



ARTIFICIAL INTELLIGENCE 'AI' IN
INTERNATIONAL ARBITRATION:
MACHINE ARBITRATION

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1.0 INTRODUCTION

Artificial Intelligence or “AI”, sometimes called machine intelligence, is intelligence demonstrated by machines, such as digital computers, computer-controlled robots etc. to perform tasks commonly associated with intelligent beings. The term is frequently applied to the project of developing systems endowed with the intellectual processes characteristic of humans, such as the ability to reason, discover meaning, generalize, or learn from past experience, in contrast with the natural intelligence portrayed by human beings.

John McCarthy, a late computer scientist and arguably the one who coined the term ‘AI’ in 1956 defined it as; ‘making a machine behave in ways that would be called intelligent if a human were so behaving’.

Artificial Intelligence (AI) technologies, especially machine learning and natural-language processing, are already impacting and gaining traction within the legal sector. With the development of technology in recent years, AI is changing the way lawyers think, the way they do business and the way they interact with clients.¹ Lawyers have now been using AI-infused technologies like Westlaw, LexisNexis and Google for years and experts believe the time is ripe to also seriously explore the technology’s use throughout the entire arbitration process in order to, among other things, enhance efficiency and reduce costs.²

Nevertheless, many legal practitioners typically believe that the impact of AI on their profession will be limited. This ignores that AI already touches many areas

¹Judy Sobowale, ‘How artificial intelligence is transforming the legal profession’ available at <http://www.abajournal.com/magazine/article/how_artificial_intelligence_is_transforming_the_legal_profession> accessed on 13th February, 2020.

² Megan Turchi, ‘The future of International Arbitration may not be AI’ available at <<https://www.thinksetmag.com/issue-7/ai-may-not-be-the-future-of-international-arbitration>> accessed on 13th February, 2020.

of law, including contract analysis, legal research, e-discovery, etc.³ For instance, computer programs are available to help lawyers to analyze the other side's written submissions and to provide relevant case law that was omitted therein or rendered since. Unsurprisingly, AI in law is a growing business.

1.1 THE USE OF TECHNOLOGY IN INTERNATIONAL ARBITRATION

Over the last two decades there has been phenomenal advancements in the use of AI. Time is now proving that no one's job is safe from being taken over by AI – not even arbitrators. AI threatens to disrupt the international arbitration industry by creating programs capable of computing information in the same manner as arbitrators.

AI promises to render awards in lightning quick time as compared to arbitrators who take months or years to render an award. These programs are also capable of independently learning from past cases to produce even better awards than human arbitrators. There are many ways that technology can improve and support international arbitration, but AI is far from taking over arbitration entirely. Thankfully, this is because there still seems to be a fundamentally human aspect of dispute resolution.⁴

Technology has the stunning ability to overhaul established practices and assumptions of human behavior. The use of technology in arbitration increase efficiency, reduce costs and permit the expansion of arbitration into new market segments.⁵ Despite traditional resistance caused by lawyers' conservativeness to embrace new technologies, technology is slowly creeping into legal practice and even international arbitration.⁶ Videoconferencing, electronic records, digital document production tools and increasingly intelligent legal research

³ Richard Susskind, *Tomorrow's Lawyers: An Introduction to Your Future* (2d ed., Oxford University Press 2017); Philip Hanke, 'Computers with Law Degrees? The Role of Artificial Intelligence in Transnational Dispute Resolution, and Its Implications of the Legal Profession', *14(2) Transnat'l Disp. Mgmt.* 1 (2017).

⁴ Christine Sim, 'Will Artificial Intelligence take over arbitration' available at <<http://www.kluwerarbitration.com/document/kli-ai-aj-140101?q=artificial%20intelligence>> accessed on 13th February, 2020.

⁵ Ljiljana, B., 'International commercial arbitration in cyberspace: Recent developments' *Nw. J. Int'l L. & Bus.* 22 (2001): 319, p. 345.

⁶ Gabrielle Kaufmann-Kohler, Thomas Schultz, *Online Dispute Resolution: Challenges for Contemporary Justice* (Kluwer Law International, 2004) p. 27.

databases are now pervasive. To be sure, there have been incremental changes. Nowadays, parties exchange pleadings via e-mail, and most communications from arbitrators are electronic. Technology is also used extensively to manage and present documents, for instance, the NetCase initiative⁷ at the ICC which is a virtual case room that provides a secure online environment for case filings for those who agree to use it. Another wonderful innovation has been the use of memorials with hyperlinks to exhibits. The next step is independent 'learning' by computers otherwise called Artificial Intelligence.

As in nearly every corner of the white-collar world, the technology with the greatest potential to disrupt international arbitration might be artificial intelligence. With its ability to replicate and augment human cognitive skills, automate time-consuming but simple tasks and process massive quantities of data, AI offers the potential to help manage cases and diagnose inefficiencies in the arbitration process.⁸

AI could also help the parties to a dispute choose their arbitrator by examining thousands of candidates' track records in similar cases. It could recommend drafting suggestions for arbitration clauses, helping clients and lawyers eliminate errors, identify blind spots and ensure their interests are protected. AI's fundamental value proposition lies in its ability to streamline administrative tasks while freeing up arbitrators and lawyers to focus on the parts of the process that require the greatest amounts of human judgment: assessing the facts, constructing arguments and deliberating to determine outcomes.⁹

⁷ See <<https://iccwbo.org/content/uploads/sites/3/2016/11/NetCase-Pamphlet-English.pdf>>, NetCase is a service allowing arbitrations to be conducted in a secure online environment. NetCase enables all participants in an arbitration to communicate through a secure website hosted by ICC. The service has been developed to suit the specific needs of ICC arbitration users and offers them the advantages of instantaneous and efficient communication, round-the-clock access, security and confidentiality, and organized handling and storage of documents. The ICC International Court of Arbitration has long been at the forefront of the use of information technology in international arbitration. The Secretariat of the Court has a state-of-the-art case management system that allows the Secretariat to follow the over 1,000 arbitrations that it oversees at any one time. The Court understands the importance of information and communications technology and the benefit it offers.

⁸ *Supra* note 2.

⁹ *Ibid.*

Case management could also be automated, or significantly streamlined with the aid of software, giving arbitrators more time to do what they do best: arbitrate.¹⁰ There are now a number of start-ups focusing on disrupting the legal industry, with some already offering case management and forecasting services to the international arbitration community.¹¹

Some practitioners have advocated for the use of AI in arbitration to help in the management of massive amounts of documentation due to an ever-growing demand for speed and efficiency.¹² A significant amount of legal research and document review has now shifted from libraries and client basement archives onto online platforms. The practice of international arbitration often entails having a grasp of international law and several domestic legal systems at the same time. Moreover, parties submit to tribunals voluminous hard copy and electronic documents.

Accordingly, international arbitration is a document intensive field of law that requires counsel and arbitrators to spend countless hours on legal research and document review. Despite this, counsel and arbitrators still read through innumerable pages, frequently containing irrelevant text in the hunt for exhaustive research/review. This may not last as the use of AI for legal research and document review in the foreseeable future will cut the time necessary for such exercises from hours/days/months/years to seconds (in some instances to milliseconds).¹³

¹⁰ Lucas Bento, 'International Arbitration and Artificial Intelligence: Time to Tango' available at <<http://arbitrationblog.kluwerarbitration.com/2018/02/23/international-arbitration-artificial-intelligence-time-tango/>> accessed on 13th February, 2020.

¹¹ *Ibid*; International Bar Association, 'Times are a-changing': disruptive innovation and the legal profession' (2016): 7-11.

¹² Hogan Lovells, "The future of arbitration: New technologies are making a big impact — and AI robots may take on "human" roles," available at <<https://www.hoganlovells.com/en/publications/the-future-of-arbitration-ai-robots-may-take-on-human-roles>> accessed on 13th February, 2020.

¹³ Camelia Aknouche, 'Artificial Intelligence and International Arbitration: Going Beyond Email' available at <<https://www.tamimi.com/law-update-articles/artificial-intelligence-and-international-arbitration-going-beyond-e-mail/>> accessed on 14th February, 2020.

The potential use for AI in arbitration is endless, but one of the most interesting and controversial applications would be the use of a non-human arbitrator i.e. machine arbitration as discussed in the next topic. Instead of choosing an arbitrator based on nationality, technical know-how and legal expertise, parties would choose a software program. This machine would have the requisite knowledge as specified by the parties and be able to understand an argument, ascertain facts and determine the applicable law while remaining independent and impartial.¹⁴

2.0 APPOINTMENT OF MACHINES AS ARBITRATORS

AI tools have already taken hold in some areas of dispute resolution, usually in a bid to increase efficiencies. For instance, disclosure management software¹⁵ is no longer limited to the performance of keyword searches, but is able to use *predictive coding* and natural language processing to extract and convey actual meaning from documents. AI tools can also be used to identify and analyze authorities, and to analyze submissions. The brutal truth is that automated tools can deal more quickly, efficiently and accurately than any human with large quantities of documents or data. Arbitration is not immune to dynamic technological advancement. With technology reigning supreme over humans, the biggest question that arises is: 'are parties willing to appoint machines as arbitrators?'

Cohen and *Nappert* opine that we are on the verge of fundamental transformation by AI, citing that there is widespread dissatisfaction among arbitration users with the time and cost of proceedings and the 'business-as-usual' indifference of the arbitral community, at the same time as technology is becoming available and affordable to address use grievances about the process. They further contend that Parties have several options in using such

¹⁴ *Infra* note 29.

¹⁵ Disclosure Management Software is a reporting tool used to manage and streamline the process of bringing together multiple data sources and text required in reporting all of which are owned and authored by multiple teams and which require approval by multiple approvers. It is used to efficiently bring together data from a wide range of external sources into a controlled and auditable environment. It also manages the process with history and workflow functionality.

as replacing human arbitrators with AI forming the entire tribunal, appointing human arbitrators in combination with AI serving as a member on the tribunal, or human arbitrators consulting with AI as a check on their decisions.¹⁶

The use of AI in international arbitration has been continuously evolving, and its use by lawyers has risen steadily. For instance, Dispute Resolution Expert Manager (DRExM)¹⁷ has, lately, been used in Egypt to resolve construction disputes, because of its ability to recommend the most appropriate dispute resolution technique, depending on the nature of the dispute, the evidence, and the relation between the parties.

The prospect of machine arbitration raises a multitude of questions. The main question being whether it would be legally possible in the current legal framework? At the outset it should be noted that most national laws do not expressly prohibit neither do they explicitly permit the use of machine arbitrators.¹⁸ Instead, every provision pertaining to the validity of the arbitration agreement only defines it as the submission of a dispute to the arbitrators. In turn, the definitions of ‘arbitral tribunal’ only mention that parties may appoint a sole or a plurality of arbitrators. Thus, based on this argument, both an arbitration agreement referring the dispute to a machine arbitrator and the composition of a tribunal by such machine would be valid.

¹⁶ Paul Cohen and Sophie Nappert ‘*The march of the robots*’ available at <<https://globalarbitrationreview.com/article/1080951/the-march-of-the-robots>> accessed on 12th February, 2020.

¹⁷ See <<https://www.sciencedirect.com/science/article/pii/S2090447915000684>>; DRExM uses an integration of computer software such as Visual Basic, Microsoft Access, and Visual Rule Studio. The windows environment involves Visual Basic Environment, Microsoft Access Database, and Visual Rule Studio. The expert system is designed by using artificial intelligent techniques, and AI is “the branch of computer science concerned with making computers behave like humans”. One category of AI is the “Expert System”. An expert system is a “computer application that performs a task that would otherwise be performed by a human expert”. The Legal expert systems in Egypt therefore use artificial intelligence techniques to help computers apply the law to any given set of facts to manage dispute resolution in construction projects.

¹⁸ One exception is France through Decree No. 2011-48 of 13 January 2011, Reforming the law governing arbitration, article 1450; “[o]nly a natural person having full capacity to exercise his or her rights may act as an arbitrator.”

However, the Arbitration Acts of Brazil¹⁹, Ecuador²⁰, Peru²¹, and Colombia²² contain specific references to arbitrators as ‘humans’ or require them to act by themselves. For instance, the Peruvian Arbitration Act states that “any individual with full capacity to exercise his civil rights may act as an arbitrator”²³. On the contrary, legislation of Chile, Colombia (international arbitration) and Mexico, as well as the Model Law, do not contain a specific reference to arbitrators as ‘human,’ nor require them to be in a capacity to exercise their civil rights. Disputably, this legal lacuna would allow users to appoint a computer as an arbitrator in these countries.²⁴

It is left largely unexplained why it is thought to be important for an arbitrator to be a natural person. It appears merely to be assumed as an obvious requirement. Arbitrators are generally seen as having a personal mandate and mission²⁵ and are personally accountable to the parties, and it is widely recognized – not least in the debate about the role of tribunal secretaries – that the core tasks of an arbitrator cannot be delegated to others.²⁶

Consequently, in the case of a sole arbitrator, it is generally assumed that in many jurisdictions the sole arbitrator is natural person who is personally

¹⁹ Art 10.

²⁰ Art 19.

²¹ Art 20.

²² Art. 7 – domestic arbitration.

²³ Paulius Docka, ‘How Hot-Tubbing Might Affect Technology Related Arbitration’ available at <<https://svamc.org/how-hot-tubbing-might-affect-technology-related-arbitration/>> accessed on 14th February, 2020.

²⁴ the legal status of MLS (Machine Learning Systems) might however change in the future. For instance, members of the European Parliament have mooted to provide legal status to robots, classifying them as ‘electronic people’ and holding them liable for their acts or omissions. This kind of regulation could open new avenues, allowing parties to appoint computers, even in countries that require ‘human’ arbitrators. Moreover, even if parties were disallowed to appoint computers as arbitrators, it does not mean they cannot consent to use them. Even if arbitration laws do not apply, courts should still execute such agreements as a matter of contract law.

²⁵ Constantine Partasides, ‘The Fourth Arbitrator? The Role of Secretaries to Tribunals in International Arbitration’ (Arbitration International, Vol. 18, No. 2 (2002)); ‘It is axiomatic to say of an arbitrator’s mission that it is “intuitu personae”. A party’s choice of arbitrator is, of essence, personal.’

²⁶ See **Article 24(2), SCC Rules, 2017**: ‘The Arbitral Tribunal may not delegate any decision-making authority to the administrative secretary.’ See also para. 145 of the ICC’s Note to Parties and Arbitral Tribunals on the Conduct of the Arbitration under the ICC Rules of Arbitration (1 Mar. 2017): ‘Under no circumstances may the arbitral tribunal delegate decision-making functions to an Administrative Secretary. Nor should the arbitral tribunal rely on the Administrative Secretary to perform any essential duties of an arbitrator’.

accountable for his or her actions and decisions as highlighted above, whereas in the case of a three-person tribunal, there are three such natural persons, and here the internal dynamics and deliberations between the different members of the tribunal are often of decisive importance. Parties often consider it important to have a say in appointing one of the members of the tribunal precisely because they hope that their chosen candidate will be able to play a key role in such deliberations.²⁷

There is quite a lot to be said for an artificial arbitrator. For example, appointment of robots would be less vulnerable to challenge on grounds of *conflict of interest or bias*. Presumably, also, their decision-making process would be less likely to be tainted by the very human weaknesses of bias, illogicality or just having a bad day. And there is obvious potential for *reducing the time and costs* of hearings.

On the flip side, the basis of law, including transnational legal principles practiced in international arbitration between parties from different jurisdictions, is fundamentally social and political therefore, despite the robotic manner in which many international arbitrations seem to be processed, its adjudicative function remains essentially social and political.

Another barrier to robot arbitrators coming into use is that, in principle, machines do not have feelings, empathy, or any idea of justice that goes beyond the processed data and precedents. This may lead to correct but somewhat unfair decisions. Moreover, justice is not just a simple algorithm, it is a real human virtue which to be put into practice needs a complex analysis of the situations and circumstances surrounding a specific case as well as of the facts and application of the law, to be able to strike a balance. A human arbitrator lends legitimacy to the process. In mediation, the reputation and charm of the mediator can be just as helpful to the resolution of the dispute.

²⁷ James Hope, 'Can a Robot be an Arbitrator?' available at < <http://www.kluwerarbitration.com/document/kli-ka-calissendorff-2019-ch07?q=artificial%20intelligence> accessed on 13th February, 2020.

Ultimately, adjudicating rights and equity in international arbitration is perceived as a fundamentally human quality – one which cannot so easily be replaced by robots.²⁸ Hence for the time being, the likelihood of a robot to be able to exercise a virtues of these kind, and to do away with human input completely in dispute resolution appears to be remote.

3.0 CONCLUSION

AI is currently in a disruption phase where legal practitioners are grappling with how AI can be implemented in the practice of law. There are bits and pieces of the legal process that can be replaced by AI but the technology to wholly replace counsel, experts and arbitrators with machines is not yet here. Human judgement and empathy will, for the foreseeable future, remain key features of arbitration, barring machines from replacing humans. Arbitration practitioners are nonetheless well advised to prepare for, and embrace, the changes that AI will bring to the arbitration scene. AI will ultimately enable arbitration practitioners to run cases better, more efficiently and, perhaps, more cost effective.

Artificial intelligence is more than legal technology. It is the next great step that is revolutionizing the legal profession. Change can be brought on through pushing existing ideas. What makes artificial intelligence stand out is the potential for a paradigm shift in how legal work is done. For the international arbitration community, investing in AI technologies must be an obvious strategy.²⁹

Arbitration Practitioners must start offering dispute resolution services supported by a suite of AI tools. They need to take charge of creating the right mix of human and machine capabilities to re-cast future relationships that

²⁸ *Supra* note 4.

²⁹ Philippe Billiet, Filip Nordlund, 'A new beginning – artificial intelligence and arbitration' available at http://www.kcab.or.kr/jsp/comm_jsp/BasicDownload.jsp?FilePath=arbitration%2Ff_0.140140034811391261521536471556&orgName=04.+A+new+beginning+%26%238211%3B+artificial+intelligence+and+arbitration+%28Philippe+Billiet%2C+Filip+Nordlund%29.pdf accessed on 14th January, 2020.

benefit both provider and clients. Arbitration is well placed to lead the way in adopting new technological and procedural innovations – indeed, arbitral institutions, tribunals and practitioners have a responsibility to do so, particularly where such innovations can reduce cost and improve efficiency.³⁰

Artificial intelligence is now a reality. AI has already moved into international arbitration with incipient but positive steps, with the aim to lighten workloads and assist the work of the various players in the arbitration arena. Similarly, technological developments have now also made inroads into the ever thorny task of selecting arbitrators through arbitrator intelligence, which seeks to change the appointment of arbitrators from being an intuitive process based on personal references to a decision founded on specific data. Case handling has also benefited greatly from artificial intelligence. The technology developed to process and analyze documents may bring significant advantages to the review of information during discovery, while also allowing the hearing to be carried out in more interactive and useful ways.³¹

Paisley and Sussman³² opine that;

“Whether we like it or not, artificial intelligence is going to play a major role in international arbitration in the near future. The amounts at issue are too high and the benefits from artificial intelligence too great to avoid it. AI has significant potential benefits for international arbitration, but as members of the international arbitration community we must ask ourselves for

³⁰ *Ibid* p. 29.

³¹ Alberto Acevedo, ‘Artificial intelligence in international arbitration: from the legal prediction to the awards issued by robots’ available at <https://www.garrigues.com/en_GB/new/artificial-intelligence-international-arbitration-legal-prediction-awards-issued-robots> accessed on 17th February, 2020.

³² Kathleen Paisley and Edna Sussman, ‘Artificial Intelligence Challenges and Opportunities for International Arbitration’ available at <<https://sussmanadr.com/wp-content/uploads/2018/12/artificial-intelligence-in-arbitration-NYSBA-spring-2018-Sussman.pdf>> accessed on 17th February, 2020.

whom, at what cost, and how this might impact international arbitration more generally in ways that may not be obvious.”

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