requirement for attorneys to not only certify that their filings, if drafted by Generative AI, were also verified for accuracy by a human, but also take full responsibility for any sanction or discipline that may result from improper submissions to the court.⁴⁹

During the public consultation (which remains ongoing), several commentators have focused on arbitrators' disclosure of using AI tools in performing their functions. Some of the concerns echo the longstanding

⁴⁹ Thomsen, *supra* note 41. See Judge Brantley Starr's requirement for "Mandatory Certification Regarding Generative Artificial Intelligence", including a template to be used by attorneys when making such certification. Hon. Starr, *supra* note 41. In particular, the template certification states:

I further certify that no portion of any filing in this case will be drafted by generative artificial intelligence or that any language drafted by generative artificial intelligence—including quotations, citations, paraphrased assertions, and legal analysis—will be checked for accuracy, using print reporters or traditional legal databases, by a human being before it is submitted to the Court. I understand that any attorney who signs any filing in this case will be held responsible for the contents thereof according to applicable rules of attorney discipline, regardless of whether generative artificial intelligence drafted any portion of that filing.

Template Certificate Regarding Judge-Specific Requirements, *supra* note 41.

issues surrounding tribunal secretaries acting as the “fourth arbitrator”. However, as discussed further below, Generative AI is not yet able to perform all of an arbitrator’s duties, including, for example, assessing a witness’s credibility.

Some have also commented on the extent of disclosure required and what would constitute a reasonable burden of disclosure. For example, disclosing every interaction with the relevant tool could be overly burdensome, given the Q&A format of such interactions.

Third, the use of Generative AI for arbitrator selection or recommendation could raise diversity concerns. The Guidelines explain that using AI tools to identify suitable arbitrators is a sensitive matter because of the potential biases that may underlie the AI tool’s output and the difficulty or controlling for those biases. Some are concerned that if an algorithm was trained on past appointments and the training data is not adjusted to account for in-built biases, there is a risk of perpetuating the status quo (where diversity is often lacking).⁵⁰

As Cortex Capital’s recent report shows, human cognitive biases in arbitrator selection include, for example, in-group favoritism, affinity bias, recency bias, stereotypes, “halo and horns” effects, and outgroup homogeneity.⁵¹ Humans must consciously consider their own cognitive biases, and this requirement is greater when considering those biases that may be latent in the design of Generative AI tools!

Fourth, there has been general consensus so far on a guideline requiring party representatives to be competent and diligent in using AI. Guideline 4 requires parties to “review the output of any AI tool used to prepare submissions to make sure it is accurate, from a factual and legal standpoint, as required by any applicable ethical or standards of competent representation”. This Guideline addresses some of the most egregious reported examples of lawyers making court submissions without verifying the truth or accuracy of cases provided by Generative AI tools.

However, this duty of competence and diligence is not absolute: lawyers are not expected to understand exactly how a particular Generative AI tool works. Even AI tools (and their designers) cannot explain exactly how they generated their input, hence the “black box” problem. In these circumstances, arbitrators are likely to assess the sufficiency of evidence based on the usual rules and principles, including that the party making a claim has the burden of proof and the tribunal has discretion to admit and evaluate the weight of evidence.

⁵⁰ On the other hand, the general use of other forms of AI, such as data analytics and other data-driven inputs, in the arbitrator selection process could enhance arbitrator diversity. *See generally* the discussion at Part II. E above.

⁵¹ Ula Cartwright-Finch, *The Usual Suspects: Decision-Making in Arbitrator Selection*, CORTEX CAPITAL 1, 7 (Oct. 2023), https://www.cortexcapital.org/_files/ugd/4ebf15_1758d4ae0bd24547aefcc3e6e8fa30e3.pdf.

VI. TRANSFORMATIVE POTENTIAL OF GENERATIVE AI IN ARBITRATION: A GLIMPSE INTO THE NEXT DECADE

A recent survey by Above the Law and Wolters Kluwer of 275 legal professionals on their perception of Generative AI advances in law showed that more than 80% of respondents agree that Generative AI will create transformative efficiencies for research and routine tasks and relieve them from mundane legal work.⁵² More than two-thirds of respondents believe that document review lawyers, librarians, and others involved in knowledge management and research are at risk of obsolescence because of Generative AI.⁵³

The Generative AI-powered chatbots discussed throughout this article barely scratch the surface of the possible uses for this technology. Indeed, Generative AI and the other more commonly implemented and utilised AI techniques outlined in Parts II and IV are transforming international arbitration practice. This Part looks further into the future and overviews the remarkable developments that we can anticipate over the next decade that will fundamentally change how international arbitration work is delivered and performed, its efficiency gains, the modalities in which it is provided, and the economics of the business of arbitration.

A. Co-Pilots for Document Management and Legal Research

Every knowledge and document management platform is expected to incorporate Generative AI capabilities as standard features to facilitate the organisation, retrieval, and analysis of vast legal knowledge repositories. This enhancement simplifies the management of precedents, case law, and research materials, providing arbitration professionals with valuable insights and resources.

Companies like CaseText and Harvey⁵⁴ are showing how Generative AI enables interaction with extensive document sets through Q&A chatbot interfaces. Similarly, Microsoft's CoPilot AI assistant, launched on September 26, 2023, and powered by ChatGPT-4, enables users to not only interact with their documents but also summarise long email threads and documents, draft replies, schedule appointments, and much more, potentially unlocking arbitration lawyers' productivity to new heights.

⁵² Rick Deckard (Harrison Ford) & Blade Runner, *Generative AI in the Law: Where Could This All Be Headed?*, WOLTERS KLUWER 1, 2 (2023), https://images.go.wolterskluwerlr.com/Web/WoltersKluwerLRSUS/%7B26ae99a4-7acc-4d18-ad11-63a829eb5df0%7D_Generative_AI_Survey_Report_July_2023.pdf.

⁵³ *Id.*

⁵⁴ HARVEY., <https://www.harvey.ai/> (last visited Nov. 9, 2023).

Moreover, specialised legal research platforms like JusMundi (with JusAI) and Lexis+AI are rolling out their GPT-powered copilots to summarise case law and arbitral awards, draft briefs, and interact with relevant corpora of case law and arbitration treatises. This gives arbitration practitioners instant access to a wealth of legal knowledge, enabling them to make strategic decisions and craft persuasive arguments.

This trend towards progressive adoption of Generative AI-powered chatbots (or, as they are often referred, “copilots”) simplifies the process of accessing and extracting information from large corpora, streamlining research and document review. It will also boost efficiency by providing rapid and precise responses to queries, obviating the need for manual data extraction or retrieval of data, which is particularly useful in document-intensive arbitrations.

B. Reliable In-House Generative AI-Powered Chatbots

To protect the privacy and confidentiality of their proprietary data, large international law firms have started to implement their in-house secure versions of ChatGPT-4,⁵⁵ enabling users to conduct legal research, generate legal content, identify relevant legal arguments, extract key data from documents, and query them.

Connecting the ChatGPT-4-powered chatbot to the law firm’s internal database allows the LLM to retrieve information from a specific knowledge base and to be programmed so that the responses are based on the documents and materials in that knowledge base. Using the law firm’s database in this way means that the underlying model is not only using ChatGPT-4’s internal pre-trained data to provide a response, but it “grounds” the LLM to factual data and relevant user context.⁵⁶ This technique reduces hallucinations without specialised model fine-tuning.

Aside from reducing the risk of hallucinations, these in-house ChatGPT-4-powered chatbots, well versed with the specific law firm’s document corpus, will be able to generate pleadings drafts following each law firm’s “house style” and check for inconsistent arguments and facts in the evidence.

As these chatbots are trained on the law firm’s data and informed by each of their lawyers, it is conceivable for law firms to provide limited access to clients to enquire about the details of their cases without any need to email the lawyers. In preparation for a hearing, different stakeholders of the case,

⁵⁵ *Dentons to Launch Client Secure Version of ChatGPT*, DENTONS (Aug. 1, 2023), <https://www.dentons.com/en/about-dentons/news-events-and-awards/news/2023/august/dentons-to-launch-client-secure-version-of-chatgpt>.

⁵⁶ Nikita Namjoshi & Andrew Ng, *Understanding and Applying Text Embeddings*, DEEPLARNING.AI, <https://www.deeplearning.ai/short-courses/google-cloud-vertex-ai/> (last visited Nov. 6, 2023); Simon Attard, *Grounding Generative AI*, MEDIUM (Mar. 23, 2023), https://medium.com/@simon_attard/grounding-large-language-models-generative-ai-526bc4404c28.

like legal experts, quantum experts, and fact witnesses, could connect to and be given access privileges to different sections of the case database and interact through the chatbot or co-pilot on information relevant to each expert or witness.

C. AI-Powered Arbitration Hearings

The ability to guardrail data in these secure GPT-powered environments could also make the preparation of hearing bundles and retrieval of anything in the record much more efficient. Instead of manually creating electronic versions of the hearing bundles, the parties' agreed hearing materials could be uploaded to a secure cloud database that connects to an in-house GPT-powered chatbot. This would enable the arbitrators, counsel, witnesses, and all involved to interact with the data and refer to the materials during cross-examinations, expert hot-tubbing, and counsel presentations.

Instead of flipping through physical bundles or scrolling through PDF versions, parties could search and retrieve the relevant passage in the document corpus (which links to the source materials) and put it to the witness for cross-examination.

Another key way in which Generative AI and LLMs will transform evidence presentation is through the automated generation of exhibits. These technologies can analyse the content of case documents and transcripts, extracting relevant information and summarising it into visually compelling exhibits.

For example, LLMs can create interactive timelines, charts, and graphs that illustrate the progression of events or the significance of certain data points. This automation saves time and ensures consistency and accuracy in exhibit creation. Arbitrators and parties can access these exhibits in real-time during hearings, facilitating a deeper understanding of the evidence presented.

During hearings, real-time transcription and translation powered by AI will enable seamless communication among parties from different linguistic backgrounds. This will expedite proceedings and ensure that all participants have equal access to the arbitration process, regardless of language barriers.

As AI-powered technologies become less expensive, specialised hearing and evidence presentation platforms will become much more accessible to medium, boutique, and independent practitioners, potentially enhancing accessibility to arbitration services by more parties.

D. Automation of Workflows to Redefine Arbitration Work

The emergence and popularisation of low-code and no-code methods⁵⁷ of programming by intuitively dragging and dropping or setting up “if, then” prompts without the need to write code, have the potential to transform arbitration practice by automating practice workflows.

This systematisation of workflows, as envisaged by legal futurist Richard Susskind, empowers arbitration practitioners to create structured and repeatable processes for handling cases, ensuring consistency, and reducing the risk of errors.⁵⁸ Professor Susskind advocates moving away from traditional, manual processes and embracing technology-driven systems to streamline tasks and improve efficiency. He envisions a future where legal services are delivered through automated and standardised workflows, allowing lawyers to focus on higher-value tasks and providing clients with more cost-effective and predictable services.

Automation of legal research and memorandum drafting is underway, as noted above. The existing (and new) legal research platforms will further enhance the ability of lawyers to sift through vast databases of legal documents and generate accurate summaries with reference sources.

AI-powered technologies are positioned to automate the creation of pleadings, including witness statements and expert reports. In-house GPT-powered copilots connected to the law firm’s legal precedents data bank and legal research databases could generate the first draft of pleadings by setting out legal tests and generating supporting authorities based on specific factual matrices whilst following the firm’s drafting style.

In addition to generating pleadings, AI-powered tools could (as discussed above) evaluate the arguments’ strength and develop potential counter-arguments with source authorities identifying relevant cases, statutes, and regulations to substantiate the arguments.

Automation extends to document production and e-discovery as well. There is real potential that the manual review of documents for production will become completely automated. Arbitration professionals will be able to leverage sentence-level text embeddings⁵⁹ and syntax search to automate the

⁵⁷ Low-code or no-code methods of programming using intuitive drag and drop tools that reduce or eliminate the need for traditional developers who write code.

⁵⁸ RICHARD SUSSKIND, *TOMORROW’S LAWYERS: AN INTRODUCTION TO YOUR FUTURE* 47 (3d ed. 2023).

⁵⁹ Sentence embeddings are numeric representations of sentences in the form of vectors of real numbers, encoding meaningful semantic information. These embeddings are designed to encapsulate the semantic essence of a sentence. See András Aponyi, *What Are Sentence Embeddings and Their Applications?*, TAUS: THE LANGUAGE DATA NETWORK (Feb. 10, 2021), <https://www.taus.net/resources/blog/what-are-sentence-embeddings-and-their-applications>.

retrieval of all documents relevant and material to a fact or legal issue or responsive to a document request for production.⁶⁰

Some legal tech platforms are automating the first-level review of documents for production using low-code and no-code tools to set rule-based automation for searching and clustering all relevant and material documents in one place.⁶¹ Performing document production and e-discovery literally with a click of a button is on the horizon.

In the evolving landscape of legal technology and automation, tomorrow's arbitration practitioners may find it necessary also to become legal no-coders, legal knowledge engineers, and legal data scientists.⁶² Embracing these roles will enable them to harness the full potential of automation technologies and enhance their efficiency and competitiveness.

Automating the above workflows, from research to drafting to document production, paves the way for creating all-in-one plug-and-play platforms that automate most aspects of arbitration workflows. This also shows that "arbitration work", like other legal practices, is not monolithic and indivisible, as Professor Suskind proposes.⁶³ Rather, it is possible to unpack the work into discrete tasks that can be automated with the popularisation and adoption of AI-powered tools.

Therefore, by relying on such platforms, we may see the emergence of independent arbitration lawyers from multiple jurisdictions collaborating seamlessly on a single case, resembling a decentralised arbitration practice at a large international firm. This collaborative model empowers lawyers to leverage AI-powered research tools, claims databases, and automation to establish and manage their arbitration practices more independently, efficiently, and cost-effectively, ultimately redefining the future of arbitration practice.

E. Disrupting Billing Models

The progressive adoption of AI-powered tools that can automate a large portion of arbitration work will significantly disrupt traditional billing models within the realm of arbitration and the broader legal services sector. AI technologies are pushing law firms to shift from labour-intensive work to

⁶⁰ Lawdify's AI leverages user's tags and notes (a) to improve the aggregation of other key facts relevant to the matter, (b) to operate on the semantic meaning of words enabling AI predictions of conceptually similar ideas, and (c) to retrieve data applicable to the context using retrieval augmented generation. See LAWlify, <https://www.lawlify.com> (last visited Nov. 9, 2023).

⁶¹ See *id.*

⁶² SUSSKIND, *supra* note 58, at 188.

⁶³ *Id.* at 52.

capital-driven AI processes.⁶⁴ This transition reflects the changing landscape of legal practice as AI becomes a central component.

Instead of relying solely on the conventional hourly billing approach, these innovative technologies are reshaping the landscape of legal fees. One transformative shift is the introduction of “technology fees”,⁶⁵ which consider the cost savings clients can reap through the enhanced efficiency of AI-driven processes. This approach not only aligns the interests of clients and legal professionals but also reflects a more transparent and value-driven billing structure.

Flat fees for specific legal tasks will likely gain prominence as Generative AI streamlines various aspects of legal work. These flat fee arrangements give clients greater cost predictability, as they know upfront what to expect for a particular legal service. This departure from the traditional billable hours model reflects the evolving nature of legal practice, where technology plays a pivotal role in optimising workflows and delivering value-driven legal services.

F. AI Arbitrators

It is impossible to glimpse into the future of arbitration without discussing the prospect of AI-powered arbitrators. The introduction of Generative AI in arbitral decision-making poses intriguing questions about the role of technology in shaping outcomes.⁶⁶ While arbitration rules typically grant parties the flexibility to determine procedural aspects, deploying AI to fulfil the tribunal’s mandate is subject to legal and ethical considerations like bias, data quality, and the ability to consider nuanced legal arguments.

In rendering a reasoned award, the arbitrator must (at a high level):

1. consider, weigh, and hear the evidence from both parties, including witness testimonies, documents, and other relevant information;

⁶⁴ Jonathan Cole, *Some Client Speculations on AI and the Law Firm Biz Model*, LAW360 (May 26, 2023), <https://www.law360.com/realestate/articles/1680716/some-client-speculations-on-ai-and-the-law-firm-biz-model>.

⁶⁵ Stephen Wu of Silicon Valley Law Group speculates that firms may charge “a technology fee”, so that “clients don’t expect to get generative AI for nothing”. See *Generative AI Could Radically Alter the Practice of Law*, ECONOMIST (June 6, 2023), <https://www.economist.com/business/2023/06/06/generative-ai-could-radically-alter-the-practice-of-law>.

⁶⁶ Consider, for example, Kevin Chan’s test of ChatGPT (version 3) to act as an arbitrator in fictional maritime disputes between a vessel owner and its charterer. The author found that while ChatGPT originally declined requests to determine a dispute (on the basis that it was unable or unauthorised to make legal judgments or awards), it would give “determinations” if given appropriate parameters. These parameters included providing summaries of the undisputed facts and parties’ submissions, together with specific questions for determination and a request to provide a reasoned decision. See Kevin Chan, *A New Era of Maritime Arbitration: Ex Machina Determinations*, 40(5) J. INT’L ARB. 521, 525 (2023).

2. consider the legal framework governing the dispute including contractual agreements, relevant laws, and any applicable rules of arbitration;
3. understand the nuances of the case and evaluate the strength of each party's position; and
4. issue a written award outlining their findings, the legal reasoning behind the decision, and any remedies or damages awarded to the prevailing party.

Taking each workflow in turn, existing AI-powered tools can summarise large volumes of evidence, documents, and information relevant to the case. While AI can perform sentiment analysis,⁶⁷ it cannot “weigh” the evidence in the legal context as an arbitrator would by assessing the credibility of a witness being cross-examined or the veracity of the documents.

However, not all cases require live evidence; some may be resolvable on the papers alone. Perhaps these are the most suitable cases for AI arbitrators, especially if their quantum is small and they are commercial, akin to eBay's decades-old, asynchronous, automated online dispute resolution system that allows buyers and sellers to resolve their disputes through a platform.⁶⁸

Similarly, regarding the applicable legal framework, AI-powered tools can outperform us in producing legal research and law summaries. However, ChatGPT-4's responses are based on patterns in the text data. It lacks an understanding of the legal intricacies and nuances crucial in arbitration cases, which arbitrators develop over years of legal training and experience.

It would not be able to perform a nuanced analysis should the parties grant amiable compositeur⁶⁹ powers to the arbitrator to seek an equitable solution to their dispute by setting aside, if necessary, the rule of law which would otherwise be applicable.

For drafting a reasoned award, ChatGPT-4 (and Generative AI generally) remains fundamentally incapable of the complex reasoning

⁶⁷ Aston Zhang et al., *Sentiment Analysis and the Dataset*, in DIVE INTO DEEP LEARNING 745, 745-48 (2023). To preview the content, see *16.1 Sentiment Analysis and the Dataset*, DIVE INTO DEEP LEARNING, http://preview.d2l.ai/d2l-en/master/chapter_natural-language-processing-applications/sentiment-analysis-and-dataset.html (last visited Nov. 6, 2023).

⁶⁸ eBay has had an online dispute resolution system for many years, allowing buyers and sellers to resolve their disputes in an efficient and automated manner. The system is facilitated through a platform provided by SquareTrade, eBay's preferred dispute resolution provider. SquareTrade offered a free web-based forum for users to attempt to resolve their differences independently. A professional mediator was also provided as part of the service if necessary. Like an AI judge, it uses technology to efficiently and impartially settle disputes between buyers and sellers within the eBay marketplace. *Dispute Resolution Overview*, EBAY, <https://pages.ebay.com/services/buyandsell/disputeres.html> (last visited Nov. 9, 2023).

⁶⁹ Amiable compositeur or “*ex aequo et bono*” means dispute settlement where parties expressly agree that the arbitrator is not bound by strict rules of law but based on fair, just and moral and commercially accepted principles.

required in arbitration, and it is incapable of reasoning.⁷⁰ Therefore, it would not be competent to generate an award satisfactory to the parties yet.

Based on this assessment, Generative AI can only perform two of the four workflows required to automate the arbitrator's work. Therefore, it might be suitable to adopt a hybrid approach using an AI tribunal secretary or shadow arbitrator without empowering it to any decision-making power.

In the next decade, AI technologies will continue to develop, including gaining the ability to reason with advances in deep neural networks simulating the human brain. During this time, more news of judges (and arbitrators) delegating decisional questions to GPT-powered tools⁷¹ will emerge as they become more widely adopted.

A new system of online do-it-yourself arbitration platforms could emerge with AI-powered end-to-end online dispute resolution services complete with AI arbitrators, offering “no frills” (e.g., no live evidence or document production, simplified procedures), cost-effective, instant decisions for low-value, commercial disputes for impecunious (or impatient) parties. It is also conceivable that arbitral institutions around the world will develop these platforms in-house to offer clients a new breed of automated arbitration services.

VII. CONCLUDING REMARKS

Generative AI stands at a pivotal moment, poised to profoundly transform the way in which international arbitration work is performed and offered. Its potential is vast, offering enhanced capabilities in legal research, document review automation, and even altering traditional billing models. The promise of AI-driven end-to-end online dispute resolution platforms could revolutionise the way arbitration is approached, particularly for low-value commercial disputes. This promises faster, more efficient, and potentially more cost-effective solutions for parties seeking resolution.

However, this transformative power is not without its challenges. As noted above, the use of AI in arbitration raises vital questions surrounding bias, data quality, and the ability of these systems to grasp and apply nuanced legal arguments. While AI tools might be adept at processing large volumes of information or conducting sentiment analysis, their capability to evaluate evidence in a legal context, such as assessing the credibility of a witness or the authenticity of a document, remains limited. This underscores the

⁷⁰ Konstantine Arkoudas, *GPT-4 Can't Reason*, ARXIV (Aug. 11, 2023), <https://arxiv.org/pdf/2308.03762.pdf>.

⁷¹ Stefanie G. Efstathiou & Mihaela Apostol, *Arbitration Tech Toolbox: ChatGPT – Arbitral Assistant or Fourth Arbitrator?*, KLUWER ARB. BLOG (July 22, 2023), <https://arbitrationblog.kluwerarbitration.com/2023/07/22/arbitration-tech-toolbox-chatgpt-arbitral-assistant-or-fourth-arbitrator>.

significance of human expertise, honed over years of legal training and experience, in the arbitration process.

Additionally, Generative AI's current limitations in complex reasoning underline the need for a hybrid approach. While tools like ChatGPT-4 offer significant advancements, they are not yet ready to fully replace human arbitrators. Thus, it might be prudent to consider Generative AI as a supplementary tool, serving as an aid rather than the primary decision-maker.

In light of these considerations, the coming decade will not only be about embracing AI's capabilities but also about crafting necessary regulations and guidelines. Ensuring AI's ethical and effective integration will require concerted efforts from legal professionals, technologists, and policymakers alike. As the landscape of arbitration evolves, it is crucial that its foundations remain rooted in fairness, transparency, and justice.

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